

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2019
or
TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____

Commission file number: 001-07964



NOBLE ENERGY, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State of incorporation)
1001 Noble Energy Way
Houston, Texas
(Address of principal executive offices)

73-0785597
(I.R.S. employer identification number)

77070
(Zip Code)

(281) 872-3100
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.01 par value	NBL	The Nasdaq Stock Market LLC (NASDAQ Global Select Market)

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer", "smaller reporting company", and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No

Aggregate market value of Common Stock held by nonaffiliates as of June 30, 2019: \$10.7 billion.

Number of shares of Common Stock outstanding as of December 31, 2019: 478,509,368.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive proxy statement for the 2020 Annual Meeting of Shareholders to be held on April 28, 2020, which will be filed with the Securities and Exchange Commission within 120 days after December 31, 2019, are incorporated by reference into Part III.

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Disclosure Regarding Forward-Looking Statements

This Annual Report on Form 10-K and the documents incorporated by reference in this report contain forward-looking statements within the meaning of the federal securities laws. Forward-looking statements give our current expectations or forecasts of future events.

These forward-looking statements include, among others, the following:

- our growth strategies, including our capital spending plans;
- our future results of operations;
- our liquidity and ability to finance our exploration and development activities;
- our ability to successfully and economically explore for and develop crude oil, natural gas liquids (NGLs) and natural gas resources;
- anticipated trends in our business;
- market conditions in the oil and gas industry;
- the impact of governmental regulation, including United States (US) federal, state, local, and foreign host government tax regulations, fiscal policies and terms, as well as that involving the protection of the environment or marketing of production and other regulations;
- our ability to make and integrate acquisitions or execute divestitures; and
- access to resources.

Forward-looking statements are typically identified by use of terms such as “may,” “will,” “expect,” “believe,” “anticipate,” “estimate,” “intend,” and similar words, although some forward-looking statements may be expressed differently. These forward-looking statements are made based upon management’s current plans, expectations, estimates, assumptions and beliefs concerning future events impacting us and therefore involve a number of risks and uncertainties. We caution that forward-looking statements are not guarantees and that actual results could differ materially from those expressed or implied in the forward-looking statements. You should consider carefully the statements under Item 1A. Risk Factors and other sections of this report, which describe factors that could cause our actual results to differ from those set forth in the forward-looking statements.

PART I

Items 1. and 2. Business and Properties

In this report, unless otherwise indicated or where the context otherwise requires, information includes that of Noble Energy, Inc. and its subsidiaries (Noble Energy, the Company, we or us). All references to production, sales volumes and reserves quantities are net to our interest unless otherwise indicated. For a summary of commonly used industry terms and abbreviations used in this report, see the [Glossary](#), located at the end of this report.

Noble Energy (Nasdaq: NBL) is an independent crude oil and natural gas exploration and production company committed to meeting the world’s growing energy needs and delivering competitive returns to its shareholders. Founded in 1932 and incorporated in Delaware in 1969, Noble Energy is guided by our values, commitment to safety, and respect for stakeholders, communities and the environment. For more information on how the Company fulfills its purpose: *Energizing the World, Bettering People’s Lives®*, visit <https://www.nblenergy.com>. Information on our website is not incorporated by reference into, and does not constitute a part of, this report.

Portfolio Our portfolio of assets is diversified through US and international projects and production mix among crude oil, NGLs and natural gas. In particular, our business is focused on both US onshore unconventional basins and certain global offshore conventional basins in the Eastern Mediterranean and off the west coast of Africa. In US onshore unconventional basins, we have demonstrated our ability to apply geological, drilling, completion, and midstream design and operational expertise through an Integrated Development Plan (IDP) approach, which is designed to optimize capital efficiency and drive returns. In the global offshore, our notable exploration and major project successes have led to sanction (meaning final investment decision has been reached) of multiple major development projects and have provided long-lived cash flows to our business. In addition, our midstream business and equity method investments represent essential components of our business as well as necessary and integral elements of our value chain.

Reportable Segments We manage our operations by geographic region and the nature of the products and services we offer. We have the following reportable segments: United States, Eastern Mediterranean, West Africa, Other International and Midstream. The geographical reportable segments are in the business of crude oil and natural gas acquisition, exploration, development, and production (Oil and Gas Exploration and Production). The Midstream reportable segment consists primarily of our interest in Noble Midstream Partners LP (Noble Midstream Partners, Nasdaq: NBLX), which we consolidate. Noble Midstream Partners develops, owns, and operates domestic midstream infrastructure assets, as well as invests in other

midstream projects, with current focus on the DJ and Delaware Basins. See [Item 8. Financial Statements and Supplementary Data – Note 3. Segment Information](#).

Oil and Gas Properties and Activities We search for crude oil and natural gas properties onshore and offshore and seek to acquire exploration rights and conduct exploration activities in areas of interest. Our activities include geophysical and geological evaluation, analysis of commercial, regulatory and political risks, and exploratory and development drilling leading to production, where appropriate.

Our current portfolio consists primarily of interests in developed and undeveloped crude oil and natural gas leases and concessions. These properties contribute all of our crude oil, NGL and natural gas production, provide additional investment opportunities in proved areas, and offer further exploration opportunities. Our new venture areas provide frontier and established basin exploration opportunities, which may result in the establishment of new operational areas in the future. We also own or invest in midstream assets primarily used in the gathering, processing and transportation of US onshore production.

The map below illustrates the locations of our significant exploration and production activities:



Development Activities Our development projects have resulted from exploration success, leasing activities, and periodic strategic acquisitions. We believe these projects provide opportunities for growth at attractive financial returns. Each project progresses, as appropriate, through the various development phases including appraisal, engineering and design, development drilling, construction and production. While development projects require significant capital investments, typically over a multi-year period, they are expected to offer sustained cash flows during production.

In US onshore, our development programs are centered around IDPs and generate efficiencies for upstream and midstream development. IDPs are generally areas of highly contiguous acreage, typically held by production, that accommodate drilling long lateral wells and other operational synergies. The approach also benefits from the ability to deploy a flexible capital investment program that can be varied in response to changes in the commodity price environment. We continue to enhance project performance in these areas through design, technology and operational efficiencies.

Offshore, we engage in long-cycle development projects, such as the Leviathan natural gas field, offshore Israel, which commenced production at the end of December 2019, as well as the Alen Gas Monetization project in West Africa.

Exploration Activities We primarily focus on organic growth from exploration and development drilling activities, concentrating on existing basins or plays where we believe we have strategic competitive advantages or in new basins with attractive geological potential and the opportunity for competitive project financial returns. These advantages are derived from proprietary seismic data and operational expertise, which we believe will generate superior returns over the oil and gas business cycle. We have had substantial historic exploration success in the Levant Basin offshore Eastern Mediterranean and the Douala Basin offshore West Africa, resulting in the successful completion of numerous major development projects. In 2019, we conducted limited exploration activities as we focused our capital investment program on the development of US onshore assets and progressing the Leviathan development project to first production in December 2019.

Asset Impairment During fourth quarter 2019, we recorded impairment expense related to our proved properties in the Eagle Ford Shale. See [Item 8. Financial Statements and Supplementary Data – Note 10. Impairments](#).

Proved Reserves Disclosures

Proved Oil and Gas Reserves Proved reserves at December 31, 2019 were as follows:

	Crude Oil & Condensate (MMBbls)	NGLs (MMBbls)	Natural Gas (Bcf)	Total	
				(MMBoe) ⁽¹⁾	(Percent)
Proved Developed					
United States	176	138	1,055	490	33%
Israel	9	—	5,463	920	61%
Equatorial Guinea	25	10	355	94	6%
Total Proved Developed Reserves	210	148	6,873	1,504	100%
Proved Undeveloped					
United States	201	125	964	486	89%
Israel	—	—	132	22	4%
Equatorial Guinea	2	5	182	38	7%
Total Proved Undeveloped Reserves	203	130	1,278	546	100%
Total Proved Reserves	413	278	8,151	2,050	

⁽¹⁾ Million barrels oil equivalent. Natural gas is converted on the basis of six Mcf of gas per one barrel of crude oil equivalent. This ratio reflects an energy content equivalency and not a price or revenue equivalency. Given commodity price disparities, the price for a barrel of crude oil equivalent for US natural gas and NGLs is significantly less than the price for a barrel of crude oil. In Israel, we sell natural gas under contracts where the majority of the price is fixed, resulting in less commodity price disparity.

Our proved reserves are 48% US onshore and 52% international. The commodity mix is 34% liquids (crude oil and NGLs), 50% international natural gas and 16% US natural gas. Changes in proved reserves were as follows:

(MMBoe)	Year Ended December 31,		
	2019	2018	2017
Proved Reserves, Beginning of Year	1,929	1,965	1,437
Revisions of Previous Estimates ⁽¹⁾	(50)	(2)	135
Extensions, Discoveries and Other Additions	305	223	736
Purchase of Minerals in Place	—	—	57
Sale of Minerals in Place	(2)	(128)	(261)
Production	(132)	(129)	(139)
Proved Reserves, End of Year	2,050	1,929	1,965

⁽¹⁾ Includes negative price revisions of 53 MMBoe in 2019 and positive price revisions of 27 MMBoe and 30 MMBoe in 2018 and 2017, respectively.

For a discussion of changes in proved reserves, see [Item 8. Financial Statements and Supplementary Data – Supplemental Oil and Gas Information \(Unaudited\)](#).

Proved Undeveloped Reserves (PUDs) Changes in PUDs, which total 27% of proved reserves, were as follows for the year ended December 31, 2019:

(MMBoe)	United States	Israel ⁽¹⁾	Equatorial Guinea	Total
Proved Undeveloped Reserves, Beginning of Year	560	612	3	1,175
Revisions of Previous Estimates	(67)	(39)	4	(102)
Extensions, Discoveries and Other Additions	167	—	34	201
Conversion to Proved Developed	(174)	(551)	(3)	(728)
Proved Undeveloped Reserves, End of Year	486	22	38	546
Conversion Percentage (Percent of Beginning Balance)	31%	90%	100%	61%

⁽¹⁾ In Israel, PUDs revisions of previous estimates reflects a reclassification to developed reserves associated with our Tamar field based upon our determination the reserves are accessible with limited further development. As such, we concurrently reflect an upward

revision within proved developed reserves. Conversions to proved developed reserves relate to commencement of Leviathan production in December 2019.

Revisions of Previous PUD Estimates Revisions of previous PUD estimates were as follows for the year ended December 31, 2019:

<i>(MMBoe)</i>	DJ Basin	Delaware Basin	Israel	Equatorial Guinea	Total
Price	(2)	(15)	—	3	(14)
Development Plans	(19)	(25)	(39)	1	(82)
Performance	—	(6)	—	—	(6)
Total	(21)	(46)	(39)	4	(102)

Extensions, Discoveries and Other Additions PUD additions in US onshore are primarily located in the DJ Basin, resulting from the inclusion of new wells within drilling plans. Equatorial Guinea additions relate to the April 2019 sanction of the Alen Gas Monetization project, for which first sales are expected in the first half of 2021.

Conversion to Proved Developed Our development plans will result in the conversion of all PUDs to developed reserves within five years of their initial recognition, with the exception of Tamar Southwest PUDs, offshore Israel. Tamar Southwest PUDs are approximately 4% of total PUDs and have remained undeveloped since initial disclosure in 2013. In 2019, we received final approval of the development plan from the government of Israel and progressed capital investment in the field, including laying subsea equipment for future tie-in of field production into existing Tamar infrastructure. Our development plan includes additional capital investment in 2020 and conversion of Tamar Southwest PUDs to proved developed reserves in 2023, which we currently believe will align start-up with local and regional natural gas demand.

PUDs are expected to be recovered from new wells on undrilled acreage or from existing wells where additional capital expenditures are required, such as from drilled but uncompleted (DUC) wells. As of December 31, 2019, less than 10% of our PUDs were associated with US onshore DUC well locations. Our development plan contemplates production to commence from these wells in 2020.

When preparing development plans and estimates of PUDs, we consider the future economic development of reserves based on our estimates of future pricing, future investments, production and other economic factors that are excluded from the Securities and Exchange Commission (SEC) reserves requirements that specify inputs be based upon current existing conditions. For example, in periods of fluctuating commodity prices, improving prices may yield economic PUDs but the Company's planned future capital outlay may not support the development of all economic PUDs. As such, certain economic PUDs may not be recorded as we record PUDs in connection with our future development plans to ensure conversion of PUDs within five years of their initial recognition. See [Item 8. Financial Statements and Supplementary Data – Supplemental Oil and Gas Information \(Unaudited\)](#).

Development Costs Costs incurred to develop our PUDs in 2019 totaled \$1.5 billion. Of this amount, \$1.1 billion, \$399 million and \$48 million related to the conversion of year end 2018 PUDs to proved developed reserves in US onshore, the Leviathan field offshore Israel and the Aseng crude oil well in Equatorial Guinea, respectively.

In addition, we spent \$131 million to convert unproved reserves to proved developed reserves in US onshore and \$24 million progressing PUDs that have not yet been converted to proved developed reserves.

Future Development Costs Future development costs include amounts we expect to spend converting PUDs to proved developed reserves. Estimated future development costs for PUDs as of December 31, 2019, are as follows:

<i>(millions)</i>	Year Ended December 31,		
	2020	2021	2022
Future Development Costs	\$ 1,191	\$ 920	\$ 994

Estimated future development costs include capital spending on development projects. PUDs related to these projects will be reclassified to proved developed reserves when production commences.

Internal Controls Over Reserves Estimates Our policies and processes regarding internal controls over the recording of reserves estimates require reserves to be in compliance with SEC definitions and guidance and prepared in accordance with Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information promulgated by the Society of Petroleum Engineers. Our internal controls over reserves estimates also include the following:

- the Audit Committee of our Board of Directors reviews significant reserves changes on an annual basis;
- fields that meet a minimum reserve quantity threshold, which combined represent over 80% of our proved reserves, are audited by Netherland, Sewell & Associates, Inc. (NSAI), a third-party petroleum consulting firm, on an annual basis;

and

- NSAI is engaged by, and has direct access to, the Audit Committee.

See *Third-Party Reserves Audit*, below.

Responsibility for compliance in reserves estimation is delegated to our Corporate Reservoir Engineering group. Qualified petroleum engineers in our Houston and Denver offices prepare all reserves estimates for our geographical regions. These reserves estimates are reviewed and approved by management and senior engineering staff with final approval by the Senior Vice President – Corporate Development and certain other members of senior management.

Our Senior Vice President – Corporate Development oversees our corporate business development, exploration and reserves departments. He is the technical person primarily responsible for overseeing the preparation of our reserves estimates and the third-party audit of our reserves estimates. He has Bachelor of Science and Master of Science degrees in Petroleum Engineering and over 39 years of industry experience. Since 2006, he has worked with positions of increasing responsibility in engineering, evaluations and business unit management at the Company. The Senior Vice President – Corporate Development reports directly to our Chief Executive Officer.

Technologies Used in Reserves Estimation The SEC’s reserves rules allow the use of techniques that have been proved effective by actual production from projects in the same reservoir or an analogous reservoir or by other evidence using reliable technology that establishes reasonable certainty. Reliable technology is a grouping of one or more technologies (including computational methods) that has been field tested and has been demonstrated to provide reasonably certain results with consistency and repeatability in the formation being evaluated or in an analogous formation.

We used a combination of production and pressure performance, wireline wellbore measurements, simulation studies, offset analogies, seismic data and interpretation, wireline formation tests, geophysical logs and core data to calculate our reserves estimates.

Based on reasonable certainty of reservoir continuity in US onshore formations where we operate, we may record proved reserves associated with wells more than one offset location away from an existing proved producing well. All of our wells drilled that were more than one offset away from a proved producing well at the time of drilling were determined to be economically producible.

Third-Party Reserves Audit In each of the years 2019, 2018, and 2017, our Audit Committee retained NSAI to perform audits of proved reserves. The reserves audit for 2019 included a detailed review of seven of our major US onshore and international fields, which covered approximately 99% of total proved reserves.

In connection with the 2019 reserves audit, NSAI prepared its own estimates of our proved reserves and compared its estimates to those prepared by us. NSAI determined that our estimates of reserves have been prepared in accordance with the definitions and regulations of the SEC, including the criteria of “reasonable certainty,” as it pertains to expectations about the recoverability of reserves in future years, under existing economic and operating conditions, consistent with the definition in Rule 4-10(a)(24) of Regulation S-X. NSAI issued an unqualified audit opinion on our proved reserves at December 31, 2019, based upon their evaluation. NSAI concluded that our estimates of proved reserves were, in the aggregate, reasonable and have been prepared in accordance with Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information promulgated by the Society of Petroleum Engineers. NSAI’s report, which should be read in its entirety, is attached as Exhibit 99.1 to this Annual Report on Form 10-K.

Sales Volumes, Price and Cost Data The table below includes sales volumes, price and cost data for each geographical area and field that contained 15% or more of total proved reserves as of December 31, 2019. Total proved reserves for the Leviathan field accounted for over 15% of total proved reserves as of December 31, 2019. While the Leviathan field commenced production in December 2019, natural gas sales from that field in 2019 were immaterial; thus, the Leviathan field is not presented in the table below.

	Sales Volumes			Average Sales Price (1)			Average
	Crude Oil & Condensate (MBbl)	NGLs (MBbl)	Natural Gas (MMcf)	Crude Oil & Condensate (Per Bbl)	NGLs (Per Bbl)	Natural Gas (Per Mcf)	Production Cost (2)
							Total (Per BOE)
Year Ended December 31, 2019							
United States							
DJ Basin	25,494	11,931	109,790	\$ 56.33	\$ 12.96	\$ 1.70	\$ 3.55
Other US	18,278	12,832	78,408	54.78	15.58	2.02	6.37
Total US	43,772	24,763	188,198	\$ 55.68	\$ 14.32	\$ 1.83	\$ 4.80
Israel	106	—	81,269	\$ 56.07	\$ —	\$ 5.55	\$ 2.73
Equatorial Guinea	4,792	—	67,729	61.03	—	0.27	4.73
Total Consolidated Operations	48,670	24,763	337,196	\$ 56.21	\$ 14.32	\$ 2.41	\$ 4.63
Equity Investment (3)	535	1,634	—	58.65	31.77	—	—
Total	49,205	26,397	337,196	\$ 56.24	\$ 15.40	\$ 2.41	—
Year Ended December 31, 2018							
United States (4)							
DJ Basin	23,165	8,880	83,766	\$ 63.06	\$ 25.32	\$ 2.13	\$ 4.53
Other US	18,506	13,761	88,370	58.69	26.24	2.90	6.16
Total US	41,671	22,641	172,136	\$ 61.12	\$ 25.88	\$ 2.53	\$ 5.35
Israel	113	—	86,461	\$ 63.25	\$ —	\$ 5.47	\$ 2.30
Equatorial Guinea	5,690	—	77,767	68.53	—	0.27	5.21
Total Consolidated Operations	47,474	22,641	336,364	\$ 62.01	\$ 25.88	\$ 2.76	\$ 4.78
Equity Investment (3)	576	1,962	—	68.99	42.14	—	—
Total	48,050	24,603	336,364	\$ 62.10	\$ 27.18	\$ 2.76	—
Year Ended December 31, 2017							
United States (4)							
DJ Basin	21,564	6,911	70,660	\$ 50.20	\$ 25.22	\$ 2.96	\$ 4.46
Marcellus Shale	233	1,654	63,443	36.91	23.81	3.15	1.05
Other US	18,757	12,521	87,364	48.01	22.34	2.99	6.48
Total US	40,554	21,086	221,467	\$ 49.11	\$ 23.40	\$ 3.02	\$ 4.81
Israel							
Tamar Field	130	—	96,894	\$ 46.95	\$ —	\$ 5.37	\$ 2.02
Other Israel	—	—	2,346	—	—	3.56	—
Total Israel	130	—	99,240	\$ 46.95	\$ —	\$ 5.32	\$ 2.01
Equatorial Guinea	6,460	—	87,269	53.68	—	0.27	4.30
Total Consolidated Operations	47,144	21,086	407,976	\$ 49.73	\$ 23.40	\$ 3.01	\$ 4.31
Equity Investment (3)	662	2,162	—	55.13	38.48	—	—
Total	47,806	23,248	407,976	\$ 49.84	\$ 24.81	\$ 3.01	—

(1) Average sales prices exclude gains or losses on commodity derivative instruments. See [Item 8. Financial Statements and Supplementary Data – Note 14. Derivative Instruments and Hedging Activities](#).

(2) Average production cost includes oil and gas production operating costs, workover and repair expense and excludes production and ad valorem taxes, gathering, transportation and processing expense, and other royalty expense.

(3) Volumes represent sales of condensate and liquefied petroleum gas (LPG) from the LPG plant in Equatorial Guinea.

(4) Amounts include Gulf of Mexico assets prior to sale in second quarter 2018 and Marcellus Shale assets prior to sale in second quarter 2017. See [Item 8. Financial Statements and Supplementary Data – Note 4. Acquisitions and Divestitures](#).

At December 31, 2019, our operated properties accounted for substantially all of our total sales volumes. Being the operator of a property improves our ability to directly influence production levels and the timing of projects, while also enhancing our control over operating expenses and capital expenditures.

Productive Wells The number of productive crude oil and natural gas wells in which we held an interest at December 31, 2019 were as follows:

	Crude Oil Wells		Natural Gas Wells		Total	
	Gross	Net	Gross	Net	Gross	Net
United States	4,819	4,231	807	764	5,626	4,995
Israel	—	—	10	3	10	3
Equatorial Guinea	6	2	23	8	29	10
Total	4,825	4,233	840	775	5,665	5,008

Developed and Undeveloped Acreage Developed and undeveloped acreage (including both leases and concessions) in which we held an interest at December 31, 2019 were as follows:

<i>(thousands of acres)</i>	Developed Acreage		Undeveloped Acreage	
	Gross	Net	Gross	Net
United States	575	453	495	438
Israel	309	123	161	62
Equatorial Guinea	284	118	26	10
Newfoundland, Canada	—	—	2,331	681
Colombia	—	—	2,174	869
Gabon	—	—	671	403
Cyprus	—	—	95	33
Cameroon	—	—	168	168
Total	1,168	694	6,121	2,664

The table above includes certain undeveloped acreage that is set to expire if production is not established or we take no other action to extend the terms of the leases, licenses or concessions within a specified period of time. As of December 31, 2019, acreage expiring in the next three years is as follows:

<i>(thousands of acres)</i>	Net Undeveloped Acreage		
	2020	2021	2022
United States ⁽¹⁾	29	59	28
Israel ⁽²⁾	46	—	—
Gabon	—	403	—
Total	75	462	28

⁽¹⁾ Approximately 80% relates to acreage on which we have not recorded PUDs. Of the remaining acreage, there are no PUDs on acreage we plan to let expire as our development plan contemplates the drilling or renewing of leases associated with this acreage prior to expiration.

⁽²⁾ Acreage relates to the Alon D license.

Drilling Activity The results of crude oil and natural gas wells completed, regardless of when drilling was initiated, were as follows:

	Net Exploratory Wells			Net Development Wells			Total
	Productive	Dry	Total	Productive	Dry	Total	
Year Ended December 31, 2019							
United States	—	—	—	183.9	—	183.9	183.9
Israel	—	—	—	1.6	—	1.6	1.6
Equatorial Guinea	—	—	—	0.4	—	0.4	0.4
Total	—	—	—	185.9	—	185.9	185.9
Year Ended December 31, 2018							
United States	—	—	—	203.0	—	203.0	203.0
Total	—	—	—	203.0	—	203.0	203.0
Year Ended December 31, 2017							
United States	—	—	—	185.3	—	185.3	185.3
Israel	—	—	—	0.3	—	0.3	0.3
Suriname	—	0.2	0.2	—	—	—	0.2
Total	—	0.2	0.2	185.6	—	185.6	185.8

In addition to the wells in the table above, wells that were in the process of drilling or completing at December 31, 2019 were as follows:

	Exploratory ⁽¹⁾		Development ⁽¹⁾		Total	
	Gross	Net	Gross	Net	Gross	Net
United States	—	—	72.0	64.0	72.0	64.0
Total	—	—	72.0	64.0	72.0	64.0

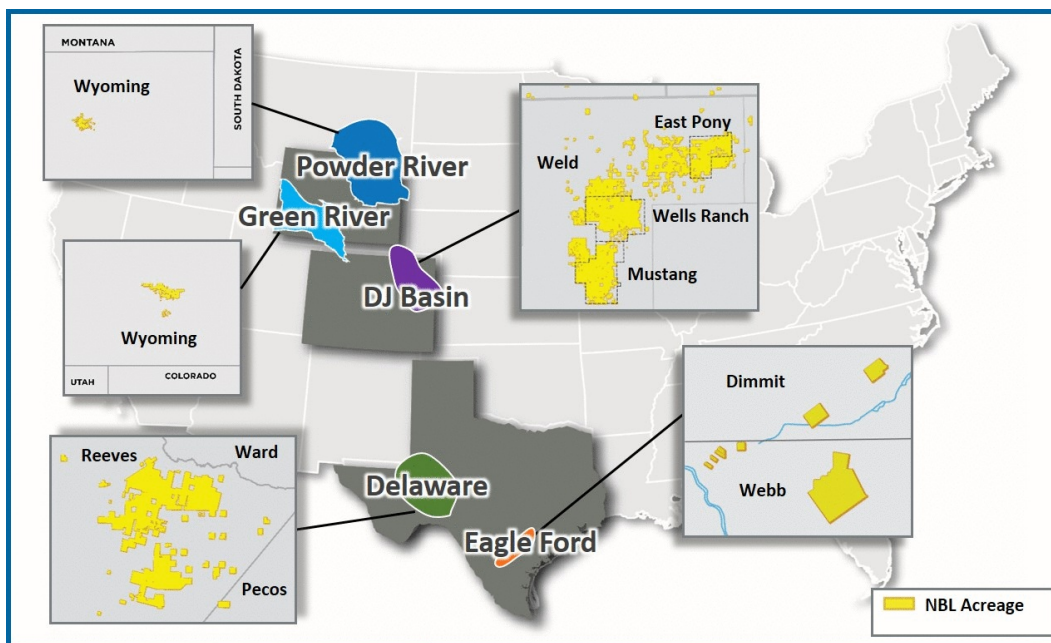
⁽¹⁾ Amounts include wells awaiting completion activities, with the exception of Tamar Southwest as it is not in the process of completing at December 31, 2019. Amounts exclude wells drilled and suspended awaiting a sanctioned development plan or being evaluated to assess the economic viability of the well.

See [Item 8. Financial Statements and Supplementary Data – Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs](#) for additional information on suspended exploratory wells.

Oil and Gas Exploration and Production – Properties and Activities

US Onshore

Our US onshore operations are located in proven hydrocarbon basins. These assets provide low geologic-risk drilling opportunities in liquids-rich areas. In addition, we evaluate and consider other US onshore new venture prospects to complement our portfolio. US onshore locations as of December 31, 2019 are shown on the map below:



US onshore operations accounted for 77% of 2019 total consolidated sales volumes and 48% of total proved reserves at December 31, 2019. Approximately 39% of the proved reserves in the US are crude oil and condensate, 34% are natural gas and 27% are NGLs.

Key information for our US onshore operating locations as of, and for the year ended, December 31, 2019, is as follows:

	DJ Basin	Delaware Basin	Eagle Ford Shale	Total
Net Acreage (thousands) ⁽¹⁾	336	92	35	463
Proved Reserves (MMBoe)	666	204	106	976
Sales Volumes (MBoe/d)	153	66	55	274
Gross Wells Drilled ⁽²⁾	106	66	16	188
Gross Wells Brought Online	120	64	25	209
Gross Non-Operated Wells Participated In	2	21	—	23

⁽¹⁾ Amounts include net developed and net undeveloped acres. Total excludes approximately 181,000 net acres in the Powder River and Green River Basins and approximately 239,000 net acres in other US onshore locations.

⁽²⁾ The number of wells drilled refers to the number of wells completed, regardless of when drilling was initiated. Amount excludes two refracture wells in the Eagle Ford Shale.

DJ Basin Our operations in the DJ Basin represent the largest asset within our US onshore asset portfolio. In 2019, we conducted drilling and development activity in three of our IDP areas, including Wells Ranch, Mustang, and East Pony. Our IDP approach has provided an opportunity to efficiently and economically develop our resources through leveraging infrastructure.

Operationally, our focus on obtaining better results from enhanced completions has led to stronger new well performance. In the Mustang IDP area, our large, contiguous acreage position allows us to focus on row development concepts, which, unlike single-pad development, include sequencing operations across a row to more efficiently develop our acreage. We are currently using three drilling rigs and two hydraulic fracturing crews.

We currently have approximately 385 approved and remaining drilling permits, primarily in our Mustang Comprehensive Drilling Plan (CDP). The vast majority of these permits have six-year terms. In addition, in September 2019, we submitted a permitting application for our second large-scale CDP in the state of Colorado. The CDP spans approximately 38,000 net acres in Wells Ranch and allows for up to 250 additional drilling permits. The Wells Ranch CDP acreage is located in an area of higher crude oil production.

Delaware Basin (Permian Basin) In 2019, we continued execution of the Delaware Basin IDP with a focus on maximizing lateral length, pad drilling, single zone completions, and infrastructure development. We began realizing the benefits of row development, which contributed to reduced well costs and improved cycle times. Newly installed electrical substations have increased reliability of production and reduced costs. We are currently using two rigs and two hydraulic fracturing crews.

We continue to focus on securing our crude oil takeaway position in the basin. We utilize the Advantage Pipeline System (below), which is 50% owned by Noble Midstream Partners, for a portion of our crude oil takeaway. We also utilize the EPIC Y-Grade Pipeline (defined below), which began interim crude service in August 2019. The EPIC Crude Oil Pipeline (below), to which substantially all of our acreage position in Reeves County, Texas is dedicated, is scheduled to come online in the first half of 2020. Our crude service will shift to the EPIC Crude Oil Pipeline once it comes online, and the EPIC Y-Grade Pipeline will commence Y-grade service. Noble Midstream Partners has ownership interests in entities that own these pipelines. See [Item 8. Financial Statements and Supplementary Data – Note 5. Equity Method Investments](#).

Eagle Ford Shale During 2019, we continued to apply IDP learnings and enhancements, including optimizing completion designs to increase investment efficiency. As we focused on completion activities, we progressed DUC wells to production and tested co-development of both the Upper and Lower Eagle Ford formation zones. In 2019, we began testing refracturing concepts in the South Gates Ranch area, which could provide opportunities to re-develop approximately 75 to 100 wells.

US Onshore Exploration Activity Our US onshore exploration position includes more than 250,000 net acres, with approximately 181,000 net acres in Wyoming in the Powder River and Green River Basins. We continue to progress activities to obtain required approvals and permits.

See [Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – Results of Operations – Liquidity and Capital Resources](#)

International

Our international business focuses on offshore opportunities in a number of countries and diversifies our portfolio. Development projects in the Eastern Mediterranean and West Africa have contributed substantially to our production and cash flow growth for more than a decade. Previous exploration successes in these areas have yielded a large inventory of discovered resources which, through major project development, have the potential to contribute to long-term production and cash flow growth in the future.

During 2019, we progressed Phase 1 development of the Leviathan field, which commenced production on December 31, 2019. In addition, we advanced our Eastern Mediterranean regional natural gas export opportunities by executing natural gas sales and purchase agreements (GSPAs) and transportation agreements for the Leviathan and Tamar fields and continued efforts to monetize our significant natural gas discoveries offshore West Africa.

Operations in Equatorial Guinea, Cameroon, Gabon, and Cyprus are conducted in accordance with the terms of production sharing contracts (PSCs). Operations in Israel, Newfoundland (Canada), Colombia and other foreign locations are conducted in accordance with concession agreements, permits or licenses.

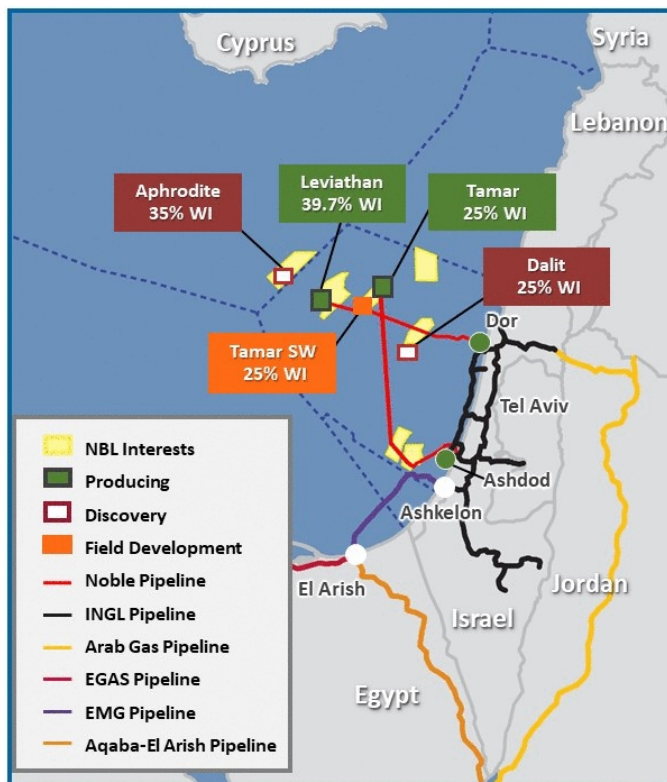
Eastern Mediterranean (Israel and Cyprus) The Eastern Mediterranean, where we have identified the existence of substantial natural gas resources, is one of our core operating areas. Natural gas sales volumes, primarily from the Tamar field, represented approximately 10% of total consolidated sales volumes during 2019. Our operated offshore Israel leasehold position includes six leases and one license. Offshore Cyprus, we operate under the terms of a PSC, with acreage adjacent to our offshore Israel acreage.

Key information for our Eastern Mediterranean operating area as of, and for the year ended, December 31, 2019, is as follows:

	Total
Proved Reserves (MMBoe) ⁽¹⁾	942
Sales Volumes (MMcf/d)	223
Net Developed Acres (thousands)	123
Net Undeveloped Acres (thousands)	95
Gross Wells Drilled ⁽²⁾	4
Gross Wells Brought Online	4

- (1) Includes 639 MMBoe, 281 MMBoe, and 22 MMBoe related to the Leviathan, Tamar, and Tamar Southwest fields, respectively.
 (2) The number of wells drilled refers to the number of wells completed, regardless of when drilling was initiated.

Eastern Mediterranean locations as of December 31, 2019 are shown on the map below:



Domestic and Regional Natural Gas Demand The quantity of discovered natural gas resources at the Tamar and Leviathan fields has positioned Israel to meet domestic needs for decades and become a significant natural gas exporter. From offshore Israel projects, we have reliably delivered over 3.0 Tcf, gross, of natural gas primarily to Israeli customers, including the Israel Electric Corporation (IEC), the largest supplier of electricity in Israel. In mid-2019, the Tamar field achieved a milestone, reaching 2.0 Tcf of cumulative gross production with over 99% runtime since startup.

Leviathan Development Project In order to expand Israel's supply of natural gas, create redundancy in infrastructure, and meet increasing regional demand, we progressed the initial phase of development at the Leviathan field, our largest discovery to date. We sanctioned the development in February 2017 and achieved first gas, ahead of schedule and under budget, with first production in December 2019.

The initial development includes four subsea wells, each capable of flowing more than 300 MMcf/d of natural gas. Production is gathered at the field and delivered via two 73-mile flowlines to a fixed platform, with full processing capabilities, located approximately 6 miles offshore. Processed gas connects to the Israel Natural Gas Lines Ltd. (INGL) onshore transportation grid at Dor, in the northern part of the country, and to regional markets via onshore and offshore export pipelines. The field began producing at the end of 2019 and will continue to ramp up to full production during 2020.

GSPAs and Regional Transportation Together, the Tamar and Leviathan developments have total installed production capacity of approximately 2.3 Bcfe/d and are supplying natural gas under multiple long-term GSPAs to regional customers in Israel, Jordan and Egypt. Sales of natural gas to the National Electric Power Company Ltd. of Jordan began in January 2020. The gas is transported via the INGL grid to customers in Jordan and Egypt via the Arab Gas Pipeline and EMG Pipeline (defined below) systems. Sales to Egyptian customers have also begun via the EMG Pipeline.

During 2019, we and our partners amended the previously agreed GSPAs with our Egyptian customers. The amended agreements provide for total combined firm contract quantities of 3.0 Tcf of natural gas, gross, more than doubling the firm volume commitments previously agreed. In addition, each agreement has been extended by five years to reflect 15-year terms. These contracts allow for natural gas sales up to 650 MMcf/d, gross, by mid-2022. Increased export flow via the EMG Pipeline

also depends on successful completion of certain de-bottlenecking projects which are under development. See [Delivery Commitments](#).

In fourth quarter 2019, we acquired an effective, indirect interest of approximately 10%, net, in the entity that owns the EMG Pipeline (EMG Pipeline). We, along with parties to the transaction, including certain of our upstream partners, entered into an agreement to jointly operate the EMG Pipeline, securing access to the pipeline’s full capacity for a 10-year term, with extension terms available.

Regional Expansion Opportunities We expect our Eastern Mediterranean business to continue to grow in the future. In Israel, we expect continued coal conversion and increases in power, industrial, and transportation usage. In Jordan, we expect increasing industrialization leading to increased natural gas consumption. In Egypt, growth is anticipated in all market segments, with the country focused on becoming a regional natural gas hub. The Leviathan development plan allows for significant future cost-effective field capacity expansion from its initial capacity of approximately 1.2 Bcf/d to 2.1 Bcf/d. We are currently assessing future development and expansions alternatives. We are also assessing the possibility for a Tamar expansion project which could expand field deliverability from the current capacity level of approximately 1.1 Bcf/d up to approximately 2.0 Bcf/d, allowing for additional regional export. Expansion options could include additional investments in pipelines, wells, and platform upgrades. In January 2019, the Petroleum Commissioner of Israel approved the development plan for our Tamar Southwest discovery, which would access additional natural gas resources through a new well.

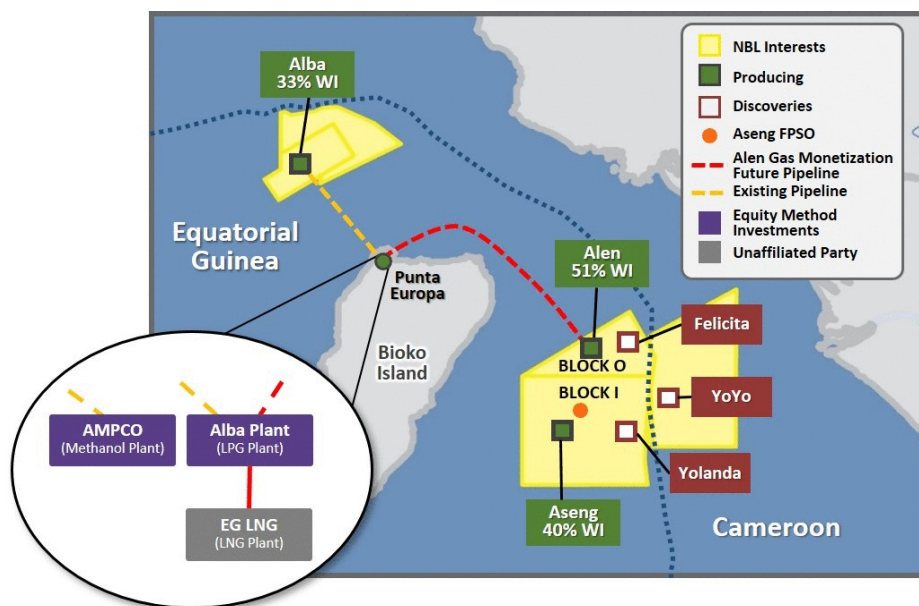
We also have significant discovered resources at the Aphrodite field, offshore Cyprus. In November 2019, we signed a PSC with the Government of Cyprus and were issued our exploitation license, which includes a development plan that would increase the delivery of natural gas to regional customers.

Timing of sanction for any expansion project is dependent upon gas sales and midstream agreements, as well as regulatory approvals from respective governments and internal company sanction decisions.

West Africa (Equatorial Guinea, Cameroon and Gabon) West Africa includes the Alba field, Block O and Block I offshore Equatorial Guinea, the YoYo Block offshore Cameroon, and one block offshore Gabon. In West Africa, our interests may differ due to overriding royalty interests and/or other government interests. As such, our working interests may differ from our revenue interests.

Equatorial Guinea is currently the only producing country in our West Africa segment and, excluding the impact of equity investments, contributed an average of 44 MBoe/d of sales volumes in 2019, representing approximately 12% of total consolidated sales volumes. At December 31, 2019, Equatorial Guinea had proved reserves of 132 MMBoe, which represents approximately 6% of total proved reserves.

West Africa locations as of December 31, 2019 are shown on the map below:



Aseng Field Aseng, an oil field (40% operated working interest, 38% revenue interest) on Block I, includes six horizontal producing wells flowing to the Aseng floating production, storage and offloading vessel (FPSO) where the crude oil is stored until offloaded and sold. During 2019, sales volumes from the Aseng field averaged 5 MBbl/d, net.

The Aseng FPSO is designed to act as a crude oil production hub, as well as a liquids storage and offloading facility, with capabilities to support future subsea oil field developments in the area. It also has the ability to process and store condensate from natural gas condensate fields in the area, the first of which is Alen. Since it first came online, the Aseng field has maintained reliable performance, averaging almost 100% production uptime and, as of December 31, 2019, has produced over 103 MMBbls of cumulative gross crude oil production.

In third quarter 2019, we drilled and completed the Aseng 6P development well, which is mitigating field decline. First production began in fourth quarter 2019.

Alen Field Alen is a natural gas and condensate field (51% operated working interest, 45% revenue interest) primarily on Block O which includes three production wells and three natural gas injection wells connected to a production platform. Condensate is pumped to the Aseng FPSO for storage and offloading. Sales volumes averaged approximately 3 MBbl/d, net, during 2019. The Alen platform will be utilized in our natural gas monetization efforts. See [West Africa Natural Gas Monetization](#), below.

Alba Field Alba is a natural gas and condensate field (33% non-operated working interest, 32% revenue interest). Operations include the Alba field and related production and condensate storage facilities, a LPG processing plant where additional condensate is extracted along with LPGs, and a methanol plant. The LPG processing plant and the methanol plant are located on Bioko Island, Equatorial Guinea. During 2019, Alba field sales volumes averaged 42 MBoe/d, net, reflecting 36 MBoe/d, net, attributable to total consolidated sales volumes and 6 MBoe/d, net, attributable to an equity investment.

We sell our share of primary condensate under short-term contracts at market-based prices. We sell our share of natural gas production to the LPG plant, the methanol plant, an unaffiliated liquefied natural gas (LNG) plant (EG LNG) and a power generation plant. The LPG plant is owned by Alba Plant LLC (Alba Plant), in which we have a 28% interest. Alba Plant sells its LPG products and secondary condensate at our marine terminal at prevailing market prices. The methanol plant is owned by Atlantic Methanol Production Company, LLC (AMPCO), in which we have a 45% interest. AMPCO purchases natural gas from the Alba field under a contract that runs through 2026 and subsequently markets the produced methanol primarily to customers in the US and Europe. We account for our interests in Alba Plant and AMPCO as equity method investments and present our share of income as a component of revenues. See [Item 8. Financial Statements and Supplementary Data – Note 5. Equity Method Investments](#).

West Africa Natural Gas Monetization We continue efforts to monetize our significant natural gas discoveries offshore West Africa. In second quarter 2019, we sanctioned the Alen natural gas development. Definitive agreements in support of the project were executed between the Alen field partners, the Alba Plant and EG LNG plant owners, as well as the government of the Republic of Equatorial Guinea.

The development is designed to produce through three existing high-capacity wells and will require minor platform modifications to deliver gas from the Alen field to the Alba Plant and EG LNG facilities. The Alen field partners are developing a plan to construct a 24-inch pipeline capable of handling 950 MMcf/d, gross, to transport natural gas processed through the Alen platform to the onshore facilities. First production is anticipated in the first half of 2021. At start-up, natural gas sales from the Alen field are anticipated to be between 200 and 300 MMcf/d, gross (approximately 75 to 115 MMcf/d, net). The wet gas stream will be tolled through the Alba Plant for additional liquids recovery before the dry gas is converted into LNG at the EG LNG facility. The contemplated structure would result in Alen natural gas being marketed to global LNG customers.

The Alen Gas Monetization is the first step towards creating a regional offshore natural gas hub, which will open the potential for future monetization of our additional discovered resources, such as at YoYo (YoYo Block, offshore Cameroon), Yolanda (Block I, offshore Equatorial Guinea) and Felicita (Block O, offshore Equatorial Guinea) through existing infrastructure. A data exchange agreement for the YoYo/Yolanda condensate and natural gas discoveries has been executed between the governments of Equatorial Guinea and Cameroon. Our development team is working with both governments to evaluate natural gas monetization options.

Offshore Gabon We are the operator of Block Doukou Dak (60% working interest), an undeveloped, deepwater area. We are currently evaluating acquired 3D seismic data.

See also [Item 8. Financial Statements and Supplementary Data – Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs](#)

Other International Other international operations include the following:

Offshore Colombia We recently acquired a 40% operated working interest in more than two million gross acres offshore Colombia, located on two blocks, Colombia-3 and Guajira Offshore-3. Extensive 3D seismic data covering almost all of the

position has identified multiple large prospects. We continue well planning and permitting activities and expect to drill an exploration well in 2020. We will operate the blocks with Shell Exploration and Production GMBH as the other working interest owner.

Offshore Newfoundland (Canada) We have a non-operated 25% working interest in exploration licenses (EL) EL 1145, EL 1146 and EL 1148, and a non-operated 40% working interest in EL 1149. BP Canada Energy Group ULC is the operator of the blocks. We licensed 3D seismic data for the purpose of assessing the economic viability of numerous exploration leads and prospects.

Midstream – Properties and Activities

In fourth quarter 2019, we concluded the sale of substantially all of our remaining US onshore midstream interests and assets and incentive distribution rights to Noble Midstream Partners. As we continue to consolidate Noble Midstream Partners, the activities related to these assets will continue to be reflected within our Midstream segment. See [Item 8. Financial Statements and Supplementary Data – Note 4. Acquisitions and Divestitures](#).

Noble Midstream Partners Noble Midstream Partners is a publicly traded, consolidated subsidiary and limited partnership that constructs and operates a wide range of domestic midstream infrastructure assets, including two natural gas processing plants, gathering, treating, and transportation assets, as well as water-related infrastructure, including fresh water delivery and produced water disposal assets strategically located with our upstream development and production activities in the DJ and Delaware Basins. Noble Midstream Partners provides services to us and third-party customers.

Midstream segment assets include the Black Diamond system, a large-scale integrated gathering system located in the DJ Basin (the Black Diamond System). The Black Diamond System is owned by Black Diamond Gathering LLC (Black Diamond), in which Noble Midstream Partners owns a 54.4% interest. Noble Midstream Partners operates the Black Diamond System and fully consolidates Black Diamond.

During 2019, Black Diamond entered into a strategic relationship with Saddlehorn Pipeline Company, LLC (Saddlehorn). Saddlehorn owns a pipeline that transports crude oil and condensate from the DJ and Powder River Basins to storage facilities in Cushing, Oklahoma. The strategic relationship includes a long-term firm transportation commitment and the receipt, by Black Diamond, of an option to acquire up to 20% ownership interest in Saddlehorn. In February 2020, Black Diamond exercised its option, acquiring a 20% ownership interest for \$155 million (\$84 million, net to Noble Midstream Partners).

In addition to developing and operating midstream assets, Noble Midstream Partners leverages its existing dedications and commercial relationships by investing in certain entities providing transportation services downstream of our current operations. During 2019, Noble Midstream Partners significantly expanded its equity holdings by acquiring equity interests in EPIC Crude Holdings, LP (EPIC Crude Holdings) and EPIC Y-Grade, LP (EPIC Y-Grade) and forming Delaware Crossing L.L.C. (Delaware Crossing). Equity method investments included the following at December 31, 2019:

- Advantage Pipeline L.L.C. (Advantage Pipeline), which owns a crude oil pipeline system in the southern Delaware Basin from Reeves County, Texas to Crane County, Texas (Advantage Pipeline System);
- EPIC Y-Grade, which owns a Y-Grade pipeline from the Delaware Basin to Corpus Christi, Texas (EPIC Y-Grade Pipeline);
- EPIC Crude Holdings, which is currently constructing a crude oil pipeline from the Delaware Basin to Corpus Christi, Texas (EPIC Crude Oil Pipeline); and
- Delaware Crossing, which is currently constructing a crude oil pipeline and gathering system in the Delaware Basin.

In addition, Noble Midstream Partners has an investment in White Cliffs Pipeline L.L.C., which owns a pipeline system from the DJ Basin to Cushing, Oklahoma. See [Item 8. Financial Statements and Supplementary Data – Note 5. Equity Method Investments](#) for ownership percentages and investment balances.

In addition to investing in midstream entities in 2019, Noble Midstream Partners focused on construction and development of midstream infrastructure assets including trunk line extensions supporting future produced water gathering and fresh water delivery services in the Greeley Crescent IDP area, new oil gathering infrastructure for upcoming well connections from third-party producers in the Black Diamond dedication area, crude oil, natural gas, and produced water gathering system infrastructure additions to facilitate further development in the Mustang IDP area, and gathering infrastructure extensions to support future well connections in the Wells Ranch IDP.

Delivery Commitments

US Onshore Agreements We sell our US onshore production under various contracts, including short-term, long-term or life-of-field contracts, where all production from a well or group of wells is sold to one or more customers, at market-based prices adjusted for location and quality differentials. Certain of our sales and delivery agreements may include natural gas processing or NGL fractionation commitments for the volumes delivered, either to a customer or to a service provider.

In addition, we have certain sales and delivery agreements to supply minimum quantities of production to various customers. The majority of our production is sold under short-term contracts. At December 31, 2019, long-term (greater than one year) fixed sales commitments included two agreements resulting in a portion of our Delaware Basin crude oil production reaching the Texas Gulf Coast, one with a remaining term of approximately four years and one with a remaining term of approximately two years. A total of approximately 40 MMBbls remain to be delivered under these contracts. We expect to fulfill these delivery commitments with existing proved developed and proved undeveloped reserves, which we regularly monitor to ensure sufficient availability to meet the commitments.

Eastern Mediterranean GSPAs We currently sell natural gas to customers in Israel, Egypt, and Jordan, including state-owned power producers, independent power producers, cogeneration facilities, and industrial companies. Most contracts provide for the sale of natural gas over an initial term of one to 18 years. Some of the contracts provide for an increase or reduction in total quantities, and some contracts are interruptible during certain contract periods. Typically, contracted sales prices are based on an initial base price subject to price indexation, Brent-linked or other, over the life of the contract and have a contractual floor. Certain contracts provide for price renegotiation in certain years with limits on the increase/decrease from the initial contractual price.

Under the contracts, we and our partners have financial exposure in the event we cannot fully deliver the contract quantities. This exposure is capped by contract and will be reflected as a reduction in sales price to the purchaser for periods in which we are delivering partial contract quantities, or as a direct payment to the customer under certain circumstances. The cap is subject to customary considerations including, but not limited to, force majeure provisions. We believe that any such sales price adjustments or direct payments would not have a material impact on our earnings or cash flows.

As of December 31, 2019, a total of approximately 10.2 Tcf, gross (2.9 Tcf, net), of natural gas remained to be delivered under these contracts, which include new contracts relating to commencement of production at the Leviathan field. Based on current production levels, our available quantities of proved reserves are more than sufficient to meet delivery commitments associated with these sales agreements with minimal additional capital investment.

West Africa Agreements Our share of crude oil and condensate from the Aseng, Alen and Alba fields is sold at market-based prices to Glencore Energy UK Ltd and is transported via tankers.

Natural gas from the Alba field is sold for \$0.25 per MMBtu to a methanol plant, an LPG plant, an unaffiliated LNG plant and a power generation plant. The sales contract with the methanol plant runs through 2026, and the sales contract with the LNG plant runs through 2023. The methanol and LPG plants are owned by affiliated entities accounted for under the equity method.

See [Item 8. Financial Statements and Supplementary Data – Note 1. Summary of Significant Accounting Policies](#).

Transportation Commitments

We have entered into various long-term firm transportation contracts, which represent commitments to pay transportation fees; they are not commitments to deliver minimum volumes to end users. Financial commitments under these contracts are included in our contractual obligations disclosures. See [Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources – Contractual Obligations](#), [Item 8. Financial Statements and Supplementary Data – Note 11. Exit Cost – Transportation Commitments](#) and [– Note 12. Commitments and Contingencies](#).

Significant Purchasers

See [Item 8. Financial Statements and Supplementary Data – Note 2. Additional Financial Statement Information](#).

Regulations

The crude oil and natural gas industry is extensively regulated at the federal, state, and local levels in the US, and internationally. Regulations affecting elements of the energy sector are under constant review for amendment or expansion over time and frequently more stringent requirements are imposed.

Various governmental bodies have issued rules, regulations and orders that require extensive efforts to ensure compliance, that impose incremental costs to comply, and that carry substantial penalties for failure to comply, which may impact our ability to economically produce and sell crude oil, NGLs and natural gas or conduct midstream operations. For example, these issuances may restrict the rate of crude oil, NGL and natural gas production below the rate that would otherwise exist in the absence of such laws, regulations and orders. The regulatory requirements on the crude oil and natural gas industry often result in incremental costs of doing business and consequently affect our profitability. See [Item 1A. Risk Factors – Increasing, and often](#)

changing, governmental laws, regulations and other requirements may restrict our access to land and/or cause us to incur substantial incremental costs

Various domestic and international agencies have legal and regulatory authority and oversight over our exploration and development activities, as well as our midstream operations and operations conducted by companies in which we invest, such as our equity method investments. Internationally, oversight also includes energy-related ministries or other agencies of our host countries, each having certain relevant energy or hydrocarbons laws. Other US federal agencies with certain authority over our business include the Internal Revenue Service (IRS) and the SEC. In addition, we are governed by the rules and regulations of the Nasdaq Global Select Market, upon which shares of our common stock and common units of Noble Midstream Partners are traded.

Among the laws affecting our operations are the following:

Environmental Matters We take into account the cost of complying with environmental regulations in planning, designing, drilling, operating, and abandoning wells, and in constructing and maintaining our midstream assets. In most instances, the regulatory requirements relate to the handling and disposal of drilling and production wastes, water and air pollution control procedures, facility siting and construction, protection of endangered species and their habitat, prevention of and responses to leaks and spills, and remediation. These laws and regulations may require the acquisition of permits before drilling commences, restrict the types, quantities and concentrations of various substances emitted in connection with drilling and production activities, or limit or prohibit construction or drilling activities on certain lands protected by state or federal law, including designated critical habitat of endangered or threatened species, wetlands, ecologically or seismically sensitive areas, and other protected areas. Similarly, regulations may require action to prevent or remediate pollution from current, former or acquired operations, such as plugging abandoned wells or closing pits. Failure to adhere to these regulations may result in the suspension or revocation of necessary permits, licenses and authorizations, or the requirement of additional pollution controls, or the imposition of substantial liabilities for pollution resulting from our operations. Where our operational activities could result in a serious adverse effect upon a protected species, a federal or state agency could order a complete halt to such activities in certain locations or during certain seasons. Consequently, the presence of a protected species in areas where we operate could adversely affect future operations or production from those areas, and government agencies frequently add to the lists of protected species.

Under state and federal laws, and in foreign jurisdictions, we could be required to remove or remediate previously disposed wastes, including wastes disposed of or released by us, or by prior owners or operators. Such activities must be performed in accordance with current laws and may cause us to suspend or cease operations in contaminated areas or to perform remedial well plugging operations or cleanups. For example, the US Environmental Protection Agency (EPA) and various state agencies have limited the disposal options for hazardous and non-hazardous wastes and may continue to do so. The owner and operator of a site, and persons that treated, disposed of, or arranged for the disposal of hazardous substances found at a site, may be liable, without regard to fault or the legality of the original conduct, for the release of a hazardous substance into the environment. The EPA, state environmental agencies and, in some cases, third parties and foreign regulatory agencies, are authorized to take actions in response to threats to human health or the environment and to seek to recover from responsible classes of persons the costs of such action. Moreover, it is not uncommon for neighboring landowners and other third parties to file claims for personal injury and property damage allegedly caused by the release of hazardous substances, hydrocarbons or other waste products into the environment.

Furthermore, though some exploration and production wastes are exempt from regulation as hazardous waste under Subtitle C of the Resource Conservation Recovery Act (RCRA), these wastes are generally subject to non-hazardous waste regulation under RCRA Subtitle D. Additionally, state governments have specific regulations and guidance for exploration and production wastes. As regulatory regimes are regularly revised, it is possible that in the future, wastes generated by our operations could be subject to more costly operating and disposal requirements. For example, legislation has been proposed from time to time in the US Congress to re-categorize certain oil and natural gas exploration, development and production wastes as “hazardous wastes”. In December 2016, the EPA agreed in a consent decree to review its federal regulations for the management of exploration, development, and production wastes of crude oil, natural gas, and geothermal energy under Subtitle D of RCRA. After review, the EPA concluded in March 2019 that revisions are not necessary at this time.

Under federal and state occupational safety and health laws and laws of foreign jurisdictions in which we operate, we must develop and maintain information about hazardous materials used, released, or produced in our operations. Certain portions of this information must be provided to employees, state and local governmental authorities, and local citizens. We are also subject to the requirements and reporting set forth in federal workplace standards. Moreover, certain state or local laws or regulations and common law may impose liabilities in addition to, or restrictions more stringent than, those described herein.

We have made and will continue to make expenditures necessary to comply with environmental requirements. We do not believe that compliance with such requirements will have a material adverse effect on our capital expenditures, earnings or competitive position. Although such requirements do have a substantial impact on the crude oil and natural gas industry, they do not appear to affect us to any greater or lesser extent than other companies in the industry.

Apart from the above matters, states where we operate have separate authority to regulate operational and environmental matters.

Colorado For some time, initiatives have been underway in the State of Colorado to limit or ban crude oil and natural gas exploration, development or operations, and/or to increase local, municipal authority or oversight over operations within their jurisdictions. In 2019, Senate Bill 19-181 (SB 181) was passed by the State Legislature and signed by the Governor into law. The legislation makes changes in Colorado oil and gas law, including, among other matters, requiring the Colorado Oil and Gas Conservation Commission (COGCC), which regulates the oil and gas industry in the State, to prioritize public health and environmental concerns in its decisions. The legislation also instructs the Colorado Air Quality Control Commission to adopt rules to minimize emissions of methane and other air contaminants and delegates considerable new authority to local governments to regulate surface impacts. The COGCC has initiated new rulemakings related to, among other things, incorporating new public health, safety, and environmental priorities into their regulations, updating wellbore integrity and flowline rules, and adopting new alternative location analysis and cumulative impact procedures. In addition, some local communities have adopted further restrictions for oil and gas activities, such as requiring greater setbacks or increased bonding requirements, and other groups have sought a cessation of permit issuances entirely until the COGCC publishes new rules in keeping with SB 181.

Additionally, certain groups have indicated they plan to submit new ballot proposals for the 2020 election year, including proposals for increased drilling setbacks and increased bonding requirements.

The majority of our acreage in Colorado is in rural, unincorporated areas of Weld County, and we continue to work closely with local regulators and communities to ensure safe and responsible operations and future planning. At this time, we do not foresee significant changes to our development plans, as we have necessary approvals to drill wells over the next several years. The approved permits are for wells in multiple IDPs, many of which are in our Mustang CDP. We will continue to work closely with Weld County on the required local permits and agreements for the CDP. However, if additional regulatory measures are adopted, we could incur additional costs to comply with the requirements or we may experience delays and/or curtailment in the permitting or pursuit of our exploration, development, or production activities. Such compliance costs and delays, curtailments, limitations, or prohibitions could have a material adverse effect on our cash flows, results of operations, financial condition, and liquidity. See [Oil and Gas Exploration and Production – Properties and Activities – US Onshore – DJ Basin](#).

It is likely these types of initiatives will continue into the future in Colorado, and efforts by the US Administration to modify federal oil and gas related regulations could intensify the risk of anti-development efforts from grass roots opposition. See [Item 1A. Risk Factors – Increasing trends of opposition to oil and gas development activity and negative public perception regarding us and/or our industry could have an adverse effect on our operations](#).

The COGCC also has implemented rules which make Colorado the first state to require sampling of groundwater for hydrocarbons and other indicator compounds both before and after drilling. Further, the COGCC has adopted rules increasing the maximum penalty for violations of its requirements.

The state environmental agency, the Colorado Department of Public Health and Environment (CDPHE), likewise has adopted measures to regulate air emissions, water protection, and waste handling and disposal relating to our crude oil and natural gas exploration and production. For air, the CDPHE has extended the EPA's emissions standards for crude oil and natural gas operations to directly regulate hydrocarbon emissions.

Some of the counties and municipalities where we operate in Colorado have adopted their own regulations or ordinances that impose additional restrictions on our crude oil and natural gas exploration and production. To date these have not significantly impacted our operations.

In April 2015, we entered into a joint consent decree (Consent Decree) with the EPA, US Department of Justice, and State of Colorado to improve emission control systems at a number of our condensate storage tanks that are part of our upstream crude oil and natural gas operations within the Non-Attainment Area of the DJ Basin. All fines required under the Consent Decree were paid in 2015; however, the required actions are ongoing. We have concluded that the penalties, injunctive relief, plugging and abandonment activities, and mitigation expenditures that result from this settlement, based on currently available information, will not have a material adverse effect on our financial position, results of operations or cash flows. See [Item 1A. Risk Factors – Violations of certain US and international laws and regulations could result in substantial fines or sanctions and/or impair our ability to do business](#) and [Item 8. Financial Statements and Supplementary Data – Note 12. Commitments and Contingencies](#).

Texas Texas has regulations governing conservation of oil and gas resources, including provisions for the unitization or pooling of oil and gas properties, the establishment of maximum rates of production from oil and gas wells, the regulation of spacing, and requirements for plugging and abandonment of wells.

The oil and gas industry is regulated in part by the Texas Railroad Commission (RRC). The RRC maintains a "well integrity rule" that addresses requirements for drilling, casing, and cementing wells. The rule also includes testing and reporting

requirements, including clarifying that cementing reports must be submitted after well completion or after cessation of drilling, whichever is earlier. Furthermore, the RRC oversees permit rules for injection wells to address seismic activity concerns within the state. Among other things, the rules require companies seeking permits for disposal wells to provide seismic activity data in permit applications, provide for more frequent monitoring and reporting for certain wells, and allow the RRC to modify, suspend, or terminate permits on grounds that a disposal well is likely to be, or determined to be, causing seismic activity. The RRC has used this authority to deny permits for waste disposal wells.

Israel Regulatory Environment We are subject to numerous regulatory measures in Israel, certain of which are governed by the Israel Natural Gas Framework (The Framework), as adopted by the Government of Israel. The Framework establishes policies for the development, production and supply of Israeli natural gas resources for both domestic and regional export sales. The Framework, among other things, provided for the sale of our ownership interest in the Karish and Tanin fields (which we completed in 2016) and the reduction of our ownership interest in the Tamar and Dalit fields to 25% by year end 2021 (which we completed in 2018), while enabling development and the marketing of Leviathan field natural gas to Israeli and export customers.

The oil and gas industry in Israel is regulated, in part, by the Ministry of Energy (MOE) and the Ministry of Environmental Protection (MOEP). The MOE has authority under the Petroleum Law of 1952 and the Natural Gas Market Law of 2002 to regulate oil and gas activities with its regulatory focus primarily relating to the engineering, operations, safety, hydrocarbon transmission, insurance, and royalty administration of oil and gas activities. The MOEP has authority under the Clean Air Law of 2008, the Law of Sea Pollution Prevention of 1988, the Hazardous Material Law of 1993, and the Business Licensing Law of 1968, and there are several other laws and international conventions that Israel has ratified. The MOEP primarily focuses on regulating the environmental impact of conducting business. These laws and international conventions set the parameters by which we are regulated through a series of regulations, guidelines, requirements, and permit approvals.

There are several other additional regulators, both federal (such as The Israeli Competition Authority, The Israeli Taxation Authority, and The Ministry of Defense) and local, that have jurisdictional authority over our assets and operations. Based on the location of the Leviathan platform within the territorial waters and the scale of our onshore footprint, these additional regulators, and in particular local authorities, have more recently required additional oversight of our operations.

Impact of Dodd-Frank Act Section 1504 Following a series of SEC actions, court proceedings and Congressional action, on December 18, 2019, the SEC voted to propose rules that would require resource extraction issuers, such as us, to disclose payments made to foreign governments or the US federal government for the commercial development of oil, natural gas, or minerals. The SEC first adopted rules in this area in 2012, as mandated by the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act). The 2012 rules were vacated by the US District Court for the District of Columbia. The SEC then adopted new rules in 2016, which were disapproved by a joint resolution of Congress pursuant to the Congressional Review Act.

Although the joint resolution of Congress vacated the 2016 rules, the statutory mandate remains in effect. As a result, the SEC is statutorily obligated to issue a rule. Under the Congressional Review Act, however, the SEC may not reissue the same rule in “substantially the same form” or issue a new rule that is “substantially the same” as the disapproved rule. The proposal will have a 60-day public comment period following its publication in the Federal Register. We will continue to monitor developments in this area.

Climate Change In recent years, the EPA has finalized a series of greenhouse gas (GHG) monitoring, reporting, and emissions control rules for the oil and natural gas industry, and the US Congress has, from time to time, considered adopting legislation to reduce emissions. In addition, states have taken measures to reduce emissions of GHGs, primarily through the development of GHG emission inventories and/or regional GHG cap-and-trade programs.

At the international level, the Paris Agreement on climate change aimed to enhance global response to global temperature changes and to reduce GHG emissions, among other things. In 2019, the US began the formal process to withdraw from the Paris Agreement. However, many states, city governments, non-governmental organizations and other actors have pledged publicly to continue to align with the objectives of the Paris Agreement.

While we monitor climate-related regulatory initiatives and international public policy issues, the current state of ongoing international climate initiatives and any related domestic actions make it difficult to assess the timing or effect on our operations or to predict with certainty the future costs that we may incur in order to comply with future international treaties, legislation or new regulations. However, future restrictions on emissions of GHGs, or related measures to encourage use of low carbon energy could have a significant impact on our future operations and reduce demand for our products. See also [Item 1A. Risk Factors](#).

Hydraulic Fracturing

Hydraulic fracturing techniques have been used for decades on the majority of all new onshore crude oil and natural gas wells drilled domestically. The process involves the injection of water, sand and chemical additives under pressure into targeted

subsurface formations to stimulate oil and gas production. We strive to adopt best practices and industry standards and comply with all regulatory requirements regarding well construction and operation. For example, the qualified service companies we use to perform hydraulic fracturing, as well as our personnel, monitor rate and pressure to assure that the services are performed as planned. Our well construction practices include installation of multiple layers of protective steel casing surrounded by cement that are specifically designed and installed to protect freshwater aquifers by preventing the migration of fracturing fluids into those aquifers. These processes are intended to minimize the risks associated with hydraulic fracturing. To help reduce our operational demand for freshwater and need for disposal, we are currently developing technology and infrastructure to expand our water recycling capacity in the DJ and Delaware Basins.

Although hydraulic fracturing is regulated primarily at the state level, legislation has been proposed in recent sessions of Congress to amend the Safe Drinking Water Act to repeal the exemption for hydraulic fracturing from the definition of “underground injection,” to require federal permitting and regulatory control of hydraulic fracturing, and to require disclosure of the chemical constituents of the fluids used in the fracturing process. Furthermore, several federal agencies have asserted regulatory authority over certain aspects of the process. For example, the EPA has taken the position that hydraulic fracturing with fluids containing diesel fuel is subject to regulation under the Underground Injection Control program, specifically as “Class II” Underground Injection Control wells under the Safe Drinking Water Act. In addition, on June 28, 2016, the EPA published a final rule prohibiting the discharge of wastewater from onshore unconventional oil and natural gas extraction facilities to publicly owned wastewater treatment plants.

Although hydraulic fracturing is regulated primarily at the state level, government agencies at all levels from federal to municipal frequently assess the potential impacts of hydraulic fracturing, and at times new requirements are proposed or implemented. For example:

- the Bureau of Land Management (BLM) published a final rule governing hydraulic fracturing on federal and Indian lands; the rule was repealed in 2017, but state and environmental groups have challenged the rollback;
- the Occupational Safety and Health Administration (OSHA) has lowered exposure limits for workers who use silica (sand), which can include hydraulic fracturing activities, and silica work practices have become stricter; and
- state and federal regulatory agencies have focused on areas where there have been connections between hydraulic fracturing related activities, particularly the operation of injection wells used for oil and gas waste disposal or hydraulic fracturing activities, and seismic activity due to the presence of critically stressed faulting and orientation, which some have termed “induced seismicity”. Some state regulatory agencies have modified their regulations to account for such induced seismicity and operators, including us, have implemented practices to avoid, monitor, mitigate and respond as necessary to induced seismicity.

Ongoing or proposed studies on the environmental impacts of hydraulic fracturing could spur initiatives to further regulate this activity. We currently disclose information regarding the components and chemicals used in the hydraulic-fracturing process for all US onshore areas in which we operate through the website [FracFocus.org](#), a public registry operated jointly by the Interstate Oil & Gas Compact Commission and the Ground Water Protection Council.

For additional information, see [Risk and Insurance Program](#) and [Item 1A. Risk Factors](#).

Risk and Insurance Program

As protection against financial loss resulting from many, but not all operating hazards, we maintain insurance coverage, including certain physical damage, business interruption (loss of production income), employer's liability, third-party liability, worker's compensation insurance and certain insurance related to cyber security. We maintain insurance at levels that we believe are appropriate and consistent with industry practice. We regularly review our potential risks of loss and the cost and availability of insurance and the company's ability to sustain uninsured losses and revise our insurance program accordingly.

Availability of insurance coverage, subject to customary deductibles and recovery limits, for certain perils such as war or political risk is often excluded or limited within property policies. We have, however, purchased insurance for certain political risks in Jordan and Egypt. In Israel, Egypt, and Equatorial Guinea, we insure against acts of war and terrorism in addition to providing insurance coverage for normal operating hazards facing our business. Additionally, as being part of critical national infrastructure, the Israel offshore and onshore assets are included in a special property coverage afforded under the Israeli government's Property Tax and Compensation Fund Law; however, the amount of financial recovery through the fund is not guaranteed.

We have a risk assessment program that analyzes safety and environmental hazards, including cyber threats, and establishes procedures, work practices, training programs and equipment requirements, including monitoring and maintenance rules, for continuous improvement. We also use third-party consultants to help us identify and quantify our risk exposures at major facilities. We have a robust prevention program and continue to manage our risks and operations such that we believe the likelihood of a significant event is remote. However, if an event occurs that is not covered by insurance, not fully protected by insured limits or our non-operating partners are not fully insured, it could have a material adverse impact on our financial

condition, results of operations and cash flows. See [Item 1A. Risk Factors](#) – *The insurance we carry is insufficient to cover all of the risks we face, which could result in significant financial exposure.*

Competition

The crude oil and natural gas industry is highly competitive. We encounter competition from other crude oil and natural gas companies in all areas of operations, including the acquisition of seismic data and lease rights on crude oil and natural gas properties and for the labor and equipment required for exploration and development of those properties. Our competitors include major integrated crude oil and natural gas companies, state-controlled national oil companies, independent crude oil and natural gas companies, service companies engaging in exploration and production activities, drilling partnership programs, private equity, and individuals. Many of our competitors are large, well-established companies. Such companies may be able to pay more for seismic information and lease rights on crude oil and natural gas properties and exploratory prospects and to define, evaluate, bid for and purchase a greater number of properties and prospects than our financial or human resources permit. Our ability to acquire additional properties and to discover reserves in the future will be dependent upon our ability to evaluate and select suitable properties and to consummate transactions in a highly competitive environment.

In addition, as we continue to expand our midstream services, we will face a high level of competition, including major integrated crude oil and natural gas companies, interstate and intrastate pipelines, and companies that gather, compress, treat, process, transport, store or market natural gas. As we seek to continue to provide midstream services to additional third-party producers, we will also face a high level of competition. Competition is often the greatest in geographic areas experiencing robust drilling by producers and during periods of high commodity prices for crude oil, NGLs or natural gas.

See [Item 1A. Risk Factors](#) – *We face significant competition and many of our competitors have resources in excess of our available resources*

Employees

As of December 31, 2019, we had 2,282 full-time employees.

Offices

Our principal corporate office is located at 1001 Noble Energy Way, Houston, Texas, 77070. We maintain additional regional offices in the US, Israel, Cyprus, Egypt, Colombia, Equatorial Guinea, and Cameroon.

Title to Properties

We believe that our title to the various interests set forth above is satisfactory and consistent with generally accepted industry standards, subject to exceptions that would not materially detract from the value of the interests or materially interfere with their use in our operations. Individual properties may be subject to burdens such as royalty, overriding royalty and other outstanding interests customary in the industry. In addition, interests may be subject to obligations or duties under applicable laws or burdens such as production payments, net profits interest, liens incident to operating agreements and for current taxes, development obligations under crude oil and natural gas leases or capital commitments under PSCs or exploration licenses. We have also dedicated certain of our US onshore acreage to Noble Midstream Partners for the provision of midstream services to us.

Furthermore, while our DJ Basin assets are primarily held by production, our Delaware Basin properties are generally held through continuous development obligations. Therefore, we are contractually obligated to fund a level of development activity in these areas or exercise options with land owners to extend leases. Failure to meet these obligations with respect to any particular lease may result in the loss of that lease.

Title Defects Subsequent to a lease or fee interest acquisition transaction, the buyer usually has a period of time in which to examine the leases for title defects. Adjustments for title defects are generally made within the terms of the sales agreement, which may provide for arbitration between the buyer and seller.

Conflicts with Surface Rights Mineral rights are property rights that include the right to use land surface that is reasonably necessary to access minerals beneath. Lawsuits regarding conflicts between surface rights and mineral rights are currently pending in several states. In several cases, owners of surface rights are suing various companies to prevent companies from using their land surface to drill horizontal wells to explore for or produce hydrocarbons from neighboring mineral tracts. If a plaintiff were to prevail in such a case, it could become more difficult and expensive for a company to place multi-acre well pads and/or limit the length of horizontal wells drilled from a pad.

Available Information

Our website address is www.nblenergy.com. Available on this website under “Investors – Financial Information – SEC Filings,” free of charge, are our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements, Forms 3, 4 and 5 filed on behalf of directors and executive officers, and amendments to those reports as soon as reasonably practicable after such materials are electronically filed with or furnished to the SEC. Alternatively, you may access these reports at the SEC’s website at www.sec.gov.

Also posted on our website under “Our Story – Transparency – Corporate Governance – Committee Charters,” and available in print upon request made by any shareholder to the Investor Relations Department, are charters for our Audit Committee, Compensation, Benefits and Stock Option Committee; Corporate Governance and Nominating Committee; and Safety, Sustainability and Corporate Responsibility Committee. Copies of the Code of Conduct and the Code of Ethics for Chief Executive and Senior Financial Officers (the Codes) are also posted on our website under the “Other Governance Documents” section. Within the time period required by the SEC and the Nasdaq Global Select Market (Nasdaq), as applicable, we will post on our website any modifications to the Codes and any waivers applicable to senior officers as defined in the applicable Code, as required by the Sarbanes-Oxley Act of 2002.

Item 1A. Risk Factors

Described below are certain risks that we believe are applicable to our business and the oil and gas industry in which we operate. There may be additional risks that are not presently material or known. You should carefully consider each of the following risks and all other information set forth in this Annual Report on Form 10-K. If any of the events described below occur, our business, financial condition, results of operations, cash flows, liquidity or access to the capital markets could be materially adversely affected.

Crude oil, NGL and natural gas price volatility, including a substantial or extended decline in the price of these commodities, could have a material adverse effect on our results of operations, cash flows, liquidity, and the price of our common stock.

Commodity prices are cyclical and can fluctuate widely. A substantial or prolonged decline in commodity prices, including declines in commodity forward price curves or volatility in location-basis differentials, may have the following effects, among others, on our business:

- reduction of our revenues, profit margins, operating income, and cash flows;
- reduction in the amount of crude oil, NGLs and natural gas that we can produce economically, leading to shut-in or early abandonment of producing wells, including low-margin US onshore wells, and increased capital requirements for abandonment operations;
- certain properties in our portfolio becoming economically unviable;
- impairments of proved or unproved properties or other long-lived assets;
- use of cash flow to satisfy minimum obligations under throughput agreements if production is suspended;
- delay, reduction, or cancellation of future capital investment programs relating to our exploration and/or development projects, resulting in a reduced ability to develop or replace our reserves;
- inability to meet exploration or continuous drilling commitments, leading to loss of leases or exploration rights;
- loss of undeveloped acreage if we are unable to make scheduled delay rental payments or loss of developed acreage if our production is shut-in;
- divestments of properties to generate funds to meet cash flow or liquidity requirements;
- limitations on our financial condition, liquidity, including access to sources of capital, such as debt and equity, and/or ability to finance planned capital expenditures and operations;
- failure of our partners to fund their share of development costs or obtain financing, which could result in delay or cancellation of future projects, thus limiting our growth and future cash flows;
- inability to meet scheduled interest and/or debt payments or payments due under operating or finance leases;
- a series of credit rating downgrades or other negative rating actions, which could increase our future cost of financing and may increase our requirements to post collateral as financial assurance of performance under certain other contracts, which, in turn, could have a negative impact on our liquidity and our ability to access the commercial paper market;
- reduction or suspension of dividends or repurchases of our common stock;
- declines in our stock price; and
- additional counterparty credit risk exposure on commodity hedges and joint venture receivables.

Our commodity price hedging arrangements in place will not fully mitigate the effects of price volatility and may also curtail benefits from future increases in commodity prices.

Markets and prices for crude oil, NGLs, and natural gas depend on factors beyond our control, including, among others:

- global demand for crude oil, NGLs, and natural gas, as impacted by economic factors that affect gross domestic product growth rates of countries around the world, including impacts from global health epidemics and concerns, such as the coronavirus;
- global supply for crude oil, NGLs, and natural gas, including inventories, as impacted by OPEC and non-OPEC countries;
- technology advances that increase crude oil, NGL, and natural gas production, thereby increasing supply;
- new technologies that promote fuel efficiency or fuel efficiency regulations, such as the Corporate Average Fuel Economy (CAFE) standards, and impact demand for crude oil as a transportation fuel and reduce energy consumption;
- the price and availability of alternative fuels and battery storage and the long-term impact on the crude oil market of the use of natural gas and electricity as an alternative fuel for road transportation or the use of natural gas as fuel for electricity generation impacting the demand for electricity;
- developments in the global LNG market, including increasing exports from the US;
- geopolitical conditions and events, including domestic political uncertainty or foreign generational leadership or regime changes, changes in government energy policies, including imposed price controls and/or product subsidies, the impact of trade embargoes or imposed tariffs, or instability/armed conflict in hydrocarbon-producing regions;
- fluctuations in exchange rates of the US dollar, the currency in which the world's crude oil trade is generally denominated;
- periods when production surpasses local pipeline/rail transportation and/or refining capacity, which in turn results in transportation constraints and significant discounts to our realized prices;
- the level and effect of trading in commodity futures markets, including by commodity price speculators and others;
- the effectiveness of worldwide conservation measures;
- weather conditions; and
- domestic and foreign governmental regulations and taxes.

Concentration of production and cash flows from, and capital in, certain operations may increase our exposure to risks enumerated herein.

A significant portion of our production and revenues is highly concentrated and is generated from a limited number of conventional deepwater wells. These wells, located offshore Israel and offshore Equatorial Guinea, contributed approximately 20% of our 2019 total crude oil, NGL and natural gas revenues and 23% of our 2019 total consolidated sales volumes. In addition, we have a major concentration of reserves offshore Israel, with approximately 46% of our year end 2019 proved reserves attributable to this area.

These offshore projects are of such magnitude and scale and include significant operational technical complexities and dependencies on infrastructure, including subsea tiebacks to a FPSO or production platform, pressure maintenance systems, gas re-injection systems, limited onshore receiving terminals, or other specialized infrastructure. Although we carry contingent business interruption insurance for these producing assets, as well as other insurance, the insurance is insufficient to cover all potential risks.

We also have significant concentrations of capital and production in our US onshore unconventional basins and we expect to invest approximately 75% of our total capital investment program to development activities, primarily in the DJ and Delaware Basins, in 2020. In addition, a significant portion of our proved reserves are in the DJ Basin with approximately 32% of our year-end 2019 proved reserves attributable to this area. Restrictions in land access or permitting, rapid changes in drilling and completion technology, significant increases in drilling and completion costs, lack of availability of downstream services, including access to gathering facilities, transportation and/or takeaway pipelines, lack of reliable power or electricity infrastructure, changes in regulations and other risks impacting these areas, as enumerated in certain risk factors described herein, can have immediate, significant negative impacts on our production, cash flows, profitability and financial position.

Increasing trends of opposition to oil and gas development activity and negative public perception regarding us and/or our industry could have an adverse effect on our operations.

In recent years, we have seen significant growth in anti-oil and gas development activity both in the US and globally. Companies in our industry can be the target of opposition to hydrocarbon development. This opposition is focused on attempting to limit or stop hydrocarbon development in certain areas. Examples of such opposition include: efforts to reduce access to public and private lands; restriction of exploration and production activities within government-owned and other lands; delaying or canceling permits for drilling or pipeline construction; limiting or banning industry techniques such as hydraulic fracturing, and/or adding restrictions on the use of water and associated disposal; imposition of set-backs on oil and gas sites; delaying or denying air-quality or siting permits; advocating for increased regulations, punitive taxation, or citizen ballot initiatives or moratoriums on industry activity; and the use of social media channels to cause reputational harm.

We have experienced these efforts in Colorado, recently and in the past, and it is likely they will continue into the future. For example, the Colorado Legislature passed, and the Governor signed into law, SB 181. This initiative, together with increased

pressure to allow local governments to control oil and gas operations within their borders, could result in new regulations that limit or ban hydraulic fracturing or other facets of crude oil and natural gas exploration or development in areas where we operate. We cannot predict the outcome of these initiatives or their impact on our operations. See [Items 1. and 2. Business and Properties – Regulations – Colorado](#).

Our need to incur costs associated with responding to these anti-development efforts, including legal challenges, or complying with any new legal or regulatory requirements resulting from these efforts, could have a material adverse effect on our business, financial condition and results of operations.

Discoveries, development or acquisitions of reserves are needed to avoid a material decline in reserves and production and failure to adequately fund these activities could adversely affect our properties.

Production rates from oil and gas properties generally decline as reserves are depleted, while related per unit production costs generally increase due to decreasing reservoir pressures and other factors. Therefore, our estimated proved reserves and future crude oil, NGL and natural gas production will decline materially as reserves are produced unless we conduct successful exploration and development activities, such as identifying additional producing zones in existing fields, utilizing secondary or tertiary recovery techniques or gaining access to properties containing future proved reserves. Consequently, our future crude oil, NGL and natural gas production and related per unit production costs are highly dependent upon our level of success in finding or acquiring additional reserves.

Our exploration, development, and acquisition activities require capital expenditures to achieve production and cash flows. In particular, major offshore projects have a multi-year long development cycle time, which means that development spending occurs for several years before the project begins producing hydrocarbons and generating cash flows. For example, assets and infrastructure for the export of natural gas from Leviathan required a multi-billion dollar investment prior to production startup. With regard to onshore unconventional wells, these wells generally produce large volumes upfront and then deplete faster than conventional wells. As such, continuous drilling and capital investment may be required in order to maintain production levels. Furthermore, while our DJ Basin assets are primarily held by production, other assets, such as our Delaware Basin properties, are held primarily through continuous development obligations. Therefore, we are contractually obligated to fund a level of development activity in these areas, the amount of which could be substantial, or to exercise options with land owners to extend leases. Failure to meet continuous development obligations or to exercise lease extensions may result in loss of leases. As a result, we will have less ability to replace our reserves through drilling operations and may elect to forfeit our ownership interests or rights to participate in some properties, resulting in lower production over time as compared with prior years.

Historically, we have funded our capital expenditures through a combination of cash flows from operations, our Revolving Credit Facility (defined below), debt and equity issuances, and occasional sales of assets. Future cash flows from operations are subject to a number of variables, as enumerated herein. We evaluate capital spending levels based on the following factors, among others:

- commodity prices, including price realizations on specific crude oil, NGL and natural gas production;
- operating and development costs;
- production, drilling and delivery commitments, or other contractual obligations;
- drilling results;
- cash flows from operations and indebtedness levels;
- availability of financing or other sources of funding;
- impact of new laws and regulations on our business practices, including potential legislative or regulatory changes regarding the use of hydraulic fracturing;
- property acquisitions and divestitures;
- exploration activity; and
- potential changes in the fiscal regimes of the US and other countries in which we operate.

We may be subject to risks in connection with acquisition and divestiture activities.

As part of our business strategy, we have made acquisitions of oil and gas properties and/or entities that own them. If we are unable to make attractive acquisitions, our future growth could be limited. Moreover, even if we do make acquisitions, they may not result in an increase in our cash flows from operations or otherwise result in the benefits anticipated due to various risks, including, but not limited to:

- incorrect estimates or assumptions about reserves, exploration potential or potential drilling locations;
- incorrect assumptions regarding future revenues, including future commodity prices and differentials, or regarding future development and operating costs;
- incorrect assumptions regarding potential synergies and the overall costs of equity or debt;
- difficulties in integrating the operations, technologies, products and personnel of the acquired assets or business;
- and

- unknown and unforeseen liabilities or other issues related to any acquisition for which contractual protections prove inadequate, including environmental liabilities and title defects.

Such risks could have a negative impact on our results of operations and cash flows and reduce the fair values of our properties, resulting in impairment charges.

We have merged with or acquired other companies in the past. Prevention of a merger by antitrust laws could impair our ability to do business. Furthermore, mergers and acquisitions expose us to potential lawsuits or other obligations not yet anticipated at time of merger or acquisition. Such liabilities and obligations could hinder our ability to fully benefit from the acquired business or assets and negatively impact our financial performance.

The acquisition of a property or business requires management to make complex judgments and assessments, and the accuracy of the assessments is inherently uncertain. In connection with these assessments, we perform a review of the subject properties that we believe to be consistent with industry practices. Our review will not reveal all existing or potential problems, nor will it permit us to become sufficiently familiar with the properties to fully assess their deficiencies and capabilities.

We also maintain an ongoing portfolio management program and we may periodically divest certain material assets. We strive to obtain the most attractive prices for our assets; however, various factors can materially affect our ability to dispose of assets on terms acceptable to us. Such factors may include:

- current commodity prices;
- laws and regulations impacting oil and gas operations in the areas where the assets are located;
- willingness of the purchaser to assume certain liabilities such as asset retirement obligations;
- our willingness to indemnify buyers for certain matters; and
- delays in closing.

An inability to achieve a desired price for the assets, or underestimation of amounts of retained liabilities or indemnification obligations, can result in a reduction of cash proceeds, a loss on sale due to an excess of the asset's net book value over proceeds, or liabilities which must be settled in the future at amounts that are higher than we anticipated. In addition, although we may successfully divest oil and gas assets, we may retain certain related contracts, such as firm transportation contracts from divestiture of the Marcellus Shale upstream properties in 2017. In addition, we may be required to recognize losses in accordance with exit or disposal activities. See [Item 7. Management's Discussion of Financial Condition and Results of Operations – Liquidity and Capital Resources – Contractual Obligations](#).

Our international operations may be adversely affected by economic or geopolitical developments or by violent acts such as civil disturbances, terrorist acts, regime changes, cross-border violence, war, piracy, or other conflicts.

We have significant international operations in Israel and Equatorial Guinea. We also conduct exploration activities in other international areas. Notwithstanding economic stability clauses, our operations may be adversely affected by social, economic or political developments, including the following, among others:

- renegotiation, modification or nullification of existing contracts, which may occur pursuant to future regulations enacted as a result of changes in Israel's antitrust, export and natural gas development policies, or the hydrocarbons law enacted in 2006 by the government of Equatorial Guinea, which can increase the amount of revenues that the host government receives from production (government take) or otherwise decrease project profitability;
- actions taken by host nations, such as expropriation or nationalization of assets or termination of contracts, which may cause a loss of revenue, property and equipment;
- changes in drilling, environmental, social or safety regulations;
- laws and policies of the US and foreign jurisdictions affecting trade, foreign investment, taxation and business conduct;
- political conditions and events which may cause the potential for Israel natural gas production and regional exports to be interrupted;
- the doctrine of sovereign immunity and foreign sovereignty over international operations which may cause difficulties enforcing our rights against a governmental agency;
- US and international monetary policies impacting foreign exchange or repatriation restrictions in countries in which we conduct business; and
- other hazards arising out of foreign governmental sovereignty over areas in which we conduct operations.

Such social, economic and political developments could have a negative impact on our results of operations and cash flows and reduce the fair values of our properties, resulting in impairment charges.

In addition, our international operations are located in, or are in close proximity to, regions that continue to experience varying degrees of political instability, public protests, territorial or boundary disputes, and terrorist attacks. Terrorist attacks and the threat of terrorist attacks, whether domestic or foreign, as well as military or other actions taken in response to these acts, could

cause instability in the global financial and energy markets. Continued or escalated civil and political unrest and acts of terrorism in the regions in which we operate could result in curtailment of our operations. In the event that such regions experience civil or political unrest or acts of terrorism, especially in areas where such unrest leads to regime change, our operations there could be materially impaired.

We monitor the social, economic and political environments of the countries in which we operate. However, we are unable to predict the occurrence of disturbances such as those noted above. In addition, we have limited ability to mitigate their impact.

Civil disturbances, terrorist acts, regime changes, war, or conflicts, or the threats thereof, could have the following effects, among others, on our business:

- increased volatility in global crude oil, NGL and natural gas prices, which could negatively impact the global economy, resulting in slower economic growth rates, which could reduce demand for our products;
- negative impact on the global crude oil supply if infrastructure or transportation are disrupted, leading to further commodity price volatility;
- difficulty in attracting and retaining qualified personnel to work in areas with potential for conflict;
- inability of our personnel, third-party providers or supplies to enter or exit the countries where we conduct operations;
- disruption of our operations due to evacuation of personnel;
- inability to deliver our production due to disruption or closing of transportation routes;
- reduced ability to export our production due to efforts of countries to conserve domestic resources;
- damage to or destruction of our wells, production facilities, receiving terminals or other operating assets;
- damage to or destruction of property belonging to our purchasers, leading to interruption of commodity deliveries, claims of force majeure, and/or termination of sales contracts, resulting in a reduction in our revenues;
- lack of availability of drilling rigs, oilfield equipment or services if third-party providers decide to exit the region; and
- shutdown of a financial system, communications network, or power grid causing a disruption to our business activities.

Loss of property and/or interruption of our business plans resulting from civil disturbances, terrorist acts, regime changes, war, or conflicts, or the threats thereof, could have a significant negative impact on our earnings and cash flow. In addition, we may not have enough insurance to cover any loss of property or other claims resulting from these risks.

Our Eastern Mediterranean discoveries bear certain technical, geopolitical, regulatory, and financial challenges that could adversely impact our ability to monetize these natural gas assets.

We have entered into and are currently negotiating various long-term GSPAs for our Eastern Mediterranean natural gas assets. Some of these agreements require the export of natural gas from either Israel or Cyprus to other countries in the region, such as Egypt and Jordan. These agreements are subject to a variety of risks, including geopolitical, regulatory, financial and other uncertainties, and could affect both our and our counterparties' abilities to cooperate and to perform under these agreements, and/or could potentially lead to a breach or termination of such agreements. In addition, economic conditions or financial duress of our counterparties could jeopardize their ability to fulfill their payment obligations under these contracts. Furthermore, if material disruptions occur, including events or circumstances constituting force majeure under contract provisions, such that they inhibit us or our counterparties from performing under these GSPAs, or our counterparties are unable to pay us for a sustained period of time, we could incur a significant decline in revenues. While the State of Israel continues to maintain its ability to generate electricity via coal-fired power plants, as they transition from coal-fired power plants to natural gas-fired power plants, it is becoming more dependent on us and our partners for its source of natural gas supply. Any material disruption in our ability to deliver natural gas to the State of Israel could have a material impact on our expected profitability, financial performance and reputation.

A cyber incident could result in information theft, data corruption, operational disruption and/or financial loss.

We are increasingly dependent on digital technology, including information systems and related infrastructure, as well as cloud applications and services, to process and record financial and operating data, communicate with our employees and business partners, analyze seismic and drilling information, estimate quantities of oil and gas reserves as well as other activities related to our business. Our business partners, including suppliers, service providers, purchasers of our production, and financial institutions, are also dependent on digital technology. The technologies needed to conduct oil and gas exploration and development activities in deepwater, ultra-deepwater and shale, as well as technologies supporting midstream operations and global competition for oil and gas resources make certain information the target of theft or misappropriation.

As dependence on digital technologies has increased, cyber incidents, including deliberate attacks or unintentional events, have also increased. A cyber attack could include gaining unauthorized access to digital systems for purposes of misappropriating assets or sensitive information, corrupting data, or causing operational disruption, or result in denial-of-service on websites. Supervisory control and data acquisition (SCADA) based systems are potentially vulnerable to targeted cyber attacks due to their critical role in operations.

Our technologies, systems, networks, and those of our business partners may become the target of cyber attacks or information security breaches that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of proprietary and other information, or other disruption of our business operations. In addition, certain cyber incidents, such as surveillance, may remain undetected for an extended period.

A cyber incident, involving our information systems and related infrastructure or that of our business partners, such as unauthorized access to seismic data, reserves information or other sensitive or proprietary information, data corruption, communication interruption, or other operational disruption, could impede our business plans and negatively impact our operations in the following ways, among others:

- have a negative impact on our ability to compete for oil and gas resources;
- result in a failure to reach the intended target or lead to a drilling incident during drilling activities;
- result in loss of production, or accidental discharge should production infrastructure be impacted;
- result in supply chain disruptions which could delay or halt a development project, effectively delaying the start of cash flows from the project;
- prevent us from marketing our production through a third-party gathering or pipeline service provider, resulting in a loss of revenues;
- cause operational disruption if communication networks or power grids are targeted resulting in loss of revenues;
- result in events of non-compliance which could lead to regulatory fines or penalties due to deliberate corruption of our financial or operational data, or data theft; and
- result in expensive remediation efforts, distraction of management, damage to our reputation, or have a negative impact on the price of our common stock.

Our implementation of various controls and processes to monitor and mitigate security threats and to increase security for our information, facilities and infrastructure is costly and labor intensive. Moreover, there can be no assurance that such measures will be sufficient to prevent security breaches from occurring. As cyber threats continue to evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any information security vulnerabilities.

Increasing, and often changing, governmental laws, regulations and other requirements may restrict our access to land and/or cause us to incur substantial incremental costs.

Our industry is subject to complex laws and regulations adopted or promulgated by international, federal, state and local authorities relating to the exploration for, and the development, production and marketing of, crude oil, NGLs and natural gas. As the various government and/or regulatory bodies issue or rescind various regulations, our operations are subject to significant volatility in response to the issuance, interpretation and application of these regulations.

Examples of factors which reduce our land access, including loss of access to land for which we own mineral rights, reduce our ability to obtain new leases, or reduce our rights granted under surface use agreements, rights-of-way, surface leases or other easement rights, include, among others:

- new municipal, state or federal land use regulations, which may restrict drilling locations or certain activities such as hydraulic fracturing;
- local and municipal government control of land or zoning requirements, which can conflict with state law and deprive land owners of property development rights;
- landowner, community and/or governmental opposition to infrastructure development;
- regulation of federal and Indian land by the BLM;
and
- the presence of threatened or endangered species or of their habitat.

In the state of Colorado, for example, we have encountered citizen driven ballot initiatives and other legislative proposals to regulate, limit or ban hydraulic fracturing or other facets of crude oil and natural gas exploration, development or operations.

Changes in taxes, environmental laws or implementation of price controls relating to our industry also have the ability to substantially affect crude oil, NGL and natural gas production, operations and economics. Environmental laws, in particular, can change frequently, often become stricter and at times may force us to incur additional costs as changes are implemented.

Under certain environmental laws that impose strict as well as joint and several liability, we may be required to remediate contaminated properties currently or formerly operated by us or facilities of third parties that received waste generated by our operations regardless of whether such contamination resulted from the conduct of others or from consequences of our own actions that were in compliance with all applicable laws at the time those actions were taken. In addition, claims for damages to persons or property, including natural resources, may result from impacts of our operations. Additionally, the accidental and/or unpermitted discharge of natural gas, crude oil, or other pollutants into the air, soil or water may give rise to liabilities on our part to government agencies and/or third parties, and may require us to incur costs to achieve remediation objectives and/or

requirements. See [Item 8. Financial Statements and Supplementary Data – Note 12. Commitments and Contingencies – Colorado Air Matter](#)

Noncompliance with existing or future legislation or regulations could potentially result in an increased risk of civil or criminal fines or sanctions. Fines or sanctions associated with a well incident or spill could well exceed the actual cost of containment and cleanup. In addition, we cannot always predict with certainty how agencies or courts will interpret existing laws and regulations or the effect these interpretations may have on our business or financial condition.

Restricted land access, further expansion of environmental, safety and performance regulations or an increase in liability for drilling or production activities, including punitive fines, may have the following effects, among others, on our business:

- reduce our proved reserves;
- reduce our ability to explore for new proved reserves;
- increase exploratory and development well drilling costs, operating or other costs;
- delay, or preclude, project development resulting in longer development cycle times;
- disrupt or prohibit our ability to construct or operate midstream assets;
- divert our cash flows from capital investments in order to maintain liquidity;
- increase or remove liability caps for claims of damages from oil spills;
- increase our share of civil or criminal fines or sanctions for actual or alleged violations if a well incident were to occur; and
- limit our ability to obtain additional insurance coverage, at a level that balances the cost of insurance and our desired rates of return, to protect against any increase in liability.

Any of the above operating or financial impacts could have a material adverse effect on our business, financial condition, results of operations, and cash flows and may result in a reduction of the fair value of our properties or reduce our financial flexibility. See [Items 1. and 2. Business and Properties – Regulations](#).

A change in the fiscal regimes and related government policies, tax laws and regulations in the US and other countries in which we operate may adversely affect our results of operations and financial condition.

Fiscal regimes impact oil and gas companies through laws and regulations governing resource access, along with government participation in oil and gas projects, royalties and taxes. We operate in the US and other countries whose fiscal regimes may change over time. Changes in fiscal regimes result in an increase or decrease in the amount of government financial take from developments, and a corresponding decrease or increase in the revenues of an oil and gas company operating in that particular country. For example, a significant portion of our production comes from Israel and Equatorial Guinea; therefore, changes in or uncertainties related to the fiscal regimes or energy policies of these countries could delay or reduce the profitability of our development projects, and/or render future exploration and development projects uneconomic.

The elimination of tax deductions, as well as any other changes to or the imposition of new federal, state, local or non-US taxes (including the imposition of, or increases in production, severance or similar taxes) could also have a significant impact on our operations and financial performance. For example, on December 22, 2017, the US Congress enacted tax reform legislation known as the Tax Cuts and Jobs Act (Tax Reform Legislation). The Tax Reform Legislation is complex and far-reaching and made sweeping modifications to the Internal Revenue Code including lowering the corporate tax rate, changing credits and deductions, and moved to a semi-territorial system for corporations that have overseas earnings.

Periodically, other legislative amendments may be proposed that, if enacted into law, would make additional significant changes to US federal and state income tax laws, such as (i) the elimination of the immediate deduction for intangible drilling and development costs and (ii) an extension of the amortization period for certain geological and geophysical expenditures. No prediction can be made as to whether any such legislative changes will be proposed or enacted in the future, or the timing of any such action. Further, we cannot predict how government agencies or courts will interpret existing regulations and tax laws, including the Tax Reform Legislation, or the effect such interpretations could have on our business.

Changes in fiscal regimes, including changes in tax laws and regulations, have long-term impacts on our business strategy, and fiscal uncertainty makes it difficult to formulate and execute capital investment programs. The implementation of new, or the modification of existing, laws or regulations increasing the tax costs on our business could disrupt our business plans and negatively impact our business in the following ways, among others:

- restrict resource access or investment in lease holdings;
- limit or cancel exploration and/or development activities, which could have a long-term negative impact on future quantities of proved reserves and inhibit future production growth;
- reduce the profitability of our projects, resulting in decreases in net income and cash flows with the potential to make future investments uneconomical;

- result in currently producing projects becoming uneconomic, to the extent fiscal changes are retroactive, thereby reducing the amount of proved reserves we record and cash flows we receive, and possibly resulting in asset impairment charges;
- require that valuation allowances be established against deferred tax assets, with offsetting increases in income tax expense, resulting in decreases in net income and cash flow; and/or
- restrict our ability to compete with imported volumes of crude oil or natural gas.

A change in international and/or US federal and state climate policy could have a significant impact on our operations and financial condition.

Domestic and international responses to climate and related energy issues are matters of public policy consideration. It is difficult to anticipate how the current or future US Administration, or other entities, may act on existing or new laws and regulations. As compared with certain large multi-national, integrated energy companies, we do not conduct fundamental research regarding the scientific inquiry of climate change. However, we will continue to closely monitor all relevant developments in this regard. Changes in international, federal or state laws and regulations regarding climate policy could have a significant negative impact on our ability to explore for and develop crude oil and natural gas resources or reduce demand for our products.

In recent years, international, federal, state and local governments have taken steps to reduce emissions of greenhouse gases. The EPA has finalized a series of greenhouse gas monitoring, reporting and emissions control rules for the oil and natural gas industry, and the US Congress has, from time to time, considered adopting legislation to reduce emissions. States in the US have also taken measures to reduce emissions of greenhouse gases primarily through the development of greenhouse gas emission inventories and/or regional greenhouse gas cap-and-trade programs. For a description of existing and proposed greenhouse gas rules and regulations, see [Items 1. and 2. Business and Properties – Regulations](#).

Furthermore, claims have been made against certain energy companies alleging that greenhouse gas emissions from oil and natural gas operations constitute a public nuisance under federal and/or state common law. As a result, private individuals or other entities may make claims against us for alleged personal injury, property damage, or other potential liabilities. While our business is not a party to any such litigation, we could be named in actions making similar allegations. An unfavorable ruling in any such case could impact our operations and could have an adverse impact on our financial condition.

Additionally, there has been public discussion about climate change and the increase of extreme weather conditions such as intense hurricanes, thunderstorms, flooding, tornadoes, drought and snow or ice storms, as well as rising sea levels. Extreme weather conditions can interfere with our production and increase our costs, and damage resulting from extreme weather may not be fully insured.

Federal, state and local hydraulic fracturing and water disposal legislation and regulation could increase our costs or restrict our ability to produce crude oil, NGLs and natural gas economically and in commercial quantities.

Certain parties have called for further study of hydraulic fracturing's alleged environmental and health effects, for additional regulation of the technique and, in some cases, for a moratorium or ban on the use of hydraulic fracturing. Because of elevated public sensitivity around the topic, federal, state and local governments are continually conducting studies, evaluating their regulatory programs and considering additional requirements on and regulation of hydraulic fracturing practices. At the national level, proposals have been introduced from time to time in the US Congress that, if implemented, would subject hydraulic fracturing to further regulation, thereby limiting its use or increasing its cost.

In Colorado, a number of local communities have attempted to increase regulatory requirements on crude oil and natural gas development, certain of which have succeeded, and the use of hydraulic fracturing on federal lands continues to be a topic of political interest. In addition, some state regulatory agencies have modified their regulations to account for potential induced seismicity with regard to the operation of injection wells used for waste disposal.

We are dependent on the use of hydraulic fracturing practices to produce commercial quantities of crude oil and natural gas, particularly from wells in our US onshore basins. Additional federal, state or local restrictions on hydraulic fracturing, water disposal or other drilling activities that may be imposed in areas where we conduct business, such as US onshore, could significantly increase our operating, capital and compliance costs, as well as delay or halt our ability to develop crude oil, NGL and natural gas reserves. See [Items 1. and 2. Business and Properties – Regulations](#) and [– Hydraulic Fracturing](#).

Exploration, development and production activities carry inherent risk. These activities, as well as natural disasters or adverse weather conditions, could result in liability exposure or the loss of production and revenues.

Our operations are subject to hazards and risks inherent in the drilling, production and transportation of crude oil, NGLs and natural gas, including, among others:

- pipeline ruptures and spills;
- fires, explosions, blowouts and well cratering;

- equipment malfunctions and/or mechanical failure on high-volume, high-impact wells;
- malfunctions of, or damage to, gathering, processing, compression and transportation facilities and equipment and other facilities and equipment utilized in support of our operations;
- leaks or spills occurring during the transfer of hydrocarbons from an FPSO to an oil tanker;
- loss of product occurring as a result of transfer to a truck or rail car or train derailments;
- leakage or loss of access to hydrocarbons resulting from formations with abnormal pressures and basin subsidence;
- release of pollutants; and
- spills, leaks or discharges of fluids used in or produced in the course of operations, especially those that reach surface water or groundwater.

Some of these risks or hazards could materially and adversely affect our revenues and expenses by reducing or shutting in production from wells, causing the loss of equipment or otherwise negatively impacting the projected economic performance of our projects. In addition, our ability to deliver product pursuant to long-term supply contracts could be negatively impacted, resulting in additional financial exposure in the event we cannot fully deliver the contract quantities.

Our operations and financial results could also be significantly impacted by adverse weather conditions and natural disasters in the areas we operate including:

- hurricanes, tropical storms, windstorms, flooding or “superstorms,” which could affect our operations in Texas;
- winter storms and snow, which could affect our operations in the DJ Basin;
- extremely high temperatures, which could affect our midstream or third-party gathering and processing facilities in the DJ Basin and Texas;
- severe droughts, which could result in new restrictions on water usage in the DJ Basin and Texas;
- harsh weather and rough seas offshore international locations, which could limit exploration activities; and
- other natural disasters.

Any of these risks or hazards can result in injuries and/or deaths of employees, supplier personnel or other individuals, loss of hydrocarbons, environmental pollution and other damage to our properties or the properties of others, regulatory investigations and administrative, civil and criminal penalties or restricted access to our properties.

Development drilling may not result in commercially productive quantities of crude oil and natural gas reserves from unconventional or conventional resources.

We depend on development projects to provide sustained cash flows after investment and attractive financial returns. However, development drilling is not always successful and the profitability of development projects may change over time.

In new development areas, including certain shale formations, available data may not allow us to know the extent of the reservoir or the best locations for drilling development wells. Therefore, a development well we drill, or in which we participate, may be a dry hole, may result in noncommercial quantities of hydrocarbons or may be less productive than our initial estimates.

We expect to invest significant amounts of capital to continue development of our US onshore unconventional resources. In unconventional basins, development is highly dependent on costs of equipment and services, the use of technologies to drive capital and cost efficiencies in drilling and completion, and the availability of and access to midstream infrastructure. Even if development drilling is successful and we find commercial quantities of reserves, we may encounter difficulties or delays in completing development wells. For example, frontier areas or less developed onshore areas may not have adequate infrastructure for gathering, transportation or processing, and production may be delayed until such infrastructure is constructed.

Exploratory drilling subjects us to risks and may not result in the discovery of commercially productive reservoirs.

Exploratory drilling requires significant capital investment and does not always result in commercial quantities of hydrocarbons or new development projects. In addition, exploratory drilling activities may be curtailed, delayed or canceled, or development plans may change, resulting in significant exploration expense, as a result of a variety of factors, including unexpected drilling conditions and pressure or other irregularities in formations. Furthermore, remote locations may make it more difficult and time-consuming to transport personnel, equipment and supplies, and we may face more difficult environments, such as oil sands, deepwater, or ultra-deepwater, in our efforts to seek new reserves, and may need to develop or invest in new technologies. These operating environments, and the potential for harsh weather, increase cost as well as drilling risk.

Exploratory dry holes can occur because seismic data and other technologies we use to determine potential exploratory drilling locations do not allow us to know conclusively prior to drilling a well that crude oil or natural gas is present or may be produced economically. In addition, a well may be successful in locating hydrocarbons, but we and our partners may decide not to develop the prospect due to other considerations.

In addition, for certain capital-intensive offshore projects, it may take several years to evaluate the future potential of an exploratory well and make a determination of its economic viability, resulting in delays in cash flows from production start-up and a lower return on our investment.

We hold working interests in certain areas, including offshore areas of Cyprus, Cameroon, Colombia, Gabon and Newfoundland (Canada) where there is minimal or no crude oil, NGL or natural gas production, and in certain cases, limited infrastructure. If commercial quantities of hydrocarbons are discovered, areas with minimal or no current production must begin to address topics such as sector regulation and distribution of government proceeds from hydrocarbon sales, the results of which could have a negative impact on our business. We may not be able to compensate for or fully mitigate these risks. See [Item 8. Financial Statements and Supplementary Data – Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs](#)

Our receivables, hedging transactions and cash investments expose us to counterparty credit risk.

We are exposed to risk of financial loss from trade, joint venture and other receivables. We sell production to a variety of purchasers and as operator, we pay joint venture expenses and make cash calls on nonoperating partners for their respective shares of joint venture costs. Certain of these counterparties may experience insolvency, liquidity problems or other issues and may not be able to meet their obligations and liabilities owed to us timely or at all.

We have cash and cash equivalents deposited with financial institutions and engage in hedging activities, both of which may expose us to counterparty credit risk or, in some cases, cause us to incur significant cash settlements. As an entity entering into derivatives transactions under master agreements that are subject to US laws, we are subject to some limitations on our ability to exercise default rights with respect to derivatives transactions with a financially-troubled bank. On January 1, 2019, the US Bank Regulators imposed additional restrictions on counterparties that are parties to certain types of Qualified Financial Contracts (QFCs) with major banks that have been designated as Global Systemically Important Banks (G-SIBs). These QFCs include various master agreements and the financial derivatives transactions that are entered into under such master agreements with G-SIBs as counterparties.

While we monitor the creditworthiness of purchasers, joint venture partners, banks and financial institutions with which we conduct business, we are unable to predict sudden changes in solvency of these counterparties and may be exposed to associated risks. Credit enhancements have been obtained from some parties in the form of parental guarantees, letters of credit or credit insurance. However, not all of our counterparty credit is protected through guarantees or credit support. In addition, we maintain credit insurance associated with specific purchasers. However, nonperformance by a purchaser, hedge counterparty or financial institution could result in significant financial losses.

Violations of certain US and international laws and regulations could result in substantial fines or sanctions and/or impair our ability to do business

Our operations require us to comply with complex and frequently-changing US and international laws and regulations, such as those involving anti-corruption, competition and antitrust, anti-boycott, anti-money laundering, import-export control, marketing, environmental and/or taxation.

For example, the US Foreign Corrupt Practices Act (FCPA) and similar laws and regulations generally prohibit improper payments to foreign officials for the purpose of obtaining or keeping business. We conduct some of our operations in developing countries that have relatively underdeveloped legal and regulatory systems compared to more developed countries. These countries generally are perceived as presenting an increased risk of corruption. Additionally, certain of our operations involve the use of agents and other intermediaries whose conduct and actions could be imputed to us by anti-corruption enforcement authorities. Violations of the FCPA or other anti-corruption laws could subject us to substantial fines or sanctions and impair our ability to do business.

The import/export of equipment and supplies necessary for oil and gas exploration and development activities, as well as the export of crude oil, liquids and natural gas production are regulated by the import/export laws of the US and other countries in which we operate. In the US, certain items required for oil and gas development activities may be considered “dual-use”, having both commercial and military applications and, therefore, may be subject to specific import or export restrictions. In addition, the US government imposes economic and trade sanctions against certain foreign countries and regimes. The sanctions are based on US foreign policy and national security goals and may change over time.

As a developer, owner and operator of crude oil and natural gas properties, we are subject to various laws and regulations relating to the discharge of materials into, and the protection of, the environment. Failure to comply with these laws and regulations may result in the assessment of administrative, civil and criminal penalties, imposition of cleanup and site restoration costs and liens, the suspension or revocation of necessary permits, licenses and authorizations, the requirement that additional pollution controls be installed and, in some instances, issuance of orders or injunctions limiting or requiring discontinuation of certain operations. See *Increasing, and often changing, governmental laws, regulations and other*

requirements may restrict our access to land and/or cause us to incur substantial incremental costs and [Item 8. Financial Statements and Supplementary Data – Note 12. Commitments and Contingencies](#).

The marketability of our production is dependent upon access to gathering, transportation and processing facilities, which we may not own or control.

The marketability of our production from our US onshore areas depends in part upon the availability, proximity and capacity of gathering systems, transportation pipelines, rail service, and processing facilities. We deliver crude oil, NGLs and natural gas produced from these areas through midstream infrastructure, the majority of which we do not own and may not control.

Internationally, we rely on third-party pipeline and transportation systems, some of which are foreign government-owned or influenced, to deliver our natural gas production from offshore Israel to customers and end users in the region, including Israel, Jordan and Egypt. Offshore Equatorial Guinea, our natural gas production is delivered to onshore processing and storage facilities operated by our partner, and the resulting products, as well as our crude oil production from Aseng and Alen, are lifted to tankers owned by third-parties.

Third-party systems and facilities may not be available to us in the future at a price that is acceptable to us. In addition, the lack of availability of, or capacity on, third-party systems and facilities, including those owned by Noble Midstream Partners, could reduce the price offered for our production or result in the shut-in of producing wells or the delay or discontinuance of development plans for properties. Further, the inability of third-party processors, over whom we have no control, to meet anticipated facility expansion deadlines, or to delay or even cancel projects, in areas where our production is growing, could result in curtailment of our production growth and/or shut-in of production. Even where we have some contractual control over the transportation of our production through firm transportation arrangements, third-party systems and facilities may be temporarily unavailable due to market conditions or mechanical reliability or other reasons, including adverse weather conditions or geopolitical instability.

Any significant change in market factors or other conditions affecting these infrastructure systems and facilities, as well as any delays in constructing new infrastructure systems and facilities, could delay or curtail production, thereby harming our business and, in turn, our results of operations, cash flows, and financial condition.

Our ability to produce crude oil, NGLs and natural gas economically and in commercial quantities could be impaired if we are unable to acquire adequate supplies of water for our drilling operations or are unable to dispose of or recycle the water we use economically and in an environmentally safe manner.

Drilling and development activities require the use of water and results in the production of waste water. For example, the hydraulic fracturing process, requires the use and disposal of significant quantities of water. In certain regions, there may be insufficient local capacity to provide a source of water for drilling activities. In those cases, water must be obtained from other sources and transported to the drilling site, adding to the development cost. Waste water from oil and gas operations often is disposed of via underground injection. Some studies have linked earthquakes or induced seismicity in certain areas to underground injection, which has led to increased public scrutiny.

The development of new environmental initiatives or regulations related to acquisition, withdrawal, storage and use of surface water or groundwater, or treatment and discharge of water waste, may limit our ability to use techniques such as hydraulic fracturing, increase our development and operating costs and cause delays, interruptions or termination of our operations, the extent of which cannot be predicted and all of which could have an adverse effect on our operations and financial condition. See *Federal, state and local hydraulic fracturing and water disposal legislation and regulation could increase our costs or restrict our ability to produce crude oil, NGLs and natural gas economically and in commercial quantities* and [Items 1. and 2. Business and Properties – Hydraulic Fracturing](#).

A negative shift in investor or shareholder sentiment of the oil and gas industry could adversely affect our business and ability to raise debt and equity capital.

Certain segments of the investor community have developed negative sentiment towards investing in our industry. Recent equity returns in the sector versus other industry sectors have led to lower oil and gas representation in certain key equity market indices. In addition, some investors, including investment advisors and certain sovereign wealth, pension funds, university endowments and family foundations, have stated policies to disinvest in the oil and gas sector based on their social and environmental considerations. Certain other stakeholders have also pressured commercial and investment banks to reduce or stop financing oil and gas and related infrastructure projects.

In addition, shareholder activism has been recently increasing in our industry, and shareholders may attempt to effect changes to our business or governance, whether by shareholder proposals, public campaigns, proxy solicitations or otherwise. Such actions could adversely impact our business by distracting management and other personnel from their primary responsibilities, require us to incur increased costs, and/or result in reputational harm.

Such developments, including environmental activism and initiatives aimed at limiting climate change and reducing air pollution, could result in downward pressure on the stock prices of oil and gas companies, including ours. This may also potentially result in a reduction of available capital funding for potential development projects, impacting our future financial results.

Global populism and general political uncertainty could adversely effect on our business, financial condition and results of operations.

Recent trade tensions and tariff disputes, including retaliation to such policies which have the potential to escalate into global trade wars, have also contributed to a slowing of global trade activities further compounding concerns around jobs, economic well-being and wealth distribution. Globally, certain individuals and organizations are attempting to focus the public's attention on income and wealth distribution and implement income and wealth redistribution policies.

Recent events have intensified these risks. Globally, and in the US, the growing trends toward populism and political polarization have resulted in uncertainty regarding potential changes in regulations, fiscal policy, social programs, domestic and foreign relations and international trade policies and tariffs.

Changes in relationships among the US, China, Russia and Saudi Arabia, and/or among China, Russia, Saudi Arabia and other countries, have potentially significant impacts on the global balance of power, as well as on global trade, with resultant impacts on both global and local economies. In addition, changes in the relationship between the US and its neighbors continues to impact commerce and trade across the North American continent. In Europe, the populist movement has resulted in the Brexit vote and increasing populist demands coupled with rising nationalism could have a negative impact on economic policy and consequently pose a potential threat to economic growth as well as the unity of the European Union.

Trade and/or tariff disputes could result in increased costs or shortages of materials and supplies, such as steel products and aluminum, which the oil and gas industry relies on to produce, process and transport its oil and gas production. Our ability to respond to these developments or comply with any resulting new legal or regulatory requirements, including those involving economic and trade sanctions, could reduce our ability to negotiate the sale of our products, increase our costs of doing business, reduce our financial flexibility and otherwise have a material adverse effect on our business, financial condition and results of our operations.

Indebtedness may limit our liquidity and financial flexibility:

At December 31, 2019, we had \$7.5 billion of consolidated debt, of which \$1.5 billion is issued by Noble Midstream Partners.

Indebtedness affects our operations in several ways, including the following, among others:

- a portion of our cash flows from operating activities must be used to service our indebtedness and is not available for other purposes;
- we may be at a competitive disadvantage as compared to similar companies that have less debt;
- a covenant contained in our Credit Agreement provides that our total debt to capitalization ratio (as defined in the Credit Agreement) may not exceed 65% at any time, which may make additional borrowings more expensive, thereby affecting our flexibility in planning for, and reacting to, changes in the economy and our industry;
- additional future financing for working capital, capital expenditures, acquisitions, general corporate or other purposes may have higher costs and more restrictive covenants; and
- we may be more vulnerable to general adverse economic and industry conditions.

We may incur additional debt in order to fund our exploration, development, acquisition and midstream activities. A higher level of indebtedness increases the risk that our financial flexibility may deteriorate. Our ability to meet our debt obligations and service our debt depends on future performance. General economic conditions, commodity prices, and financial, business and other factors may affect our operations and our future performance. Many of these factors are beyond our control and we may not be able to generate sufficient cash flow to pay the interest on our debt, and future working capital, borrowings and equity financing may not be available to pay or refinance such debt.

In addition, a downgrade or other negative rating action could affect our requirements to post collateral as financial assurance of performance under certain contractual arrangements, such as pipeline transportation contracts, crude oil and natural gas sales contracts, work commitments and certain abandonment obligations. A lowering of our debt credit rating may negatively affect the cost, terms, conditions and/or availability of future financing, including access to the commercial paper market, and lower ratings will increase the interest rate and fees we pay on our Revolving Credit Facility, including our commercial paper program. These actions, in turn, could result in negative impacts on our business, financial condition and liquidity. See [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#).

We face significant competition and many of our competitors have resources in excess of our available resources

We operate in highly competitive areas of crude oil and natural gas exploration, development, acquisition and production. We face intense competition from various types of competitors ranging from large multi-national, integrated oil and gas companies, to state-controlled national oil companies, to independent oil and gas companies, to privately backed oil and gas equity funds, to name a few.

We also face competition in a number of areas such as acquiring desirable producing properties or new leases for future exploration, acquiring or increasing access to gathering, transportation and processing services and capacity and in the marketing of our crude oil, NGL and natural gas production.

In addition, we also compete for access to third-party oilfield equipment, materials, services and personnel required to explore, develop and operate properties. During periods of increasing levels of industry activity, the demand for, and cost of, drilling rigs and oilfield services increases. As a result, drilling rigs and oilfield services may not be available at rates that provide a satisfactory return on our investment.

Many of our competitors have financial and other resources substantially in excess of those available to us. Such companies may be able to pay more for seismic information and lease rights on crude oil and natural gas properties and exploratory prospects and to define, evaluate, bid for and purchase a greater number of properties and prospects than our financial or human resources permit. This highly competitive environment could have an adverse impact on our business. See [Items 1. and 2. Business and Properties – Competition](#).

Crude oil, NGL and natural gas reserves are estimates and actual recoveries may vary significantly.

Reservoir engineering is a subjective process of estimating underground accumulations of crude oil, NGLs and natural gas that cannot be measured in an exact manner, and there are numerous uncertainties inherent in estimating reserves quantities and their value, including factors that are beyond our control.

In accordance with the SEC's rules for oil and gas reserves reporting, our reserves estimates are based on historical 12-month average commodity prices; therefore, reserves quantities will change when actual prices increase or decrease. As estimated production, development and abandonment costs are based on year end economic conditions, reserves quantities will also change when these costs increase or decrease.

Reserves estimates depend on a number of factors and assumptions that may vary considerably from actual results, including:

- estimating future production from an area is consistent with historical production from similar producing areas;
- assumed effects of regulations by governmental agencies, including the SEC;
- future development, operating and abandonment costs, as well as timing of such activities; and
- impacts of cost recovery provisions in contracts with foreign governments.

For these reasons, estimates of the economically recoverable quantities of crude oil, NGLs and natural gas attributable to any particular group of properties, classifications of those reserves based on risk of recovery, and estimates of the future net cash flows expected from them prepared by different petroleum engineers, or by the same petroleum engineers but at different times, may vary substantially. Estimation of crude oil, NGL and natural gas reserves in emerging areas or areas with limited historical production is inherently more difficult, and we may have less experience in such areas. Accordingly, reserves estimates may be subject to positive or negative revisions, and actual production, revenues and expenditures with respect to our reserves likely will vary, possibly materially, from estimates. A decline in estimates of proved reserves could result in an asset impairment charge.

In addition, realization or recognition of PUDs will depend on our development schedule and plans. A change in future development plans for PUDs could cause the discontinuation of the classification of these reserves as proved. See [Items 1. and 2. Business and Properties – Proved Reserves Disclosures](#).

We operate in a litigious environment.

Some of the jurisdictions within which we operate have proven to be litigious environments. Oil and gas companies can be involved in various legal proceedings and disputes with landowners, royalty owners, or other operators over matters such as leases, title transfer, joint interest billing arrangements, revenue distribution, or production or cost sharing arrangements, in the ordinary course of business. For example, in certain states, oil and gas companies are often the target of “legacy lawsuits,” by which a landowner claims that oil and gas operations, often performed many years ago and by another operator, caused pollution or contamination of a property. Various properties we have owned over the past decades potentially expose us to “legacy lawsuit” claims. Similarly, neighboring landowners may allege that current operations cause contamination or create a nuisance.

Because we maintain a diversified portfolio of assets that includes both US and international projects, the complexity and types of legal procedures with which we may become involved may vary, and we could incur significant legal and support expenses in different jurisdictions. For example, we historically have had to address certain fiscal, antitrust and other regulatory

challenges in Israel, including a current lawsuit filed by petitioners alleging we and our partners in Tamar violated antitrust laws through the monopolistic pricing of natural gas to the citizens of Israel. Legal proceedings such as this could result in substantial liability and/or negative publicity about us and adversely affect the price of our common stock. In addition, legal proceedings distract management and other personnel from their primary responsibilities. These proceedings are subject to the uncertainties inherent in any litigation. However, if we are not able to successfully defend ourselves, there could be a delay or even a halt in our exploration, development or production activities or other business plans, resulting in a reduction in reserves, loss of production and reduced cash flows.

One of our subsidiaries acts as the general partner of a publicly traded master limited partnership, Noble Midstream Partners, which may involve a potential legal liability.

One of our subsidiaries acts as the general partner of Noble Midstream Partners, a publicly traded master limited partnership. Our control of the general partner of Noble Midstream Partners may increase the possibility that we could be subject to claims of breach of duties owed to Noble Midstream Partners, including claims of conflicts of interest. Any liability resulting from such claims could have a material adverse effect on our future business, financial condition, results of operations and cash flows.

Commodity hedging transactions may limit our potential gains or fail to fully protect us from declines in commodity prices

In order to reduce the impact of commodity price uncertainty and increase cash flow predictability relating to the marketing of our production, we enter into hedging arrangements with respect to a portion of our expected revenues. Our hedges, consisting of a series of derivative instrument contracts, are limited in duration, usually for periods of one to three years. While intended to reduce the effects of volatile commodity prices, such transactions may limit our potential gains if prices rise over the price established by the arrangements. Conversely, our hedging program may be inadequate to protect us from continuing and prolonged declines in commodity prices. See [Item 8. Financial Statements and Supplementary Data – Note 14. Derivative Instruments and Hedging Activities](#).

The insurance we carry is insufficient to cover all of the risks we face, which could result in significant financial exposure.

Exploration for and production of crude oil and natural gas can be hazardous, involving natural disasters or other catastrophic events such as hurricanes, earthquakes, blowouts, well cratering, fire and explosion, loss of well control, gathering system or pipeline disruptions, mishandling of fluids and chemicals, and possible underground migration of hydrocarbons and chemicals, any of which can result in damage to or destruction of wells or formations or production facilities, injury to persons, loss of life, or damage to property and the environment. Exploration and production activities are also subject to risk from other disruptive events such as terrorist acts, piracy, civil disturbances, war, and expropriation or nationalization of assets, or other interruptions, such as cyber security breaches, which can cause loss of or damage to our property.

Our insurance program and memberships in domestic and international dedicated oil spill and emergency response organizations may not minimize or fully protect us from losses resulting from damages to or the loss of physical assets or loss of human life, liability claims of third parties, and business interruption (loss of production) attributed to certain assets and including such occurrences as well blowouts and resulting oil spills. We do not have insurance protection against all the risks we face, because we choose not to insure certain risks, insurance is not available at a level that balances the cost of insurance and our desired rates of return, or actual losses may exceed coverage limits.

Future availability and cost of insurance can be impacted by events such as hurricanes, earthquakes and other natural disasters. Impacts could include tighter underwriting standards, limitations on scope and amount of coverage, and higher premiums, and will depend, in part, on future changes in laws and regulations regarding exploration and production activities in areas in which we operate, including possible increases in liability caps for claims of damages from oil spills. We will continue to monitor legislative or regulatory changes relating to exploration and production and its potential impact on the insurance market and our overall risk profile, and adjust our risk and insurance program to provide protection, at a level that we can afford considering the cost of insurance and our desired rates of return, against disruption to our operations and cash flows.

If an event, for example, a major offshore incident resulting in significant personal injury and/or environmental and physical damage, occurs that is not covered by insurance or not fully protected by insured limits, it could have a significant adverse impact on our financial condition, results of operations and cash flows. See [Items 1. and 2. Business and Properties – Risk and Insurance Program](#).

Item 1B. Unresolved Staff Comments

None.

Item 3. Legal Proceedings

We are involved in various legal proceedings in the ordinary course of business. These proceedings are subject to the uncertainties inherent in any litigation. We are defending ourselves vigorously in all such matters and we believe that the

ultimate disposition of such proceedings will not have a material adverse effect on our financial position, results of operations or cash flows. See [Item 8. Financial Statements and Supplementary Data – Note 12. Commitments and Contingencies](#).

Item 4. Mine Safety Disclosures

Not Applicable.

PART II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Common Stock On December 16, 2019, acting pursuant to authorization from our Board of Directors, we provided notice to the New York Stock Exchange (NYSE) of our intent to voluntarily withdraw the principal listing of our common stock, par value \$0.01 per share, from the NYSE and transfer the listing to Nasdaq. Our common stock was voluntarily delisted on the NYSE effective as of the close of trading on December 27, 2019, and trading commenced on Nasdaq at market open on December 30, 2019. Our stock continues to trade under the stock symbol “NBL.”

Dividends The declaration and payment of dividends are determined on a quarterly basis and are at the discretion of our Board of Directors and the amount thereof will depend on our results of operations, financial condition, contractual restrictions, cash requirements, future prospects and other factors deemed relevant by the Board of Directors.

On January 27, 2020, our Board of Directors declared a quarterly cash dividend of \$0.12 per common share. The dividend will be paid February 24, 2020, to shareholders of record on February 10, 2020. See [Item 8. Financial Statements and Supplementary Data – Consolidated Statements of Shareholders’ Equity](#).

Transfer Agent and Registrar The transfer agent and registrar for our common stock is Computershare Trust Company N.A., 250 Royall Street, Canton, MA, 02021.

Shareholders’ Profile Pursuant to the records of the transfer agent, as of February 4, 2020, the number of holders of record of our common stock was 522.

Stock Repurchases The following table summarizes repurchases of our common stock occurring in fourth quarter 2019:

Period	Total Number of Shares Purchased ⁽¹⁾	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs ⁽²⁾	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs <i>(millions)</i>
10/1/2019 - 10/31/2019	3,060	\$ 20.07	—	
11/1/2019 - 11/30/2019	125	21.24	—	
12/1/2019 - 12/31/2019	81	20.91	—	
Total	3,266	\$ 20.14	—	\$ 455

⁽¹⁾ Shares repurchased during the period related to stock received by us from employees for the payment of withholding taxes due on shares of common stock issued under stock-based compensation plans.

⁽²⁾ During fourth quarter 2019, we did not repurchase any shares under the \$750 million share repurchase program, authorized by the Board of Directors and announced in February 2018, which expires on December 31, 2020.

Stock Performance Graph On January 28, 2019, the Compensation, Benefits and Stock Option Committee of the Board of Directors (the Committee) made changes to our compensation peer group to accurately reflect, in the judgment of the Committee, companies with which we compete for investment capital and market recognition. Criteria used to determine this new group included similarity of long-term business strategy, multi-basin operations, commodity mix and international presence. After the change in companies, the new peer group consisted of the following:

Anadarko Petroleum Corp. ⁽¹⁾	Devon Energy Corp.	Murphy Oil Corp.
Apache Corp.	Ovintiv Inc. (formerly known as Encana Corp.)	Noble Energy, Inc.
Chesapeake Energy Corp.	EOG Resources, Inc.	WPX Energy, Inc.
Cimarex Energy Co.	Hess Corp.	
Continental Resources, Inc.	Marathon Oil Corp.	

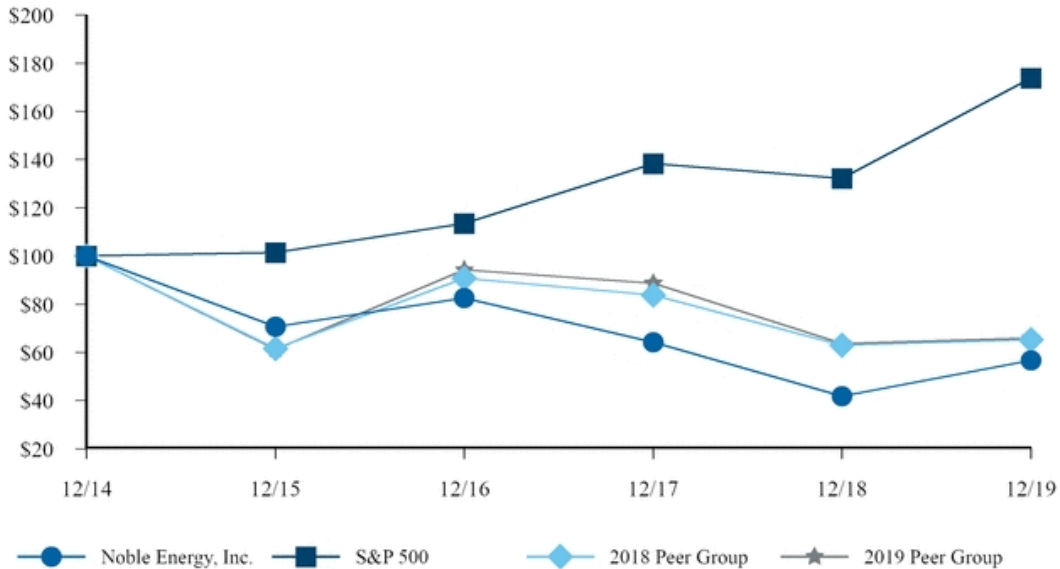
⁽¹⁾ Anadarko Petroleum Corp. is excluded from all periods in the graph below due to its acquisition by Occidental Petroleum Corp. in 2019.

Compared to our 2018 peers, the new 2019 peer group includes Cimarex Energy Co., Encana Corp. and WPX Energy, Inc., and excludes Cabot Oil & Gas Corp., Pioneer Natural Resource Co., Range Resources Corp. and Southwestern Energy Co.

This graph shows our cumulative total shareholder return over the five-year period from December 31, 2014 to December 31, 2019. The graph also shows the cumulative total returns for the same five-year period of the S&P 500 Index, the previous peer group used in 2018, and the new 2019 peer group. The cumulative total return of the common stock of our 2018 and 2019 peer groups includes the cumulative total return of our common stock.

The comparison assumes \$100 was invested on December 31, 2014 in our common stock, in the S&P 500 Index and in our 2019 and 2018 peer groups and assumes that all of the dividends were reinvested. In addition, each peer group investment is weighted based upon the market capitalization of each individual company within the applicable peer group.

**Comparison of 5 Year Cumulative Total Return
Among Noble Energy, Inc., the S&P 500 Index, a 2018 Peer Group and a 2019 Peer Group**



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Year Ended December 31,	2015	2016	2017	2018	2019
Noble Energy, Inc.	\$ 70.66	\$ 82.62	\$ 64.10	\$ 41.88	\$ 56.66
S&P 500	101.38	113.51	138.29	132.23	173.86
2018 (Previous) Peer Group	61.58	90.75	83.75	62.94	65.16
2019 (New) Peer Group	61.28	94.22	88.70	63.73	66.02

Item 6. Selected Financial Data

	Year Ended December 31,				
<i>(millions, except as noted)</i>	2019	2018	2017	2016	2015
Revenues and Income					
Total Revenues	\$ 4,438	\$ 4,986	\$ 4,256	\$ 3,491	\$ 3,183
Asset Impairments ⁽¹⁾	1,160	206	70	92	533
Net (Loss) Income and Comprehensive (Loss) Income Including Noncontrolling Interests	(1,433)	14	(1,050)	(985)	(2,441)
Net Loss and Comprehensive Loss Attributable to Noble Energy	(1,512)	(66)	(1,118)	(998)	(2,441)
Per Share Data, Attributable to Noble Energy					
Loss per Share - Basic and Diluted	\$ (3.16)	\$ (0.14)	\$ (2.38)	\$ (2.32)	\$ (6.07)
Cash Dividends per Share	0.47	0.43	0.40	0.40	0.72
Stock Price per Share	24.84	18.76	29.14	38.06	32.93
Weighted Average Number of Shares Outstanding					
Basic and Diluted	478	483	469	430	402
Cash Flows					
Net Cash Provided by Operating Activities	\$ 1,998	\$ 2,336	\$ 1,951	\$ 1,351	\$ 2,062
Additions to Property, Plant and Equipment	2,524	3,279	2,649	1,541	2,979
Net Proceeds from Divestitures ⁽²⁾	173	1,999	2,073	1,241	151
Proceeds from Issuance of Noble Energy Common Stock, Net of Offering Costs	—	—	—	—	1,112
Proceeds from Issuance of Noble Midstream Partners Common Units, Net of Offering Costs	243	—	312	299	—
Financial Position					
Cash and Cash Equivalents	\$ 484	\$ 716	\$ 675	\$ 1,180	\$ 1,028
Property, Plant and Equipment, Net	17,451	18,419	17,502	18,548	21,300
Goodwill ⁽¹⁾	110	110	1,310	—	—
Total Assets	20,647	21,120	21,476	21,011	24,196
Long-term Obligations					
Long-Term Debt	7,477	6,574	6,746	7,011	7,976
Deferred Income Taxes	662	1,061	1,127	1,819	2,826
Asset Retirement Obligations, Noncurrent	730	762	824	775	861
Other	648	403	421	328	358
Mezzanine Equity	106	—	—	—	—
Total Shareholders' Equity	9,055	10,484	10,619	9,600	10,370

⁽¹⁾ See [Item 8. Financial Statements and Supplementary Data – Note 10. Impairments.](#)

⁽²⁾ See [Item 8. Financial Statements and Supplementary Data – Note 4. Acquisitions and Divestitures.](#)

	Year Ended December 31,				
	2019	2018	2017	2016	2015
Consolidated Operations Information					
Consolidated Crude Oil Sales (MBbl/d)	133	130	129	125	112
Average Realized Price (\$/Bbl)	\$ 56.21	\$ 62.01	\$ 49.73	\$ 40.39	\$ 45.00
Consolidated NGL Sales (MBbl/d)	68	62	58	54	39
Average Realized Price (\$/Bbl)	\$ 14.32	\$ 25.88	\$ 23.40	\$ 14.92	\$ 13.91
Consolidated Natural Gas Sales (MMcfd)	925	922	1,118	1,397	1,187
Average Realized Price (\$/Mcf)	\$ 2.41	\$ 2.76	\$ 3.01	\$ 2.42	\$ 2.44
Proved Reserves					
Crude Oil and Condensate Reserves (MMBbls)	413	457	457	333	307
NGL Reserves (MMBbls)	278	266	229	219	189
Natural Gas Reserves (Bcf)	8,151	7,231	7,680	5,308	5,549
Total Reserves (MMBoe)	2,050	1,929	1,965	1,437	1,421
Number of Employees	2,282	2,330	2,277	2,274	2,395

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) is intended to provide a narrative about our business from the perspective of our management. Our MD&A is presented in the following sections:

- [Executive Overview](#);
- [Operating Outlook](#);
- [Results of Operations – E&P](#);
- [Results of Operations – Midstream](#);
- [Results of Operations – Corporate](#);
- [Liquidity and Capital Resources](#);
- and
- [Critical Accounting Policies and Estimates](#).

The accompanying consolidated financial statements, including the notes thereto, contain detailed information that should be read in conjunction with our MD&A.

For discussion related to changes in financial condition and results of operations for 2018 as compared with 2017, refer to Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our 2018 Form 10-K, which was filed with the SEC on February 19, 2019.

EXECUTIVE OVERVIEW

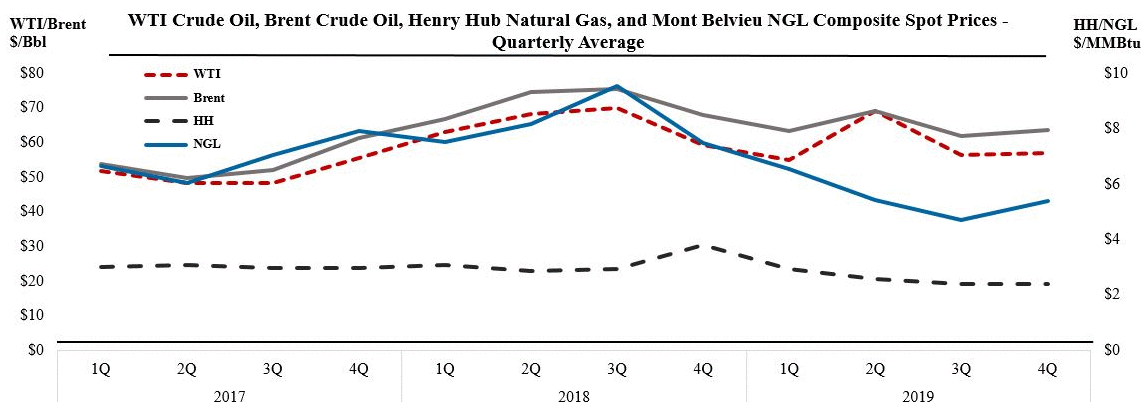
Industry Outlook

Commodity Prices The global oil and gas industry is cyclical, and commodity prices can be volatile. Global crude oil prices are driven by crude oil supply, which includes Organization of Petroleum Exporting Countries (OPEC) and non-OPEC producers, and global crude oil demand. The outlook for 2020 crude oil prices will continue to depend on supply and demand dynamics, as well as global geopolitical and security factors in crude oil-producing nations. Production cuts by OPEC and geopolitical factors in critical oil producing regions remain constructive for global crude oil prices. However, a weakening of crude oil demand amid signs of a potential softening in the global economy could result in lower prices. In addition, US and China trade tensions threaten further damage to global trade and economic growth and, consequently, crude oil demand.

The US domestic natural gas market remains oversupplied as production has continued to grow due to drilling efficiencies, higher incremental volumes of associated gas from oil wells and de-bottlenecking of transportation infrastructure. Despite record domestic LNG exports and high natural gas fired electric generation, natural gas inventories are projected to remain at or slightly above historical five-year averages. As a result, natural gas prices traded within a narrow range in 2019, with an expectation to continue as such in 2020. Natural gas price differentials increased in the DJ Basin, while differentials in the Delaware Basin continue to be wide despite additional pipeline capacity from the Delaware Basin to Corpus Christi, Texas. Additional Delaware Basin natural gas pipeline expansions are targeted for in-service in late 2020, which are expected to decrease these differentials.

US NGL prices are also suppressed amid increased production, high inventory levels, and downstream fractionation and export bottlenecks. As new processing and export facilities are brought online, NGL prices should benefit. During 2019, we added NGL commodity price hedges to our hedge portfolio.

The chart below shows the historical trends in benchmark prices for WTI crude oil, Brent crude oil, Mont Belvieu composite NGLs, and US Henry Hub natural gas.



Our Eastern Mediterranean GSPAs generally provide for an initial base price subject to price indexation over the life of the contract and have a contractual floor, which provides some protection from price volatility.

2019 Operating Focus

During 2019, our activities were focused on positioning the Company for sustainable, long-term cash flows through the following initiatives:

Improving Cost Structure We focused on strong operational execution and cost control to improve our cost structure for current and future operations. We reduced capital spend, focusing on high-margin, high-return opportunities while emphasizing safety and protection of the environment. Capital efficiencies resulted in significantly lower well costs, driving overall capital spend nearly \$240 million lower than expected for the year. Unit production expenses were also driven lower than expected, primarily due to US onshore cost initiatives.

Improving US Onshore Takeaway Capacity We successfully leveraged significant pipeline expansion projects for increased flow assurance and improved crude oil netback prices. In the DJ Basin, we entered into a strategic relationship with Saddlehorn, acquiring additional capacity of long-term takeaway at lower cost. In the Delaware Basin, we exercised options to acquire ownership interests in EPIC Y-Grade and EPIC Crude Holdings, and partnered in the formation of the Delaware Crossing joint venture. Through these investments, we gained access to Gulf Coast pricing for certain of our Delaware Basin

production when the EPIC Y-Grade Pipeline began interim crude oil service. We continue to negotiate other pipeline contracts for lower cost arrangements.

Leviathan Phase I Development Having commenced production from the Leviathan field on December 31, 2019, we are now ready for significant regional exports to begin. We expect Leviathan production and regional sales will result in a significant impact to our sustainable production profile, with material increases in sales volumes and cash flows in 2020.

Progressing Natural Gas Monetization Offshore West Africa We continue to focus on progressing natural gas monetization opportunities through development of a regional natural gas hub offshore West Africa. During the year, we sanctioned the Alen Gas Monetization project, which will result in low-cost access to additional reserves and our entry into the global LNG markets in 2021.

Advancing Exploration Opportunities Although we have modified our exploration activity in the low commodity price environment, we continue to pursue opportunities that have low capital commitments, but which we perceive to have potentially high impact. During the year, we farmed-in a significant new opportunity offshore Colombia and progressed various exploration activities in support of future drilling efforts in both US onshore and international locations.

Completing Midstream Strategic Review We conducted a strategic review of our Midstream segment and elected to retain and increase our ownership in Noble Midstream Partners. We concluded the review with the sale of substantially all of our remaining US onshore midstream interests and assets and our incentive distribution rights to Noble Midstream Partners for total consideration of \$1.6 billion, including \$670 million of cash and 38.5 million of newly issued Noble Midstream Partners common units.

Maintaining Strong Balance Sheet We focused on maintaining our strong balance sheet and financial liquidity, which totaled almost \$4.5 billion at December 31, 2019. During the year, we early redeemed certain senior notes, extending the average maturity of our total debt portfolio, which is approximately 16 years. We maintained our investment grade rating across all agencies while returning capital to investors through debt repayments and dividends.

Advancing Environmental, Social and Governance (ESG) Initiatives We continued our focus on ESG initiatives by identifying opportunities to reduce environmental impact, improve safety, support the communities in which we operate through social investment, increase transparency, and the diversity of our Board of Directors. We also finished 2019 with a record-low total recordable incident rate in the US onshore.

OPERATING OUTLOOK

Growing Long-Term Value We believe the following guiding principles will contribute to growing long-term value:

- Execution of a disciplined capital allocation process by:
 - designing a flexible investment program aligned with the current commodity price environment.
- Leveraging the benefits of our well-positioned and diversified portfolio, including:
 - exercising investment optionality and flexibility afforded by our assets, certain of which are held by production; and
 - continuing portfolio optimization actions to maximize strategic value.
- Enhancing capital efficiencies by:
 - utilizing our technical competencies and applying historical learnings from unconventional US shale plays to reduce US onshore exploration and development costs.
- Capitalizing on a currently low-cost offshore environment with execution of high-quality, long-cycle development projects, such as:
 - continuing development offshore Israel and monetizing natural gas offshore West Africa.
- Maintaining financial strength through:
 - focusing operational activities on high-margin, high-return assets; and
 - improving overall corporate returns.
- Commitment to people and communities in which we operate by:
 - being a safe and reliable operator;
 - complying with applicable air quality rules and environmental regulations; and
 - advancing ESG initiatives.

We believe our approach positions the Company for sustainability, operational efficiency, and long-term success throughout the oil and gas business cycle. Further, we expect our US onshore activity, combined with Leviathan natural gas sales and efforts towards Alen Gas Monetization, will position us for sustainable free cash flow generation in the future. However, if commodity prices are suppressed for an extended period of time, we could experience material negative impacts on our revenues, profitability, cash flows, liquidity and proved reserves, and, in response, we may consider reductions in our capital investment program or dividends, asset sales or actions to support our financial position. Our production, cash flows, and our stock price could decline as a result of these potential developments. See [Item 1A. Risk Factors – Crude oil, NGL and natural gas price](#)

volatility, including a substantial or extended decline in the price of these commodities, could have a material adverse effect on our results of operations, cash flows, liquidity, and the price of our common stock.

2020 Organic Capital Investment Program Our 2020 organic capital investment program, which excludes Noble Midstream Partners and acquisition capital, is designed to deliver near and long-term value and is flexible in the current commodity price environment. The 2020 organic capital investment program is in the range of \$1.6 to \$1.8 billion. The 2020 organic capital investment program is approximately 25% below our 2019 organic capital expenditures, which reflects lower spend on the Leviathan field offshore Israel. Approximately 75% of the 2020 organic capital budget is allocated to US onshore development, primarily in the DJ and Delaware Basins, with the remainder allocated to progressing the Alen Gas Monetization in West Africa, expanding gas deliverability in Israel and costs for drilling an exploratory well offshore Colombia.

We plan to fund our capital investment program with cash flows from operations, cash on hand, proceeds from divestments of non-strategic assets, borrowings under our Revolving Credit Facility, and/or other sources of funding. See [Liquidity and Capital Resources – Sources and Uses of Liquidity](#).

Our 2020 production target is in the range of 385 MBoe/d to 405 MBoe/d. In our US onshore business, we expect relatively flat production compared to 2019, with an increase in DJ and Delaware Basin production offset by reductions in the Eagle Ford Shale. We expect to have higher oil volumes in 2020 compared to 2019.

Potential for Future Impairments We have had in the past, and may incur in the future, impairments of proved and unproved properties. Our impairment assessment as of December 31, 2019 indicated that the carrying amounts of our DJ Basin and Delaware Basin properties were not impaired. However, we believe our Delaware Basin properties, in particular, may be at risk for future impairment. Our Delaware Basin properties have significant book value associated with proved reserves and unproved resources, which were acquired primarily through corporate acquisitions. Through acquisition accounting, acquired asset values are recorded at their estimated fair market values at the time of closing. In 2017, commodity prices, specifically those for domestic NGLs and natural gas, were significantly higher when compared to the current environment.

We believe that it is reasonably likely an impairment could be triggered if there is a decrease in forward commodity price assumptions, a widening of basis differentials, material changes to development plans or an increase in operating or abandonment costs, among other factors. The variable which generates the most significant change in undiscounted future net cash flows is generally the forward commodity price outlook. For purposes of impairment assessment, where contractual pricing is not applicable, our current assumption is based on a five-year strip price for crude oil and natural gas, with prices subsequent to the fifth year held constant. Should our assumptions regarding forward commodity prices decline 5% or more beyond that used as of December 31, 2019, with all other assumptions unchanged, our Delaware Basin properties would be at risk for impairment. As of December 31, 2019, the carrying amount of our Delaware Basin properties was \$5.5 billion, of which \$3.6 billion was attributable to proved properties, including related Midstream segment assets, with \$1.9 billion attributable to unproved properties.

In addition, an extended commodity price downturn could result in the impairment of other proved or unproved properties or long-lived assets, including equity method investments, intangible assets, goodwill and/or right-of-use assets. A future impairment of property or other long-lived asset could have a significant impact on our deferred tax asset and liability balance, and potentially cause us to establish valuation allowances for our deferred tax assets associated with domestic net operating loss carryforwards, which would result in a corresponding increase in income tax expense.

See [Item 1A, Risk Factors – Crude oil, NGL and natural gas price volatility, including a substantial or extended decline in the price of these commodities, could have a material adverse effect on our results of operations, cash flows, liquidity, and the price of our common stock.](#)

RESULTS OF OPERATIONS – E&P

2019 Significant E&P Highlights:

- increased total average consolidated sales volumes by 3% to 355 MBoe/d, net;
- increased average daily sales volumes for US onshore crude oil by 10% to 120 MBbl/d, net;
- reduced total production expense per BOE by 3% as compared to 2018;
- exceeded 2 Tcf, gross, of natural gas produced from the Tamar field since commencement of operations;
- commenced production from the Leviathan field in December 2019;
- invested in the EMG Pipeline, through our affiliate, EMED Pipeline B.V., enabling future flow of natural gas production from offshore Israel to customers in Egypt;
- reduced capital expenditures, excluding acquisitions, by \$571 million as compared with 2018;
- drilled the Aseng 6P well, offshore Equatorial Guinea, and commenced production in fourth quarter 2019; and
- sanctioned the Alen Gas Monetization project, offshore Equatorial Guinea.

Following is a summarized statement of operations for our E&P business:

(millions)	Year Ended December 31,	
	2019	2018
Oil, NGL and Gas Sales to Third Parties	\$ 3,904	\$ 4,461
Sales of Purchased Oil and Gas	109	20
Income from Equity Method Investments and Other	69	132
Total Revenues	4,082	4,613
Production Expense	1,354	1,358
Exploration Expense	202	129
Depreciation, Depletion and Amortization	2,058	1,819
Gain on Divestitures, Net ⁽¹⁾	—	(340)
Asset Impairments ⁽²⁾	1,160	169
Goodwill Impairment ⁽²⁾	—	1,281
Cost of Purchased Oil and Gas	107	20
Loss (Gain) on Commodity Derivative Instruments	143	(63)
(Loss) Income Before Income Taxes	(1,093)	119

⁽¹⁾ See [Item 8. Financial Statements and Supplementary Data – Note 4. Acquisitions and Divestitures](#).

⁽²⁾ See [Item 8. Financial Statements and Supplementary Data – Note 10. Impairments](#).

Average Oil, NGL and Gas Sales Volumes and Prices Average daily sales volumes from our share of production and average realized sales prices were as follows:

	Average Sales Volumes				Average Realized Sales Prices			
	Crude Oil & Condensate (MBbl/d)	NGLs (MBbl/d)	Natural Gas (MMcf/d)	Total (MBoe/d)	Crude Oil & Condensate (Per Bbl)	NGLs (Per Bbl)	Natural Gas (Per Mcf)	
Year Ended December 31, 2019								
United States	120	68	516	274	\$ 55.68	\$ 14.32	\$ 1.83	
Eastern Mediterranean	—	—	223	37	—	—	5.55	
West Africa ⁽¹⁾	13	—	186	44	61.03	—	0.27	
Total Consolidated Operations	133	68	925	355	56.21	14.32	2.41	
Equity Investment ⁽²⁾	2	4	—	6	58.65	31.77	—	
Total	135	72	925	361	\$ 56.24	\$ 15.40	\$ 2.41	
Year Ended December 31, 2018								
United States ⁽³⁾	114	62	472	255	\$ 61.12	\$ 25.88	\$ 2.53	
Eastern Mediterranean	—	—	237	40	—	—	5.47	
West Africa ⁽¹⁾	16	—	213	51	68.53	—	0.27	
Total Consolidated Operations	130	62	922	346	62.01	25.88	2.76	
Equity Investment ⁽²⁾	2	5	—	7	68.99	42.14	—	
Total	132	67	922	353	\$ 62.10	\$ 27.18	\$ 2.76	

⁽¹⁾ Natural gas from the Alba field is sold under contract for \$0.25 per MMBtu to a methanol plant, an LPG plant, an LNG plant and a power generation plant. The methanol and LPG plants are owned by affiliated entities accounted for under the equity method. See [Items 1. and 2. Business and Properties – Delivery Commitments – West Africa Agreements](#).

⁽²⁾ Volumes represent sales of condensate and LPG from the LPG plant in Equatorial Guinea. See *Income from Equity Method Investments and Other*.

⁽³⁾ Includes 7 MBoe/d for 2018 related to Gulf of Mexico assets sold in second quarter 2018. See [Item 8. Financial Statements and Supplementary Data – Note 4. Acquisitions and Divestitures](#).

An analysis of revenues from sales of crude oil, NGLs and natural gas is as follows:

(millions)	Crude Oil & Condensate	NGLs	Natural Gas	Total
Year Ended December 31, 2018	\$ 2,945	\$ 587	\$ 929	\$ 4,461
Changes due to				
Increase (Decrease) in Sales Volumes	68	48	(15)	101
Decrease in Sales Prices ⁽¹⁾	(277)	(281)	(100)	(658)
Year Ended December 31, 2019	\$ 2,736	\$ 354	\$ 814	\$ 3,904

⁽¹⁾ Changes exclude impacts of commodity derivative instruments. See [Item 8. Financial Statements and Supplementary Data – Note 14. Derivative Instruments and Hedging Activities](#).

Crude Oil and Condensate Sales Revenues Revenues from crude oil and condensate sales decreased in 2019 as compared with 2018 due to the following:

- 9% decrease in average realized prices (see factors impacting global pricing at [Executive Overview – Industry Outlook](#));
- reduction in sales volumes of 5 MBbl/d due to the sale of our Gulf of Mexico assets in second quarter 2018; and
- lower offshore West Africa sales volumes of 3 MBbl/d due to timing of liftings and natural field decline;

partially offset by:

- higher US onshore sales volumes of 11 MBbl/d primarily due to an increase in development activity in the DJ and Delaware Basins.

NGL Sales Revenues Revenues from NGL sales decreased in 2019 as compared with 2018 due to the following:

- 43% decrease in average realized prices (see factors impacting global pricing at [Executive Overview – Industry Outlook](#)); and
- lower Eagle Ford Shale sales volumes of 6 MBbl/d due to reduced activity and natural field decline;

partially offset by:

- higher sales volumes of 12 MBbl/d in the DJ and Delaware Basins due to an increase in development activities.

Natural Gas Sales Revenues Revenues from natural gas sales decreased in 2019 as compared with 2018 due to the following:

- 13% decrease in average realized prices (see factors impacting global pricing at [Executive Overview – Industry Outlook](#));
- lower Eagle Ford Shale sales volumes of 41 MMcf/d due to reduced activity and natural field decline;
- lower West Africa sales volumes of 28 MMcf/d due to natural field decline and planned maintenance at onshore facilities during first quarter 2019, which required shut-in for a portion of the period; and
- lower Israel sales volumes of 14 MMcf/d primarily due to the sale of a 7.5% interest in the Tamar field in March 2018;

partially offset by:

- higher sales volumes of 91 MMcf/d in the DJ and Delaware Basins due to an increase in development activity.

Sales and Cost of Purchased Oil and Gas Sales and cost of purchased oil and gas increased in 2019 as compared with 2018 as we engaged in a full year of third-party sales and purchases of crude oil in the DJ Basin in 2019 compared with only fourth quarter sales and purchases in 2018. We enter into these arrangements for flow assurance on pipelines used to deliver our production to market and to cover shortfalls in equity production.

Income from Equity Method Investments and Other Our share of operations of equity method investments were as follows:

	Year Ended December 31,	
	2019	2018
Net Income (millions)		
AMPCO and Affiliates	\$ 23	\$ 64
Alba Plant	41	71
Dividends (millions)		
AMPCO and Affiliates	\$ 9	\$ 63
Alba Plant	42	93
Sales Volumes		
Methanol (Mt/d)	1,091	1,230
Condensate (MBbl/d)	2	2
LPG (MBbl/d)	4	5
Average Realized Prices		

Methanol (per Mt)	\$	269.73	\$	379.62
Condensate (per Bbl)		58.65		68.99
LPG (per Bbl)		31.77		42.14

Income from equity method investments decreased for 2019 as compared with 2018 due to the following:

- decrease in net income from AMPCO and affiliates primarily due to lower realized methanol prices; and
- decrease in net income from Alba Plant primarily due to lower realized LPG prices.

Production Expense Components of production expense were as follows:

<i>(millions, except unit rate)</i>	Total per BOE ⁽¹⁾		Total		United States ⁽²⁾		Eastern Mediterranean		West Africa	
	⁽²⁾									
Year Ended December 31, 2019										
Lease Operating Expense	\$	4.42	\$	573	\$	460	\$	37	\$	76
Production and Ad Valorem Taxes		1.30		169		169		—		—
Gathering, Transportation and Processing		4.62		599		598		1		—
Other Royalty Expense		0.10		13		13		—		—
Total Production Expense	\$	10.44	\$	1,354	\$	1,240	\$	38	\$	76
Total Production Expense per BOE			\$	10.44	\$	12.41	\$	2.78	\$	4.73
Year Ended December 31, 2018										
Lease Operating Expense	\$	4.78	\$	603	\$	480	\$	26	\$	97
Production and Ad Valorem Taxes		1.46		184		184		—		—
Gathering, Transportation and Processing		4.22		533		533		—		—
Other Royalty Expense		0.30		38		38		—		—
Total Production Expense	\$	10.76	\$	1,358	\$	1,235	\$	26	\$	97
Total Production Expense per BOE			\$	10.76	\$	13.28	\$	1.79	\$	5.20

⁽¹⁾ Consolidated unit rates exclude sales volumes and expenses attributable to equity method investments.

⁽²⁾ US production expense includes charges from our midstream operations that are eliminated on a consolidated basis. See [Item 8. Financial Statements and Supplementary Data – Note 3. Segment Information](#).

Production expense decreased in 2019 as compared with 2018 primarily due to the following:

- decrease in US lease operating expense primarily due to the sale of our Gulf of Mexico assets and cost reduction efforts, notably workover reductions and compression optimization, in the US onshore basins; and
- decrease in other royalty expense due to lower commodity prices;
- decrease in West Africa lease operating expense due to cost reduction efforts across all assets; and
- decrease in production and ad valorem taxes due to production tax refunds;

partially offset by:

- increase in US gathering, transportation and processing (GTP) expense primarily due to increased development activity in the DJ Basin and higher-cost Delaware Basin; and
- increase in Eastern Mediterranean lease operating expense due to planned maintenance activities.

The decrease in the unit rate per BOE for 2019 compared to 2018 is primarily due to cost reduction efforts in US onshore basins and West Africa, partially offset by an increase in GTP expense and an increase in volumes from higher-cost areas within US onshore.

Exploration Expense The increase in exploration expense for 2019 is primarily due to the write-off of \$100 million of Leviathan Deep exploratory well costs. This increase was partially offset by reductions in lease rentals and staff expense as compared with 2018. See [Item 8. Financial Statements and Supplementary Data – Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs](#)

Depreciation, Depletion and Amortization (DD&A) Expense DD&A expense was as follows:

<i>(millions, except unit rate)</i>	Total	United States	Eastern Mediterranean	West Africa	Other Int'l
Year Ended December 31, 2019					
DD&A Expense ⁽¹⁾	\$ 2,058	\$ 1,907	\$ 67	\$ 83	\$ 1
Unit Rate per BOE ⁽²⁾	\$ 15.88	\$ 19.09	\$ 4.91	\$ 5.16	\$ —
Year Ended December 31, 2018					
DD&A Expense ⁽¹⁾	\$ 1,819	\$ 1,642	\$ 60	\$ 115	\$ 2
Unit Rate per BOE ⁽²⁾	\$ 14.42	\$ 17.66	\$ 4.13	\$ 6.17	\$ —

⁽¹⁾ DD&A expense includes accretion of discount on asset retirement obligations (AROs) of \$43 million in 2019 and \$33 million in 2018.

⁽²⁾ Consolidated rates exclude sales volumes and expenses attributable to equity method investments.

Total DD&A expense increased in 2019 as compared with 2018 primarily due to the following:

- capital investment and development activities in the DJ and Delaware Basins resulting in higher sales volumes; and
- increase in Eastern Mediterranean primarily due to the retirement of certain capital assets resulting in accelerated depreciation;

partially offset by:

- decrease resulting from the sale of our Gulf of Mexico assets in second quarter 2018; and
- reduced sales volumes in West Africa, as noted above, from natural field decline.

The unit rate per BOE for 2019 increased as compared with 2018 due to increased development activity in the higher cost oil-rich Delaware Basin and the 2018 sale of lower-cost Tamar reserves, which increased the overall unit rate per BOE. The increase in unit rate is partially offset by the sale of higher-cost production from the Gulf of Mexico assets in second quarter 2018.

Loss (Gain) on Commodity Derivative Instruments Commodity derivative activity was as follows:

For 2019, the loss on commodity derivative instruments was due to the following:

- net cash receipt of \$32 million; and
- net non-cash decrease of \$175 million in the fair value of our net commodity derivative liability, primarily driven by increases in the forward commodity price curve for crude oil.

For 2018, gain on commodity derivative instruments included:

- net cash payment of \$161 million; and
- net non-cash increase of \$224 million in the fair value of our net commodity derivative asset, primarily driven by decreases in the forward commodity price curve for crude oil.

See [Item 8. Financial Statements and Supplementary Data – Note 14. Derivative Instruments and Hedging Activities](#).

RESULTS OF OPERATIONS – MIDSTREAM

2019 Significant Midstream Highlights:

- sold substantially all of our US onshore midstream interests and assets and our incentive distribution rights to Noble Midstream Partners for total consideration of \$1.6 billion;
- expanded our long-haul business by developing strategic relationships in the Delaware Basin, exercising investment options in EPIC Y-Grade and EPIC Crude Holdings, and forming the Delaware Crossing crude oil pipeline joint venture, with total equity contributions of approximately \$590 million; and
- secured long-term takeaway at a lower cost in the DJ Basin through a strategic relationship with Saddlehorn.

Following is a summarized statement of operations for the Midstream segment:

<i>(millions)</i>	Year Ended December 31,	
	2019	2018
Midstream Services Revenues - Third Party	\$ 94	\$ 78
Sales of Purchased Oil and Gas	190	142
(Loss) Income from Equity Method Investments	(18)	40
Intersegment Revenues	427	351
Total Revenues	693	611

Operating Costs and Expenses	150	128
Depreciation, Depletion and Amortization	104	87
Gain on Divestiture, Net	—	(503)
Asset Impairments	—	37
Cost of Purchased Oil and Gas	181	136
Total Expense (Income)	435	(115)
Income Before Income Taxes	\$ 258	\$ 726

Midstream Services Revenues - Third Party The amount of revenue generated by the Midstream segment depends primarily on the volumes of crude oil, natural gas and water for which services are provided to dedicated acreage for our E&P business and to third-party customers. These volumes are affected by the level of drilling and completion activity and by changes in the supply of, and demand for, crude oil, NGLs and natural gas in the markets served directly or indirectly by our midstream assets.

Midstream segment services revenues for 2019 increased \$16 million as compared with 2018 primarily due to increases in crude oil, natural gas and produced water gathering services and fresh water delivery. The increases were due primarily to higher Delaware Basin throughput volumes, a full year of services in the Mustang IDP and a full year of services related to the Black Diamond System, which was acquired in first quarter 2018.

Sales and Cost of Purchased Oil and Gas Sales and cost of purchased oil and gas for 2019 increased \$48 million as compared with 2018 due to an increase in throughput volumes driven by additional well connections.

(Loss) Income from Equity Method Investments The 2019 amount decreased as compared to 2018 due to operating costs incurred by Noble Midstream Partners' equity method investments prior to commencement of full service operations, as well as a decrease in income of \$24 million due to the sale of our investments in CONE Gathering LLC and CNX Midstream Partners LP (NYSE: CNXM) in 2018.

Operating Costs and Expenses Total expense for 2019 increased by \$22 million as compared with 2018 due to an increase in gathering systems operating expense associated with the Delaware Basin CGFs that were completed in 2018, additional expenses associated with the Black Diamond System and expenses associated with the commencement of gathering services in the Mustang IDP in 2018.

DD&A Expense DD&A expense for 2019 increased by \$17 million as compared with 2018 primarily due to certain assets being placed in service throughout 2018, including the Mustang IDP gathering system, the Delaware Basin CGFs, and additional Black Diamond assets. In addition, DD&A expense includes a full year of amortization related to intangible assets acquired in the Saddle Butte acquisition.

Gain on Divestitures, Net See [Item 8. Financial Statements and Supplementary Data – Note 4. Acquisitions and Divestitures](#).

Asset Impairments See [Item 8. Financial Statements and Supplementary Data – Note 10. Impairments](#).

RESULTS OF OPERATIONS – CORPORATE

Interest expenses and other debt-related costs, headquarters depreciation, corporate G&A expenses, exit costs and certain other costs associated with mitigating the effects of our retained Marcellus Shale transportation agreements are recorded at the Corporate level.

Transportation Exit Cost Revenues and expenses associated with retained Marcellus Shale firm transportation contracts were as follows:

(millions)	Year Ended December 31,	
	2019	2018
Sales of Purchased Gas ⁽¹⁾	\$ 90	\$ 113
Cost of Purchased Gas ⁽¹⁾	143	140
Firm Transportation Exit Cost ⁽²⁾	88	—

⁽¹⁾ Relates to third-party mitigation activities we engage in to utilize a portion of our Marcellus Shale transportation commitments. Cost of purchased gas includes utilized and unutilized transportation expense.

⁽²⁾ Includes exit costs related to future commitments to a third-party resulting from a permanent capacity assignment.

See [Item 8. Financial Statements and Supplementary Data – Note 11. Exit Cost – Transportation Commitments](#).

General and Administrative Expense G&A expense was as follows:

<i>(millions, except unit rate)</i>	Year Ended December 31,	
	2019	2018
G&A Expense	\$ 416	\$ 385
Unit Rate per BOE ⁽¹⁾	\$ 3.21	\$ 3.05

⁽¹⁾ Consolidated unit rates exclude sales volumes and expenses attributable to equity method investments.

The 2019 increase to G&A is primarily due to incentive compensation awards, which reflected strong operating performance and major project execution. The increase in the unit rate per BOE for 2019 as compared with 2018 was due to the increase in G&A expense, partially offset by the increase in total sales volumes.

G&A expense is impacted by the number of stock-based awards, the market price of our common stock and price volatility which may result in a higher or lower fair value of stock-based awards as calculated using various valuation models. G&A expense included stock-based compensation expense of \$59 million in 2019 and \$54 million in 2018. See [Item 8. Financial Statements and Supplementary Data – Note 16. Stock-Based and Other Compensation Plans](#).

Loss on Extinguishment of Debt or Facility See [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#).

Interest Expense and Capitalized Interest Interest expense and capitalized interest were as follows:

<i>(millions, except unit rate)</i>	Year Ended December 31,	
	2019	2018
Interest Expense	\$ 362	\$ 355
Capitalized Interest	(102)	(73)
Interest Expense, Net	\$ 260	\$ 282
Unit Rate per BOE ⁽¹⁾	\$ 2.01	\$ 2.23

⁽¹⁾ Consolidated unit rates exclude sales volumes and expenses attributable to equity method investments.

Interest expense for 2019 increased slightly as compared with 2018. See [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#).

Capitalized interest for 2019 increased as compared with 2018 primarily due to higher work in progress amounts related to Leviathan development and additions to our Midstream segment equity method investments engaged in construction activities.

The unit rate per BOE for 2019 decreased as compared with 2018, primarily due to the reduction in net interest expense and the increase in total sales volumes.

Income Taxes See [Item 8. Financial Statements and Supplementary Data – Note 13. Income Taxes](#).

LIQUIDITY AND CAPITAL RESOURCES

Capital Structure/Financing Strategy

In seeking to effectively fund development and monetize our discovered hydrocarbons, we employ a capital structure and financing strategy designed to provide sufficient liquidity throughout commodity price cycles, including a sustained period of low prices. We strive to retain the ability to fund long cycle, multi-year, capital intensive development projects throughout a range of scenarios, while also funding a continuing exploration program and maintaining capacity to capitalize on financially attractive merger and acquisition opportunities. We endeavor to maintain a strong balance sheet and an investment grade debt rating in service of these objectives.

We strive to maintain a minimum liquidity level to address volatility and risk. Our sources of liquidity are primarily cash flows from operations, cash on hand, proceeds from divestitures of properties and other investments, commercial paper borrowings and available borrowing capacity under our Revolving Credit Facilities (defined below). We occasionally access the capital markets to ensure adequate liquidity exists in the form of unutilized capacity under our Revolving Credit Facilities or to refinance scheduled debt maturities.

We may from time to time seek to retire or purchase our outstanding senior notes through cash purchases in the open market, privately negotiated transactions or otherwise. Such repurchases, if any, will depend on prevailing market conditions, our liquidity requirements, contractual restrictions and other factors.

We also evaluate potential strategic farm-out arrangements of our working interests for reimbursement of our capital spending. We periodically consider repatriations of foreign cash to increase our financial flexibility and fund our capital investment program. Additionally, we enter into commodity price hedging arrangements in an effort to mitigate the effects of commodity price volatility and enhance the predictability of cash flows relating to the marketing of a portion of our crude oil and natural gas production.

In 2019, we funded our capital investment program with cash flows from operations, cash on hand, commercial paper borrowings, proceeds from divestments of non-strategic assets, proceeds from the Midstream segment asset divestiture to Noble Midstream Partners, and other sources of funding. During the year, we did not repurchase any shares of Noble Energy common stock under the Board of Directors-authorized \$750 million share repurchase program. As a result of our financing activities, we ended 2019 with almost \$4.5 billion in liquidity, including \$4.0 billion of availability under our Noble Energy Revolving Credit Facility.

2019 Significant Financing Highlights

- initiated a commercial paper program;
- issued and redeemed notes, lowering interest expense and extending debt maturities;
- established a new Noble Midstream Partners term loan;
- increased the Noble Midstream Services Revolving Credit Facility capacity to almost \$1.2 billion;
- secured a \$200 million preferred equity commitment at Noble Midstream Partners; and
- completed our midstream asset sale and simplification to Noble Midstream Partners.

Available Liquidity

Our operating cash flows are a significant source of liquidity. Additional sources of funding were available through debt financing activities, as described above. Overall, we expect to support our 2020 capital investment program with cash flows from operations, cash on hand, proceeds from divestments of non-strategic assets, issuances of commercial paper, borrowings under our Revolving Credit Facilities, and/or other sources of funding.

We believe our current liquidity level and balance sheet, along with our ability to access the capital markets, provide flexibility and that we are well-positioned to fund our business throughout the commodity price cycle. We will continue to evaluate the commodity price environment and our level of capital spending throughout 2020. A downgrade below our current investment grade rating could trigger requirements to post collateral as financial assurance of performance under certain contractual arrangements. See [Item 1A. Risk Factors – Indebtedness may limit our liquidity and financial flexibility](#).

The table below summarizes our cash, debt balances and available liquidity.

	December 31, 2019			December 31, 2018		
	Noble Energy Excluding Noble Midstream Partners	Noble Midstream Partners	Total	Noble Energy Excluding Noble Midstream Partners	Noble Midstream Partners	Total
<i>(millions, except percentages)</i>						
Total Cash ⁽¹⁾	\$ 471	\$ 13	\$ 484	\$ 707	\$ 12	\$ 719
Amounts Available for Borrowing ⁽²⁾	4,000	—	4,000	4,000	—	4,000
Total Liquidity	\$ 4,471	\$ 13	\$ 4,484	\$ 4,707	\$ 12	\$ 4,719
Total Debt ⁽³⁾	\$ 6,089	\$ 1,495	\$ 7,584	\$ 6,115	\$ 560	\$ 6,675
Noble Energy Share of Equity			\$ 8,410			\$ 9,426
Ratio of Debt-to-Book Capital ⁽⁴⁾			47%			41%

⁽¹⁾ Total cash includes \$3 million of restricted cash at December 31, 2018.

⁽²⁾ Excludes amounts available to be borrowed under the Noble Midstream Services Revolving Credit Facility, which is not available to Noble Energy for general corporate purposes.

⁽³⁾ Total debt excludes unamortized debt discount/premium and debt issuance costs. See [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#)

⁽⁴⁾ We define our ratio of debt-to-book capital as total debt divided by the sum of total debt plus Noble Energy's share of equity.

Cash and Cash Equivalents We had approximately \$484 million in cash and cash equivalents at December 31, 2019, \$383 million of which is attributable to our foreign subsidiaries.

Revolving Credit Facilities Noble Energy's \$4.0 billion unsecured revolving credit facility (Revolving Credit Facility) and Noble Midstream Services' revolving credit facility (Noble Midstream Services Revolving Credit Facility), which was increased from \$800 million to almost \$1.2 billion in fourth quarter 2019, both mature in 2023. These facilities are used to fund capital investment programs and acquisitions and may periodically provide amounts for working capital purposes. At December 31, 2019, no amounts were outstanding under Noble Energy's Revolving Credit Facility, and no commercial paper borrowings were outstanding, leaving the entire \$4.0 billion available for borrowing. At December 31, 2019, \$595 million was outstanding under the Noble Midstream Services Revolving Credit Facility, leaving \$555 million of remaining availability. See [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#).

Commercial Paper Program Supported by our investment grade credit rating, in 2019 we established a commercial paper program to provide for short-term funding needs. The program allows for Noble to issue a maximum of \$4.0 billion of unsecured commercial paper notes, supported by Noble Energy's Revolving Credit Facility. The commercial paper program was a significant source of liquidity during 2019. All amounts outstanding were repaid prior to December 31, 2019. See [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#).

Senior Note Issuance and Redemption In October 2019, we issued \$500 million of 3.25% senior notes due October 15, 2029 and \$500 million of 4.20% senior notes due October 15, 2049. Proceeds from the issuance were used to fund the early tender offer and redemption of our \$1.0 billion 4.15% notes due December 15, 2021. As a result, we paid a premium of \$44 million on the extinguishment of debt and recognized a loss in fourth quarter 2019. The transactions resulted in reduced future interest costs and extended debt maturity dates. See [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#).

Noble Midstream Services 2019 Term Loan Credit Facility In August 2019, Noble Midstream Services entered into a term loan agreement, which provides for a three-year senior unsecured term loan credit facility, due August 23, 2022 (2019 Noble Midstream Services Term Loan Credit Facility), that permits aggregate borrowings of up to \$400 million. Proceeds from the term loan were primarily used to repay a portion of the outstanding borrowings under the Noble Midstream Services Revolving Credit Facility. See [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#).

Noble Midstream Services 2018 Term Loan Credit Facility In July 2018, Noble Midstream Services entered into a term loan agreement, which provides for a three-year senior unsecured term loan credit facility, due July 31, 2021 (2018 Noble Midstream Services Term Loan Credit Facility), that permits aggregate borrowings of up to \$500 million. As of December 31, 2019, \$500 million was outstanding under this facility, which was used to repay amounts outstanding under the Noble Midstream Services Revolving Credit Facility. See [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#).

Mezzanine Equity Commitment In March 2019, Noble Midstream Partners obtained a \$200 million preferred equity commitment. \$100 million of the commitment funded immediately and the remaining \$100 million is available for funding until March 2020, subject to certain conditions precedent. See [Item 8. Financial Statements and Supplementary Data – Note 1. Summary of Significant Accounting Policies](#).

Asset Sale to Noble Midstream Partners We received approximately \$1.6 billion in consideration from the sale of substantially all of our remaining midstream interests and assets to Noble Midstream Partners. Consideration included approximately \$670 million in cash, of which \$420 million was funded by the Noble Midstream Services Revolving Credit Facility and approximately \$250 million was funded by a private placement of Noble Midstream Partners common units. See [Note 4. Acquisitions and Divestitures](#).

Dividends We funded a 9% dividend increase in 2019. See [Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities](#).

Cash Flows

The following table summarizes our net cash flows from operating, investing and financing activities:

(millions)	Year Ended December 31,	
	2019	2018
Total Cash Provided By (Used in)		
Operating Activities	\$ 1,998	\$ 2,336
Investing Activities	(3,138)	(1,931)
Financing Activities	905	(399)
Increase (Decrease) in Cash, Cash Equivalents and Restricted Cash	\$ (235)	\$ 6

Operating Activities The decrease in cash provided by operating activities in 2019 compared with 2018 was primarily driven by a decrease in revenues resulting from lower commodity prices, partially offset by increases in sales volumes and lower production costs attributable to cost saving initiatives. In addition, we received cash settlements of commodity derivative instruments for \$32 million in 2019, compared with cash payments of \$161 million in 2018 and we made cash interest payments related to outstanding debt of \$310 million in 2019 compared with \$343 million in 2018.

Investing Activities Increases in cash used in investing activities primarily related to funding of new equity method investments of \$99 million in 2019 compared with zero in 2018 and reduced divestiture activity resulting in proceeds from divestitures of \$173 million in 2019 compared with \$2.0 billion in 2018. These amounts were partially offset by cash used in acquisitions of \$653 million in 2018, compared to none in 2019, as well as a \$75 million decrease in spending on property, plant and equipment driven by our focus on improving cost structure and capital efficiencies during 2019, lower investment in

midstream infrastructure, and the timing of Leviathan field development costs, which were lower in 2019 than the peak year of capital investment in 2018. See [Item 8. Financial Statements and Supplementary Data – Note 4. Acquisitions and Divestitures](#) and [Item 8. Financial Statements and Supplementary Data – Note 5. Equity Method Investments](#).

Financing Activities Increases in cash provided by financing activities include net borrowings of \$35 million in 2019 on the Noble Midstream Services Revolving Credit Facility, compared with net repayments of \$25 million in 2018, and having no net repayments under the Revolving Credit Facility in 2019 compared with \$230 million in 2018. Additionally, repayments of senior notes, net of proceeds from senior note issuances, was \$3 million in 2019 compared with \$384 million of repayments in 2018. In 2019, Noble Midstream Partners received net proceeds of \$243 million from the issuance of Noble Midstream Partners common units, which was used to fund Noble Midstream Partners' acquisition of our remaining midstream assets. We did not repurchase shares under our share repurchase program in 2019, compared with spending of \$295 million in 2018. In 2019, we received contributions from noncontrolling interest owners of \$37 million compared with \$353 million in 2018.

See [Item 8. Financial Statements and Supplementary Data – Note 4. Acquisitions and Divestitures](#), [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#) and [Item 8. Financial Statements and Supplementary Data – Consolidated Statements of Cash Flows](#).

Acquisition and Capital Expenditures

Our expenditures (on an accrual basis) were as follows:

(millions)	Year Ended December 31,	
	2019	2018
Unproved Property Acquisition ⁽¹⁾	\$ 37	\$ 41
Proved Property Acquisition	4	—
Exploration	38	25
Development	2,074	2,658
Midstream	230	727
Corporate	66	60
Total	\$ 2,449	\$ 3,511
Additions to Equity Method Investments⁽²⁾		
EMED Pipeline B.V.	\$ 189	\$ —
EPIC Y-Grade	174	—
EPIC Crude Holdings	358	—
Delaware Crossing	72	—
Other	6	—
Total Additions to Equity Method Investments	\$ 799	\$ —
Increase in Finance Lease Obligations	\$ 7	\$ 14

⁽¹⁾ Amounts relate to US onshore undeveloped leasehold activity.

⁽²⁾ Amounts include capitalized interest that will be amortized into earnings over the useful life of the related assets.

Development costs decreased in 2019 as compared with 2018 due to our focus on US onshore capital efficiencies and near-term completion of the Leviathan development activities. Costs include approximately \$1.6 billion for US onshore and \$482 million for Eastern Mediterranean, primarily related to Leviathan.

Midstream costs incurred in 2018 primarily relate to constructing the Mustang IDP gathering system and Delaware Basin CGFs and were higher than 2019 costs which included expansion of existing infrastructure. In addition, midstream expenditures for 2018 included \$206 million related to the Saddle Butte acquisition.

Off-Balance Sheet Arrangements

We may enter into off-balance sheet arrangements and transactions that can give rise to material off-balance sheet obligations. As of December 31, 2019, material off-balance sheet arrangements and transactions that we have entered into included transportation and gathering agreements, undrawn letters of credit and guarantees, all of which are customary in the oil and gas industry (see cross references to the Notes to the Financial Statements in the table below). Other than these aforementioned arrangements, we have no transactions, arrangements or other relationships with unconsolidated entities or other persons that are reasonably likely to materially affect our financial condition, results of operations, liquidity or availability of or requirements for capital resources. See *Contractual Obligations*, below.

Contractual Obligations

The following table summarizes certain contractual obligations as of December 31, 2019 that are reflected in the consolidated balance sheets and/or disclosed in the accompanying notes. Unless otherwise noted, all amounts are undiscounted and are net to our interest.

<i>(millions)</i>	Note Reference ⁽¹⁾	2020	2021 and 2022	2023 and 2024	2025 and beyond	Total
Long-Term Debt ⁽²⁾	Note 8	\$ —	\$ 900	\$ 1,345	\$ 5,134	\$ 7,379
Long-Term Debt Interest Payments and Revolving Credit Facility Commitment Fee ⁽³⁾	Note 8	342	661	580	4,458	6,041
Operating Lease Obligations ⁽⁴⁾	Note 9	100	101	41	37	279
Finance Lease Obligations ⁽⁴⁾	Note 9	52	65	44	86	247
Marcellus Shale Firm Transportation Obligations ⁽⁵⁾	Note 11	143	187	175	675	1,180
Purchase and Service Obligations ⁽⁶⁾	Note 12	135	42	32	72	281
Gathering, Transportation and Processing Obligations	Note 12	174	332	302	334	1,142
Other Liabilities ⁽⁷⁾						
Asset Retirement Obligations ⁽⁸⁾	Note 7	85	170	34	525	814
Commodity Derivative Instruments ⁽⁹⁾	Note 14	36	1	—	—	37
Total Contractual Obligations		\$ 1,067	\$ 2,459	\$ 2,553	\$ 11,321	\$ 17,400

⁽¹⁾ References are to the Notes accompanying [Item 8. Financial Statements and Supplementary Data](#).

⁽²⁾ Long-term debt excludes unamortized discounts, premiums, debt issuance costs and finance lease obligations.

⁽³⁾ Interest payments and commitment fees are based on the total debt balance, scheduled maturities and interest rates in effect at December 31, 2019.

⁽⁴⁾ Annual lease payments exclude regular maintenance and operational costs.

⁽⁵⁾ Amount includes firm transportation exit cost accruals resulting from certain permanent capacity assignments.

⁽⁶⁾ Purchase and service obligations represent contractual agreements to purchase goods or services that are enforceable, legally binding and specify all significant terms, including fixed and minimum quantities to be purchased; fixed, minimum or variable price provisions; and the approximate timing of the transaction.

⁽⁷⁾ The table excludes deferred compensation liabilities of \$133 million as specific payment dates are unknown. See [Item 8. Financial Statements and Supplementary Data – Note 16. Stock-Based and Other Compensation Plans](#)

⁽⁸⁾ AROs are discounted.

⁽⁹⁾ Amount represents commodity derivative instruments that were in a net payable position with the counterparty at December 31, 2019.

Additional contractual commitments are as follows:

Exploration Commitments The terms of some of our PSCs, licenses or concession agreements may require us to conduct certain exploration activities, including drilling one or more exploratory wells or acquiring seismic data, within specific time periods. These obligations can extend over several years, and failure to conduct such exploration activities within the prescribed periods could lead to loss of leases or exploration rights and/or penalty payments.

Continuous Development Obligations Certain of our Delaware Basin properties are held through continuous development obligations. Therefore, we are contractually obligated to fund a level of development activity in these areas which could be substantial, or exercise options with land owners to extend leases. Failure to meet these obligations may result in the loss of leases.

Mezzanine Equity Commitment Preferred equity is perpetual and has a 6.5% annual dividend rate. The preferred equity partner can request redemption at a pre-determined base return following the later of the sixth anniversary of the preferred equity closing in March 2019 or the fifth anniversary of the completion date of the EPIC Crude Oil Pipeline.

OIL Contingency As of December 31, 2019, approximately \$22 million was accrued as a theoretical withdrawal premium associated with our membership in OIL. OIL is a mutual insurance company which insures specific property, pollution liability and other catastrophic risks. As part of our membership, we are contractually committed to pay termination fees should we elect to withdraw from OIL. We do not anticipate withdrawing from OIL and the potential termination fee is calculated annually based on OIL's past losses.

Letters of Credit In the ordinary course of business, we maintain letters of credit and bank guarantees with a variety of banks in support of certain performance obligations of our subsidiaries. Outstanding letters of credit and bank guarantees, including Noble Midstream Partners, totaled approximately \$132 million at December 31, 2019.

Ratings Triggers We do not have triggers on any of our corporate debt that would cause an event of default in the case of a downgrade of our credit rating. See [Item 1A. Risk Factors - Indebtedness may limit our liquidity and financial flexibility](#).

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of the consolidated financial statements requires our management to make a number of estimates and assumptions relating to the reported amounts of assets and liabilities and the disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the period. When alternatives exist among various accounting methods, the choice of accounting method can have a significant impact on reported amounts. The following is a discussion of the accounting policies, estimates and judgments which management believes are most significant in the application of US GAAP used in the preparation of the consolidated financial statements.

Reserves

Description We estimate proved oil and gas reserves according to the definition of proved reserves provided by the SEC and the Financial Accounting Standards Board (FASB). Reserves estimates have a significant impact on our financial statements as they are used as an input in the calculation of DD&A expense and in impairment assessments for crude oil and natural gas properties.

Judgment and Uncertainties The accuracy of any reserves estimate is a function of the quality of available data and of engineering and geological interpretation and judgment. Commodity prices and development and production costs are factors used in determining reserves economics and reserves estimates. As a result, our reserves estimates will change in the future due to commodity price volatility and cost changes, as well as due to new information obtained from development drilling and production history.

Effect if Actual Results Differ from Assumptions Our reserves estimates are based on year end cost, development, and production data and on historical 12-month average commodity price data. Results of drilling, testing, and production subsequent to the date of the estimate may justify revision of such estimate. Accordingly, reserves estimates are often different from the quantities of crude oil, NGLs and natural gas that are ultimately recovered due to reservoir performance and new geological and geophysical data. Additionally, increases in future drilling, development, production and abandonment costs and changes in commodity prices may result in future revisions to our reserves.

Estimates of proved crude oil, NGL and natural gas reserves significantly affect our DD&A expense. For example, if estimates of proved reserves decline, the DD&A rate will increase, resulting in a decrease in net income. For 2019, a 10% reduction in estimates of proved reserves across all properties would have increased DD&A expense by approximately \$229 million.

A decline in estimates of proved reserves could also cause us to perform an impairment analysis to determine if the carrying amount of crude oil and natural gas properties exceeds fair value and could result in an impairment charge, which would reduce earnings. See [Item 8. Financial Statements and Supplementary Data – Supplemental Oil and Gas Information \(Unaudited\)](#).

Oil and Gas Properties – Successful Efforts Method of Accounting

Description We account for crude oil and natural gas properties under the successful efforts method of accounting which results in the capitalization of costs directly related to specific oil and gas reserves when results are positive and expensing of certain costs, including geological and geophysical costs and delay rentals, during the periods the costs are incurred, and, in the case of dry hole costs, in the period the well is deemed non-commercial.

The alternative method of accounting for crude oil and natural gas properties is the full cost method under which geological and geophysical costs, exploratory dry holes and delay rentals are capitalized as assets and charged to earnings in future periods as a component of DD&A expense. In addition, capitalized costs are accumulated in pools on a country-by-country basis. DD&A is computed on a country-by-country basis, and capitalized costs are limited on the same basis through the application of a ceiling test.

Judgment and Uncertainties The determination of the carrying value of our oil and gas properties includes assessment of impairment and the calculation of DD&A expense. We assess our oil and gas properties for possible impairment whenever events or circumstances indicate that the carrying value of the asset may not be recoverable. Our assessment involves a high degree of estimation uncertainty as it requires us to make assumptions and apply judgment to estimate future net undiscounted cash flows related to proved reserves. Such assumptions include commodity prices, capital spending, production and abandonment costs and reservoir data. In cases where unproved reserve cash flows are utilized to assess properties for impairment, we apply the same pricing, cost and future production assumptions. We also apply significant judgment in assessing entity-specific assumptions and assumptions relating, but not limited to, potential impacts of the political and regulatory climate on future development activity, current exploration plans, favorable or unfavorable exploration activity on the property being evaluated and/or adjacent properties, our geologists' evaluation of the property, and the remaining lease term of the property. Negative revisions in estimates of reserves quantities, expectations of decreasing commodity prices, or rising

operating or development costs could result in a reduction in undiscounted future cash flows, potentially indicating an impairment.

An impairment is indicated if, as a result of the assessment, an asset's carrying value exceeds its future net undiscounted cash flows. Once an impairment is indicated, we estimate the asset's fair value as the carrying value of the asset may not be recoverable. In the absence of comparable market data, fair value is estimated using a discounted net cash flow model. Cash flows are discounted using a risk-adjusted rate and compared to the carrying value in determining the amount of impairment expense to record. Estimated future cash flows are based on management's expectations for the future and include estimates of crude oil, natural gas and NGL reserves and future commodity prices, revenues and operating and development costs.

For the purpose of impairment assessment as of December 31, 2019, the undiscounted future net cash flows included five-year strip prices for crude oil and natural gas, with prices subsequent to the fifth year held constant as the benchmark price, unless contractual arrangements designated the price to be used. Capital and operating costs were estimated assuming 0% escalation. As a result of the assessment, an impairment of our Eagle Ford Shale assets was indicated. We then estimated the fair value of the assets and reduced the carrying value of the assets to fair value, resulting in impairment expense of \$1.2 billion. See [Item 8. Financial Statements and Supplementary Data – Note 10. Impairments](#).

For capitalized exploratory well costs, significant judgment is required in order to determine whether sufficient progress has been made in assessing the reserves and the economic and operational viability of a project in order to continue capitalization of such costs. Such assessment requires consideration of the following factors: commitment of project personnel, costs incurred to assess reserves and potential development, progress of economic, legal, political and environmental aspects of potential development, existence or active negotiations of agreements with governments and venture partners or sales contracts with customers, identification of existing transportation and other infrastructure that is or will be available for the project and other factors. Consideration of these factors requires us to make assumptions and apply judgment to assess industry and economic conditions, as well as our future drilling and development plans. Future changes in our exploratory and drilling activities or economic conditions may result in the determination not to pursue certain projects, resulting in future write-offs of the capitalized exploratory well costs.

Calculation of unit-of-production rates for DD&A purposes is performed on a field-by-field basis and includes estimation of the period-end reserves base and production data for each respective field, including estimates of production for non-operated properties.

Effect if Actual Results Differ from Assumptions At year end, the net book value of our unproved properties includes significant amounts allocated in previous business combinations or acquisitions. Unfavorable revisions to our reserves and/or changes in our exploration and development plans or the economic, political or regulatory environment in areas where we operate, or changes in the availability of funds for future activities may result in abandonment and impairment of unproved leases and oil and gas properties. Unfavorable changes in pricing and cost assumptions in the future may result in negative revisions to proved and/or unproved reserves and associated cash flows, causing us to record impairment of proved and/or unproved oil and gas properties. An impairment of a proved or unproved property could result in a significant decrease in earnings.

If management determines that future appraisal drilling or development activities are unlikely to occur, associated suspended exploratory well costs would be charged to exploration expense in future periods, resulting in a decrease in earnings. See [Item 8. Financial Statements and Supplementary Data – Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs](#).

Furthermore, a change in groupings of our oil and gas properties for the purpose of the DD&A calculation and impairment review could affect the calculation of unit-of-production rates, DD&A expense and determination of impairment.

Exit Costs

Description Our consolidated balance sheets include accrued exit cost liabilities relating to retained Marcellus Shale natural gas firm transportation contracts.

Judgment and Uncertainties We are required to make significant judgments and estimates regarding the timing and amount of recognition of exit cost liabilities, taking into consideration current commercialization activities related to the retained firm transportation contracts and/or the potential occurrence of a cease-use date. We must consider, among other factors, the status of negotiations with counterparties regarding permanent assignment or capacity release of our contract commitments and the likelihood of capacity utilization through purchase of third-party natural gas, which reduces unutilized volume commitments.

Additionally, any subsequent changes in interest rates and/or credit risk will affect the discount rate used to calculate the present value of expected future cash flows associated with our existing contract commitments. There are inherent uncertainties surrounding the recording of exit cost liabilities, and, in future periods, a number of factors could significantly change our estimate of such obligations or result in recognition of additional liability.

Effect if Actual Results Differ from Assumptions Although we based the initial fair value estimate of our accrued exit cost liabilities on assumptions we believed to be reasonable, those assumptions were inherently unpredictable and uncertain. Changes in assumptions, such as a reduced likelihood of capacity utilization through purchase of third-party natural gas, could have resulted in a higher exit cost accrual, higher current period expense, and lower future expense. For example, as of December 31, 2019, we have a significant remaining financial commitment associated with Marcellus Shale retained contracts. We cannot guarantee that our current commercialization efforts for these contracts will be successful, and, in the future, we may recognize substantial future liabilities, at fair value, for the net amount of the estimated remaining commitments under these contracts, with the offsetting charge reducing our earnings. See [Item 8. Financial Statements and Supplementary Data – Note 11. Exit Cost – Transportation Commitments](#).

Income Tax Expense and Deferred Tax Assets

Description Our consolidated balance sheets include deferred tax assets and liabilities relating to temporary differences, operating losses, and tax-credit carryforwards. Valuation allowances may reduce the deferred tax assets if it is more likely than not that some portion or all of the deferred tax assets will not be realized.

Judgment and Uncertainties Estimates of amounts of income tax to be recorded involve interpretation of complex tax laws as well as assessment of the effects of foreign taxes on domestic taxes, and estimates regarding the timing and amounts of future repatriation of earnings from controlled foreign corporations.

In determining whether a valuation allowance is required for our deferred tax asset balances, we consider all available evidence (both positive and negative) including, among other factors, current financial position, results of operations, projected future taxable income, tax planning strategies and new tax legislation. Significant judgment is involved in this determination as we are required to make assumptions about future commodity prices, projected production rates, timing of development activities, profitability of future business strategies and forecasted economics in the oil and gas industry. Judgment is also required in considering the relative weight of negative and positive evidence. Additionally, changes in the effective tax rate resulting from changes in tax law and our level of earnings may limit utilization of deferred tax assets and will affect valuation of deferred tax balances in the future.

Effect if Actual Results Differ from Assumptions We continue to monitor facts and circumstances in the reassessment of the likelihood that operating loss carryforwards, credits and other deferred tax assets will be utilized prior to their expiration. Changes to our current financial position, results of operations, projected future taxable income, tax planning strategies and/or new tax legislation may be deemed significant enough to necessitate a change to our deferred tax asset valuation allowances in the future, in which case the increases or decreases could significantly impact net income through offsetting changes in income tax expense. See [Item 8. Financial Statements and Supplementary Data – Note 13. Income Taxes](#).

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Commodity Price Risk

We are exposed to market risk in the normal course of business operations, and the volatility of commodity prices continues to impact the oil and gas industry.

Derivative Instruments Held for Non-Trading Purposes Due to commodity price volatility, we may use derivative instruments as a means of managing our exposure to price changes. At December 31, 2019, we had various open commodity derivative instruments. Changes in the fair value of commodity derivative instruments are reported in earnings in the period in which they occur. Our open commodity derivative instruments were in a net liability position with a fair value of \$22 million. Based on the December 31, 2019 published commodity futures price curves for the underlying commodities, a hypothetical price increase of 10% per Bbl for both crude oil and NGLs and 10% per MMBtu for natural gas would increase the fair value of our net commodity derivative liability by approximately \$121 million.

Even with certain hedging arrangements in place to mitigate the effect of commodity price volatility, our 2020 revenues and results of operations could be adversely affected if commodity prices were to decline. See [Item 1A. Risk Factors – Commodity hedging transactions may limit our potential gains or fail to fully protect us from declines in commodity prices](#) and [Item 8. Financial Statements and Supplementary Data – Note 14. Derivative Instruments and Hedging Activities](#).

Interest Rate Risk

Changes in interest rates affect the amount of interest we pay on certain of our borrowings. Borrowings under our commercial paper program, the Revolving Credit Facility, Noble Midstream Services Revolving Credit Facility and Noble Midstream Services Term Loan Credit Facilities, which as of December 31, 2019 total \$1.5 billion and have a weighted average interest rate of 2.92%, are subject to variable interest rates which expose us to the risk of earnings or cash flow loss due to potential increases in market interest rates. A change in the interest rate applicable to amounts, if any, related to these debt agreements would have had a de minimis impact on our consolidated net loss. See [Item 8. Financial Statements and Supplementary Data – Note 8. Long-Term Debt](#).

While we currently have no interest rate derivative instruments as of December 31, 2019, we may invest in such instruments in the future in order to mitigate interest rate risk.

LIBOR Transition London Inter-bank Offered Rate (LIBOR) is a commonly used indicative measure of the average interest rate at which major global banks could borrow from one another. Certain of our commercial agreements use LIBOR as a “benchmark” or “reference rate” for various commercial terms. It is currently expected that the LIBOR benchmark will be discontinued after 2021. We are currently reviewing our contracts that extend past 2021 to determine their exposure to LIBOR, some of which contain an existing LIBOR alternative. Where there is not an alternative, we expect to replace the LIBOR benchmark with an alternative reference rate such as the Secured Overnight Financing Rate. We do not expect the transition to an alternative rate to have a significant impact on our business, operations or liquidity.

Foreign Currency Risk

The US dollar is considered the functional currency for each of our international operations. Substantially all of our international crude oil, NGL and natural gas production is sold pursuant to US dollar denominated contracts. Transactions, such as operating costs and administrative expenses that are paid in a foreign currency, are remeasured into US dollars and recorded in the financial statements at prevailing currency exchange rates. Certain monetary assets and liabilities, for example certain local working capital items, are denominated in a foreign currency and remeasured into US dollars. A reduction in the value of the US dollar against currencies of other countries in which we have material operations could result in the use of additional cash to settle operating, administrative and tax liabilities. Net transaction gains and losses were de minimis for 2019, 2018 and 2017.

We currently have no foreign currency derivative instruments outstanding. However, we may enter into foreign currency derivative instruments in the future if we determine that it is necessary to invest in such instruments in order to mitigate our foreign currency exchange risk.

Item 8. Financial Statements and Supplementary Data

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Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate "internal control over financial reporting," as defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934, as amended. Our internal control over financial reporting is a process designed under the supervision of our Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

Because of its inherent limitations, internal control over financial reporting may not detect or prevent misstatements. Projections of any evaluation of the effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or processes may deteriorate.

As of December 31, 2019, our management assessed the effectiveness of our internal control over financial reporting based on the criteria for effective internal control over financial reporting established in *Internal Control – Integrated Framework (2013)*, issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the assessment, management determined that we maintained effective internal control over financial reporting as of December 31, 2019, based on those criteria.

KPMG LLP, the independent registered public accounting firm that audited our consolidated financial statements included in this Annual Report on Form 10-K, has issued an attestation report on the effectiveness of internal control over financial reporting as of December 31, 2019 which is included herein.

Noble Energy, Inc.

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Noble Energy, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Noble Energy, Inc. and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations and comprehensive (loss) income, cash flows, and shareholders' equity for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 12, 2020 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of *Accounting Standards Update No. 2016-02, Leases*.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Assessment of the impact of estimated proved oil and gas reserves on depletion expense related to producing oil and gas properties

As discussed in Note 1 to the consolidated financial statements, the Company calculates depletion expense related to producing oil and gas properties using the unit-of-production method. Under this method, capitalized costs of producing oil and gas properties, along with support equipment and facilities, are depleted to expense over proved oil and gas reserves. For the year ended December 31, 2019, the Company recorded depreciation, depletion and amortization expense of \$2,197 million. The estimation of proved oil and gas reserves requires the expertise of professional petroleum reserve engineers who take into consideration forecasted production. The Company's internal reserve engineers prepare an estimate of the proved oil and gas reserves. The Company engages external reserve engineers to independently evaluate the proved oil and gas reserves estimated by the Company.

We identified the assessment of the impact of estimated proved oil and gas reserves on depletion expense related to producing oil and gas properties as a critical audit matter. Complex auditor judgment was required in evaluating the Company's estimate of proved oil and gas reserves, which was an input to the depletion expense calculation. Specifically, auditor judgment was required to evaluate the forecasted production of proved oil and gas reserves.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's depletion process, including controls related to the forecasted production of proved oil and gas reserves. We analyzed and recalculated the depletion expense for compliance with industry and regulatory standards. We assessed the methodology used by the Company's internal reserve engineers to estimate proved oil and gas reserves. We assessed the competence, capabilities, and objectivity of the Company's internal reserve engineers, who estimated the proved oil and gas reserves, and the external reserve engineers engaged by the Company. We compared the forecasted production used by the Company to historical production rates. We read the findings of the Company's external reserve engineers in order to understand the method and assumptions used by the engineers in connection with our evaluation of the Company's reserve estimates.

Assessment of recoverability of oil and gas properties in the Eagle Ford Shale and in the Delaware Basin

As discussed in Note 1 and 10 to the consolidated financial statements, the Company routinely assesses its oil and gas properties for impairment indicators. If an impairment indicator is identified in relation to one or more oil and gas properties, an undiscounted cash flow analysis is required to quantitatively evaluate recoverability. The Company estimates future net cash flows expected in connection with the oil and gas property and compares such future net cash flows to the carrying amount of the oil and gas property to determine if the carrying amount is recoverable. When the carrying amount of an oil and gas property exceeds its estimated undiscounted future net cash flows, the carrying amount is reduced to estimated fair value. Estimated future net cash flows used to estimate fair value are based on the Company's forecasted production of oil and gas reserves, commodity prices based on published forward price curves or contract prices as of the date of the estimate, operating and development costs, and a discount rate. The Company recorded an impairment of \$1.2 billion related to the Eagle Ford Shale proved properties and did not record any impairment related to the Delaware Basin oil and gas properties.

We identified the assessment of recoverability of oil and gas properties in the Eagle Ford Shale and in the Delaware Basin as a critical audit matter. There was a high degree of subjective auditor judgment in evaluating the key assumptions used to estimate the undiscounted future net cash flows of oil and gas properties in the Delaware Basin and the discounted future net cash flows of oil and gas properties in the Eagle Ford Shale. The key assumptions were the estimated future commodity prices, including relevant market differentials, forecasted production of oil and gas reserves, risk adjustment factors associated with oil and gas reserves, estimated future operating and development costs, and a discount rate applied to the cash flows.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's oil and gas property impairment process, including controls related to the key assumptions. We compared forecasted commodity prices to publicly available market information. We evaluated the Company's undiscounted future net cash flows by comparing the Company's forecasted production of oil and gas reserves, development costs, and operating costs to historical results. We evaluated risk adjustment factors against supporting information used by the Company and guideline ranges by reserve class from published industry surveys. We evaluated the competence, capabilities, and objectivity of the Company's internal reserve engineers, who estimated the reserves, including the applicable risk adjustment factors. In addition, we involved a valuation professional with specialized skills and knowledge, who assisted in evaluating the discount rate used in the valuation, by comparing it against a discount rate range that was independently developed using publicly available market data for comparable entities.

/s/ KPMG LLP

We have served as the Company's auditor since 2002.

Houston, Texas
February 12, 2020

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Noble Energy, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Noble Energy, Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of operations and comprehensive (loss) income, cash flows, and shareholders' equity for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements), and our report dated February 12, 2020 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Controls over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Houston, Texas
February 12, 2020

Noble Energy, Inc.
Consolidated Statements of Operations and Comprehensive (Loss) Income
(millions, except per share amounts)

	Year Ended December 31,		
	2019	2018	2017
Revenues			
Oil, NGL and Gas Sales	\$ 3,904	\$ 4,461	\$ 4,060
Sales of Purchased Oil and Gas	389	275	—
Other Revenue	145	250	196
Total	4,438	4,986	4,256
Costs and Expenses			
Production Expense	1,137	1,197	1,141
Exploration Expense	202	129	188
Depreciation, Depletion and Amortization	2,197	1,934	2,053
General and Administrative	416	385	415
Cost of Purchased Oil and Gas	431	296	—
Gain on Divestitures, Net	—	(843)	(326)
Asset Impairments	1,160	206	70
Goodwill Impairment	—	1,281	—
Loss on Marcellus Shale Upstream Divestiture and Other	—	—	2,379
Other Operating Expense, Net	214	50	138
Total	5,757	4,635	6,058
Operating (Loss) Income	(1,319)	351	(1,802)
Other Expense			
Loss (Gain) on Commodity Derivative Instruments	143	(63)	(63)
Loss on Extinguishment of Debt or Facility	44	8	98
Interest, Net of Amount Capitalized	260	282	354
Other Non-Operating Expense (Income), Net	10	(16)	—
Total	457	211	389
(Loss) Income Before Income Taxes	(1,776)	140	(2,191)
Income Tax (Benefit) Expense	(343)	126	(1,141)
Net (Loss) Income and Comprehensive (Loss) Income Including Noncontrolling Interests	(1,433)	14	(1,050)
Less: Net Income and Comprehensive Income Attributable to Noncontrolling Interests	79	80	68
Net Loss and Comprehensive Loss Attributable to Noble Energy	\$ (1,512)	\$ (66)	\$ (1,118)
Loss Attributable to Noble Energy per Common Share			
Basic and Diluted	\$ (3.16)	\$ (0.14)	\$ (2.38)
Weighted Average Number of Shares Outstanding			
Basic and Diluted	478	483	469

The accompanying notes are an integral part of these financial statements.

Noble Energy, Inc.
Consolidated Balance Sheets
(millions)

ASSETS	December 31, 2019	December 31, 2018
Current Assets		
Cash and Cash Equivalents	\$ 484	\$ 716
Accounts Receivable, Net	730	616
Other Current Assets	148	418
Total Current Assets	1,362	1,750
Property, Plant and Equipment		
Oil and Gas Properties (Successful Efforts Method of Accounting)	30,404	29,002
Property, Plant and Equipment, Other	1,083	891
Total Property, Plant and Equipment, Gross	31,487	29,893
Accumulated Depreciation, Depletion and Amortization	(14,036)	(11,474)
Total Property, Plant and Equipment, Net	17,451	18,419
Other Noncurrent Assets	1,834	841
Total Assets	\$ 20,647	\$ 21,010
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current Liabilities		
Accounts Payable - Trade	\$ 1,250	\$ 1,207
Other Current Liabilities	719	519
Total Current Liabilities	1,969	1,726
Long-Term Debt	7,477	6,574
Deferred Income Taxes	662	1,061
Other Noncurrent Liabilities	1,378	1,165
Total Liabilities	11,486	10,526
Commitments and Contingencies		
Mezzanine Equity		
Redeemable Noncontrolling Interest, Net	106	—
Shareholders' Equity		
Preferred Stock - Par Value \$1.00 per share; 4 Million Shares Authorized; None Issued	—	—
Common Stock - Par Value \$0.01 per share; 1 Billion Shares Authorized; 522 Million and 520 Million Shares Issued, respectively	5	5
Additional Paid in Capital	8,927	8,203
Accumulated Other Comprehensive Loss	(31)	(32)
Treasury Stock, at Cost; 39 Million Shares	(732)	(730)
Retained Earnings	241	1,980
Noble Energy Share of Equity	8,410	9,426
Noncontrolling Interests	645	1,058
Total Shareholders' Equity	9,055	10,484
Total Liabilities, Mezzanine Equity and Shareholders' Equity	\$ 20,647	\$ 21,010

The accompanying notes are an integral part of these financial statements.

Noble Energy, Inc.
Consolidated Statements of Cash Flows
(millions)

	Year Ended December 31,		
	2019	2018	2017
Cash Flows From Operating Activities			
Net (Loss) Income Including Noncontrolling Interests	\$ (1,433)	\$ 14	\$ (1,050)
Adjustments to Reconcile Net (Loss) Income to Net Cash Provided by Operating Activities			
Depreciation, Depletion and Amortization	2,197	1,934	2,053
Loss on Marcellus Shale Upstream Divestiture and Other	—	—	2,379
Gain on Divestitures, Net	—	(843)	(326)
Asset Impairments	1,160	206	70
Goodwill Impairment	—	1,281	—
Deferred Income Tax Benefit	(434)	(70)	(1,227)
Loss on Extinguishment of Debt or Facility	44	4	98
Loss (Gain) on Commodity Derivative Instruments	143	(63)	(63)
Net Cash Received (Paid) in Settlement of Commodity Derivative Instruments	32	(161)	13
Stock Based Compensation	68	62	104
Firm Transportation Exit Cost	88	—	—
Noncash Exploration Expense	100	2	71
Other Adjustments for Noncash Items Included in Net (Loss) Income	98	17	(21)
Changes in Operating Assets and Liabilities			
(Increase) Decrease in Accounts Receivable	(6)	156	(171)
Increase (Decrease) in Accounts Payable	9	(63)	248
Other Current Assets and Liabilities, Net	94	(14)	(107)
Other Operating Assets and Liabilities, Net	(162)	(126)	(120)
Net Cash Provided by Operating Activities	1,998	2,336	1,951
Cash Flows From Investing Activities			
Additions to Property, Plant and Equipment	(2,524)	(3,279)	(2,649)
Acquisitions, Net of Cash Received	—	(653)	(954)
Additions to Equity Method Investments	(799)	—	(68)
Net Proceeds from Divestitures	173	1,999	2,073
Other	12	2	(19)
Net Cash Used in Investing Activities	(3,138)	(1,931)	(1,617)
Cash Flows From Financing Activities			
Proceeds from Revolving Credit Facility	50	1,580	1,585
Repayment of Revolving Credit Facility	(50)	(1,810)	(1,355)
Repayment of Term Loan Facility	—	—	(550)
Proceeds from Noble Midstream Services Revolving Credit Facility	1,290	777	325
Repayment of Noble Midstream Services Revolving Credit Facility	(755)	(802)	(240)
Proceeds from Noble Midstream Services Term Loan Credit Facilities	400	500	—
Repayment of Senior Notes	(1,053)	(384)	(1,114)
Repayment of Clayton Williams Energy Long-term Debt	—	—	(595)
Proceeds from Issuance of Senior Notes	1,000	—	1,086
Dividends Paid, Common Stock	(227)	(208)	(190)
Purchase and Retirement of Common Stock	—	(295)	—
Proceeds from Issuance of Mezzanine Equity, Net of Offering Costs	97	—	—
Issuance of Noble Midstream Partners Common Units, Net of Offering Costs	243	—	312
Contributions from Noncontrolling Interest Owners	37	353	19
Other	(127)	(110)	(114)
Net Cash Used in Financing Activities	905	(399)	(831)
(Decrease) Increase in Cash, Cash Equivalents, and Restricted Cash	(235)	6	(497)
Cash, Cash Equivalents, and Restricted Cash at Beginning of Period	719	713	1,210
Cash, Cash Equivalents, and Restricted Cash at End of Period	\$ 484	\$ 719	\$ 713

The accompanying notes are an integral part of these financial statements.

Noble Energy, Inc.
Consolidated Statements of Shareholders' Equity
(millions)

	Attributable to Noble Energy						Non- controlling Interests	Total Equity
	Common Stock	Additional Paid in Capital	Accumulated Other Comprehensive Loss	Treasury Stock at Cost	Retained Earnings			
December 31, 2016	\$ 5	\$ 6,450	\$ (31)	\$ (692)	\$ 3,556	\$ 312	\$ 9,600	
Net (Loss) Income	—	—	—	—	(1,118)	68	(1,050)	
Clayton Williams Energy Acquisition	—	1,876	—	(25)	—	—	1,851	
Stock-based Compensation	—	100	—	—	—	—	100	
Exercise of Stock Options	—	10	—	—	—	—	10	
Dividends (40 cents per share)	—	—	—	—	(190)	—	(190)	
Issuance of Noble Midstream Partners Common Units, Net of Offering Costs	—	—	—	—	—	312	312	
Distributions to Noncontrolling Interest Owners	—	—	—	—	—	(28)	(28)	
Other	—	2	1	(8)	—	19	14	
December 31, 2017	\$ 5	\$ 8,438	\$ (30)	\$ (725)	\$ 2,248	\$ 683	\$ 10,619	
Net (Loss) Income	—	—	—	—	(66)	80	14	
Stock-based Compensation	—	78	—	—	—	—	78	
Dividends (43 cents per share)	—	—	—	—	(208)	—	(208)	
Purchase and Retirement of Common Stock	—	(295)	—	—	—	—	(295)	
Clayton Williams Energy Acquisition	—	(25)	—	—	—	—	(25)	
Distributions to Noncontrolling Interest Owners	—	—	—	—	—	(51)	(51)	
Contributions from Noncontrolling Interest Owners	—	—	—	—	—	353	353	
Other	—	7	(2)	(5)	6	(7)	(1)	
December 31, 2018	\$ 5	\$ 8,203	\$ (32)	\$ (730)	\$ 1,980	\$ 1,058	\$ 10,484	
Net (Loss) Income	—	—	—	—	(1,512)	79	(1,433)	
Stock-based Compensation	—	76	—	—	—	—	76	
Dividends (47 cents per share)	—	—	—	—	(227)	—	(227)	
Issuance of Noble Midstream Partners Common Units, Net of Offering Costs	—	110	—	—	—	100	210	
Subsidiary Equity Transaction	—	538	—	—	—	(538)	—	
Distributions to Noncontrolling Interest Owners	—	—	—	—	—	(74)	(74)	
Contributions from Noncontrolling Interest Owners	—	—	—	—	—	37	37	
Other	—	—	1	(2)	—	(17)	(18)	
December 31, 2019	\$ 5	\$ 8,927	\$ (31)	\$ (732)	\$ 241	\$ 645	\$ 9,055	

The accompanying notes are an integral part of these financial statements.

Nature of Operations Noble Energy, Inc. (Noble Energy, we or us) is a leading independent energy company engaged in worldwide crude oil and natural gas exploration and production. Our historical operating areas include: US onshore, primarily the DJ Basin, Delaware Basin, Eagle Ford Shale and Marcellus Shale (until June 2017); US offshore Gulf of Mexico (until April 2018); Eastern Mediterranean; and West Africa. Our Midstream segment develops, owns, operates and acquires domestic midstream infrastructure assets, or invests in other midstream entities, with current focus areas being the DJ and Delaware Basins.

Note 1. Summary of Significant Accounting Policies

Basis of Presentation and Consolidation We use accounting policies that conform to US GAAP. Our consolidated accounts include our accounts and the accounts of our wholly-owned subsidiaries. Intercompany balances and transactions have been eliminated upon consolidation. For the periods presented, net income or loss is materially consistent with comprehensive income or loss. Certain prior-period amounts have been reclassified to conform to the current period presentation.

Segment Information Accounting policies are consistent across geographical segments. Transfers between segments are accounted for at market value. See [Note 3. Segment Information](#).

Noble Midstream Partners Noble Energy has determined that the partners with equity at risk in Noble Midstream Partners LP (Noble Midstream Partners, Nasdaq: NBLX) lack the authority, through voting rights or similar rights, to direct the activities that most significantly impact Noble Midstream Partners' economic performance; therefore, Noble Midstream Partners is considered a variable interest entity (VIE). Through Noble Energy's ownership interest in Noble Midstream GP LLC (the General Partner to Noble Midstream Partners), Noble Energy has the authority to direct the activities that most significantly affect economic performance and the obligation to absorb losses or the right to receive benefits that could be potentially significant to Noble Midstream Partners. Therefore, Noble Energy is considered the primary beneficiary and consolidates Noble Midstream Partners.

Noncontrolling Interests Our consolidated financial statements include both noncontrolling interests and a redeemable noncontrolling interest. The noncontrolling interests represent the public's ownership in Noble Midstream Partners and third-party ownership in Noble Midstream Partners' consolidated non-wholly owned subsidiaries.

The redeemable noncontrolling interest represents third-party preferred equity secured by Noble Midstream Partners in March 2019. The entire equity commitment totals \$200 million, of which \$100 million was funded and the remaining \$100 million is available for a one year period, subject to certain conditions precedent. The preferred equity is perpetual and has a 6.5% annual dividend rate. Noble Midstream Partners can redeem the preferred equity in whole or in part at any time for cash at a predetermined redemption price. The preferred equity partner can request redemption at a pre-determined base return following the later of the sixth anniversary of the preferred equity closing or the fifth anniversary of the completion date of the EPIC Crude Oil Pipeline (defined below). As the preferred equity partner's redemption right is outside of Noble Midstream Partners' control, the preferred equity is not considered to be a component of shareholders' equity and, therefore, is reported as mezzanine equity. In addition, because the preferred equity is held by a third-party, it is considered a redeemable noncontrolling interest. We accrete changes in the preferred equity redemption value from the issuance date to the earliest redemption date and offset the accretion against additional paid in capital. See [Note 4. Acquisitions and Divestitures](#).

Equity Method of Accounting We use the equity method of accounting for investments in entities that we do not control but over which we exert significant influence. For certain entities, we serve as the operator and exert significant influence over the day-to-day operations. For other entities, we do not serve as the operator; however, our voting position on management committees or the board of directors allows us to exert significant influence over decisions regarding capital investments, budgets, turnarounds, maintenance, monetization decisions and other project matters. We consider these equity method investments essential components of our business as well as necessary and integral elements of our value chain in support of ongoing upstream operations. In order to reflect the economics associated with our integrated upstream value chain, we include income from equity method investments as a component of revenues in our consolidated statements of operations. See [Note 5. Equity Method Investments](#).

Use of Estimates The preparation of consolidated financial statements in conformity with US GAAP requires us to make a number of estimates and assumptions relating to the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period.

Estimated quantities of crude oil, NGL and natural gas reserves are the most significant of our estimates. See [Supplemental Oil and Gas Information \(Unaudited\)](#). Other items subject to estimates and assumptions include the carrying amounts of inventory, property, plant and equipment, equity method investments, goodwill, intangible assets, exit cost liabilities and AROs, valuation

allowances for receivables and deferred income tax assets, valuation of derivative instruments, and fair values, among others. Management evaluates estimates and assumptions on an ongoing basis using historical experience and other factors, including the current economic and commodity price environment. The volatility of commodity prices results in increased uncertainty inherent in such estimates and assumptions. Declines in commodity prices, or other events, could result in a reduction in our fair value estimates and cause us to perform analyses to determine if our oil and gas properties, or other long-lived assets, are impaired. As future commodity prices cannot be determined accurately, actual results could differ significantly from our estimates.

Fair Value Measurements Certain assets and liabilities are measured at fair value on a recurring basis on our consolidated balance sheets. Other assets and liabilities are measured at fair value on a nonrecurring basis. Fair value measurements are based on a hierarchy which prioritizes the inputs to valuation techniques used to measure fair value into three levels. The fair value hierarchy is as follows:

- Level 1 measurements are fair value measurements which use quoted market prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 measurements are fair value measurements which use inputs, other than quoted prices included within Level 1, which are observable for the asset or liability, either directly or indirectly.
- Level 3 measurements are fair value measurements which use unobservable inputs.

The fair value hierarchy gives the highest priority to Level 1 measurements and the lowest priority to Level 3 measurements. We use Level 1 inputs when available, as Level 1 inputs generally provide the most reliable evidence of fair value. The carrying amounts of cash and cash equivalents, accounts receivable and accounts payable approximate fair value due to the short-term nature or maturity of the instruments.

Cash and Cash Equivalents For purposes of reporting cash flows, cash and cash equivalents include unrestricted cash on hand and investments with original maturities of three months or less at the time of purchase.

Accounts Receivable and Allowance for Expected Credit Losses Our accounts receivable result primarily from sales of crude oil, NGL and natural gas production and joint interest billings to our partners for their share of expenses on joint venture projects for which we are the operator. The majority of these receivables have payment terms of 30 days or less. Our accounts receivable reflects broad national and international customer base, which limits our exposure to concentrations of credit risk. We continually monitor the creditworthiness of the counterparties and have obtained credit enhancements from some parties in the form of parental guarantees or letters of credit.

At the end of each reporting period, we assess the recoverability of all material receivables using historical data, current market conditions, and reasonable and supportable forecasts of future economic conditions to determine their expected collectibility. The loss given default method is used when, based on management's judgment, an allowance for expected credit losses should be accrued on a material receivable to reflect the net amount expected to be collected. See "Recently Adopted Accounting Standards" below for discussion on our early adoption of Accounting Standards Update No. 2016-13 (ASU 2016-13): *Financial Instruments – Credit Losses*. See [Note 2. Additional Financial Statement Information](#).

Property, Plant and Equipment Significant accounting policies for our property, plant and equipment are as follows:

Oil and Gas Properties (Successful Efforts Method of Accounting) We account for crude oil and natural gas properties under the successful efforts method of accounting. Under this method, costs to acquire mineral interests in crude oil and natural gas properties, drill and equip exploratory wells that find proved reserves, and drill and equip development wells are capitalized. Capitalized costs of producing crude oil and natural gas properties, along with support equipment and facilities, are depleted using the unit-of-production method based on proved crude oil, NGL and natural gas reserves on a field-by-field basis, as estimated by our qualified petroleum engineers. Costs of certain gathering facilities or processing plants serving a number of properties or used for third-party processing are depreciated using the straight-line method over the useful lives of the assets ranging from three to thirty years. Upon sale or retirement of depreciable or depletable property, the cost and related accumulated DD&A is eliminated and we either adjust the basis of the respective asset or recognize a gain or loss. Costs related to repair and maintenance activities are expensed as incurred.

Proved Property Impairment For our proved properties, we routinely assess whether impairment indicators exist and have processes in place to ensure that we become aware of such indicators. Impairment indicators include, but are not limited to, sustained decreases in commodity prices, negative revisions of proved reserves, and increases in development or operating costs. We conduct an impairment test in the event impairment indicators exist. Under such test, we estimate future net cash flows expected in connection with the property and compare such future net cash flows to the carrying amount of the property to determine if the carrying amount is recoverable. Other long-lived assets, such as our midstream assets, are evaluated in a manner consistent with our policy for proved property.

When the carrying amount of the proved property exceeds its estimated undiscounted future net cash flows, an impairment is indicated and the fair value of the asset is then estimated. Fair value inputs, which are level 3 on the fair value hierarchy, may be estimated using comparable market data, a discounted cash flow method, or a combination of the two. In the discounted cash flow method, estimated future net cash flows are based on management's expectations for the future and include estimates of future crude oil and natural gas production, commodity prices based on published forward commodity price curves or contract prices as of the date of the estimate, operating and development costs, and a risk-adjusted discount rate. In the event of an impairment, the carrying amount of the proved property is reduced to estimated fair value. See [Note 10. Impairments](#).

Unproved Property Our unproved properties consist of leasehold costs and allocated value to probable and possible reserves resulting from acquisitions. Undeveloped leasehold costs are derived from allocated fair values as a result of business combinations or other purchases of unproved properties and are subject to impairment testing. We reclassify undeveloped leasehold costs to proved property costs when, as a result of exploration and development activities, probable and possible resources are reclassified to proved reserves, including proved undeveloped reserves.

We assess individually significant unproved properties for impairment on a quarterly basis and recognize a loss at the time of impairment. In determining whether a significant unproved property is impaired, we consider numerous factors including, but not limited to, current exploration plans, favorable or unfavorable exploration activity on the property being evaluated and/or adjacent properties, our geologists' evaluation of the property, and the remaining months in the lease term for the property.

When we have allocated fair value to an unproved property as the result of a transaction accounted for as a business combination, we use a future net cash flow analysis to assess the unproved property for impairment. Cash flows used in the impairment analysis are determined based on management's estimates of crude oil, NGL and natural gas reserves, future commodity prices and future costs to produce the reserves. Reserves volumes are reduced by risk adjustments applied to probable and possible reserves. See [Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs](#)

Properties Acquired in Business Combinations When sufficient market data is not available, we determine the fair values of proved and unproved oil and gas properties acquired in transactions accounted for as business combinations by preparing estimates of cash flows from the production of crude oil, NGL and natural gas reserves. We estimate future prices to apply to the estimated reserves quantities acquired, and estimate future operating and development costs, to arrive at estimates of future net cash flows. For the fair value assigned to proved reserves, future net cash flows are discounted using a market-based weighted average cost of capital rate determined appropriate at the time of the business combination. When estimating and valuing unproved reserves, discounted future net cash flows of probable and possible reserves are reduced by additional risk-weighting factors. For other assets acquired in business combinations, we use a combination of available cost and market data and/or estimated cash flows to determine the fair values.

Assets Held for Sale At the end of each reporting period, we evaluate properties being marketed for sale to determine whether any should be reclassified as held for sale. If the held-for-sale criteria are met, the property is reclassified as held for sale on our consolidated balance sheets and valued at the lower of net book value or anticipated sales proceeds less costs to sell. Impairment expense is recorded for any excess of net book value over anticipated sales proceeds less costs to sell.

Exploration Costs Geological and geophysical costs, delay rentals, amortization of unproved leasehold costs, and costs to drill exploratory wells that do not find proved reserves are expensed as oil and gas exploration. We carry the costs of an exploratory well as an asset if the well finds a sufficient quantity of reserves to justify its capitalization as a producing well and as long as we are making sufficient progress assessing the reserves and the economic and operating viability of the project. For certain capital-intensive international projects, it may take us more than one year to evaluate the future potential of the exploratory well and make a determination of its economic viability. Our ability to move forward on a project may be dependent on gaining access to transportation or processing facilities or obtaining permits and government or partner approval, the timing of which is beyond our control. In such cases, exploratory well costs remain suspended as long as we are actively pursuing access to necessary facilities, permits and approvals and we believe they will be obtained. We assess the status of suspended exploratory well costs on a quarterly basis. See [Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs](#)

Property, Plant and Equipment, Other Other property includes automobiles, trucks, an airplane, office furniture, computer equipment, buildings, leasehold improvements and other fixed assets. These items are recorded at cost and are depreciated using the straight-line method based on expected lives of the individual assets or group of assets, ranging from three to thirty years. Other property also includes linefill, which is recorded at cost to produce into the production line. Linefill is not subject to depreciation but is reviewed for impairment.

Capitalization of Interest We capitalize interest costs associated with the development and construction of significant properties or projects to bring them to a condition and location necessary for their intended use, which for crude oil and natural gas assets is at first production from the field. Interest is capitalized using an interest rate equivalent to the weighted average interest rate we pay on long-term debt, including our unsecured revolving credit facilities, term loan credit facilities and Senior

Notes. Capitalized interest is included in the cost of oil and gas assets and is amortized with other costs on a unit-of-production basis.

Asset Retirement Obligations Asset retirement obligations (AROs) consist of estimated costs of dismantlement, removal, site reclamation and similar activities associated with our oil and gas properties. We recognize the fair value of a liability for an ARO in the period in which we have an existing legal obligation associated with the retirement that can reasonably be estimated. The associated asset retirement cost is capitalized as part of the carrying value of the oil and gas asset. The asset retirement cost is recorded at estimated fair value, measured by the expected future cash outflows required to satisfy the obligation discounted at our credit-adjusted risk-free rate. After initial recording, the liability is increased for the passage of time, with the increase being reflected as accretion expense included in DD&A expense in the consolidated statements of operations. Subsequent adjustments in the cost estimate are reflected in the liability and the amounts continue to be amortized over the useful life of the related long-lived asset. See [Note 7. Asset Retirement Obligations](#).

Intangible Assets Intangible assets consist of customer contracts and relationships that were recorded at their estimated fair values at the date of acquisition. Amortization is calculated using the straight-line method, which reflects the pattern in which the estimated economic benefit is expected to be received over the estimated useful life of the intangible assets, which is currently over periods of seven to 13 years. As of December 31, 2019, the net book value of our intangible assets was \$278 million, net of accumulated amortization of \$62 million. Intangible assets with finite useful lives are reviewed for impairment when events or changes in circumstances indicate that the carrying amounts of such assets may not be recoverable. See [Note 4. Acquisitions and Divestitures](#).

Exit Costs We recognize the fair value of a liability for an exit cost in the period in which a liability is incurred. The recognition and fair value estimation of an exit cost liability requires that management take into account certain estimates and assumptions. Fair value estimates are based on expected future discounted cash outflows required to satisfy the obligation, net of estimated recoveries. In periods subsequent to initial measurement, changes to an exit cost liability, including changes resulting from revisions to either the timing or the amount of estimated cash flows over the future contract period, are recognized as an adjustment to the liability in the period of the change. Exit costs, and associated accretion expense, are included in other operating expense, net in our consolidated statements of operations. See [Note 11. Exit Cost – Transportation Commitments](#).

Derivative Instruments and Hedging Activities All derivative instruments are recorded on our consolidated balance sheets as either an asset or liability and are measured at fair value. We account for our commodity derivative instruments using mark-to-market accounting and recognize all gains and losses in earnings during the period in which they occur.

We offset the fair value amounts recognized for derivative instruments against the fair value amounts recognized for the right to reclaim cash collateral or the obligation to return cash collateral. The cash collateral (commonly referred to as a “margin”) must arise from derivative instruments recognized at fair value that are executed with the same counterparty under a master agreement with netting clauses. See [Note 14. Derivative Instruments and Hedging Activities](#).

Stock-Based Compensation Restricted stock and stock options issued to employees and directors are recorded on grant-date at fair value. Expense is recognized on a straight-line basis over the employee’s and director’s requisite service period (generally the vesting period of the award) in the consolidated statements of operations. See [Note 16. Stock-Based and Other Compensation Plans](#).

Contingencies We are subject to legal proceedings, claims and liabilities that arise in the ordinary course of business. We accrue for losses associated with legal claims when such losses are considered probable and the amounts can be reasonably estimated. See [Note 12. Commitments and Contingencies](#).

Income Taxes We are subject to income and other taxes in numerous taxing jurisdictions worldwide. For financial reporting purposes, we provide taxes at rates applicable for the appropriate tax jurisdictions. We account for income taxes using the asset and liability method. Deferred tax assets and liabilities are recognized when items of income and expense are recognized in the financial statements in different periods than when recognized in the applicable tax return.

Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the date when the change in the tax rate was enacted.

In assessing the realizability of deferred tax assets, we consider whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income in the appropriate tax jurisdictions during the periods in which those temporary differences become deductible. We consider the scheduled reversal of deferred tax liabilities, current financial position, results of operations, projected future taxable income and tax planning strategies as well as current and forecasted business economics in the oil and gas industry. The

amount of the deferred tax assets considered realizable could be reduced in the future if estimates of future taxable income during the carryforward period are reduced. See [Note 13. Income Taxes](#).

Treasury Stock We record treasury stock purchases at cost, which includes incremental direct transaction costs. Amounts are recorded as reductions in shareholders' equity in the consolidated balance sheets.

Revenue Recognition Our revenues are derived primarily from the sale of crude oil, NGL and natural gas production to crude oil refining companies, midstream marketing companies, marketers, industrial companies, electric utility companies, independent power producers and cogeneration facilities, among others. We recognize revenues based on the amount of product sold to a customer when control transfers to the customer. Our revenue arrangements include the following:

Crude Oil Sale Arrangements – US We sell our share of crude oil production under both short-term and long-term contracts at market-based prices, adjusted for location, quality and transportation charges. Revenue is measured based on the index-based contract price, and may include adjustments for market differentials and downstream costs incurred by the customer, including gathering, transportation, and fuel costs.

Crude Oil Sale Arrangements – West Africa We sell our share of crude oil and condensate at market-based prices and recognize revenue at the time a crude oil cargo is loaded onto the tanker.

Natural Gas and NGLs Sale Arrangements – US We evaluate these arrangements to determine whether the processor is a service provider or a customer. In arrangements where we determine that the processor is a customer, we record revenue when the processor takes control of the natural gas and NGLs and in the amount of proceeds expected to be received, net of any fees or deductions charged by the processor. In other arrangements, we receive natural gas and NGL products "in-kind" after processing at the tailgate of the plant. In these arrangements, where we determine that the processor is a service provider, we record revenue and applicable gathering, processing, transportation and fractionation fees on a gross basis at the time the product is delivered to the end customer.

Natural Gas Sale Arrangements – West Africa We sell our share of natural gas production under a long-term contract for \$0.25 per MMBtu to a methanol plant, a liquefied petroleum gas (LPG) plant, a liquefied natural gas (LNG) plant and a power generation plant. We recognize revenue upon transfer of control of product to these processors.

Natural Gas Sale Arrangements – Eastern Mediterranean We sell our share of natural gas production primarily based on long-term contracts with fixed volume commitments. Performance obligations are satisfied over time using production output to measure progress. The nature of these contracts gives rise to several types of variable consideration, including index-based annual price escalations, commodity-based index pricing, tiered pricing and sales price discounts in periods of volume deficiencies. Additionally, the majority of these sales contracts contain take-or-pay provisions whereby the customers are required to purchase a contractual minimum over varying time periods. We record revenues related to the volumes delivered at the contract price at the time of delivery.

The following table provides estimated future revenues for remaining performance obligations under fixed volume natural gas sales agreements using the contractual fixed base or floor price provision in effect. Actual future sales volumes under these agreements may exceed future minimum volume commitments. In addition, future sales revenues will vary due to components of variable consideration above the contractual base or floor provision, such as index-based escalations and market price changes. Certain of these contracts contain embedded derivatives for which we have elected the normal purchases and normal sales scope exception, which excludes the derivatives from mark-to-market accounting.

Estimated future revenues related to remaining performance obligations were as follows as of December 31, 2019:

<i>(millions)</i>	2020	2021	2022	2023	2024	Thereafter	Total
Natural Gas Revenues ⁽¹⁾	\$ 743	\$ 768	\$ 583	\$ 583	\$ 583	\$ 5,259	\$ 8,519

⁽¹⁾ Includes amounts related to the Tamar and Leviathan fields, offshore Israel.

Oil and Gas Purchase and Sale Arrangements We enter into separate third-party purchase and sale transactions at prevailing market prices to mitigate unutilized pipeline transportation commitments. We recognize associated revenues and expenses on a gross basis, as we act as a principal in these transactions by assuming control of the purchased commodity before it is transferred to the customer. We also enter into crude oil buy/sell arrangements that effect a change in location and/or grade with required repurchase of crude oil at a delivery point. We account for these transactions on a net basis and record the residual transportation fee within gathering, transportation and processing expense in the consolidated statements of operations.

Midstream Services Arrangements Third-party Midstream services revenues relate to fixed fee arrangements for gathering, transportation and storage services. Our performance obligations for the provision of such services are satisfied over time using volumes delivered as the measure of progress.

Basic and Diluted Earnings (Loss) Per Share Attributable to Noble Energy Basic earnings (loss) per share (EPS) of our common stock is computed on the basis of the weighted average number of shares outstanding during each period. The diluted EPS of our common stock includes the effect of outstanding common stock equivalents such as stock options, shares of restricted stock, and/or shares of our stock held in a rabbi trust, except in periods in which there is a net loss. In the event of a net loss, we exclude the effect of outstanding common stock equivalents from the calculation of diluted EPS as the inclusion would be anti-dilutive.

Recently Adopted Accounting Standards

Leases Effective January 1, 2019, we adopted Accounting Standards Update No. 2016-02 (ASU 2016-02), which created *Topic 842 – Leases* (ASC 842). The standard requires lessees to recognize a right-of-use (ROU) asset and lease liability on the balance sheet for the rights and obligations created by leases. This standard does not apply to leases to explore for or use minerals, oil, natural gas or similar nonregenerative resources, including the intangible right to explore for those resources and rights to use the land in which those natural resources are contained.

Upon adoption, we elected the following optional practical expedients:

- transition “practical expedients,” permitting us not to reassess our prior conclusions about lease identification, lease classification and initial direct costs;
- the practical expedient pertaining to land easements, allowing us to account for existing land easements under our previous accounting policy; and
- the practical expedient to not separate lease and non-lease components for the majority of our leases (elected by asset class).

We adopted ASC 842 using the modified retrospective method and recorded ROU assets and lease liabilities of \$282 million and \$287 million, respectively, primarily related to operating leases. ROU assets and corresponding liabilities are based on the present value of the minimum lease payments. Our accounting for finance leases remains substantially unchanged. Adoption of ASC 842 did not materially impact our consolidated statement of operations and comprehensive income and had no impact on our consolidated statement of cash flows.

Additional information related to our accounting policies for leases is as follows:

- Most of our leases do not provide implicit borrowing rates; therefore, using the portfolio approach, we determine the present value of lease payments using hypothetical secured borrowing rates based on information available at lease commencement.
- Leases with an initial term of 12 months or less are not recorded on the balance sheet and we recognize lease expense for these leases on a straight-line basis over the lease term. Most leases include one or more options to renew, with renewal terms that can extend the lease term from one month to one year or more. Additionally, some of our leases include an option for early termination. We include renewal periods and exclude termination periods from our lease term if, at commencement, it is reasonably likely that we will exercise the option.
- Certain of our lease agreements include rental payments that are adjusted periodically for inflation or passage of time. These step payments are included within our present value calculation as they are known adjustments at commencement. Variable payments related to lease agreements are not material.
- We have lease agreements that include lease and non-lease components, such as equipment maintenance, that are generally accounted for as a single lease component. For these leases, lease payments include all fixed payments stated within the contract. For other leases, such as office space, lease and non-lease components are accounted for separately. While some lease agreements include residual value guarantees, there are no material guarantees that impact our lease payments.
- ROU assets are reviewed for impairment when events or changes in circumstances indicate that the carrying amounts of such assets may not be recoverable.

See [Note 9. Leases](#).

Financial Instruments: Credit Losses In June 2016, the FASB issued ASU 2016-13, which replaces the incurred loss impairment methodology with an expected credit loss methodology for financial instruments, including financial assets measured at amortized cost, such as trade and joint interest billing receivables, and off-balance sheet credit exposures not accounted for as insurance, such as financial guarantees and other unfunded loan commitments. The amended standard is effective for fiscal years beginning after December 15, 2019, with early adoption permitted. We early adopted this ASU in fourth quarter 2019. This adoption did not have a material impact on our financial statements.

Income Taxes In December 2019, the FASB released Accounting Standards Update No. 2019-12 (ASU 2019-12): *Income Taxes (Topic 740) – Simplifying the Accounting for Income Taxes*, which removes certain exceptions for recognizing deferred taxes for investments, performing intraperiod allocation and calculating income taxes in interim periods. The ASU also adds

guidance to reduce complexity in certain areas, including recognizing deferred taxes for tax goodwill and allocating taxes to members of a consolidated group. The amended standard is effective for fiscal years beginning after December 15, 2020, with early adoption permitted. We early adopted this ASU in fourth quarter 2019. This adoption did not have a material impact on our financial statements.

Recently Issued Accounting Standards

None that are expected to have a material impact on our financial statements.

Note 2. Additional Financial Statement Information

Statements of Operations Information Other statements of operations information is as follows:

<i>(millions)</i>	Year Ended December 31,		
	2019	2018	2017
Other Revenue			
Income from Equity Method Investments and Other	\$ 51	\$ 172	\$ 177
Midstream Services Revenues - Third Party	94	78	19
Total	\$ 145	\$ 250	\$ 196
Production Expense			
Lease Operating Expense	\$ 532	\$ 576	\$ 571
Production and Ad Valorem Taxes	175	190	118
Gathering, Transportation and Processing Expense	417	393	432
Other Royalty Expense	13	38	20
Total	\$ 1,137	\$ 1,197	\$ 1,141
Exploration Expense			
Leasehold Impairment and Amortization	\$ —	\$ 1	\$ 62
Dry Hole Cost ⁽¹⁾	100	1	9
Seismic, Geological and Geophysical	21	22	27
Staff Expense	48	54	55
Other	33	51	35
Total	\$ 202	\$ 129	\$ 188
Loss on Marcellus Shale Upstream Divestiture and Other			
Loss on Sale	\$ —	\$ —	\$ 2,270
Exit Cost	—	—	93
Other	—	—	16
Total	\$ —	\$ —	\$ 2,379
Other Operating Expense, Net			
Marketing Expense	\$ 34	\$ 40	\$ 47
Firm Transportation Exit Cost ⁽²⁾	88	—	—
Clayton Williams Energy Acquisition Expenses	—	—	100
Loss (Gain) on Asset Retirement Obligation Revisions	9	(25)	(42)
Other, Net	83	35	33
Total	\$ 214	\$ 50	\$ 138

⁽¹⁾ See [Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs](#).

⁽²⁾ See [Note 11. Exit Cost – Transportation Commitments](#).

Balance Sheet Information Other balance sheet information is as follows:

<i>(millions)</i>	December 31,	
	2019	2018
Accounts Receivable, Net		
Commodity Sales	\$ 446	\$ 383
Joint Interest Billings	164	137
Other	128	111
Allowance	(8)	(15)
Total	\$ 730	\$ 616
Other Current Assets		
Commodity Derivative Assets	\$ 14	\$ 180
Inventories, Materials and Supplies	59	55
Assets Held for Sale ⁽¹⁾	14	133
Prepaid Expenses and Other Current Assets	61	50
Total	\$ 148	\$ 418
Other Noncurrent Assets		
Equity Method Investments ⁽²⁾	\$ 1,066	\$ 286
Operating Lease Right-of-Use Assets ⁽³⁾	227	—
Customer-Related Intangible Assets, Net	278	310
Goodwill	110	110
Mutual Fund Investments	27	38
Other Noncurrent Assets	126	97
Total	\$ 1,834	\$ 841
Other Current Liabilities		
Production and Ad Valorem Taxes	\$ 118	\$ 103
Asset Retirement Obligations	84	118
Interest Payable	74	66
Operating Lease Liabilities ⁽³⁾	88	—
Compensation and Benefits Payable	126	83
Other Current Liabilities	229	149
Total	\$ 719	\$ 519
Other Noncurrent Liabilities		
Deferred Compensation Liabilities	\$ 133	\$ 147
Asset Retirement Obligations	730	762
Operating Lease Liabilities ⁽³⁾	164	—
Firm Transportation Exit Cost Accrual ⁽⁴⁾	129	67
Other Noncurrent Liabilities	222	189
Total	\$ 1,378	\$ 1,165

(1) Amounts relate to divestitures of non-core assets and acreage in Reeves County, Texas. See [Note 4. Acquisitions and Divestitures](#).

(2) See [Note 5. Equity Method Investments](#).

(3) Amounts relate to assets and liabilities recorded as a result of ASC 842 adoption. See [Note 9. Leases](#).

(4) See [Note 11. Exit Cost – Transportation Commitments](#).

Reconciliation of Total Cash We define total cash as cash, cash equivalents and restricted cash. The following table provides a reconciliation of total cash:

<i>(millions)</i>	December 31,	
	2019	2018
Cash and Cash Equivalents at Beginning of Period	\$ 716	\$ 675
Restricted Cash at Beginning of Period	3	38
Cash, Cash Equivalents, and Restricted Cash at Beginning of Period	\$ 719	\$ 713
Cash and Cash Equivalents at End of Period	\$ 484	\$ 716
Restricted Cash at End of Period	—	3
Cash, Cash Equivalents, and Restricted Cash at End of Period	\$ 484	\$ 719

A significant portion of our cash is located in foreign subsidiaries. The cash is denominated in US dollars and at certain times is invested in highly liquid money market funds and short term deposits with original maturities of three months or less at the time of purchase. Although our cash and cash equivalents are deposited with major international banks and financial institutions, concentrations of cash in certain foreign locations may increase credit risk. We monitor the creditworthiness of the banks and financial institutions with which we invest and review the securities underlying our investment accounts.

Supplemental Cash Flow Information Supplemental statements of cash flow information is as follows:

<i>(millions)</i>	Year Ended December 31,		
	2019	2018	2017
Cash Paid During the Year For			
Interest, Net of Amount Capitalized ⁽¹⁾	\$ 208	\$ 270	\$ 346
Income Taxes Paid, Net	76	172	121

⁽¹⁾ Interest capitalized totaled \$102 million in 2019, \$73 million in 2018 and \$49 million in 2017.

See [Note 9. Leases](#) for supplemental cash flow information related to leases.

Significant Purchasers Non-affiliated purchasers who accounted for 10% or more of our commodity sales were as follows:

	Year Ended December 31,		
	2019	2018	2017
Percentage of Crude Oil Sales			
Shell ⁽¹⁾	22%	22%	22%
BP ⁽²⁾	18%	31%	15%
Percentage of Total Crude Oil, NGL & Natural Gas Sales			
Shell ⁽¹⁾	15%	14%	13%
BP ⁽²⁾	14%	17%	10%

⁽¹⁾ Includes sales to Shell Energy North America and Shell Trading (US) Company (collectively, Shell).

⁽²⁾ Includes sales to BP America Production, BP Energy Co and BP Products North America, Inc (collectively, BP).

Both Shell and BP purchased crude oil and condensate domestically from our US onshore operations. No other single purchaser accounted for 10% or more of our commodity sales in 2019. We routinely monitor the credit worthiness of our purchasers. While we maintain credit insurance associated with certain purchasers, we do not carry credit insurance for all purchasers. We believe that the loss of any one significant purchaser would not have a material adverse effect on our financial position or results of operations as there are numerous potential purchasers of our US onshore production and generally production is sold under short-term contracts.

Note 3. Segment Information

We have the following reportable segments: United States (US onshore (Marcellus Shale until July 2017) and Gulf of Mexico (until April 2018)); Eastern Mediterranean (Israel and Cyprus); West Africa (Equatorial Guinea, Cameroon and Gabon); Other International (Suriname (until November 2018), Falkland Islands (until December 2018), Canada, Colombia and New Ventures); and Midstream. The Midstream segment includes the consolidated accounts of Noble Midstream Partners.

Noble Energy, Inc.
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The geographical reportable segments are in the business of crude oil and natural gas acquisition and exploration, development, and production (Oil and Gas Exploration and Production). The Midstream reportable segment develops, owns, and operates domestic midstream infrastructure assets, as well as invests in other financially attractive midstream projects, with current focus areas being the DJ and Delaware Basins. The chief operating decision maker analyzes income (loss) before income taxes to assess the performance of Noble Energy's reportable segments as management believes this measure provides useful information in assessing the Company's operating and financial performance across periods.

Expenses related to debt, such as interest and other debt-related costs, headquarters depreciation, corporate general and administrative expenses, exit costs and certain costs associated with mitigating the effects of our retained Marcellus Shale firm transportation agreements, are recorded at the corporate level.

<i>(millions)</i>	Consolidated	Oil and Gas Exploration and Production				Midstream		Intersegment Eliminations and Other ⁽¹⁾	Corporate
		United States	Eastern Mediterranean	West Africa	Other Int'l	United States	Other		
Year Ended December 31, 2019									
Crude Oil Sales	\$ 2,736	\$ 2,437	\$ 6	\$ 293	\$ —	\$ —	\$ —	\$ —	\$ —
NGL Sales	354	354	—	—	—	—	—	—	—
Natural Gas Sales	814	345	451	18	—	—	—	—	—
Total Crude Oil, NGL and Natural Gas Sales	3,904	3,136	457	311	—	—	—	—	—
Sales of Purchased Oil and Gas	389	109	—	—	—	190	—	—	90
Income (Loss) from Equity Method Investments and Other	51	8	—	61	—	(18)	—	—	—
Midstream Services Revenues - Third Party	94	—	—	—	—	94	—	—	—
Intersegment Revenues	—	—	—	—	—	427	(427)	—	—
Total Revenues	4,438	3,253	457	372	—	693	(427)	—	90
Lease Operating Expense	532	460	37	76	—	4	(45)	—	—
Production and Ad Valorem Taxes	175	169	—	—	—	6	—	—	—
Gathering, Transportation and Processing Expense	417	598	1	—	—	110	(292)	—	—
Other Royalty Expense	13	13	—	—	—	—	—	—	—
Total Production Expense	1,137	1,240	38	76	—	120	(337)	—	—
Exploration Expense	202	57	109	13	23	—	—	—	—
Depreciation, Depletion and Amortization	2,197	1,907	67	83	1	104	(29)	—	64
Asset Impairments	1,160	1,160	—	—	—	—	—	—	—
Cost of Purchased Oil and Gas	431	107	—	—	—	181	—	—	143
Firm Transportation Exit Cost	88	—	—	—	—	—	—	—	88
Loss on Commodity Derivative Instruments	143	125	—	18	—	—	—	—	—
Loss on Debt Extinguishment	44	—	—	—	—	—	—	—	44
(Loss) Income Before Income Taxes	(1,776)	(1,431)	199	164	(25)	258	(55)	(886)	(886)
Additions to Long-Lived Assets, Excluding Acquisitions	2,408	1,651	505	70	20	230	(92)	—	24
Additions to Equity Method Investments	799	—	189	—	—	610	—	—	—
Property, Plant and Equipment, Net	17,451	11,859	3,041	793	44	1,721	(223)	—	216
Year Ended December 31, 2018									

Noble Energy, Inc.
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<i>(millions)</i>	Consolidated	Oil and Gas Exploration and Production				Midstream		Intersegment Eliminations and Other ⁽¹⁾	Corporate
		United States	Eastern Mediterranean	West Africa	Other Int'l	United States			
Crude Oil Sales	\$ 2,945	\$ 2,548	\$ 7	\$ 390	\$ —	\$ —	\$ —	\$ —	
NGL Sales	587	587	—	—	—	—	—	—	
Natural Gas Sales	929	435	473	21	—	—	—	—	
Total Crude Oil, NGL and Natural Gas Sales	4,461	3,570	480	411	—	—	—	—	
Sales of Purchased Oil and Gas	275	20	—	—	—	142	—	113	
Income from Equity Method Investments and Other	172	—	—	132	—	40	—	—	
Midstream Services Revenues - Third Party	78	—	—	—	—	78	—	—	
Intersegment Revenues	—	—	—	—	—	351	(351)	—	
Total Revenues	4,986	3,590	480	543	—	611	(351)	113	
Lease Operating Expense	576	480	26	97	—	—	(27)	—	
Production and Ad Valorem Taxes	190	184	—	—	—	6	—	—	
Gathering, Transportation and Processing Expense	393	533	—	—	—	95	(235)	—	
Other Royalty Expense	38	38	—	—	—	—	—	—	
Total Production Expense	1,197	1,235	26	97	—	101	(262)	—	
Exploration Expense	129	48	7	6	68	—	—	—	
Depreciation, Depletion and Amortization	1,934	1,642	60	115	2	87	(20)	48	
(Gain) Loss on Divestitures, Net	(843)	36	(376)	—	—	(503)	—	—	
Asset Impairments	206	169	—	—	—	37	—	—	
Goodwill Impairment	1,281	1,281	—	—	—	—	—	—	
Cost of Purchased Oil and Gas	296	20	—	—	—	136	—	140	
Gain on Asset Retirement Obligation Revision	(25)	—	(8)	—	(17)	—	—	—	
(Gain) Loss on Commodity Derivative Instruments	(63)	(70)	—	7	—	—	—	—	
Income (Loss) Before Income Taxes	140	(875)	742	305	(53)	726	(60)	(645)	
Additions to Long Lived Assets, Excluding Acquisitions	3,253	2,115	671	12	—	521	(91)	25	
Property, Plant and Equipment, Net	18,419	13,044	2,630	805	37	1,742	(145)	306	
Year Ended December 31, 2017									
Crude Oil Sales	\$ 2,346	\$ 1,993	\$ 6	\$ 347	\$ —	\$ —	\$ —	\$ —	
NGL Sales	493	493	—	—	—	—	—	—	
Natural Gas Sales	1,221	670	528	23	—	—	—	—	
Total Crude Oil, NGL and Natural Gas Sales	4,060	3,156	534	370	—	—	—	—	
Income from Equity Method Investments and Other	177	—	—	120	—	57	—	—	
Midstream Services Revenues - Third Party	19	—	—	—	—	19	—	—	
Intersegment Revenues	—	—	—	—	—	277	(277)	—	

Noble Energy, Inc.
Notes to Consolidated Financial Statements

<i>(millions)</i>	Consolidated	Oil and Gas Exploration and Production				Midstream		Intersegment Eliminations and Other ⁽¹⁾	Corporate
		United States	Eastern Mediterranean	West Africa	Other Int'l	United States	Other ⁽¹⁾		
Total Revenues	4,256	3,156	534	490	—	353	(277)	—	
Lease Operating Expense	571	466	29	90	—	—	(14)	—	
Production and Ad Valorem Taxes	118	115	—	—	—	3	—	—	
Gathering, Transportation and Processing Expense	432	550	—	—	—	70	(188)	—	
Other Royalty Expense	20	20	—	—	—	—	—	—	
Total Production Expense	1,141	1,151	29	90	—	73	(202)	—	
Exploration Expense	188	102	2	5	79	—	—	—	
Depreciation, Depletion and Amortization	2,053	1,739	76	146	4	30	(5)	63	
Loss on Marcellus Shale Upstream Divestiture and Other	2,379	2,286	—	—	—	—	—	93	
Gain on Divestitures, Net	(326)	(325)	(1)	—	—	—	—	—	
Asset Impairments	70	63	—	—	7	—	—	—	
Clayton Williams Energy Acquisition Expenses	100	100	—	—	—	—	—	—	
Gain on Asset Retirement Obligation Revision	(42)	—	—	—	(42)	—	—	—	
(Gain) Loss on Commodity Derivative Instruments	(63)	(92)	—	29	—	—	—	—	
Loss on Debt Extinguishment	98	—	—	—	—	—	—	98	
(Loss) Income Before Income Taxes	(2,191)	(2,365)	413	203	(54)	233	(62)	(559)	
Additions to Long Lived Assets, Excluding Acquisitions	2,851	1,994	411	34	(34)	423	(79)	102	
Property, Plant and Equipment, Net	17,502	13,348	2,005	863	25	1,027	(74)	308	

⁽¹⁾ Intersegment eliminations related to income (loss) before income taxes are the result of Midstream expenditures. Certain of these expenditures are presented as property, plant and equipment within the E&P business on an unconsolidated basis, in accordance with the successful efforts method of accounting. Other expenditures are presented as production expense. Intercompany revenues and expenses are eliminated upon consolidation.

Note 4. Acquisitions and Divestitures

Year Ended December 31, 2019

Divestiture of Reeves County Assets In February 2019, we sold approximately 13,000 net proved and unproved non-core acres in the Reeves County, Texas area of the Delaware Basin. We received cash consideration of approximately \$131 million, recognizing no gain or loss on the sale.

Asset Sale to Noble Midstream Partners In November 2019, we sold substantially all of our remaining midstream interests and assets to Noble Midstream Partners. The value of the transaction, which also included the sale of our incentive distribution rights, totaled approximately \$1.6 billion, comprised of \$670 million of cash and 38.5 million of newly issued Noble Midstream Partners common units, valued at approximately \$930 million. Noble Midstream Partners funded the cash portion of the consideration through \$420 million of borrowings on the Noble Midstream Services Revolving Credit Facility (defined below) and approximately \$250 million in gross proceeds from a private placement of approximately 12 million common units. At closing, we owned approximately 56.5 million common units, or 63%, of the outstanding units of Noble Midstream Partners. We are subject to a post-closing 180-day lock-up period applicable to the common units received. Sales proceeds were used to repay amounts outstanding under our commercial paper program. As we continue to consolidate Noble Midstream Partners, the activities related to these assets will continue to be reflected within our Midstream segment.

Year Ended December 31, 2018

Divestiture of Gulf of Mexico Assets We sold substantially all of our Gulf of Mexico assets, including interests in producing properties and undeveloped acreage, for cash consideration of \$480 million, along with the assumption, by the purchaser, of abandonment obligations associated with the properties sold. We recorded impairment expense of \$168 million during first quarter 2018. We received net proceeds of approximately \$384 million and recorded a loss of \$24 million upon close.

Divestiture of 7.5% Interest in Tamar Field In first quarter 2018, we sold a 7.5% working interest in the Tamar field to Tamar Petroleum Ltd. (Tamar Petroleum), a publicly traded entity on the Tel Aviv Stock Exchange (TASE: TMRP). Total consideration included cash of \$484 million and 38.5 million of Tamar Petroleum shares that had a publicly traded value of \$224 million. Total consideration received from the sale was applied to the field's basis and resulted in the recognition of a pre-tax gain of \$376 million. We incurred tax expense of \$86 million in connection with the transaction.

The Tamar Petroleum shares were subject to certain temporary lock-up provisions and had no voting rights. Due to the lock-up provisions associated with the Tamar Petroleum shares, we initially attributed \$190 million of fair value to the shares, or 15% less than the publicly traded value on the TASE. These shares were accounted for at fair value and we recorded decreases in fair value of \$27 million and dividend income of \$31 million during 2018. These amounts are included in other non-operating (income) expense, net, in our consolidated statements of operations. In fourth quarter 2018, we sold the Tamar Petroleum shares in over the counter transactions for pre-tax proceeds of \$163 million, net of transaction expenses.

Divestiture of Southwest Royalties In January 2018, we sold our investment in Southwest Royalties, Inc., which we acquired in the 2017 acquisition of Clayton Williams Energy (Clayton Williams Energy Acquisition). We received proceeds of \$60 million, resulting in no gain or loss recognition on the sale of these assets.

Divestiture of Greeley Crescent Assets In September 2018, we sold assets in the Greeley Crescent area of the DJ Basin and received proceeds of \$68 million, resulting in no gain or loss recognition on the sale of these assets.

Divestiture of Non-Core Delaware Basin Acreage In December 2018, we sold certain non-core acreage in the Delaware Basin, receiving proceeds of \$63 million, resulting in a pre-tax loss of \$16 million.

DJ Acreage Exchange We closed a cashless acreage exchange in the DJ Basin receiving approximately 12,900 net undeveloped acres within core areas of our Mustang and Wells Ranch positions in exchange for approximately 12,300 net undeveloped acres in non-core areas of Mustang and Wells Ranch. No gain or loss was recognized.

Noble Midstream Partners Saddle Butte Acquisition In January 2018, Noble Midstream Partners and its partner formed Black Diamond Gathering LLC (Black Diamond) to acquire Saddle Butte Rockies Midstream, LLC and affiliates, which own a large-scale integrated gathering system located in the DJ Basin. Consideration for the acquisition totaled \$681 million, which included \$663 million of cash and assumption of \$18 million of liabilities. Our partner funded approximately \$343 million of the purchase price, which is reflected as a contribution from noncontrolling interest within our consolidated statement of shareholders' equity, and Noble Midstream Partners funded the remainder.

We accounted for the transaction as a business combination using the acquisition method and allocated the total purchase price to assets acquired and liabilities assumed based on the fair values at the acquisition date. Allocated fair values included: \$206 million to property, plant and equipment; \$340 million to customer-related intangible assets (acquired customer contracts); and \$110 million to implied goodwill.

We own a 54.4% interest in Black Diamond and consolidate the entity as a VIE, reflecting the third-party ownership within noncontrolling interests in our consolidated statements of shareholders' equity.

Year Ended December 31, 2017

Clayton Williams Energy Acquisition We completed the Clayton Williams Energy Acquisition on April 24, 2017. Total consideration of \$2.5 billion included cash consideration of \$637 million and proceeds from the issuance of approximately 56 million shares of Noble Energy common stock with a fair value of approximately \$1.9 billion. In exchange, we received all outstanding Clayton Williams Energy shares, including stock options, restricted stock awards and warrants.

In connection with the acquisition, we incurred acquisition-related costs of \$100 million, including \$64 million of severance, consulting, investment, advisory, legal and other merger-related fees and \$36 million of noncash share-based compensation expense, all of which were expensed and are included in other operating expense, net in our consolidated statements of operations.

The transaction was accounted for as a business combination using the acquisition method. The allocation of the total purchase price of Clayton Williams Energy to the assets acquired and the liabilities assumed was based on the fair values at the

acquisition date, with any excess of the purchase price over the estimated fair value of the identifiable net assets acquired recorded as goodwill. The \$1.3 billion of goodwill recorded as part of the transaction was fully impaired in fourth quarter 2018.

The results of operations attributable to Clayton Williams Energy are included in our consolidated statements of operations for 2019 and 2018. Revenues of \$99 million and pre-tax net loss of \$19 million were generated from Clayton Williams Energy assets during the period April 24, 2017 to December 31, 2017.

Marcellus Shale Upstream Divestiture In 2017, we sold all of our Marcellus Shale upstream assets, which were primarily natural gas properties. The sales price totaled \$1.2 billion, and we received \$1.0 billion of net cash proceeds, after consideration of customary closing adjustments. The sales price includes additional contingent consideration of up to \$100 million structured as three separate payments of \$33.3 million each for each annual period through 2020, should certain conditions be met. No amounts have been accrued related to the contingent consideration. Proceeds from the transaction were used to repay borrowings resulting from the Clayton Williams Energy Acquisition.

We recognized a loss on divestiture of \$2.3 billion, or \$1.5 billion after-tax, and recorded exit costs for retained financial commitments of \$93 million, discounted. The aggregate net book value of the properties sold was approximately \$3.4 billion, which included approximately \$883 million of undeveloped leasehold cost.

After the property sale, we retained certain firm transportation commitments to flow Marcellus Shale natural gas production. See [Note 11. Exit Cost – Transportation Commitments](#).

Other US Onshore Transactions We conducted the following additional transactions in 2017:

- sold certain US onshore properties receiving total proceeds of \$671 million, including \$568 million related to divestment of non-core acreage in the DJ Basin. Proceeds were applied to reduce field basis with no recognition of gain or loss.
- received \$335 million and recognized a gain of \$334 million on the sale of mineral and royalty assets covering approximately 140,000 net mineral acres concentrated primarily in Texas, Oklahoma and North Dakota.
- acquired Delaware Basin properties, including seven producing wells, increasing our contiguous acreage position in the Reeves County, Texas area. Consideration totaled \$301 million, approximately \$246 million of which was allocated to undeveloped leasehold cost.

Asset Sale to Noble Midstream Partners In June 2017, we sold interests in certain midstream assets to Noble Midstream Partners for \$270 million, which consisted of \$245 million in cash and 562,430 Noble Midstream Partners common units. Noble Midstream Partners funded the cash consideration with approximately \$138 million of net proceeds from a concurrent private placement of common units, \$90 million of borrowings under the Noble Midstream Services Revolving Credit Facility and the remainder from cash on hand.

See [Supplemental Oil and Gas Information \(Unaudited\)](#) for discussion of proved reserves acquired or divested in connection with the above transactions.

Note 5. Equity Method Investments

The carrying values of our equity method investments, including the respective segments, are as follows:

<i>(millions, except percentages)</i>	Segment	Ownership	December 31,	
			2019	2018
Eastern Mediterranean Pipeline B.V.	Eastern Mediterranean	25%	\$ 189	\$ —
Atlantic Methanol Production Company, LLC and Affiliates ⁽¹⁾	West Africa	45%	160	146
Alba Plant LLC ⁽²⁾	West Africa	28%	56	58
EPIC Y-Grade, LP	Midstream	15%	166	—
EPIC Crude Holdings, LP	Midstream	30%	339	—
Delaware Crossing LLC	Midstream	50%	69	—
Advantage Pipeline, L.L.C.	Midstream	50%	77	73
Other	N/A	N/A	10	9
Total Equity Method Investments ⁽³⁾			\$ 1,066	\$ 286

⁽¹⁾ Atlantic Methanol Production Company, LLC (AMPCO) owns and operates a methanol plant and related facilities in Equatorial Guinea.

⁽²⁾ Alba Plant LLC owns and operates a LPG processing plant in Equatorial Guinea.

⁽³⁾ At December 31, 2019, total carrying values were \$42 million higher than the underlying net assets of the investments, primarily due to capitalized interest which is amortized into earnings over the useful life of the related assets.

At December 31, 2019, consolidated retained earnings included \$73 million related to the undistributed earnings of equity method investments.

Acquisitions and Divestitures

Year Ended December 31, 2019

EMED Pipeline B.V. During third quarter 2019, we acquired a 25% equity interest in Eastern Mediterranean Pipeline B.V. (EMED Pipeline B.V.). In fourth quarter 2019, EMED Pipeline B.V. acquired an approximate 39% equity interest in East Mediterranean Gas Company S.A.E. (EMG), which owns the EMG Pipeline. Upon closing of EMED Pipeline B.V.'s equity acquisition of EMG, we own an effective, indirect interest of approximately 10%, net, in EMG. The EMG Pipeline provides connection from the Israel pipeline network to Egyptian customers and supports delivery of natural gas from our producing fields offshore Israel into Egypt. During 2019, we made capital contributions of \$189 million in EMED Pipeline B.V., primarily to fund the EMG equity acquisition.

EPIC Pipelines In first quarter 2019, Noble Midstream Partners exercised and closed options with EPIC Midstream Holdings, LP (EPIC) to acquire a 5% equity interest in EPIC Y-Grade, LP (EPIC Y-Grade), which constructed the EPIC Y-Grade Pipeline, and a 30% equity interest in EPIC Crude Holdings, which is constructing the EPIC Crude Oil Pipeline. The pipelines support transportation of production from the Delaware Basin to Corpus Christi, Texas. Noble Midstream Partners made capital contributions of \$169 million and \$351 million in EPIC Y-Grade and EPIC Crude Holdings, respectively, in 2019.

Delaware Crossing Joint Venture In February 2019, Noble Midstream Partners formed a 50/50 joint venture with Salt Creek Midstream LLC. The joint venture, Delaware Crossing LLC, is constructing a crude oil pipeline system in the Delaware Basin. Noble Midstream Partners made capital contributions of \$70 million for its share of pipeline construction costs in 2019.

Year Ended December 31, 2018

Divestiture of Marcellus Shale CONE Gathering In January 2018, we sold our 50% interest in CONE Gathering LLC (CONE Gathering) to CNX Resources Corporation. CONE Gathering owns the general partner of CNX Midstream Partners LP (CNX Midstream Partners, NYSE: CNXM). We received proceeds of \$309 million in cash and recognized a pre-tax gain of \$196 million. After the sale, we held 21.7 million common units, representing a 34.1% limited partner interest, in CNX Midstream Partners. During 2018, we sold our 21.7 million common units, receiving net proceeds of approximately \$387 million, and recognized a gain of \$307 million. The investment was previously accounted for under the equity method of accounting.

Year Ended December 31, 2017

Noble Midstream Partners Advantage Joint Venture In April 2017, Noble Midstream Partners acquired a 50% interest in Advantage Pipeline, L.L.C. (Advantage Pipeline) for \$67 million. Advantage Pipeline owns a crude oil pipeline system in the southern Delaware Basin from Reeves County, Texas to Crane County, Texas, for which we serve as operator.

Combined Financial Information

Summarized, 100% combined balance sheet information for equity method investments was as follows:

(millions)	December 31,	
	2019	2018
Current Assets	\$ 681	\$ 387
Noncurrent Assets	5,306	575
Current Liabilities	607	198
Noncurrent Liabilities	2,243	81

Summarized, 100% combined statements of operations for equity method investments was as follows:

<i>(millions)</i>	Year Ended December 31,		
	2019	2018	2017
Operating Revenues	\$ 1,018	\$ 855	\$ 790
Operating Expenses	853	284	303
Operating Income	165	571	487
Other (Loss) Income, net	(33)	3	15
Income Before Income Taxes	132	574	502
Income Tax Provision	72	152	136
Net Income	\$ 60	\$ 422	\$ 366

Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs

Capitalized Exploratory Well Costs We capitalize exploratory well costs until a determination is made that the well has found proved reserves or is deemed noncommercial. These costs are included in Oil and Gas Properties on our consolidated balance sheets. On a quarterly basis, we review the status of suspended exploratory well costs and assess the development of these projects. If a well is deemed to be noncommercial, the well costs are charged to exploration expense as dry hole cost.

Changes in capitalized exploratory well costs, excluding amounts that were capitalized and subsequently expensed in the same period, are as follows:

<i>(millions)</i>	Year Ended December 31,		
	2019	2018	2017
Capitalized Exploratory Well Costs, Beginning of Period	\$ 354	\$ 520	\$ 768
Additions to Capitalized Exploratory Well Costs Pending Determination of Proved Reserves	26	7	20
Divestitures ⁽¹⁾	—	(168)	—
Reclassified to Proved Oil and Gas Properties, Based on Determination of Proved Reserves, or to Assets Held for Sale ⁽²⁾	—	(1)	(203)
Capitalized Exploratory Well Costs Charged to Expense ⁽³⁾	(100)	(4)	(65)
Capitalized Exploratory Well Costs, End of Period	\$ 280	\$ 354	\$ 520

⁽¹⁾ The 2018 amount relates to the second quarter 2018 sale of our Gulf of Mexico assets.

⁽²⁾ The 2017 amount relates to the approval and sanction of the first phase of development of the Leviathan field.

⁽³⁾ In fourth quarter 2019, we recorded exploration expense of \$100 million related to the Leviathan Deep prospect, offshore Israel, which was initially drilled in 2012 but did not reach the target interval. Throughout this time, we have evaluated seismic information and nearby discoveries in the region. Upon concluding we would not move forward with the project, we wrote off the entire amount of capitalized exploratory well costs associated with this prospect. The 2017 amount relates to a write-off of costs for a natural gas discovery in the Gulf of Mexico. See [Note 10. Impairments](#).

The following table provides an aging of capitalized exploratory well costs based on the date that drilling commenced:

<i>(millions, except number of projects)</i>	December 31,		
	2019	2018	2017
Exploratory Well Costs Capitalized for a Period of One Year or Less	\$ 22	\$ 6	\$ 10
Exploratory Well Costs Capitalized for a Period Greater Than One Year Since Commencement of Drilling	258	348	510
Balance at End of Period	\$ 280	\$ 354	\$ 520
Number of Projects with Exploratory Well Costs That Have Been Capitalized for a Period Greater Than One Year Since Commencement of Drilling	5	7	8

The following table provides a further aging of those exploratory well costs that have been capitalized for a period greater than one year since the commencement of drilling as of December 31, 2019:

<i>(millions)</i>	Total	Suspended Since			Progress
		2017 - 2018	2015 - 2016	2014 & Prior	
Offshore Eastern Mediterranean					
Dalit (Offshore Israel)	\$ 23	\$ (9)	\$ 3	\$ 29	Our future development plan for this 2008 natural gas discovery, consisting of a tie-in to existing infrastructure at Tamar, was approved by the Government of Israel in 2019. During 2019, we continued analyzing 3D seismic data to evaluate additional potential of the area.
Cyprus (Offshore Cyprus)	100	3	15	82	During 2019, we received approval of our Plan of Development and Exploitation License from the Government of Cyprus. We continued to progress capital project cost improvement and regional natural gas marketing efforts.
Offshore West Africa					
Felicita (Block O, Offshore Equatorial Guinea)	49	2	4	43	We are in the process of evaluating regional development scenarios for this 2008 natural gas discovery. The recent sanction of the Alen Gas Monetization project, which represents the initial step in establishing a regional natural gas hub, expands the options for development of this discovery through existing infrastructure.
YoYo (YoYo Block, Offshore Cameroon) and Yolanda (Block I, Offshore Equatorial Guinea)	80	2	5	73	A data exchange agreement for these 2007 condensate and natural gas discoveries has been executed between the governments of Equatorial Guinea and Cameroon. Our development team is working with both governments to evaluate natural gas monetization options. The recent sanction of the Alen Gas Monetization project, which represents the initial step in establishing a regional natural gas hub, expands the options for development of this discovery through existing infrastructure.
Other					
Projects less than \$20 million	6	(1)	(10)	17	Continuing to assess and evaluate wells.
Total	\$ 258	\$ (3)	\$ 17	\$ 244	

Undeveloped Leasehold Costs Changes in undeveloped leasehold costs, which are recorded in oil and gas properties on our consolidated balance sheets, were as follows:

<i>(millions)</i>	Year Ended December 31,	
	2019	2018
Undeveloped Leasehold Costs, Beginning of Period	\$ 2,373	\$ 2,922
Additions to Undeveloped Leasehold Costs	59	47
Transfers to Proved Properties ⁽¹⁾	(184)	(453)
Assets Sold ⁽²⁾	(96)	(142)
Impairment	—	(1)
Undeveloped Leasehold Costs, End of Period	\$ 2,152	\$ 2,373

⁽¹⁾ Transfers primarily relate to development of Delaware Basin assets.

⁽²⁾ Amounts primarily relate to Delaware Basin assets sold. See [Note 4. Acquisitions and Divestitures](#).

As of December 31, 2019, undeveloped leasehold costs included \$1.9 billion, \$100 million, \$79 million, and \$58 million attributable to the Delaware Basin, Eagle Ford Shale, other US onshore properties, and international properties, respectively. Certain of these costs pertain to acquired leases or licenses that are subject to expiration over the next several years unless production is established on units containing the acreage. Other costs pertain to acreage that is being held by production.

Note 7. Asset Retirement Obligations

Asset retirement obligations (ARO) consists primarily of estimated costs of dismantlement, removal, site reclamation and similar activities associated with our oil and gas properties. Changes in ARO are as follows:

<i>(millions)</i>	Year Ended December 31,	
	2019	2018
Asset Retirement Obligations, Beginning of Period	\$ 880	\$ 875
Liabilities Incurred	70	25
Liabilities Settled	(110)	(345)
Revisions of Estimates	(69)	293
Reclassification to Liabilities Associated with Assets Held for Sale	—	(1)
Accretion Expense	43	33
Asset Retirement Obligations, End of Period	\$ 814	\$ 880

Year Ended December 31, 2019 Liabilities incurred included \$43 million in Israel, primarily related to costs associated with the Leviathan field, and \$20 million in US onshore, primarily related to the DJ and Delaware Basins. The majority of liabilities settled relate to abandonment of properties in the DJ Basin where we have engaged in a program to plug and abandon older vertical wells. Costs associated with these abandonment activities will be incurred over several years. Revisions of estimates include a decrease of \$72 million in the DJ Basin as a result of improved cycle times and cost reductions for vertical wells.

Year Ended December 31, 2018 Liabilities settled included \$216 million and \$24 million of liabilities assumed by the purchasers of the Gulf of Mexico properties and Greeley Crescent assets, respectively, and \$104 million related to abandonment of US onshore properties, primarily in the DJ Basin, where we have engaged in a program to plug and abandon older vertical wells, as discussed above.

Revisions of estimates were primarily related to increases in cost estimates and changes in timing estimates of \$287 million for US onshore, primarily in the DJ Basin related to the abandonment activities noted above, \$10 million for wells offshore Israel and \$9 million for wells offshore Equatorial Guinea, partially offset by decreases in cost and timing estimates of \$17 million associated with the North Sea abandonment project.

Note 8. Long-Term Debt

Our debt consists of the following:

<i>(millions, except percentages)</i>	December 31, 2019		December 31, 2018	
	Debt	Interest Rate	Debt	Interest Rate
Noble Energy, Excluding Noble Midstream Partners				
Revolving Credit Facility, due March 9, 2023	\$ —	—%	\$ —	—%
Commercial Paper Borrowings	—	—%	—	—%
Senior Notes, due December 15, 2021	—	—%	1,000	4.15%
Senior Notes, due October 15, 2023	100	7.25%	100	7.25%
Senior Notes, due November 15, 2024	650	3.90%	650	3.90%
Senior Notes, due April 1, 2027	250	8.00%	250	8.00%
Senior Notes, due January 15, 2028	600	3.85%	600	3.85%
Senior Notes, due October 15, 2029	500	3.25%	—	—%
Senior Notes, due March 1, 2041	850	6.00%	850	6.00%
Senior Notes, due November 15, 2043	1,000	5.25%	1,000	5.25%
Senior Notes, due November 15, 2044	850	5.05%	850	5.05%
Senior Notes, due August 15, 2047	500	4.95%	500	4.95%
Senior Notes, due October 15, 2049	500	4.20%	—	—%
Senior Debentures	84	7.25%	92	7.13%
Finance Lease Obligations	205	—%	223	—%
Total Noble Energy Debt, Excluding Noble Midstream Partners Debt	6,089		6,115	
Noble Midstream Partners				
Noble Midstream Services Revolving Credit Facility, due March 9, 2023	595	3.11%	60	3.67%
Noble Midstream Services Term Loan Credit Facility, due July 31, 2021	500	2.85%	500	3.42%
Noble Midstream Services Term Loan Credit Facility, due August 23, 2022	400	2.74%	—	—%
Total Noble Midstream Partners Debt	1,495		560	
Total Debt	7,584		6,675	
Net Unamortized Discounts and Debt Issuance Costs	(65)		(60)	
Total Debt, Net of Unamortized Discounts and Debt Issuance Costs	\$ 7,519		\$ 6,615	
Less Amounts Due Within One Year:				
Finance Lease Obligations	(42)		(41)	
Long-Term Debt Due After One Year	\$ 7,477		\$ 6,574	

Revolving Credit Facility Our Credit Agreement, as amended, provides for a \$4.0 billion unsecured revolving credit facility (Revolving Credit Facility), which is available for general corporate purposes. The Revolving Credit Facility (i) provides for facility fee rates that range from 10 basis points to 25 basis points per year depending upon our credit rating, (ii) provides for interest rates that are based upon the Eurodollar rate plus a margin that ranges from 90 basis points to 150 basis points depending upon our credit rating, and (iii) includes sub-facilities for short-term loans and letters of credit up to an aggregate amount of \$500 million under each sub-facility. As of December 31, 2019, we were in compliance with our debt covenants and no amounts were outstanding under our Revolving Credit Facility.

Commercial Paper Program Our commercial paper program provides for short-term funding needs. The program allows Noble Energy to issue a maximum of \$4.0 billion of unsecured commercial paper notes and is supported by Noble Energy's \$4.0 billion Revolving Credit Facility. Our commercial paper notes, which generally have a maturity of less than 30 days, are sold under customary terms in the commercial paper market and are generally issued at a discounted price relative to the principal face value. Such discount prices are dependent on market conditions and ratings assigned to the commercial paper program by credit rating agencies at the time of commercial paper issuance. As of December 31, 2019, we had no outstanding commercial paper borrowings.

Senior Notes Issuance and Completed Tender Offer On October 1, 2019, we issued \$500 million of 3.25% senior notes due

October 15, 2029 and \$500 million of 4.20% senior notes due October 15, 2049. Interest on the notes is payable semi-annually beginning April 15, 2020. We may redeem some or all of the notes at any time at the applicable redemption price, plus accrued interest, if any. Proceeds from the issuance of the notes were used to fund the tender offer and redemption of our \$1.0 billion 4.15% notes due December 15, 2021. In connection with the tender and redemption, in fourth quarter 2019, we recorded early debt extinguishment cost of approximately \$44 million in our consolidated statements of operations.

Noble Midstream Services Revolving Credit Facility Noble Midstream Services LLC (Noble Midstream Services), a subsidiary of Noble Midstream Partners, maintains a revolving credit facility (Noble Midstream Services Revolving Credit Facility), which is available to fund working capital and to finance acquisitions and other capital expenditures of Noble Midstream Partners. In fourth quarter 2019, the capacity of the facility was increased from \$800 million to almost \$1.2 billion. As of December 31, 2019, \$555 million was available for borrowing under the Noble Midstream Services Revolving Credit Facility.

All obligations of Noble Midstream Services, as the borrower under the Noble Midstream Services Revolving Credit Facility, are guaranteed by Noble Midstream Partners and all wholly-owned material subsidiaries of Noble Midstream Partners. Noble Midstream Services was in compliance with the debt covenants for this facility as of December 31, 2019.

Noble Midstream Services 2019 Term Loan Credit Facility On August 23, 2019, Noble Midstream Services entered into a term loan agreement (Noble Midstream Services 2019 Term Credit Agreement), which provides for a three-year senior unsecured term loan credit facility due August 23, 2022 (2019 Term Loan Credit Facility) with permitted aggregate borrowings of up to \$400 million. Proceeds from the 2019 Term Loan Credit Facility were primarily used to repay a portion of the outstanding borrowings under the Noble Midstream Services Revolving Credit Facility. Noble Midstream Services was in compliance with the debt covenants for this facility as of December 31, 2019.

Noble Midstream Services 2018 Term Loan Credit Facility In 2018, Noble Midstream Services entered into a term loan agreement (Noble Midstream Services 2018 Term Credit Agreement), which provides for a three-year senior unsecured term loan credit facility due July 31, 2021 (2018 Term Loan Credit Facility) with permitted aggregate borrowings of up to \$500 million. Proceeds from the 2018 Term Loan Credit Facility were primarily used to repay a portion of the outstanding borrowings under the Noble Midstream Services Revolving Credit Facility. Noble Midstream Services was in compliance with the debt covenants for this facility as of December 31, 2019.

Fair Value of Debt The fair value of fixed-rate, public debt is estimated based on the published market prices. As such, we consider the fair value of this debt to be a Level 1 measurement on the fair value hierarchy. Our non-public debt, including our Revolving Credit Facility, commercial paper borrowings, Noble Midstream Services Revolving Credit Facility and Noble Midstream Services term loans are subject to variable interest rates. The fair value is estimated based on significant other observable inputs; thus, we consider the fair value to be a Level 2 measurement on the fair value hierarchy. Fair value information regarding our debt is as follows:

(millions)	December 31, 2019		December 31, 2018	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Debt	\$ 7,379	\$ 8,033	\$ 6,452	\$ 6,121

Annual Debt Maturities As of December 31, 2019, annual maturities of outstanding debt, excluding finance lease obligations, were as follows:

(millions)	Debt Principal Payments		
	Noble Energy Excluding Noble Midstream Partners	Noble Midstream Partners	Total
2020	\$ —	\$ —	\$ —
2021	—	500	500
2022	—	400	400
2023	100	595	695
2024	650	—	650
Thereafter	5,134	—	5,134
Total	\$ 5,884	\$ 1,495	\$ 7,379

Finance Lease Obligations See [Note 9. Leases](#).

Note 9. Leases

In the normal course of business, we enter into operating and finance lease agreements to support our operations. Operating leases primarily include office space for our corporate and field locations, US onshore compressors and drilling rigs, vessels and helicopters for offshore operations, storage facilities, and other miscellaneous assets. Finance leases include corporate office space, a trunkline in the DJ Basin, a floating production, storage and offloading vessel (FPSO) in West Africa, and vehicles. Our leasing activity is recorded and presented on a gross basis, with the exception of the FPSO which is recorded net to our interest.

Balance Sheet Information ROU assets and lease liabilities are as follows:

<i>(millions)</i>	Balance Sheet Location	December 31, 2019
ROU Assets		
Operating Leases ⁽¹⁾	Other Noncurrent Assets	\$ 227
Finance Leases ⁽²⁾	Total Property, Plant and Equipment, Net	172
Total ROU Assets		\$ 399
Lease Liabilities		
Current Liabilities		
Operating Leases	Other Current Liabilities	\$ 88
Finance Leases	Other Current Liabilities	42
Noncurrent Liabilities		
Operating Leases	Other Noncurrent Liabilities	164
Finance Leases	Long-Term Debt	163
Total Lease Liabilities		\$ 457

⁽¹⁾ Operating lease ROU assets include compressors of \$89 million and office space of \$80 million.

⁽²⁾ Finance lease ROU assets include office space of \$90 million and a trunkline of \$28 million, both net of accumulated amortization.

Statement of Operations Information The components of lease cost are as follows:

<i>(millions)</i>	Statement of Operations Location	Year Ended December 31, 2019
Operating Lease Cost	Various ⁽¹⁾	\$ 110
Finance Lease Cost		
Amortization Expense	Depreciation, Depletion and Amortization	38
Interest Expense	Interest, Net of Amount Capitalized	13
Short-term Lease Cost ⁽²⁾	Various ⁽¹⁾	424
Sublease Income	General and Administrative	(5)
Total Lease Cost		\$ 580

⁽¹⁾ Cost classifications vary depending on the leased asset. Costs are primarily included within production expense and general and administrative expense. In addition, in accordance with the successful efforts method of accounting, certain lease costs may be capitalized when incurred and therefore, are included as part of oil and gas properties on our consolidated balance sheets.

⁽²⁾ Costs primarily relate to hydraulic fracturing services, well-to-well drilling rig contracts and other miscellaneous lease agreements. Amount excludes costs for leases with an initial term of one month or less.

Cash Flow Information Supplemental cash flow information is as follows:

<i>(millions)</i>	Year Ended December 31, 2019	
	Operating Leases	Finance Leases
Cash Paid for Amounts Included in the Measurement of Lease Liabilities		
Operating Cash Flows	\$ 74	\$ 12
Investing Cash Flows	36	—
Financing Cash Flows	—	42
Non-Cash Activities		
ROU Assets Obtained in Exchange for Lease Liabilities ⁽¹⁾	127	26

⁽¹⁾ Amounts exclude the impact of adopting ASC 842 on January 1, 2019. See [Note 1. Summary of Significant Accounting Policies](#).

Annual Lease Maturities As of December 31, 2019, maturities of lease liabilities were as follows:

<i>(millions)</i>	Operating Leases		Finance Leases		Total
2020	\$	100	\$	52	\$ 152
2021		60		38	98
2022		41		27	68
2023		26		23	49
2024		15		21	36
2025 and Thereafter		37		86	123
Total Lease Liabilities, Undiscounted		279		247	526
Less: Imputed Interest		27		42	69
Total Lease Liabilities ⁽¹⁾	\$	252	\$	205	\$ 457

⁽¹⁾ Includes the current portions of \$88 million and \$42 million for operating and finance leases, respectively.

Lease Commitments See [Note 12. Commitments and Contingencies](#) for lease commitments as of December 31, 2019.

Other Information As of December 31, 2019, other information related to our leases is as follows:

	Operating Leases	Finance Leases
Weighted-Average Remaining Lease Term	4.9 years	7.5 years
Weighted-Average Discount Rate	4.05%	4.96%

Note 10. Impairments

2019 Impairments In fourth quarter 2019, we determined that the continued depressed commodity price environment and performance of certain of our US onshore basins indicated possible impairment of our proved oil and gas properties in our US onshore business. Following our impairment analysis, we recorded impairment expense of \$1.2 billion to our Eagle Ford Shale proved properties, primarily as a result of significant decreases in NGL and natural gas prices, partially offset by lower capital and operating costs. The fair value of approximately \$600 million was estimated using the income approach, utilizing a discounted cash flow model. The cash flow model included management's estimates of future production, commodity prices based on published forward commodity price curves, operating and development costs, and a risk-adjusted discount rate. As of December 31, 2019, we had \$100 million of undeveloped leasehold costs related to our Eagle Ford Shale unproved properties that were not impaired and for which we believe future development scenarios exist to recover these costs.

2018 Impairments In 2018, upon classification of the Gulf of Mexico properties as assets held for sale, we recognized impairment expense of \$168 million. Additionally, in fourth quarter 2018, we recorded impairment expense of \$38 million, \$37 million of which related to changes in construction plans for certain midstream assets.

In fourth quarter 2018, we considered changes to facts and circumstances, particularly the decline in WTI strip pricing, increases in operating and capital costs, as well as our development plans, and concluded that it was more likely than not that the fair value of our Texas reporting unit was less than its carrying amount. As a result, we recognized a goodwill impairment of \$1.3 billion.

2017 Impairments In 2017, we recorded impairment expense of \$70 million primarily related to our decision not to pursue development of the Troubadour natural gas discovery in the Gulf of Mexico.

Note 11. Exit Cost – Transportation Commitments

In connection with the divestiture of Marcellus Shale upstream assets in 2017, we retained certain long-term financial commitments to pay transportation fees on certain pipelines in the Marcellus Basin. As of December 31, 2019, our undiscounted financial commitment for the remaining obligations under these agreements, which have remaining terms of three to fourteen years, was approximately \$1.0 billion, which excludes the impact of ongoing mitigation activities to reduce and offset this cost. See [Note 4. Acquisitions and Divestitures](#) and [Note 12. Commitments and Contingencies](#).

Our efforts to mitigate and thereby reduce these obligations primarily include permanent assignment of capacity, negotiation of capacity releases and utilization of capacity through purchase and transport of third-party natural gas. Revenues and expenses associated with mitigation activities are recorded in sales of purchased oil and gas and cost of purchased oil and gas, respectively, in our consolidated statements of operations. In the event we execute a permanent assignment of capacity, we no

longer have a contractual obligation to the pipeline company and, as such, our gross financial commitment is reduced. In the event we execute a capacity release or utilize the capacity through the purchase and transport of third-party natural gas, we remain the primary obligor to the pipeline company. While our gross financial commitment is not reduced, except through use under those arrangements, we would receive future cash payments from the third-parties with whom we negotiated a capacity release or from the sale of purchased natural gas to third-parties. As a result of our mitigation activities, we reduced and offset our financial obligations by approximately \$38 million and \$8 million in 2019 and 2018, respectively.

Leach Xpress and Rayne Xpress Permanent Assignment In January 2019, we executed agreements on the Leach Xpress and Rayne Xpress pipelines to permanently assign the remaining capacity to a third-party effective January 1, 2021, extending through the remainder of the contract. The permanent assignment reduced our total financial commitment by approximately \$350 million, undiscounted. As a result of the assignment, we recorded firm transportation exit cost at a fair value \$92 million, representing the discounted, present value of our remaining obligation to the third-party. We will continue efforts to mitigate the impact of these transportation agreements through 2020.

Exit Costs Reconciliation of accrued exit costs at December 31, 2019 is as follows:

(millions)	December 31,	
	2019	2018
Balance at Beginning of Period	\$ 80	\$ 90
Exit Cost Accrual ⁽¹⁾	88	—
Payments, Net of Accretion	(5)	(10)
Balance at End of Period	\$ 163	\$ 80
Less Current Portion Included in Other Current Liabilities	34	13
Long-term Portion Included in Other Noncurrent Liabilities	\$ 129	\$ 67

⁽¹⁾ Amount includes \$92 million exit cost for the permanent assigned discussed above, offset by a gain of \$4 million.

Revenues and expenses associated with these long-term financial commitments, including mitigation activities discussed above, were as follows:

(millions)	Year Ended December 31,		
	2019	2018	2017
Sales of Purchased Gas	\$ 90	\$ 113	\$ —
Cost of Purchased of Gas	85	108	—
Utilized Firm Transportation Expense	57	29	—
Unutilized Firm Transportation Expense	1	3	—
Cost of Purchased Gas, Total	\$ 143	\$ 140	\$ —

Note 12. Commitments and Contingencies

Legal Proceedings We are involved in various legal proceedings in the ordinary course of business. These proceedings are subject to the uncertainties inherent in any litigation. We are defending ourselves vigorously in all such matters and we believe that the ultimate disposition of such proceedings will not have a material adverse effect on our financial position, results of operations or cash flows.

Colorado Air Matter In April 2015, we entered into a joint consent decree (Consent Decree) with the US Environmental Protection Agency (EPA), US Department of Justice, and State of Colorado to improve emission control systems at a number of our condensate storage tanks that are part of our upstream crude oil and natural gas operations within the Non-Attainment Area of the DJ Basin. Costs associated with the settlement consist of \$5 million in civil penalties which were paid in 2015. Mitigation costs of \$4 million and supplemental environmental project costs of \$4 million are being expended in accordance with schedules established in the Consent Decree. Costs associated with the injunctive relief, including plugging and abandonment of certain wells and facilities, are also being expended in accordance with schedules established in the Consent Decree.

We have concluded that the penalties, injunctive relief and mitigation expenditures that result from this settlement, based on currently available information, will not have a material adverse effect on our financial position, results of operations or cash flows. See [Note 7. Asset Retirement Obligations](#).

Colorado Water Quality Control Division Matter In October 2019, we resolved by Compliance Order on Consent (COC) with the Colorado Department of Public Health & Environment allegations of noncompliance with the Colorado Water Quality Act relating to our Colorado Discharge Permit System General Permit for construction activities associated with oil and gas exploration and/or production within our Wells Ranch Drilling and Production field located in Weld County, Colorado. The COC required us to pay a penalty of \$57 thousand and to contribute \$126 thousand toward a State-managed supplemental environmental project. We have concluded that the resolution of this action did not have a material adverse effect on our financial position, results of operations or cash flows.

Colorado Clean Water Act Referral Notice In September 2018, we received a letter from the US Department of Justice providing notification of referral from the EPA of alleged Clean Water Act violations at an upstream production facility and a midstream gathering facility in Weld County, Colorado. In April 2019, we met with the DOJ and Environmental Protection Agency enforcement personnel to discuss potential settlement of the alleged violations. Given the ongoing status of settlement discussions, we are currently unable to predict the ultimate outcome of this action, but believe the resolution will not have a material adverse effect on our financial position, results of operations or cash flows.

Marcellus Shale Firm Transportation Obligations As part of our Marcellus Shale upstream divestiture, we retained certain transportation obligations to flow Marcellus Shale natural gas production to various markets. See [Note 11. Exit Cost – Transportation Commitments](#).

Other Gathering and Transportation Obligations As part of our normal course of business, we enter into agreements to transport minimum volumes in the US onshore and Eastern Mediterranean. In the US onshore, primarily in the DJ Basin, certain of these contracts require us to make payments for any shortfalls in delivering or transporting minimum volumes under the commitments. As properties are undergoing development activities, we may experience temporary shortfalls until production volumes increase to meet or exceed the minimum volume commitments and will incur expense related to volume deficiencies and/or unutilized commitments. We expect to continue to incur expense related to deficiency and/or unutilized commitments in the near-term. These amounts are recorded as marketing expense in our consolidated statements of operations. In the Eastern Mediterranean, regional export contracts contain minimum transportation commitments. For US onshore and Eastern Mediterranean agreements, which have remaining terms of one to 12 years, our total financial commitment is approximately \$921 million, undiscounted. The commitments are included in the table below.

Mezzanine Equity Commitment In March 2019, Noble Midstream Partners obtained a \$200 million preferred equity commitment. \$100 million of the commitment funded immediately and the remaining \$100 million is available for funding until March 2020, subject to certain conditions precedent. See [Note 1. Summary of Significant Accounting Policies](#) and [Note 4. Acquisitions and Divestitures](#).

Minimum Commitments Minimum commitments as of December 31, 2019 consist of the following:

<i>(millions)</i>	Purchase and Service Obligations	Marcellus Shale Firm Transportation Obligations ⁽¹⁾	Gathering, Transportation & Processing Obligations ⁽²⁾	Operating Lease Obligations ⁽³⁾	Finance Lease Obligations ⁽³⁾	Total
2020	\$ 135	\$ 143	\$ 174	\$ 100	\$ 52	\$ 604
2021	28	102	176	60	38	404
2022	14	85	156	41	27	323
2023	30	83	153	26	23	315
2024	2	92	149	15	21	279
2025 and Thereafter	72	675	334	37	86	1,204
Total	\$ 281	\$ 1,180	\$ 1,142	\$ 279	\$ 247	\$ 3,129

⁽¹⁾ Amount includes exit cost obligations resulting from permanent capacity assignments. See [Note 11. Exit Cost – Transportation Commitments](#).

⁽²⁾ Amount includes US onshore and Eastern Mediterranean transportation obligations of \$921 million, undiscounted, and Noble Midstream Partners obligations of \$221 million, undiscounted.

⁽³⁾ See [Note 9. Leases](#).

Note 13. Income Taxes

Components of (loss) income from operations before income taxes are as follows:

<i>(millions)</i>	Year Ended December 31,		
	2019	2018	2017
Domestic	\$ (2,222)	\$ (953)	\$ (2,831)
Foreign	446	1,093	640
Total	\$ (1,776)	\$ 140	\$ (2,191)

Income Tax Provision The income tax (benefit) provision consists of the following:

<i>(millions, except percentages)</i>	Year Ended December 31,		
	2019	2018	2017
Current Taxes			
Federal	\$ 1	\$ 22	\$ (11)
State	3	2	1
Foreign	81	172	96
Total Current	\$ 85	\$ 196	\$ 86
Deferred Taxes			
Federal	\$ (413)	\$ (123)	\$ (1,258)
State	(25)	(7)	(8)
Foreign	10	60	39
Total Deferred	\$ (428)	\$ (70)	\$ (1,227)
Total Income Tax (Benefit) Provision Attributable to Noble Energy	\$ (343)	\$ 126	\$ (1,141)
Effective Tax Rate	19.3%	90.0%	52.1%

The 2019 deferred income tax benefit relates to the asset impairment recorded in fourth quarter 2019. See [Note 10. Impairments](#). The 2018 income tax provision is primarily due to current income tax expense for foreign taxes on the gain recognized for the 2018 divestiture of a 7.5% working interest in the Tamar field, partially offset by a deferred income tax benefit. The 2017 income tax benefit is due to the significant deferred tax benefit associated with the revaluation of the US deferred tax liability as a result of the reduction in the federal corporate tax rate to 21%.

Effective Tax Rate (ETR) A reconciliation of the federal statutory tax rate to the ETR is as follows:

<i>(percentages)</i>	Year Ended December 31,		
	2019	2018	2017
Federal Statutory Rate	21.0 %	21.0 %	35.0 %
Effect of			
Goodwill Impairment	—	192.5	—
Change in Valuation Allowance	(0.6)	(170.2)	(17.4)
US and Foreign Statutory Rate Change	—	80.7	23.5
Accumulated Undistributed Foreign Earnings	—	—	11.0
Transition Tax	—	—	(4.8)
Difference Between US and Foreign Rates	(0.6)	17.9	1.8
Earnings of Equity Method Investments	0.7	(20.1)	1.9
Noncontrolling Interests	0.9	(12.1)	1.1
State Taxes	1.1	0.9	0.3
Foreign Exploration Loss	—	(35.6)	—
Global Intangible Low-Taxed Income (GILTI)	(0.8)	24.2	—
Return to Provision	—	(17.1)	(0.1)
Audit Settlement	—	5.1	0.1
Oil Profits Tax - Israel	(0.1)	3.3	(0.1)
Other, Net	(2.3)	(0.5)	(0.2)
Effective Rate	19.3 %	90.0 %	52.1 %

There were no material items impacting our 2019 ETR as compared to the federal statutory rate of 21%. Our 2018 ETR included a significant deferred tax benefit, discussed below, recorded as a result of the intent of the US Department of the Treasury (Treasury) and Internal Revenue Service (IRS) to issue additional regulatory guidance associated with the Tax Cuts and Jobs Act (Tax Reform Legislation) and the transition tax. In addition, the 2018 ETR was impacted by low earnings, goodwill impairment with no tax benefit, deferred tax expense of \$34 million related to GILTI, discussed below, and a deferred tax benefit of \$50 million associated with a write-off of foreign exploration losses. Our 2017 ETR was driven by the deferred tax benefit related to the Tax Reform Legislation, as we revalued the ending deferred tax liability at the reduced future tax rate.

Deferred Tax Assets and Liabilities Deferred tax assets and liabilities resulted from the following:

<i>(millions)</i>	December 31,	
	2019	2018
Deferred Tax Assets		
Loss Carryforwards ⁽¹⁾	\$ 656	\$ 589
Employee Compensation and Benefits	92	92
Mark to Market of Commodity Derivative Instruments	11	(27)
Foreign Tax Credits	133	138
Other	126	157
Total Deferred Tax Assets	\$ 1,018	\$ 949
Valuation Allowance - Foreign Loss Carryforwards and Foreign Tax Credits	(327)	(320)
Net Deferred Tax Assets	\$ 691	\$ 629
Deferred Tax Liabilities		
Property, Plant and Equipment, Principally Due to Differences in Depreciation, Amortization, Lease Impairment and Abandonments	(1,338)	(1,669)
Total Deferred Tax Liability	\$ (1,338)	\$ (1,669)
Net Deferred Tax Liability	\$ (647)	\$ (1,040)

⁽¹⁾ At December 31, 2019, \$459 million related to domestic tax (state and federal) and \$197 million related to foreign tax.

Net deferred tax assets and liabilities were classified in the consolidated balance sheets as follows:

(millions)	December 31,	
	2019	2018
Deferred Income Tax Asset - Noncurrent	\$ 15	\$ 21
Deferred Income Tax Liability - Noncurrent	(662)	(1,061)
Net Deferred Tax Liability	\$ (647)	\$ (1,040)

Our estimated pre-tax net operating loss (NOL) carryforwards totaled approximately \$2.7 billion at December 31, 2019, of which US federal income tax NOL carryforwards totaled approximately \$2.0 billion and foreign NOL carryforwards totaled \$691 million.

We currently have a valuation allowance on the deferred tax assets associated with foreign loss carryforwards and foreign tax credits. The valuation allowance on foreign loss carryforwards totaled \$192 million and \$187 million in 2019 and 2018, respectively. The valuation allowance on foreign tax credits totaled \$133 million and \$132 million in 2019 and 2018, respectively.

Accumulated Undistributed Earnings of Foreign Subsidiaries As of December 31, 2019, there is no expected withholding tax impact upon actual distribution of earnings and as such, we have not recorded any tax associated with unremitted earnings.

Tax Reform Legislation Updates Since the enactment of Tax Reform Legislation by the US Congress in December 2017, Treasury and the IRS have periodically issued guidance regarding various aspects of the new law.

Global Intangible Low-Taxed Income (GILTI) Tax Reform Legislation introduced a new tax on GILTI. Further analysis and legal interpretation has resulted in identifying certain foreign oil related income (FORI) activity as GILTI income which will be offset by NOL carryforwards rather than the 50% deduction and related foreign tax credits. As a result of utilizing our NOL to offset the GILTI inclusion, for 2019 and 2018, we recognized tax expense of \$14 million and \$34 million, respectively, of GILTI associated with FORI from investments in Equatorial Guinea and Israel.

In June 2019, Treasury and the IRS released new proposed regulations pertaining to GILTI, which include an election that would apply an elective high-tax exception to GILTI when the tax imposed on a tentative net tested income item exceeds an 18.5% corporate tax rate. The applicability of the high-tax exception would be tested at the level of a single qualified business unit (QBU) and would apply to all foreign corporations controlled by the same domestic shareholders. This regulation is applicable to taxable years beginning on or after the date that final regulations are published in the Federal Register. For us, this high tax exception would have the effect of reclassifying all GILTI into another classification of income, thus eliminating the GILTI/NOL offset item described above. We will continue to monitor the development of this proposed regulation.

Transition Tax (Toll Tax) Tax Reform Legislation provided for a toll tax on a one-time “deemed repatriation” of accumulated foreign earnings for the year ended December 31, 2017. In April 2018, the Treasury and the IRS released Notice 2018-26, signaling intent to issue regulations related to the toll tax for the year ended December 31, 2017. This notice clarified that an Internal Revenue Code Section 965(n) election is available with respect to both current and prior year NOLs. As a result, we released \$252 million of the valuation allowance recorded against foreign tax credits to be utilized against the estimated \$268 million toll tax liability recorded as of December 31, 2017. This resulted in a \$252 million tax benefit and a corresponding expense of \$107 million for the tax rate change adjustment on the previously utilized NOLs. The impact on first quarter 2018 total tax expense, related to this additional guidance, was a net \$145 million discrete tax benefit.

During fourth quarter 2018, the toll tax calculations were finalized in conjunction with filing of the US tax return, resulting in a \$261 million toll tax against which \$240 million of foreign tax credits were utilized. This resulted in a \$21 million liability payable in installments over eight years beginning in 2018.

Other Provisions Tax Reform Legislation broadened the former Section 163(j) applying a net interest expense limitation equal to 30% of earnings before interest, taxes, depreciation, and amortization (EBITDA) for tax years beginning after December 31, 2017, and before January 1, 2022, after which the net interest expense limitation will be calculated as 30% of earnings before interest and taxes (EBIT). Disallowed interest may be carried forward indefinitely. In November 2018, Treasury and the IRS released proposed regulations pertaining to section 163(j) which state that any amount normally incurred as deductible DD&A, but included in a taxpayer’s cost of goods sold calculation pursuant to section 263A, is not a deduction for DD&A for purposes of determining Adjusted Taxable Income for years beginning prior to January 1, 2022. We have modified our 163(j) limitation calculation to comply and will continue to monitor the development of this proposed regulation.

Israeli Tax Law Our Israeli operations are subject to the Natural Resources Profits Taxation Law, 2011 (the Law), which imposes a separate additional tax on profits from oil and gas activities (Oil Profits Tax). The Oil Profits Tax is calculated by dividing net accumulated revenue generated by each separate project by its cumulative investments as defined within the

Law. Once the revenue factor (R Factor) reaches 1.5, a tax rate of 20% is imposed; as the ratio increases to a maximum of 2.3, the Oil Profits Tax increases progressively up to a maximum rate of 50%. The Oil Profits Tax provides for a corporate tax rate adjustment based on the corporate income tax rate, which is currently 23%. To the extent the corporate income tax rate exceeds 18%, a reduction in the Oil Profits Tax rate is calculated. At the current corporate tax rate, the Oil Profits Tax rate is 46.8%. The Oil Profits Tax is deductible for Israeli corporate tax purposes. Our Tamar and Leviathan projects are both subject to the Oil Profits Tax and are expected to pay at the maximum rate.

Clayton Williams Energy Acquisition In April 2017, we completed the Clayton Williams Energy Acquisition, which qualified as a tax free merger, and acquired carryover tax basis in Clayton Williams Energy's assets and liabilities. As part of our purchase price allocation we recorded a deferred tax liability of \$307 million, adjusted for the new US statutory rate, which includes a deferred tax asset for federal pre-tax NOLs of approximately \$450 million. The merger resulted in a change of control for federal income tax purposes, and the NOL usage will be subject to an annual limitation in part based on Clayton Williams Energy's value at the date of the merger.

Unrecognized Tax Benefits We file a consolidated income tax return in the US federal jurisdiction, and we file income tax returns in various states and foreign jurisdictions. Our income tax returns are routinely audited by the applicable revenue authorities, and provisions are made in the financial statements for differences between positions taken in tax returns and amounts recognized in the financial statements in anticipation of audit results.

In our major tax jurisdictions, the earliest years remaining open to examination are: US - 2014, Israel - 2015 (2013 with respect to Israel Oil Profits Tax) and Equatorial Guinea - 2013. Our policy is to recognize any interest and penalties related to unrecognized tax benefits in income tax expense. As of December 31, 2019 and 2018, we had de minimis unrecognized tax benefits.

Note 14. Derivative Instruments and Hedging Activities

Objective and Strategies for Using Derivative Instruments We enter into price hedging arrangements in an effort to mitigate the effects of commodity price volatility and enhance the predictability of cash flows relating to the marketing of a portion of our production. The derivative instruments we use may include variable to fixed price commodity swaps, enhanced swaps, collars and three-way collars, sold calls and sold puts, basis swaps, swaptions and/or put options.

The fixed price swap and collar contracts entitle us (floating price payor) to receive settlement from the counterparty (fixed price payor) for each calculation period in amounts, if any, by which the settlement price for the scheduled trading days applicable for each calculation period is less than the fixed strike price or floor price. We would pay the counterparty if the settlement price for the scheduled trading days applicable for each calculation period is more than the fixed strike price or ceiling price. The amount payable by us, if the floating price is above the fixed or ceiling price, is the product of the notional quantity per calculation period and the excess of the floating price over the fixed or ceiling price in respect of each calculation period. The amount payable by the counterparty, if the floating price is below the fixed or floor price, is the product of the notional quantity per calculation period and the excess of the fixed or floor price over the floating price in respect of each calculation period.

A three-way collar consists of a collar contract combined with a put option contract sold by us with a strike price below the floor price of the collar. We receive price protection at the purchased put option floor price of the collar if commodity prices are above the sold put option strike price. If commodity prices fall below the sold put option strike price, we receive the cash market price plus the difference between the two put option strike prices. This type of instrument allows us to capture more value in a rising commodity price environment, but limits our benefits in a downward commodity price environment.

A swaption gives counterparties the right, but not the obligation, to enter into swap agreements with us on the option expiration dates.

Sold calls are entered into to receive premiums for establishing a maximum price that would be settled for the notional volumes covered by the respective contracts. Sold puts are entered into to receive premiums for establishing a minimum price that would be settled for the notional volumes covered by basis swap contracts.

While these instruments mitigate the cash flow risk of future reductions in commodity prices, they may also curtail benefits during periods of increasing commodity prices. Additionally, derivative instruments expose us to counterparty credit risk, especially during periods of falling prices. Our commodity derivative instruments are currently with a diversified group of major banks or market participants. We monitor the creditworthiness of these counterparties and our internal hedge policies provide for exposure limits.

Noble Energy, Inc.
Notes to Consolidated Financial Statements

Unsettled Commodity Derivative Instruments As of December 31, 2019, we had entered into the following crude oil derivative instruments:

Settlement Period	Type of Contract	Index	Bbls per Day	Swaps		Collars		
				Weighted Average Differential	Weighted Average Fixed Price	Weighted Average Short Put Price	Weighted Average Floor Price	Weighted Average Ceiling Price
2020	Sold Calls	NYMEX WTI	8,000	\$ —	\$ 65.59	\$ —	\$ —	\$ —
2020	Swaps	NYMEX WTI	35,000	—	58.12	—	—	—
2020	Three-Way Collars	NYMEX WTI	30,000	—	—	48.33	57.87	64.27
Jan2020-Jun2020	Swaps	NYMEX WTI	24,000	—	59.54	—	—	—
Jul2020-Dec2020	Call Swaption	NYMEX WTI	11,000	—	58.95	—	—	—
2020	Basis Swaps	(1)	15,000	(5.01)	—	—	—	—

(1) We have entered into crude oil basis swap contracts in order to establish a fixed amount for the differential between pricing in Midland, Texas, and Cushing, Oklahoma. The weighted average differential represents the amount of reduction to Cushing, Oklahoma, prices for the notional volumes covered by the basis swap contracts.

As of December 31, 2019, we had entered into the following NGL derivative instruments:

Settlement Period	Type of Contract	Index	Bbls per Day	Swaps	
				Weighted Average Differential	Weighted Average Fixed Price
Apr 2020-Sept 2020	Ethane Swaps	Mont Belvieu	2,000	\$ —	7.77
Apr 2020-Sept 2020	Propane Swaps	Mont Belvieu	5,000	—	21.04
Apr 2020-Sept 2020	Isobutane Swaps	Mont Belvieu	1,000	—	25.36
Apr 2020-Sept 2020	Butane Swaps	Mont Belvieu	1,500	—	24.31

As of December 31, 2019, we had entered into the following natural gas derivative instruments:

Settlement Period	Type of Contract	Index	MMBtu per Day	Swaps		Collars		
				Weighted Average Differential	Weighted Average Fixed Price	Weighted Average Short Put Price	Weighted Average Floor Price	Weighted Average Ceiling Price
Apr2020-Dec2020	Swaps	NYMEX HH	90,000	\$ —	\$ 2.60	\$ —	\$ —	\$ —
Apr2020-Oct2020	Three-Way Collars	NYMEX HH	40,000	—	—	2.25	2.70	2.85
2020	Sold Puts	NYMEX HH	90,000	—	—	2.15	—	—
2020	Basis Swaps	CIG (1)	139,000	(0.56)	—	—	—	—
2020	Basis Swaps	Waha (1)	49,500	(1.05)	—	—	—	—
2021	Basis Swaps	CIG (1)	60,000	(0.52)	—	—	—	—
2021	Basis Swaps	Waha (1)	14,000	(0.60)	—	—	—	—

(1) We have entered into natural gas basis swap contracts in order to establish a fixed amount for the differential between index pricing for Colorado Interstate Gas (CIG) and Waha Hub versus NYMEX Henry Hub (HH). The weighted average differential represents the amount of reduction to NYMEX HH prices for the notional volumes covered by the basis swap contracts.

Fair Value Amounts and Gains and Losses on Derivative Instruments The fair values of derivative instruments on our consolidated balance sheets were as follows (in millions):

Asset Derivative Instruments			Liability Derivative Instruments		
Balance Sheet Location	December 31, 2019	December 31, 2018	Balance Sheet Location	December 31, 2019	December 31, 2018
Other Current Assets	\$ 14	\$ 180	Other Current Liabilities	\$ 36	\$ 1
Other Noncurrent Assets	1	—	Other Noncurrent Liabilities	1	26
Total Assets	\$ 15	\$ 180	Total Liabilities	\$ 37	\$ 27

We estimate the fair values of these instruments using published forward commodity price curves as of the date of the estimate. The discount rate used in the discounted cash flow projections is based on published London Inter-bank Offered Rate (LIBOR) rates, Eurodollar futures rates and interest swap rates. The fair values of commodity derivative instruments in an asset position include a measure of counterparty nonperformance risk, and the fair values of commodity derivative instruments in a liability position include a measure of our own nonperformance risk, each based on the current published credit default swap rates. In addition, for collars, we estimate the option values of the put options sold and the contract floors and ceilings using an option pricing model which considers market volatility, market prices and contract terms. Amounts include the impact of netting clauses within our master agreements that allow us to net cash settle asset and liability positions with the same counterparty.

The effect of derivative instruments on our consolidated statements of operations was as follows:

<i>(millions)</i>	Year Ended December 31,		
	2019	2018	2017
Cash (Received) Paid in Settlement of Commodity Derivative Instruments			
Crude Oil	\$ (10)	\$ 162	\$ (14)
Natural Gas	(22)	(1)	1
Total Cash (Received) Paid in Settlement of Commodity Derivative Instruments	(32)	161	(13)
Non-cash Portion of Loss (Gain) on Commodity Derivative Instruments			
Crude Oil	184	(225)	18
NGLs	(3)	—	—
Natural Gas	(6)	1	(68)
Total Non-cash Portion of Loss (Gain) on Commodity Derivative Instruments	175	(224)	(50)
Loss (Gain) on Commodity Derivative Instruments			
Crude Oil	174	(63)	4
NGLs	(3)	—	—
Natural Gas	(28)	—	(67)
Total Loss (Gain) on Commodity Derivative Instruments	\$ 143	\$ (63)	\$ (63)

Note 15. Additional Shareholders' Equity Information

Common Stock and Treasury Stock Activity in shares of our common stock and treasury stock was as follows:

	Year Ended December 31,	
	2019	2018
Shares of Common Stock Issued		
Shares, Beginning of Period	521,055,001	528,743,381
Exercise of Common Stock Options	—	576,617
Restricted Stock Awarded, Net of Forfeitures	2,768,731	2,488,363
Purchase and Retirement of Common Stock ⁽¹⁾	—	(10,008,128)
Adjustment to Shares Exchanged in Clayton Williams Energy Acquisition	—	(745,232)
Shares, End of Period	523,823,732	521,055,001
Treasury Stock		
Shares, Beginning of Period	38,851,988	38,786,969
Shares Received in Payment of Withholding Taxes Due on Vesting of Shares of Restricted Stock	240,865	267,258
Rabbi Trust Shares Distributed and/or Sold	(203,063)	(202,239)
Shares, End of Period	38,889,790	38,851,988
Additional Information		
Incremental Shares From Assumed Conversion of Dilutive Stock Options, Restricted Stock, and Shares of Common Stock in Rabbi Trust	—	—
Number of Antidilutive Stock Options, Shares of Restricted Stock and Shares of Common Stock in Rabbi Trust excluded from Dilutive Earnings (Loss) per Share ⁽²⁾	13,892,742	15,004,591

⁽¹⁾ On February 15, 2018, we announced that the Company's Board of Directors had authorized a share repurchase program of \$750 million which expires December 31, 2020. In 2019, no shares were repurchased and retired. In 2018, shares were repurchased and retired at an average price of \$29.49 per share.

⁽²⁾ For the years ended December 31, 2019 and 2018, all outstanding options and non-vested restricted shares have been excluded from the calculation of diluted earnings (loss) per share as Noble Energy incurred a loss. Therefore, inclusion of outstanding options and non-vested restricted shares in the calculation of diluted earnings (loss) per share would be anti-dilutive.

Accumulated Other Comprehensive Loss (AOCL) AOCL in the shareholders' equity section of the balance sheet included:

<i>(millions)</i>	Interest Rate Cash Flow Hedge	Other Postretirement Benefit Plans	Total
December 31, 2016	\$ (21)	\$ (10)	\$ (31)
Realized Amounts Reclassified Into Earnings	1	4	5
Unrealized Change in Fair Value	—	(4)	(4)
December 31, 2017	(20)	(10)	(30)
Realized Amounts Reclassified Into Earnings	(3)	1	(2)
December 31, 2018	(23)	(9)	(32)
Realized Amounts Reclassified Into Earnings	1	—	1
December 31, 2019	\$ (22)	\$ (9)	\$ (31)

Items in AOCL were initially recorded net of tax, using an effective income tax rate of 5%. In fourth quarter 2018, we reclassified to retained earnings approximately \$6 million representing the effect of the decrease in the income tax rate to 21%.

AOCL at December 31, 2019 included deferred losses of \$22 million, net of tax, related to an interest rate derivative instrument. This amount is reclassified to earnings as an adjustment to interest expense over the term of our senior notes due March 2041.

Note 16. Stock-Based and Other Compensation Plans

We recognized total stock-based compensation expense as follows:

<i>(millions)</i>	Year Ended December 31,		
	2019	2018	2017
General and Administrative Expense	\$ 59	\$ 54	\$ 56
Exploration Expense and Other	9	8	48
Total Stock-Based Compensation Expense⁽¹⁾	\$ 68	\$ 62	\$ 104
Tax Benefit Recognized	\$ (14)	\$ (13)	\$ (36)

⁽¹⁾ 2019 amount excludes \$8 million capitalized to property, plant and equipment.

Stock Option and Restricted Stock Plans Our stock option and restricted stock plans are described below.

2017 Long-Term Incentive Plan On April 25, 2017, our shareholders approved the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the 2017 Plan). Upon shareholder approval, the 2017 Plan superseded and replaced the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan, as amended (the 1992 Plan) which was frozen so that no future grants would be made under the 1992 Plan. The 1992 Plan continues to govern awards that were outstanding as of the date of its suspension, which remain in effect pursuant to their terms. Under the 2017 Plan, the Compensation, Benefits and Stock Option Committee of the Board of Directors (the Committee) may grant stock options, stock appreciation rights, restricted stock, restricted stock units, performance awards, stock awards and other incentive awards to our officers or other employees and those of our subsidiaries. The maximum number of shares that may be granted under the 2017 Plan is 44 million shares of common stock. At December 31, 2019, 39,693,735 shares of our common stock were reserved for issuance, including 28,407,839 shares available for future grants and awards, under the 2017 Plan.

Stock options are issued with an exercise price equal to the fair market value of our common stock on the date of grant, and are subject to such other terms and conditions as may be determined by the Committee. Unless granted by the Committee for a shorter term, the options expire 10 years from the grant date. Option grants generally vest ratably over a three-year period.

Restricted stock awards made under the 2017 Plan are subject to such restrictions, terms and conditions, including forfeitures, if any, as may be determined by the Committee. During the period in which such restrictions apply, unless specifically provided otherwise in accordance with the terms of the 2017 Plan, the recipient of restricted stock would be the record owner of the shares and have all the rights of a shareholder with respect to the shares, including the right to vote and the right to receive dividends or other distributions made or paid with respect to the shares. The dividends or other distributions pertaining to the restricted shares will be held by the Company until the restriction period ends and the shares vest or forfeit. If the restricted shares forfeit, then the recipient shall not be entitled to receive the dividend or distribution, which will transfer to the Company. Restricted stock awards with a time-vested restriction vest over a two or three-year period. Performance share awards cliff vest after a three-year period if the Company achieves certain levels of total shareholder return relative to a pre-determined industry peer group.

2015 Stock Plan for Non-Employee Directors The 2015 Stock Plan for Non-Employee Directors of Noble Energy, Inc., as amended (the 2015 Plan) provides for grants of stock options and awards of restricted stock to our non-employee directors. The 2015 Plan superseded and replaced the 2005 Stock Plan for Non-Employee Directors of Noble Energy, Inc. The total number of shares of our common stock that may be issued under the 2015 Plan is 708,996. At December 31, 2019, 485,062 shares of our common stock were reserved for issuance, including 306,243 shares available for future grants and awards, under the 2015 Plan.

Stock Option Grants The fair value of each stock option granted is estimated on the date of grant using a Black-Scholes-Merton option valuation model that used the assumptions described below:

- **Expected term** Represents the period of time that options granted are expected to be outstanding, which is the grant date to the date of expected exercise or other expected settlement for options granted. The hypothetical midpoint scenario we use considers our actual exercise and post-vesting cancellation history and expectations for future periods, which assumes that all vested, outstanding options are settled halfway between the current date and their expiration date.
- **Expected volatility** Represents the extent to which our stock price is expected to fluctuate between the grant date and the expected term of the award. We use the historical volatility of our common stock for a period equal to the expected term of the option prior to the date of grant. We believe that historical volatility produces an estimate that is representative of our expectations about the future volatility of our common stock over the expected term.

- **Risk-free rate** Represents the implied yield available on US Treasury securities with a remaining term equal to the expected term of the option. We base our risk-free rate on a weighting of five and seven year US Treasury securities as of the date of grant.
- **Dividend yield** Represents the value of our stock's annualized dividend as compared to our stock's average price for the three-year period ended prior to the date of grant. It is calculated by dividing one full year of our expected dividends by our average stock price over the three-year period ended prior to the date of grant.

The assumptions used in valuing stock options granted were as follows:

<i>(weighted averages)</i>	Year Ended December 31,		
	2019	2018	2017
Expected Term (in Years)	6.9	6.7	6.4
Expected Volatility	33.8%	33.4%	33.2%
Risk-Free Rate	2.7%	2.6%	2.2%
Expected Dividend Yield	1.4%	1.2%	0.9%
Weighted Average Grant-Date Fair Value	\$ 7.57	\$ 10.47	\$ 13.26

Stock option activity was as follows:

	Options	Weighted Average Exercise Price <i>(per share)</i>	Weighted Average Remaining Contractual Term <i>(years)</i>	Aggregate Intrinsic Value <i>(millions)</i>
Outstanding at December 31, 2018	13,852,020	\$ 44.04		
Granted	461,311	22.15		
Forfeited	(51,100)	34.72		
Expired	(1,686,478)	35.26		
Outstanding at December 31, 2019	12,575,753	\$ 44.62	4.2	\$ 1
Exercisable at December 31, 2019	11,373,846	\$ 46.11	3.7	\$ —

There were no options exercised in 2019. The total intrinsic value of options exercised was \$5 million in 2018 and \$4 million in 2017. As of December 31, 2019, \$5 million of compensation cost related to unvested stock options granted under the Plans remained to be recognized. The cost is expected to be recognized over a weighted-average period of 1.2 years. We issue new shares of our common stock to settle option exercises. Dividends are not paid on unexercised options.

Restricted Stock Awards Awards of time-vested restricted stock (shares subject to service conditions) are valued at the price of our common stock at the date of award. The fair value of the market based restricted stock awards was estimated on the date of award using a Monte Carlo valuation model that uses the assumptions in the following table. The Monte Carlo valuation model is based on random projections of stock price paths and must be repeated numerous times to achieve a probabilistic assessment. Expected volatility represents the extent to which our stock price is expected to fluctuate between now and the award's anticipated term. We use the historical volatility of Noble Energy common stock for the three-year period ended prior to the date of award. The risk-free rate is based on a three-year period for US Treasury securities as of the year ended prior to the date of award.

The assumptions used in valuing market based restricted stock awards granted were as follows:

	Year Ended December 31,		
	2019	2018	2017
Number of Simulations	10,000,000	10,000,000	500,000
Expected Volatility	37.5%	35.0%	35.0%
Risk-Free Rate	2.5%	2.3%	1.5%

Restricted stock activity was as follows:

	Subject to Time Vesting		Subject to Market Conditions	
	Number of Shares	Weighted Average Award Date Fair Value <i>(per share)</i>	Number of Shares	Weighted Average Award Date Fair Value <i>(per share)</i>
Outstanding at December 31, 2018	3,172,891	\$ 32.72	1,385,634	\$ 21.74
Awarded	2,464,682	22.33	1,138,730	13.50
Vested	(906,485)	34.11	—	—
Forfeited	(486,733)	27.97	(347,948)	21.20
Outstanding at December 31, 2019	4,244,355	\$ 27.02	2,176,416	\$ 17.52

The total fair value of restricted stock that vested was \$20 million in 2019, \$29 million in 2018, and \$34 million in 2017. The weighted average award-date fair value per share of restricted stock awarded was \$19.54 in 2019, \$27.96 in 2018, and \$35.45 in 2017.

As of December 31, 2019, \$74 million of compensation cost related to all of our unvested restricted stock awarded under the Plans remained to be recognized. The cost is expected to be recognized over a weighted-average period of 1.4 years. Common stock dividends accrue on restricted stock awards and are paid upon vesting. We issue new shares of our common stock when awarding restricted stock.

Cash-Settled Awards Periodically, we issue cash-settled awards (so called phantom units, the nomenclature used in accounting literature) to certain employees in lieu of a portion of restricted stock and stock options. These phantom units represented a hypothetical interest in the Company and, once vested, are settled in cash. Common stock dividends accrue on phantom units and are paid upon vesting.

On February 1, 2016, we issued one million phantom units under the 1992 Plan, a portion of which were subject to the Company's achievement of certain levels of total shareholder return relative to a pre-determined industry peer group. The phantom units vested during 2019 at \$31.65 per share which was equal to the grant date fair value. The fair value of the market based phantom unit awards was estimated on the date of award using a Monte Carlo valuation model and assumed 500,000 simulations, 38% expected volatility and a risk-free rate of 0.9%. These awards vested at 0% as performance was not achieved.

On February 19, 2019, we issued 803,606 phantom units under the 2017 Plan. The units had a grant date fair value of \$22.39 and vest ratably over three years. The value at vesting will equal the fair market value of a share of common stock of the Company as of the vesting date.

Phantom unit activity was as follows:

	Subject to Time Vesting		Subject to Market Conditions	
	Number of Units	Weighted Average Award Date Fair Value <i>(per share)</i>	Number of Units	Weighted Average Award Date Fair Value <i>(per share)</i>
Outstanding at December 31, 2018	467,365	\$ 31.65	150,296	\$ 6.82
Awarded	803,606	22.39	—	—
Vested	(462,823)	31.65	—	—
Forfeited	(92,762)	22.55	(150,296)	6.82
Outstanding at December 31, 2019	715,386	\$ 22.39	—	\$ —

As of December 31, 2019, \$11 million of compensation cost related to phantom units remained to be recognized. The cost is expected to be recognized over a weighted-average period of 2.1 years. The total fair value of phantom units that vested in 2019 was \$0 million. We accrued a liability of \$5 million in 2019 related to the phantom units.

Other Compensation Plans

401(k) Plan We sponsor a 401(k) savings plan. All regular employees are eligible to participate. We make contributions to match employee contributions up to the first 6% of compensation deferred into the plan, and certain profit sharing contributions for employees hired on or after May 1, 2006, based upon their ages and salaries. We made cash contributions of \$32 million in 2019, \$31 million in 2018 and \$31 million in 2017.

Deferred Compensation Plans We have a non-qualified deferred compensation plan for which participant-directed investments are held in a rabbi trust and are available to satisfy the claims of our creditors in the event of bankruptcy or insolvency. Participants may elect to receive distributions in either cash or shares of our common stock. Assets within the rabbi trust primarily consist of mutual fund investments, which include various publicly-traded mutual funds that, in turn, include investments ranging from equities to money market instruments and totaled \$27 million at December 31, 2019. The fair values are based on quoted market prices for identical assets.

The liability associated with the deferred compensation plan, which is dependent upon the fair values of the mutual fund investments and common stock held in the rabbi trust, was \$29 million and \$43 million at December 31, 2019 and 2018, respectively. The rabbi trust included 64,729 and 267,792 shares of our common stock at December 31, 2019 and 2018, respectively, which are accounted for as treasury stock. Distributions of 200,000 shares were made in each of 2019, 2018 and 2017 and were valued at \$23 million in 2019, \$18 million in 2018 and \$21 million in 2017.

All fluctuations in market value of the deferred compensation liability have been reflected in other non-operating (income) expense, net in the consolidated statements of operations. We recognized deferred compensation expense of \$9 million in 2019, \$2 million in 2018 and \$9 million in 2017.

We also maintain other nonqualified deferred compensation plans for the benefit of certain of our employees. Deferred compensation liabilities under these plans were \$99 million and \$104 million at December 31, 2019 and 2018, respectively.

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In accordance with US GAAP for disclosures about oil and gas producing activities, and Securities and Exchange Commission (SEC) rules for oil and gas reporting disclosures, we are making the following disclosures about our crude oil, NGL and natural gas reserves and exploration and production activities. The results of operations, costs incurred and capitalized costs associated with our Midstream reportable segment are not included in this disclosure.

Reserves There are numerous uncertainties inherent in estimating quantities of proved reserves and reserves engineering is a subjective process of estimating underground accumulations of crude oil, NGLs and natural gas that cannot be precisely measured. The accuracy of any reserves estimate is a function of the quality of available data and of engineering and geological interpretation and judgment. Results of drilling, testing and production subsequent to the date of the estimate may justify revision of such estimate. Accordingly, reserves estimates are often different from the quantities of crude oil, NGLs and natural gas that are ultimately recovered.

Economic producibility of reserves is dependent on the commodity prices used in the reserves estimate. We based our reserves estimates on 12-month average commodity prices, unless contractual arrangements designate the price to be used, in accordance with SEC rules. However, commodity prices are volatile and declines in crude oil, NGL and natural gas prices could result in negative reserves revisions. Production, development and abandonment costs are based on year end economic conditions; therefore increases in these costs could also result in negative reserves revisions. Alternatively, decreases in these costs could result in positive reserves revisions.

Reserves Estimates Estimates of our proved reserves and associated future net cash flows are made solely by our engineers and are the responsibility of management. In accordance with US GAAP, we disclose a standardized measure of discounted future net cash flows related to our proved reserves. In order to standardize the measure, all companies are required to use a 10% discount rate and SEC pricing rules. This prescribed calculation can result in some proved undeveloped reserves (PUDs) having negative present worth, meaning that while these PUDs have positive cash flows, the rate of return is lower than 10%. As of December 31, 2019, we had 4 MMBoe of PUDs, or less than 1% of PUDs, with a negative present worth when discounted at 10%. For additional information regarding our reserves estimation process and internal controls see [Items 1. and 2. Business and Properties – Internal Controls Over Reserves Estimates and – Technologies Used in Reserves Estimation](#).

Third-Party Reserves Audit We retained Netherland, Sewell & Associates, Inc. (NSAI), independent, third-party petroleum engineers, to perform a reserves audit of proved reserves as of December 31, 2019. See [Items 1. and 2. Business and Properties – Proved Reserves Disclosures](#).

Definitions The following definitions apply to the terms used in the paragraphs above:

Reserves Estimate The determination of an estimate of a quantity of oil or gas reserves that are thought to exist at a certain date, considering existing prices and reservoir conditions.

Reserves Audit The process of reviewing certain of the pertinent facts interpreted and assumptions underlying a reserves estimate prepared by another party and the rendering of an opinion about the appropriateness of the methodologies employed, the adequacy and quality of the data relied upon, the depth and thoroughness of the reserves estimation process, the classification of reserves appropriate to the relevant definitions used, and the reasonableness of the estimated reserves quantities.

The following definitions apply to our categories of proved reserves:

Proved Oil and Gas Reserves Proved reserves are those quantities of oil, NGLs and natural gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to produce the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.

Developed Oil and Gas Reserves Proved developed reserves are reserves that can be expected to be recovered through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well.

Undeveloped Oil and Gas Reserves PUDs are reserves that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion. Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

For complete definitions of proved reserves, refer to SEC Regulation S-X, Rule 4-10(a)(6), (22) and (31).

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Proved Oil Reserves (Unaudited) The following reserves schedule sets forth the changes in estimated quantities of proved crude oil reserves

<i>(MMBbls)</i>	Crude Oil and Condensate			
	United States	Equatorial Guinea	Israel	Total
December 31, 2016	296	34	3	333
Price Revisions	12	2	—	14
Non-Price Revisions	17	—	—	17
Extensions, Discoveries and Other Additions	104	—	6	110
Purchase of Minerals in Place	43	—	—	43
Sale of Minerals in Place	(12)	—	—	(12)
Production	(41)	(7)	—	(48)
December 31, 2017	419	29	9	457
Price Revisions	10	4	—	14
Non-Price Revisions	(41)	(1)	—	(42)
Extensions, Discoveries and Other Additions	98	3	—	101
Sale of Minerals in Place	(24)	—	(1)	(25)
Production	(42)	(6)	—	(48)
December 31, 2018	420	29	8	457
Price Revisions	(27)	(1)	—	(28)
Non-Price Revisions	(44)	3	—	(41)
Extensions, Discoveries and Other Additions	74	1	1	76
Sale of Minerals in Place	(2)	—	—	(2)
Production	(44)	(5)	—	(49)
December 31, 2019	377	27	9	413
Proved Developed Reserves as of:				
December 31, 2016	138	34	3	175
December 31, 2017	176	29	3	208
December 31, 2018	165	26	2	193
December 31, 2019	176	25	9	210
Proved Undeveloped Reserves as of:				
December 31, 2016	158	—	—	158
December 31, 2017	243	—	6	249
December 31, 2018	255	3	6	264
December 31, 2019	201	2	—	203

Non-Price Revisions

- 2017 revisions were primarily attributable to the Delaware Basin due to continued optimization of well development and improved producing well performance.
- 2018 revisions included 30 MMBbbs for changes in expected recoveries and increased operating and capital costs in the Delaware Basin and 11 MMBbbs for changes in the previously adopted development plans in the Eagle Ford Shale and DJ Basin.
- 2019 revisions included a 41 MMBbbs revision (29 MMBbbs of PUDs and 12 MMBbbs of proved developed) in the Delaware Basin for changes in development plans and performance.

Extensions, Discoveries and Other Additions

- 2017 included additions of 59 MMBbbs and 42 MMBbbs in the Delaware and DJ Basins, respectively, primarily due to the addition of planned new locations and activity.
- 2018 extensions relate to drilling plans for new wells and primarily include 55 MMBbbs and 38 MMBbbs in the Delaware and DJ Basins, respectively.
- 2019 additions of 52 MMBbbs and 22 MMBbbs in the DJ Basin and Delaware Basin, respectively, related to drilling plans for new wells.

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Purchase of Minerals in Place The 2017 purchase was attributable to the reserves acquired in the Clayton Williams Energy Acquisition.

Sale of Minerals in Place

- 2017 sales included Marcellus Shale upstream assets and other non-strategic US onshore assets.
- 2018 sales included 16 MMBbls related to our Gulf of Mexico assets and 8 MMBbls related to other non-strategic US onshore assets.

See [Note 4. Acquisitions and Divestitures](#).

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Proved NGL Reserves (Unaudited) The following reserves schedule sets forth the changes in estimated quantities of proved NGL reserves

<i>(MMBbls)</i>	NGLs		
	United States	Equatorial Guinea	Total
December 31, 2016	207	12	219
Price Revisions	6	—	6
Non-Price Revisions	25	1	26
Extensions, Discoveries and Other Additions	32	—	32
Purchase of Minerals in Place	7	—	7
Sale of Minerals in Place	(38)	—	(38)
Production	(21)	(2)	(23)
December 31, 2017	218	11	229
Price Revisions	5	—	5
Non-Price Revisions	16	—	16
Extensions, Discoveries and Other Additions	48	—	48
Sale of Minerals in Place	(7)	—	(7)
Production	(23)	(2)	(25)
December 31, 2018	257	9	266
Price Revisions	(12)	(1)	(13)
Non-Price Revisions	(4)	3	(1)
Extensions, Discoveries and Other Additions	47	5	52
Production	(25)	(1)	(26)
December 31, 2019	263	15	278
Proved Developed Reserves as of:			
December 31, 2016	113	12	125
December 31, 2017	119	11	130
December 31, 2018	121	9	130
December 31, 2019	138	10	148
Proved Undeveloped Reserves as of:			
December 31, 2016	94	—	94
December 31, 2017	99	—	99
December 31, 2018	136	—	136
December 31, 2019	125	5	130

Non-Price Revisions

- 2017 US revisions included 11 MMBbbls in the Delaware Basin, 8 MMBbbls in the Eagle Ford Shale and 6 MMBbbls in the DJ Basin, due to continued optimization of well development and improved producing well performance.
- 2018 revisions included positive revisions of 35 MMBbbls in the DJ Basin primarily due to ASC 606 adoption, offset by negative revisions of 19 MMBbbls, primarily in the Eagle Ford Shale due to changes in the previously adopted development plan.

Extensions, Discoveries and Other Additions

- 2017 extensions in US reserves included 19 MMBbbls in the DJ Basin, 9 MMBbbls in the Delaware Basin and 4 MMBbbls in the Eagle Ford Shale primarily due to the addition of planned new locations and activity.
- 2018 extensions related to the addition of planned new locations and activity, of which 25 MMBbbls, 15 MMBbbls and 8 MMBbbls related to the DJ Basin, Delaware Basin and Eagle Ford Shale, respectively.
- 2019 extensions included additions of 40 MMBbbls in the DJ Basin due to drilling plans for new wells.

Sale of Minerals in Place

- 2017 sales included the Marcellus Shale upstream assets and other non-strategic US onshore assets.
- 2018 sales included 1 MMBbl from Gulf of Mexico assets and 6 MMBbbls for certain non-core US onshore assets.

See [Note 4. Acquisitions and Divestitures](#).

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Proved Gas Reserves (Unaudited) The following reserves schedule sets forth the changes in estimated quantities of proved natural gas reserves:

<i>(Bcf)</i>	Natural Gas			
	United States	Israel	Equatorial Guinea	Total
December 31, 2016	2,838	1,984	486	5,308
Price Revisions	53	—	13	66
Non-Price Revisions	71	292	—	363
Extensions, Discoveries and Other Additions	299	3,271	—	3,570
Purchase of Minerals in Place	46	—	—	46
Sale of Minerals in Place	(1,264)	—	(1)	(1,265)
Production	(222)	(99)	(87)	(408)
December 31, 2017	1,821	5,448	411	7,680
Price Revisions	44	—	5	49
Non-Price Revisions	(43)	2	17	(24)
Extensions, Discoveries and Other Additions	373	68	2	443
Sale of Minerals in Place	(79)	(502)	—	(581)
Production	(172)	(86)	(78)	(336)
December 31, 2018	1,944	4,930	357	7,231
Price Revisions	(81)	—	7	(74)
Non-Price Revisions	(33)	226	77	270
Extensions, Discoveries and Other Additions	377	520	167	1,064
Production	(188)	(81)	(71)	(340)
December 31, 2019	2,019	5,595	537	8,151
Proved Developed Reserves as of:				
December 31, 2016	1,817	1,600	486	3,903
December 31, 2017	983	1,793	411	3,187
December 31, 2018	929	1,295	355	2,579
December 31, 2019	1,055	5,463	355	6,873
Proved Undeveloped Reserves as of:				
December 31, 2016	1,021	384	—	1,405
December 31, 2017	838	3,655	—	4,493
December 31, 2018	1,015	3,635	2	4,652
December 31, 2019	964	132	182	1,278

Non-Price Revisions

- 2017 US revisions included 81 Bcf in the Eagle Ford Shale and 31 Bcf in the Delaware Basin, partially offset by negative performance revisions of 49 Bcf in the DJ Basin primarily associated vertical well locations. The Israel revision was associated with the integration of the Tamar 8 well results in our geologic modeling across the reservoir.
- 2018 US revisions included positive revisions of 70 Bcf in the DJ Basin primarily due to ASC 606 adoption, offset by negative revisions of 71 Bcf in the Eagle Ford Shale due to changes in the previously adopted development plan and 42 Bcf primarily in the Delaware Basin due to changes in expected recoveries and increased operating and capital costs. Additional reserves of 17 Bcf in Equatorial Guinea and 2 Bcf in Israel relate to improved recoveries on existing wells.
- 2019 revisions in US onshore included a 41 Bcf negative revision in the Eagle Ford Shale due to performance, partially offset by positive revisions due to performance in the DJ Basin. In Israel, revisions to our Tamar field included positive revisions to developed reserves of 460 Bcf, partially offset by revisions to PUD reserves of 241 Bcf. The Tamar field PUDs were reclassified to developed reserves based on our determination the reserves are accessible with limited further development. Equatorial Guinea revisions relate to the sanction of the Alen Gas Monetization project, which extends the life of the Alba field as certain natural gas volumes are now economic to produce.

Extensions, Discoveries and Other Additions

- 2017 extensions in US reserves included additions of 224 Bcf in the DJ Basin, 53 Bcf in the Delaware Basin and 22 Bcf in

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the Eagle Ford Shale primarily due to the addition of planned new locations and activity. The 2017 increase in Israel reserves represented sanction of the first phase of development of the Leviathan natural gas project.

- 2018 extensions related to drilling plans for new wells. Increases in the US included 254 Bcf, 77 Bcf and 42 Bcf in the DJ Basin, Delaware Basin and Eagle Ford Shale, respectively, and the increase in Israel of 68 Bcf related to the Tamar field.
- 2019 extensions in US onshore included additions of 345 Bcf in the DJ Basin due to drilling plans for new wells. Israel additions relate to the Leviathan field and are due to closing of the EMG Pipeline transaction and signing of amendments to our natural gas sales agreements with Egyptian customers, which significantly increase our firm sales commitments in the region. Additions in Equatorial Guinea relate to sanction of the Alen Gas Monetization project in second quarter 2019.

Sale of Minerals in Place

- 2017 sales included our Marcellus Shale upstream assets and other non-strategic US onshore assets.
- 2018 sales included 20 Bcf for our Gulf of Mexico assets, 59 Bcf for other non-strategic US onshore assets and 502 Bcf for a 7.5% working interest in the Tamar field, offshore Israel.

See [Note 4. Acquisitions and Divestitures](#).

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Results of Operations for Oil and Gas Producing Activities (Unaudited) Results of operations for crude oil, NGLs and natural gas producing activities within the E&P reporting segments are as follows:

<i>(millions)</i>	United States	Israel	Equatorial Guinea	Other Int'l	Total
Year Ended December 31, 2019					
Revenues	\$ 3,253	\$ 457	\$ 372	\$ —	\$ 4,082
Production Costs ⁽¹⁾	1,284	48	90	1	1,423
Exploration Expense ⁽²⁾	57	103	4	38	202
Depreciation, Depletion and Amortization	1,907	67	83	1	2,058
Asset Impairments ⁽³⁾	1,160	—	—	—	1,160
Marketing Expense	27	6	—	—	33
(Loss) Income before Income Taxes	(1,182)	233	195	(40)	(794)
Income Tax (Benefit) Expense ⁽⁴⁾	(248)	54	49	—	(145)
Results of Operations ⁽⁵⁾	\$ (934)	\$ 179	\$ 146	\$ (40)	\$ (649)
Year Ended December 31, 2018					
Revenues	\$ 3,590	\$ 480	\$ 543	\$ —	\$ 4,613
Production Costs ⁽¹⁾	1,276	37	110	2	1,425
Exploration Expense	48	2	1	78	129
Depreciation, Depletion and Amortization	1,642	60	115	2	1,819
Loss (Gain) on Divestitures, Net ⁽⁶⁾	36	(376)	—	—	(340)
Asset Impairments ⁽³⁾	169	—	—	—	169
Marketing Expense	40	—	—	—	40
Gain on Asset Retirement Obligation Revisions	—	(8)	—	(17)	(25)
Income (Loss) before Income Taxes	379	765	317	(65)	1,396
Income Tax Expense ⁽⁴⁾	80	176	79	—	335
Results of Operations ⁽⁵⁾	\$ 299	\$ 589	\$ 238	\$ (65)	\$ 1,061
Year Ended December 31, 2017					
Revenues	\$ 3,156	\$ 534	\$ 370	\$ —	\$ 4,060
Production Costs ⁽¹⁾	1,199	49	103	2	1,353
Exploration Expense	102	—	1	85	188
Depreciation, Depletion and Amortization	1,739	76	146	4	1,965
Loss on Marcellus Shale Upstream Divestiture and Other ⁽⁵⁾	2,286	—	—	—	2,286
Asset Impairments ⁽³⁾	63	—	—	7	70
Marketing Expense	47	—	—	—	47
Gain on Asset Retirement Obligation Revisions	—	—	—	(42)	(42)
(Loss) Income before Income Taxes	(2,280)	409	120	(56)	(1,807)
Income Tax (Benefit) Expense ⁽⁴⁾	(798)	98	30	—	(670)
Results of Operations ⁽⁵⁾	\$ (1,482)	\$ 311	\$ 90	\$ (56)	\$ (1,137)

⁽¹⁾ Production costs consist of lease operating expense, production and ad valorem taxes, royalty expense, transportation and gathering expense, and general and administrative expense supporting oil and gas operations.

⁽²⁾ Amount for Israel includes \$100 million for the write-off of the Leviathan Deep prospect.

⁽³⁾ See [Note 10. Impairments](#).

⁽⁴⁾ Income tax (benefit) expense is based upon respective corporate statutory tax rates. During all periods presented, we incurred exploration expense in currently non-commercial other international locations; therefore, no tax benefit was included in income tax expense for other international as we could not conclude it was more likely than not that some portion or all of the deferred tax assets would be realized.

⁽⁵⁾ Results of operations exclude the mark-to-market gain or loss on commodity derivative instruments, corporate activities, exit costs and certain costs associated with mitigating the effects of our retained Marcellus Shale firm transportation agreements, and overhead and interest costs.

⁽⁶⁾ See [Note 4. Acquisitions and Divestitures](#).

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Costs Incurred in Oil and Gas Property Acquisition, Exploration and Development Activities (Unaudited) Costs incurred include both capitalized costs and costs charged to expense when incurred for oil and gas property acquisition, exploration, and development activities associated with the E&P reporting segments. Costs incurred also include new AROs established in the current year, as well as changes to AROs resulting from changes to cost estimates during the year. Exploration costs presented below include the costs of drilling and equipping successful and unsuccessful exploration wells during the year, geological and geophysical expenses, and the costs of retaining undeveloped leaseholds. Development costs include the costs of drilling and equipping development wells. Costs associated with activities of our Midstream segment and other corporate activities are excluded.

<i>(millions)</i>	United States		Israel		Equatorial Guinea		Other Int'l		Total
December 31, 2019									
Property Acquisition Costs									
Proved ⁽¹⁾	\$	4	\$	—	\$	—	\$	—	\$ 4
Unproved ⁽¹⁾		37		—		—		—	37
Exploration Costs ⁽²⁾		67		14		16		43	140
Development Costs ⁽³⁾		1,483		522		60		—	2,065
Total Consolidated Operations	\$	1,591	\$	536	\$	76	\$	43	\$ 2,246
December 31, 2018									
Property Acquisition Costs									
Proved ⁽¹⁾	\$	—	\$	—	\$	—	\$	—	\$ —
Unproved ⁽¹⁾		41		—		—		—	41
Exploration Costs ⁽²⁾		58		12		10		73	153
Development Costs ⁽³⁾		2,303		663		20		(16)	2,970
Total Consolidated Operations	\$	2,402	\$	675	\$	30	\$	57	\$ 3,164
December 31, 2017									
Property Acquisition Costs									
Proved ⁽¹⁾	\$	839	\$	—	\$	—	\$	—	\$ 839
Unproved ⁽¹⁾		1,817		—		—		—	1,817
Exploration Costs ⁽²⁾		59		6		4		90	159
Development Costs ⁽³⁾		1,870		483		33		(39)	2,347
Total Consolidated Operations	\$	4,585	\$	489	\$	37	\$	51	\$ 5,162

- ⁽¹⁾ 2019 and 2018 unproved property acquisition costs include US onshore undeveloped leasehold activity during the year. 2017 proved and unproved property acquisition costs primarily include amounts allocated from the Clayton Williams Energy Acquisition. See [Note 4. Acquisitions and Divestitures](#).
- ⁽²⁾ 2019 and 2018 exploration costs primarily relate to lease rentals, seismic and staffing expense. 2019 costs exclude \$100 million of dry hole expense related to the Leviathan Deep prospect as the associated unproved capital costs were incurred in prior years. 2017 exploration costs primarily include capitalized interest on Gulf of Mexico projects, \$7 million dry hole cost related to the Araku-1 exploration well, offshore Suriname, and seismic expense and drilling costs.
- ⁽³⁾ 2019 costs to develop our PUDs totaled \$1.5 billion. Of this amount, \$1.1 billion, \$399 million and \$48 million related to the conversion of year end 2018 PUDs to proved developed reserves in US onshore, the Leviathan field and the Aseng crude oil well, respectively. In addition, we spent \$131 million to convert unproved reserves to proved developed reserves in US onshore and \$24 million progressing PUDs that have not yet been converted to proved developed reserves. Development costs also included a decrease of \$9 million in ARO, consisting of downward revisions of \$57 million in US onshore partially offset by additions of \$40 million in Israel related to Leviathan. 2018 costs to develop our PUDs totaled \$1.7 billion. Of this amount, \$1.0 billion and \$646 million were spent in US onshore and Leviathan field, respectively. In addition, we spent \$355 million to convert unproved reserves to proved developed reserves in US onshore. Development costs also included \$315 million due to upward revisions of ARO costs, \$302 million of which was in US onshore. 2017 costs to develop our PUDs totaled \$1.7 billion. Of this amount, \$1.2 billion and \$479 million were spent in US onshore and Leviathan field offshore Israel, respectively. Development costs also included downward revisions in ARO of \$13 million. Other International costs include decreases in ARO of \$40 million primarily associated with the North Sea abandonment project.

Noble Energy, Inc.
Supplemental Oil and Gas Information
(Unaudited)

Capitalized Costs Relating to Oil and Gas Producing Activities (Unaudited) Aggregate capitalized costs relating to crude oil and natural gas producing activities within the E&P reporting segments are as follows:

<i>(millions)</i>	December 31,	
	2019	2018
Unproved Undeveloped Leasehold and Other ⁽¹⁾	\$ 2,152	\$ 2,321
Unproved Capitalized Exploratory Well Costs ⁽¹⁾	280	348
Proved Oil and Gas Properties ⁽²⁾	26,658	24,607
Total Oil and Gas Properties	29,090	27,276
Accumulated Depreciation, Depletion and Amortization	(13,353)	(10,867)
Net Capitalized Costs	\$ 15,737	\$ 16,409

⁽¹⁾ See [Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs](#).

⁽²⁾ At December 31, 2019, includes asset retirement costs of \$954 million and assets held for sale of \$14 million.

At December 31, 2018, includes asset retirement costs of \$966 million and assets held for sale of \$133 million.

Standardized Measure of Discounted Future Net Cash Flows Relating to Proved Oil and Gas Reserves (Unaudited) The following information is based on our best estimate of the required data for the Standardized Measure of Discounted Future Net Cash Flows in accordance with US GAAP. The standards require the use of a 10% discount rate. This information is not the fair value, nor does it represent the expected present value of future cash flows of our proved oil and gas reserves.

<i>(millions)</i>	United States	Israel ⁽¹⁾	Equatorial Guinea	Other Int'l ⁽²⁾	Total
December 31, 2019					
Future Cash Inflows ⁽³⁾	\$ 27,965	\$ 30,865	\$ 2,760	\$ —	\$ 61,590
Future Production Costs ⁽⁴⁾	(12,453)	(2,945)	(1,172)	—	(16,570)
Future Development Costs ⁽⁵⁾	(4,966)	(418)	(269)	(23)	(5,676)
Future Income Tax Expense ⁽⁶⁾	(466)	(13,877)	(338)	—	(14,681)
Future Net Cash Flows	10,080	13,625	981	(23)	24,663
10% Annual Discount for Estimated Timing of Cash Flows	(4,110)	(8,360)	(211)	—	(12,681)
Standardized Measure of Discounted Future Net Cash Flows	\$ 5,970	\$ 5,265	\$ 770	\$ (23)	\$ 11,982
December 31, 2018					
Future Cash Inflows ⁽³⁾	\$ 38,542	\$ 27,559	\$ 2,528	\$ —	\$ 68,629
Future Production Costs ⁽⁴⁾	(14,793)	(2,478)	(1,180)	—	(18,451)
Future Development Costs ⁽⁵⁾	(5,793)	(1,038)	(170)	(32)	(7,033)
Future Income Tax Expense	(2,061)	(12,185)	(277)	—	(14,523)
Future Net Cash Flows	15,895	11,858	901	(32)	28,622
10% Annual Discount for Estimated Timing of Cash Flows	(6,493)	(8,037)	(158)	4	(14,684)
Standardized Measure of Discounted Future Net Cash Flows	\$ 9,402	\$ 3,821	\$ 743	\$ (28)	\$ 13,938
December 31, 2017					
Future Cash Inflows ⁽³⁾	\$ 30,061	\$ 29,998	\$ 2,028	\$ —	\$ 62,087
Future Production Costs ⁽⁴⁾	(11,020)	(2,517)	(932)	—	(14,469)
Future Development Costs ⁽⁵⁾	(5,941)	(1,706)	(109)	(51)	(7,807)
Future Income Tax Expense	(948)	(13,088)	(216)	—	(14,252)
Future Net Cash Flows	12,152	12,687	771	(51)	25,559
10% Annual Discount for Estimated Timing of Cash Flows	(5,202)	(8,993)	(113)	7	(14,301)
Standardized Measure of Discounted Future Net Cash Flows	\$ 6,950	\$ 3,694	\$ 658	\$ (44)	\$ 11,258

⁽¹⁾ During 2018, we reduced our ownership in the Tamar field, offshore Israel, to 25% through the sale of a 7.5% interest. Amounts at December 31, 2019 and December 31, 2018 reflect a 25% interest while amounts at December 31, 2017 reflect a 32.5% working interest. See [Note 4. Acquisitions and Divestitures](#). In 2017, we sanctioned the first phase of development of the Leviathan field.

⁽²⁾ Other International represents changes in North Sea abandonment costs.

Noble Energy, Inc.
Supplemental Oil and Gas Information
(Unaudited)

- (3) Excludes future methanol sales.
(4) Production costs include lease operating expense, production and ad valorem taxes, transportation expense and general and administrative expense supporting crude oil and natural gas operations.
(5) Future development costs include future abandonment costs for each location. See [Note 7. Asset Retirement Obligations](#).
(6) Future income tax expense includes the effect of statutory tax rates and the impact of tax deductions, tax credits and allowances relating to our proved reserves. Future income tax expense for Israel includes the effect of estimated future profit levy taxes and changes to corporate income tax rates.

Prices and Other Assumptions in Discounted Future Net Cash Flows (Unaudited) Future cash inflows are computed by applying a 12-month average commodity price, adjusted for location and quality differentials on a field-by-field basis, to year end quantities of proved reserves, except in those instances where fixed and determinable price changes are provided by contractual arrangements at year end. The discounted future cash flow estimates do not include the effects of derivative instruments. Average prices per region are as follows:

	United States	Israel	Equatorial Guinea (1)	Total
December 31, 2019				
Average Crude Oil and Condensate Price per Bbl	\$ 56.00	\$ 57.42	\$ 59.33	\$ 56.25
Average NGL Price per Bbl	13.24	—	30.53	14.18
Average Natural Gas Price per Mcf	1.74	5.42	1.24	4.23
December 31, 2018				
Average Crude Oil and Condensate Price per Bbl	66.66	63.94	70.92	66.88
Average NGL Price per Bbl	24.48	—	45.15	25.19
Average Natural Gas Price per Mcf	2.17	5.49	0.27	4.34
December 31, 2017				
Average Crude Oil and Condensate Price per Bbl	47.81	46.82	53.12	48.13
Average NGL Price per Bbl	22.32	—	37.23	23.02
Average Natural Gas Price per Mcf	2.83	5.43	0.27	4.54

(1) Natural gas from the Alba field is sold for \$0.25 per MMBtu and is adjusted for energy content. In 2019, we recorded natural gas PUDs associated with the Alen Gas Monetization project with future cash inflows from LNG sales estimated based upon pricing linked principally to the ICE Brent index.

We performed a sensitivity of our discounted future net cash flows to reflect a price reduction to our 12-month average commodity price. We estimate that a 10% per Bbl reduction in the average price of crude oil and NGLs from the 12-month average price for 2019 would reduce the discounted future net cash flows before income taxes by approximately \$1.2 billion and \$192 million, respectively. We estimate that a 10% per Mcf reduction in the average price of natural gas from the 12-month average price for 2019 would reduce the discounted future net cash flows before income taxes by approximately \$1.0 billion.

Future production and development costs, which include dismantlement and restoration expense, are computed by estimating the expenditures to be incurred in developing and producing the proved crude oil, NGL and natural gas reserves at the end of the year, based on year end costs, and assuming continuation of existing economic conditions.

Future development costs include amounts that we expect to spend to develop PUDs of approximately \$1.2 billion in 2020, \$920 million in 2021 and \$1.0 billion in 2022.

Future income tax expense is computed by applying the appropriate year end statutory tax rates to the estimated future pre-tax net cash flows relating to proved crude oil, NGL and natural gas reserves, less the tax bases of the properties involved. Future income tax expense gives effect to tax credits and allowances, but does not reflect the impact of general and administrative costs and exploration expenses of ongoing operations.

Noble Energy, Inc.
Supplemental Oil and Gas Information
(Unaudited)

Sources of Changes in Discounted Future Net Cash Flows (Unaudited) Principal changes in the aggregate standardized measure of discounted future net cash flows attributable to proved crude oil, NGL and natural gas reserves are as follows:

<i>(millions)</i>	Year Ended December 31,		
	2019	2018	2017
Standardized Measure of Discounted Future Net Cash Flows, Beginning of Year	\$ 13,938	\$ 11,258	\$ 5,686
Changes in Standardized Measure of Discounted Future Net Cash Flows			
Sales of Oil and Gas Produced, Net of Production Costs	(2,660)	(3,190)	(2,674)
Net Changes in Prices and Production Costs ⁽¹⁾	(4,748)	2,327	2,436
Extensions, Discoveries and Improved Recovery, Less Related Costs	1,858	2,036	3,711
Changes in Estimated Future Development Costs ⁽²⁾	729	(738)	(537)
Development Costs Incurred During the Period	2,070	2,986	1,975
Revisions of Previous Quantity Estimates	(483)	(9)	1,462
Purchases of Minerals in Place ⁽³⁾	—	—	423
Sales of Minerals in Place ⁽⁴⁾	(28)	(1,873)	(643)
Accretion of Discount	1,807	1,538	778
Net Change in Income Taxes ⁽⁵⁾	(35)	(11)	(1,669)
Change in Timing of Estimated Future Production and Other	(466)	(386)	310
Aggregate Change in Standardized Measure of Discounted Future Net Cash Flows	\$ (1,956)	\$ 2,680	\$ 5,572
Standardized Measure of Discounted Future Net Cash Flows, End of Year	\$ 11,982	\$ 13,938	\$ 11,258

⁽¹⁾ The decrease in 2019 and increases in 2018 and 2017 were driven primarily by 12-month average commodity prices.

⁽²⁾ The decrease in 2019 relates to primarily to capital efficiencies in our US onshore program and changes in development plans in the Delaware Basin.

⁽³⁾ Purchase of minerals in 2017 relates to reserves acquired in the Clayton Williams Energy Acquisition.

⁽⁴⁾ See [Note 4. Acquisitions and Divestitures](#).

⁽⁵⁾ 2019 increase in future income tax expense relates primarily to higher future cash flows from the Leviathan and Tamar fields and from cash flows attributable to Alen Gas Monetization, partially offset by a decrease in US income tax expense due to lower future taxable income.
2018 increase in future income tax expense relates primarily to higher US tax expense due to higher future taxable income and a reduction of NOL carryforwards utilized to offset future taxable income from \$3.2 billion as of December 31, 2017 to \$1.7 billion as of December 31, 2018. The increase is partially offset by a decrease in future taxes in Israel driven by the sale of 7.5% working interest in Tamar.
2017 increase in future income tax expense relates primarily to the increase in profit and levy taxes in Israel, partially offset by the decrease in the future corporate income tax rate in Israel. The increase in profits tax is driven by a significant increase in future cash flows related to the Leviathan project sanctioning in 2017. The increase in US tax expense due to the increase in future taxable income was offset by the decrease in tax expense associated with utilization of future net operating losses and decrease in applicable tax rate from 35% to 21% in the US effective January 1, 2018.

Noble Energy, Inc.
Supplemental Quarterly Financial Information
(Unaudited)

Supplemental quarterly financial information is as follows:

<i>(millions except per share amounts)</i>	Quarter Ended				Total
	March 31,	June 30,	Sep 30,	Dec 31,	
2019 ^{(1) (3)}					
Revenues	\$ 1,052	\$ 1,093	\$ 1,119	\$ 1,174	\$ 4,438
(Loss) Income Before Income Taxes	(373)	28	51	(1,482)	(1,776)
Net (Loss) Income Including Noncontrolling Interests	(289)	8	36	(1,188)	(1,433)
Less: Net Income Attributable to Noncontrolling Interests	24	18	19	18	79
Net (Loss) Income Attributable to Noble Energy	(313)	(10)	17	(1,206)	(1,512)
Net (Loss) Income Per Share, Basic	(0.65)	(0.02)	0.04	(2.52)	(3.16)
Net (Loss) Income Per Share, Diluted	(0.65)	(0.02)	0.04	(2.52)	(3.16)
2018 ^{(2) (3)}					
Revenues	\$ 1,286	\$ 1,230	\$ 1,273	\$ 1,197	\$ 4,986
Income (Loss) Before Income Taxes	543	10	307	(720)	140
Net Income (Loss) Including Noncontrolling Interests	574	(6)	248	(802)	14
Less: Net Income Attributable to Noncontrolling Interests	20	17	21	22	80
Net Income (Loss) Attributable to Noble Energy	554	(23)	227	(824)	(66)
Net Income (Loss) Per Share, Basic	1.14	(0.05)	0.47	(1.72)	(0.14)
Net Income (Loss) Per Share, Diluted	1.14	(0.05)	0.47	(1.72)	(0.14)

⁽¹⁾ First quarter 2019 included a \$92 million firm transportation exit cost. See [Note 11. Exit Cost – Transportation Commitments](#).

Second and third quarters 2019 did not have any unusual or infrequently occurring items.

Fourth quarter 2019 included the following:

- Proved property impairment charge of \$1.2 billion in the Eagle Ford Shale. See [Note 10. Impairments](#); and
- \$100 million dry hole cost. See [Note 6. Capitalized Exploratory Well Costs and Undeveloped Leasehold Costs](#).

⁽²⁾ First quarter 2018 included the following:

- \$572 million pre-tax gain on divestitures. See [Note 4. Acquisitions and Divestitures](#);
- \$168 million impairment expense related to Gulf of Mexico asset divestiture. See [Note 4. Acquisitions and Divestitures](#); and
- \$145 million discrete tax benefit, net, related to changes in federal income tax regulations. See [Note 13. Income Taxes](#).

Second quarter 2018 included a \$109 million gain on divestiture. See [Note 4. Acquisitions and Divestitures](#).

Third quarter 2018 included a \$198 million gain on divestiture. See [Note 4. Acquisitions and Divestitures](#).

Fourth quarter 2018 included a \$1.3 billion goodwill impairment charge and \$38 million asset impairment expense. See [Note 10. Impairments](#).

⁽³⁾ The sum of the individual quarterly income (loss) may not agree with year-to-date income (loss) as each quarterly computation is based on the income (loss) for the individual quarter as reported with rounding applied.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain “disclosure controls and procedures,” as such term is defined in Rule 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended, that are designed to ensure that information required to be disclosed by us in the reports we file or furnish to the SEC under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified by the SEC’s rules and forms, and that information is accumulated and communicated to management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Our principal executive officer and principal financial officer have evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K. Based upon their evaluation, they have concluded that our disclosure controls and procedures were effective and provide an effective as of December 31, 2019.

Management’s Annual Report on Internal Control over Financial Reporting

The management report called for by Item 308(a) of Regulation S-K is incorporated herein by reference to Management’s Report on Internal Control over Financial Reporting, included in Item 8. Financial Statements and Supplementary Data.

The independent auditor’s attestation report called for by Item 308(b) of Regulation S-K is incorporated herein by reference to Report of Independent Registered Public Accounting Firm (Internal Control Over Financial Reporting), included in Item 8. Financial Statements and Supplementary Data.

Changes in Internal Control over Financial Reporting

There were no changes in internal controls over financial reporting that occurred during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated herein by reference to the 2020 Proxy Statement, which will be filed with the SEC not later than 120 days subsequent to December 31, 2019.

Item 11. Executive Compensation

The information required by this item is incorporated herein by reference to the 2020 Proxy Statement, which will be filed with the SEC not later than 120 days subsequent to December 31, 2019.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated herein by reference to the 2020 Proxy Statement, which will be filed with the SEC not later than 120 days subsequent to December 31, 2019.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated herein by reference to the 2020 Proxy Statement, which will be filed with the SEC not later than 120 days subsequent to December 31, 2019.

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated herein by reference to the 2020 Proxy Statement, which will be filed with the SEC not later than 120 days subsequent to December 31, 2019.

PART IV

Item 15. Exhibits, Financial Statement Schedules

- (a) The following documents are filed as a part of this report:
- (1) Financial Statements: The consolidated financial statements and related notes, together with the reports of KPMG LLP, Independent Registered Public Accounting Firm, appear in Part II, Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

- (2) Financial Statement Schedules: All schedules for which provision is made in the applicable accounting regulations of the SEC are not required under the related instruction or are inapplicable and, therefore, have been omitted.
- (3) Exhibits: The exhibits listed below on the Index to Exhibits are filed or incorporated by reference as part of this Form 10-K.

INDEX TO EXHIBITS

Exhibit Number	Exhibit
2.1	— Agreement and Plan of Merger, dated as of January 13, 2017, by and among Noble Energy, Inc., Wild West Merger Sub Inc., NBL Permian LLC, and Clayton Williams Energy, Inc. (filed as Exhibit 2.1 to the Registrant's Current Report on Form 8-K on January 17, 2017 (File No. 001-07964) and incorporated herein by reference).
2.2	— Exchange Agreement, executed October 29, 2016, by and between CNX Gas Company LLC and Noble Energy, Inc. (filed as Exhibit 2.3 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016 (File No. 001-07964) and incorporated herein by reference).
3.1	— Restated Certificate of Incorporation of Noble Energy, Inc. (filed as Exhibit 3.3 to the Registrant's Current Report on Form 8-K on July 28, 2016 (File No. 001-07964) and incorporated herein by reference).
3.2	— By-Laws of Noble Energy, Inc. (as amended through February 15, 2019) (filed as Exhibit 3.2 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-07964) and incorporated herein by reference).
3.3	— Certificate of Elimination of the Series A Junior Participating Preferred Stock of Noble Energy, Inc. (filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K on July 28, 2016 (File No. 001-07964) and incorporated herein by reference).
3.4	— Certificate of Elimination of the Series B Mandatorily Convertible Preferred Stock of Noble Energy, Inc. (filed as Exhibit 3.2 to the Registrant's Current Report on Form 8-K on July 28, 2016 (File No. 001-07964) and incorporated herein by reference).
4.1	— Description of Securities of the Registrant filed herewith.
4.2	— Indenture dated as of February 27, 2009 between Noble Energy, Inc. and Wells Fargo Bank, National Association, as Trustee, relating to senior debt securities of Noble Energy, Inc. (filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K on February 27, 2009 (File No. 001-07964) and incorporated herein by reference).
4.3	— Second Supplemental Indenture dated as of February 18, 2011, to Indenture dated as of February 27, 2009 between Noble Energy, Inc. and Wells Fargo Bank, National Association, as Trustee, relating to the Registrant's 6.000% Notes due 2041 (including the form of 2041 Notes) (filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K on February 22, 2011 (File No. 001-07964) and incorporated herein by reference).
4.4	— Fourth Supplemental Indenture dated as of November 8, 2013, to Indenture dated as of February 27, 2009 between Noble Energy, Inc. and Wells Fargo Bank, National Association, as Trustee, relating to the Registrant's 5.25% Notes due 2043 (including the form of 2043 Notes) (filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K on November 8, 2013 (File No. 001-07964) and incorporated herein by reference).
4.5	— Fifth Supplemental Indenture dated as of November 7, 2014, to Indenture dated as of February 27, 2009 between Noble Energy, Inc. and Wells Fargo Bank, National Association, as Trustee, relating to the Registrant's 3.900% Notes due 2024 and 5.050% Notes due 2044 (including the forms of 2024 Notes and 2044 Notes) (filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K on November 7, 2014 (File No. 001-07964) and incorporated herein by reference).
4.6	— Seventh Supplemental Indenture dated as of August 15, 2017, to Indenture dated as of February 27, 2009 between Noble Energy, Inc. and Wells Fargo Bank, National Association, as Trustee, relating to the Registrant's 3.850% Notes due 2028 and 4.950% Notes due 2047 (including the forms of 2028 Notes and 2047 Notes) (filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K on August 15, 2017 (File No. 001-07964) and incorporated herein by reference).
4.7	— Eighth Supplemental Indenture dated as of October 1, 2019, to Indenture dated as of February 27, 2009 between Noble Energy, Inc. and Wells Fargo Bank, National Association, as Trustee, relating to the Registrant's 3.250% Notes due 2029 and 4.200% Notes due 2049 (including the forms of 2029 Notes and 2049 Notes) (filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K on October 1, 2019 (File No. 001-07964) and incorporated herein by reference).
4.8	— Indenture dated as of October 14, 1993 between the Registrant and US Trust Company of Texas, N.A., as Trustee, relating to the Registrant's 7.25% Notes Due 2023 (including the form of 2023 Notes) (filed in paper with the SEC as Exhibit 4.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 1993 on November 12, 1993 (File No. 001-07964) and incorporated herein by reference).
4.9	— Indenture dated as of April 1, 1997 between the Registrant and US Trust Company of Texas, N.A., as Trustee, relating to senior debt securities of Noble Energy, Inc. (filed with the SEC as Exhibit 4.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 1997 (File No. 001-07964) and incorporated herein by reference).

- 4.10 — [First Indenture Supplement dated as of April 2, 1997, to Indenture dated as of April 1, 1997, between the Registrant and US Trust Company of Texas, N.A., as Trustee, relating to the Registrant's 8.00% Senior Notes Due 2027 \(including the form of 2027 Notes\) \(filed with the SEC as Exhibit 4.2 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 1997 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 4.11 — [Second Indenture Supplement, dated as of August 1, 1997, to Indenture dated as of April 1, 1997, between the Registrant and US Trust Company of Texas, N.A. as trustee, relating to the Registrant's 7.25% Senior Debentures Due 2097 \(including the form of 2097 Notes\) \(filed with the SEC as Exhibit 4.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 1997 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.1 — [Credit Agreement, dated October 14, 2011, among Noble Energy, Inc., JPMorgan Chase Bank, N.A., as administrative agent, Citibank N.A., as syndication agent, Bank of America, N.A., Mizuho Corporate Bank, LTD., and Morgan Stanley MUFG Loan Partners, LLC, as documentation agents, and certain other commercial lending institutions named therein \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on October 18, 2011 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.2 — [Commitment Increase Agreement \(Existing Lenders\) dated September 28, 2012, among Noble Energy, Inc., JPMorgan Chase Bank, N.A., as administrative agent, and certain other commercial lending institutions party thereto \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on October 2, 2012 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.3 — [Commitment Increase Agreement \(New Lenders\) dated September 28, 2012, among Noble Energy, Inc., JPMorgan Chase Bank, N.A., as administrative agent, and certain other commercial lending institutions party thereto \(filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K on October 2, 2012 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.4 — [First Amendment to Credit Agreement, dated October 3, 2013, by and among Noble Energy, Inc., NBL International Finance B.V., JPMorgan Chase Bank, N.A., as administrative agent, Citibank N.A., as syndication agent, and Bank of America, N.A., Bank of Tokyo-Mitsubishi UFJ, Ltd., Mizuho Bank, Ltd. and DNB Bank ASA, New York Branch as documentation agents, and the other commercial lending institutions party thereto \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on October 9, 2013 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.5 — [Second Amendment to Credit Agreement, dated August 27, 2015, by and among Noble Energy, Inc., JPMorgan Chase Bank, N.A., as administrative agent, Citibank N.A., as syndication agent, and Bank of America, N.A., Bank of Tokyo-Mitsubishi UFJ, Ltd., Mizuho Bank, Ltd. and DNB Bank ASA, New York Branch as documentation agents, and the other commercial lending institutions party thereto \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on August 31, 2015 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.6 — [Third Amendment to Credit Agreement, dated March 9, 2018, by and among Noble Energy, Inc., JPMorgan Chase Bank, N.A., as administrative agent, Citibank N.A., as syndication agent, and Bank of America, N.A., Bank of Tokyo-Mitsubishi UFJ, Ltd., Mizuho Bank, Ltd., and DNB Bank ASA, New York Branch as documentation agents, and the other commercial lending institutions party thereto \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on March 12, 2018 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.7* — [Noble Energy, Inc. Retirement Restoration Plan dated effective as of January 1, 2009 \(filed as Exhibit 10.1 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2008 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.8* — [Amendment No. 1 to the Noble Energy, Inc. Retirement Restoration Plan, dated effective as of December 31, 2013 \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on December 23, 2013 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.9* — [Noble Energy, Inc. Restoration Trust effective August 1, 2002 \(filed as Exhibit 10.3 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2002 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.10* — [Form of Indemnity Agreement entered into between the Registrant and each of the Registrant's directors and bylaw officers \(filed in paper with the SEC as Exhibit 10.18 to the Registrant's Annual Report on Form 10-K405 for the year ended December 31, 1995 on March 25, 1996 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.11* — [Noble Energy, Inc. 2005 Non-Employee Director Fee Deferral Plan, dated December 11, 2008, and effective as of January 1, 2009 \(filed as Exhibit 10.20 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2008 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.12* — [2015 Stock Plan for Non-Employee Directors of Noble Energy, Inc. \(as amended and restated effective October 20, 2015\) \(filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015 \(File No. 001-07964\) and incorporated herein by reference\).](#)

- 10.13* — [Form of Stock Option Agreement under the Noble Energy, Inc. 2015 Non-Employee Director Stock Plan \(filed as Exhibit 10.7 to the Registrant's Current Report on Form 8-K on January 29, 2016 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.14* — [Form of Restricted Stock Agreement under the Noble Energy, Inc. 2015 Non-Employee Director Stock Plan \(filed as Exhibit 10.6 to the Registrant's Current Report on Form 8-K on January 29, 2016 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.15* — [2005 Stock Plan for Non-Employee Directors of Noble Energy, Inc. \(as amended and restated effective October 20, 2015\) \(filed as Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.16* — [Form of Stock Option Agreement under the Noble Energy, Inc. 2005 Non-Employee Director Stock Plan \(filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2005 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.17* — [Form of Restricted Stock Agreement under the Noble Energy, Inc. 2005 Non-Employee Director Stock Plan \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on February 2, 2009 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.18* — [Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(as amended and restated effective October 20, 2015\) \(filed as Exhibit 10.2 to Registrant's Quarterly report on Form 10-Q for the quarter ended September 30, 2015 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.19* — [Form of Nonqualified Stock Option Agreement under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on February 7, 2005 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.20* — [Form of Non-Qualified Stock Option Agreement under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(filed as Exhibit 10.24 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2012 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.21* — [Form of Restricted Stock Agreement \(two-year vested\) under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(filed as Exhibit 10.25 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2012 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.22* — [Form of Restricted Stock Agreement \(three-year vested awards\) under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(filed as Exhibit 10.26 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2012 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.23* — [Form of Restricted Stock Agreement \(performance-vested\) under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(filed as Exhibit 10.27 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2012 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.24* — [Form of Non-Qualified Stock Option Agreement under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(effective February 1, 2016\) \(filed as Exhibit 10.5 to the Registrant's Current Report on Form 8-K on January 29, 2016 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.25* — [Form of Restricted Stock Agreement \(two-year time vested for non-PEO executive officers\) under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(effective February 1, 2016\) \(filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K on January 29, 2016 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.26* — [Form of Restricted Stock Agreement \(two-year time vested\) under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(effective February 1, 2016\) \(filed as Exhibit 10.26 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2016 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.27* — [Form of Performance Award Agreement \(3-year performance vested stock and cash\) under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(effective February 1, 2016\) \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on January 29, 2016 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.28* — [Form of Cash Award Agreement \(two-year vested\) under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(effective February 1, 2016\) \(filed as Exhibit 10.4 to the Registrant's Current Report on Form 8-K on January 29, 2016 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.29* — [Form of Restricted Stock Agreement \(three-year performance-vested\) under the Noble Energy, Inc. 1992 Stock Option and Restricted Stock Plan \(effective February 1, 2016\) \(filed as Exhibit 10.8 to the Registrant's Current Report on Form 8-K/A on February 4, 2016 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.30* — [Noble Energy, Inc. 2017 Long-Term Incentive Plan \(Amended and Restated Effective April 23, 2019\) \(filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.31* — [Amendment to Noble Energy, Inc. 2017 Long-Term Incentive Plan \(Amended Effective December 30, 2019\), filed herewith.](#)

10.32*	—	Form of Restricted Stock Award (two-year vested) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (filed as Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017 (File No. 001-07964) and incorporated herein by reference).
10.33*	—	Form of Restricted Stock Award (three-year vested) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (filed as Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017 (File No. 001-07964) and incorporated herein by reference).
10.34*	—	Form of Stock Option Award under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (filed as Exhibit 10.7 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017 (File No. 001-07964) and incorporated herein by reference).
10.35*	—	Form of Performance Share Award under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (filed as Exhibit 10.8 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017 (File No. 001-07964) and incorporated herein by reference).
10.36*	—	Form of Restricted Stock Award (three-year time-vested officers) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (Date of Report: January 29, 2018) filed February 1, 2018 (File No. 001-07964) and incorporated herein by reference).
10.37*	—	Form of Restricted Stock Award (three-year cliff vested) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K (Date of Report: January 29, 2018) filed February 1, 2018 (File No. 001-07964) and incorporated herein by reference).
10.38*	—	Form of Cash Award Agreement (three-year vested) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (filed as Exhibit 10.37 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-07964) and incorporated herein by reference).
10.39*	—	Form of Restricted Stock Award (three-year time vested-40/40/20) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (filed as Exhibit 10.38 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-07964) and incorporated herein by reference).
10.40*	—	Form of Restricted Stock Notice and Award Agreement (three-year vested one-third per year) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (Amended and Restated Effective April 23, 2019) (filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 (File No. 001-07964) and incorporated herein by reference).
10.41*	—	Form of Option Award Notice and Agreement under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (Amended and Restated Effective April 23, 2019) (filed as Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 (File No. 001-07964) and incorporated herein by reference).
10.42*	—	Form of Restricted Stock Notice and Award Agreement (three-year cliff vested) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (Amended and Restated Effective April 23, 2019) (filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 (File No. 001-07964) and incorporated herein by reference).
10.43*	—	Form of Restricted Stock Notice and Award Agreement (three-year vested 20/30/50) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (Amended and Restated Effective April 23, 2019) (filed as Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 (File No. 001-07964) and incorporated herein by reference).
10.44*	—	Form of Cash-Settled Restricted Stock Unit Notice and Award Agreement (three-year vested one-third per year) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (Amended and Restated Effective April 23, 2019), filed herewith.
10.45*	—	Form of Cash-Settled Restricted Stock Unit Notice and Award Agreement (three-year cliff vested) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (Amended and Restated Effective April 23, 2019), filed herewith.
10.46*	—	Form of Performance Share Notice and Award Agreement under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (Amended and Restated Effective April 23, 2019), filed herewith.
10.47*	—	Form of Restricted Stock Notice and Award Agreement (three-year vested one-third per year) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (Amended and Restated Effective April 23, 2019), filed herewith.
10.48*	—	Form of Restricted Stock Notice and Award Agreement (three-year cliff vested) under the Noble Energy, Inc. 2017 Long-Term Incentive Plan (Amended and Restated Effective April 23, 2019), filed herewith.
10.49*	—	Amendment to the Noble Energy, Inc. Change of Control Agreement dated effective February 1, 2011 (filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K on February 4, 2011 (File No. 001-07964) and incorporated herein by reference).
10.50*	—	Form of Noble Energy, Inc. Change of Control Agreement (as amended effective January 1, 2008), (filed as Exhibit 10.41 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2007 (File No. 001-07964) and incorporated herein by reference).

- 10.51* — [Noble Energy, Inc. Change of Control Severance Plan for Executives, as amended and restated effective January 30, 2018 \(filed as Exhibit 10.39 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2017 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.52* — [Termination of Change of Control Agreement dated effective October 21, 2014 by and between Noble Energy, Inc. and David L. Stover \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on October 27, 2014 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.53* — [Noble Energy, Inc. Deferred Compensation Plan \(formerly known as the Noble Affiliates, Inc. Deferred Compensation Plan\) as restated effective August 1, 2001 \(filed as Exhibit 10.4 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2002 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.54* — [Amendment No. 1 to the Noble Energy, Inc. Deferred Compensation Plan \(formerly known as the Noble Affiliates, Inc. Deferred Compensation Plan\), dated effective as of January 1, 2014 \(filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K on December 23, 2013 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.55* — [Noble Energy, Inc. 2005 Deferred Compensation Plan \(as amended effective January 1, 2009\) \(filed as Exhibit 10.31 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2008 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.56* — [Amendment No. 1 to the Noble Energy, Inc. 2005 Deferred Compensation Plan, dated effective as of January 1, 2014 \(filed as Exhibit 10.3 to the Registrant's Current Report on Form 8-K on December 23, 2013 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.57* — [Amendment No. 2 to the Noble Energy, Inc. 2005 Deferred Compensation Plan, dated effective as of January 1, 2015 \(filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.58* — [Amendment No. 3 to the Noble Energy, Inc. 2005 Deferred Compensation Plan, dated effective as of August 1, 2016 \(filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.59 — [Gas Sale and Purchase Agreement dated March 14, 2012, by and between Noble Energy Mediterranean Ltd. Isramco Negev 2 Limited Partnership, Delek Drilling Limited Partnership, Avner Oil Exploration Limited Partnership, and Dor Gas Exploration Limited Partnership \(Sellers\) and The Israel Electric Corporation Limited \(Purchaser\) \(filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q/A for the quarter ended March 31, 2012 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.60 — [Amendment No. 1 dated July 22, 2012 to the Gas Sale and Purchase Agreement dated March 14, 2012, by and between Noble Energy Mediterranean Ltd. Isramco Negev 2 Limited Partnership, Delek Drilling Limited Partnership, Avner Oil Exploration Limited Partnership, and Dor Gas Exploration Limited Partnership \(Sellers\) and The Israel Electric Corporation Limited \(Purchaser\) \(filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2012 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.61 — [Support Agreement, dated as of January 13, 2017, by and among certain stockholders affiliated with Ares Management, LLC, Noble Energy, Inc., and solely for certain purposes specified therein, Clayton Williams Energy, Inc. \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K on January 17, 2017 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.62 — [Agreement Not to Dissent, dated as of January 13, 2017, by and among Clayton W. Williams, Jr., Noble Energy, Inc., and solely for certain purposes specified therein, Clayton Williams Energy, Inc. \(filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K on January 17, 2017 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.63 — [Agreement Not to Dissent, dated as of January 13, 2017, by and among The Williams Children's Partnership, Ltd., Noble Energy, Inc., and solely for certain purposes specified therein, Clayton Williams Energy, Inc. \(filed as Exhibit 10.3 to the Registrant's Current Report on Form 8-K on January 17, 2017 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.64 — [Noble Energy, Inc. Short-Term Incentive Plan \(filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 10.65* — [Separation and Release Agreement between Noble Energy, Inc. and Gary W. Willingham, Executive Vice President - Operations, effective as of October 26, 2018 \(filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K/A on November 9, 2018 \(File No. 001-07964\) and incorporated herein by reference\).](#)
- 21.1 — [Subsidiaries, filed herewith.](#)
- 23.1 — [Consent of Independent Registered Public Accounting Firm—KPMG LLP, filed herewith.](#)
- 23.2 — [Consent of Independent Petroleum Engineers and Geologists—Netherland, Sewell & Associates, Inc., filed herewith.](#)
- 31.1 — [Certification of the Registrant's Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 \(18 USC, Section 7241\), filed herewith.](#)

31.2	—	Certification of the Registrant's Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (18 USC, Section 7241), filed herewith.
32.1	—	Certification of the Registrant's Chief Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 USC, Section 1350), furnished herewith.
32.2	—	Certification of the Registrant's Chief Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 USC, Section 1350), furnished herewith.
99.1	—	Report of Netherland, Sewell & Associates, Inc., filed herewith.
101	—	The following materials from the Registrant's Annual Report on Form 10-K for the year ended December 31, 2019 formatted in iXBRL (Inline eXtensible Business Reporting Language): (i) Consolidated Statements of Operations and Comprehensive Income (Loss); (ii) Consolidated Balance Sheets; (iii) Consolidated Statements of Cash Flows; (iv) Consolidated Statements of Equity; and (v) Notes to Consolidated Financial Statements.
104	—	Cover Page Interactive Data File (formatted in iXBRL and contained in Exhibit 101).

* Management contract or compensatory plan or arrangement required to be filed as an exhibit hereto.

Item 16. Form 10-K Summary

None.

GLOSSARY

In this report, the following abbreviations are used:

Bbl	Barrel
BBoe	Billion barrels oil equivalent
Bcf	Billion cubic feet
Bcf/d	Billion cubic feet per day
BCM	Billion cubic meters
BOE	Barrels oil equivalent. Natural gas is converted on the basis of six Mcf of gas per one barrel of crude oil equivalent. This ratio reflects an energy content equivalency and not a price or revenue equivalency. Given commodity price disparities, the price for a barrel of crude oil equivalent for natural gas is significantly less than the price for a barrel of crude oil. The price for a barrel of NGL is also less than the price for a barrel of crude oil.
Boe/d	Barrels oil equivalent per day
Btu	British thermal unit
FPSO	Floating production, storage and offloading vessel
GHG	Greenhouse gas emissions
GSPA	Gas Sales Purchase Agreement
HH	Henry Hub index
IDP	Integrated Development Plan
LNG	Liquefied natural gas
LPG	Liquefied petroleum gas
MBbl/d	Thousand barrels per day
MBoe/d	Thousand barrels oil equivalent per day
Mcf	Thousand cubic feet
MMBbls	Million barrels
MMBoe	Million barrels oil equivalent
MMBtu	Million British thermal units
MMBtu/d	Million British thermal units per day
MMcf/d	Million cubic feet per day
MMcfe/d	Million cubic feet equivalent per day
MMgal	Million gallons
Mt	Metric ton
Mt/d	Metric tons per day
NGLs	Natural gas liquids
NYMEX	The New York Mercantile Exchange
OPEC	The Organization of Petroleum Exporting Countries
PSC	Production sharing contract
Tcf	Trillion cubic feet
US GAAP	United States generally accepted accounting principles
WTI	West Texas Intermediate index

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

NOBLE ENERGY, INC.
(Registrant)

Date: February 12, 2020

By: /s/ David L. Stover
David L. Stover,
Chairman of the Board and Chief Executive Officer

Date: February 12, 2020

By: /s/ Kenneth M. Fisher
Kenneth M. Fisher,
Executive Vice President, Chief Financial Officer

Date: February 12, 2020

By: /s/ Dustin A. Hatley
Dustin A. Hatley,
Vice President, Chief Accounting Officer and Controller

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Capacity in which signed</u>	<u>Date</u>
<u>/s/ David L. Stover</u> David L. Stover	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	February 12, 2020
<u>/s/ Kenneth M. Fisher</u> Kenneth M. Fisher	Executive Vice President, Chief Financial Officer (Principal Financial Officer)	February 12, 2020
<u>/s/ Dustin A. Hatley</u> Dustin A. Hatley	Vice President, Chief Accounting Officer and Controller (Principal Accounting Officer)	February 12, 2020
<u>/s/ Jeffrey L. Berenson</u> Jeffrey L. Berenson	Director	February 12, 2020
<u>/s/ Michael A. Cawley</u> Michael A. Cawley	Director	February 12, 2020
<u>/s/ James E. Craddock</u> James E. Craddock	Director	February 12, 2020
<u>/s/ Barbara J. Duganier</u> Barbara J. Duganier	Director	February 12, 2020
<u>/s/ Thomas J. Edelman</u> Thomas J. Edelman	Director	February 12, 2020
<u>/s/ Holli C. Ladhani</u> Holli C. Ladhani	Director	February 12, 2020
<u>/s/ Scott D. Urban</u> Scott D. Urban	Director	February 12, 2020
<u>/s/ William T. Van Kleef</u> William T. Van Kleef	Director	February 12, 2020
<u>/s/ Martha B. Wyrsh</u> Martha B. Wyrsh	Director	February 12, 2020

DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

The following is a summary of the common stock, \$0.01 par value per share ("Common Stock"), of Noble Energy, Inc. (the "Company"), which is the only class of the Company's securities registered under Section 12 of the Securities Exchange Act of 1934, as amended. The following summary is not complete. You should refer to the applicable provisions of the Company's restated certificate of incorporation (the "Charter"), the Company's by-laws, as amended (the "By-Laws"), and the General Corporation Law of the State of Delaware ("DGCL"), including Section 203, for a complete statement of the terms and rights of the Common Stock. Copies of the Charter and By-Laws have been filed with the Securities and Exchange Commission as exhibits 3.1 and 3.2, respectively, to the Company's Annual Report on Form 10-K.

Authorized Capital Stock

Under the Charter, the Company's authorized capital stock consists of 1.0 billion shares of Common Stock and 4.0 million shares of preferred stock, par value \$1.00 per share ("Preferred Stock").

Common Stock*Dividend Rights*

Holders of Common Stock are entitled to receive dividends when, as and if declared by the Company's board of directors (the "Board of Directors"), out of funds legally available for their payment, subject to the rights, if any, of the holder of any series of Preferred Stock.

Voting Rights

Each holder of Common Stock is entitled to one vote per share. Subject to the rights, if any, of the holder of any series of Preferred Stock, all voting rights are vested in the holders of shares of Common Stock.

Rights Upon Liquidation

In the event of the Company's voluntary or involuntary liquidation, dissolution or winding up, the holders of Common Stock will be entitled to share equally in any of the Company's assets available for distribution after the payment in full of all debts and distributions and after the holders of all series of outstanding Preferred Stock, if any, have received their liquidation preferences in full.

Fully Paid and Nonassessable

The issued and outstanding shares of Common Stock are fully paid and nonassessable.

No Preemptive, Redemption or Conversion Rights

Holders of shares of Common Stock have no preemptive or redemption rights. Shares of Common Stock are not convertible into shares of any other class of capital stock.

Proxy Access

The By-Laws permit certain qualifying shareholders to include director nominees in the Company's proxy statement. This proxy access mechanism allows a shareholder or group of up to 25 shareholders owning at least 3% of the Company's outstanding Common Stock continuously for at least three years to submit their own candidate for election to the Board of Directors. These nominees may not constitute more than 25% of the Board of Directors at any time.

Listing

The Common Stock is listed on The Nasdaq Stock Market LLC under the symbol "NBL."

Transfer Agent

The transfer agent for the Common Stock is Computershare Trust Company, N.A.

Anti-Takeover Provisions of the Company's Charter or By-Laws

The Company's Charter and By-Laws contain certain provisions that may be deemed to have an anti-takeover effect and may delay, deter or prevent a tender offer or takeover attempt that a shareholder might consider in its best interest, including those attempts that might result in a premium over the market price for the Common Stock held by such shareholder.

Business Transactions

The Charter restricts the Company's ability to engage in any business transaction with any other entity who is the beneficial owner, directly or indirectly, of 20% or more of the outstanding shares of stock of the Company entitled to vote in the election of directors unless:

- (1) the cash or fair market value of the consideration per share to be received by holders of Common Stock is not less than or equal to the highest per share price paid by such other entity in acquiring any of its holdings of Common Stock;
- (2) after completion of the transaction that resulted in the other entity acquiring 20% of the outstanding shares of stock of the Company entitled to vote in the election of directors and before consummation of the proposed business transaction, the other entity has not acquired any newly issued shares of stock, directly or indirectly, from the Company (except in the case of convertible securities acquired by it prior to obtaining 20% of the outstanding shares of stock of the Company entitled to vote in the election of directors or as part of the transaction which results in the other entity acquiring its 20% or greater interest or as a result of a pro rata stock dividend or stock split); and
- (3) the other entity has not (i) received the benefit, directly or indirectly (except proportionately as a shareholder), of any loans, advances, guarantees, pledges or other financial assistance or tax credits provided by the Company, or (ii) made any major change in the Company's business or equity capital structure prior to the consummation of the proposed business transaction.

This restriction also applies to a business transaction with any other entity that has at one time been the beneficial owner, directly or indirectly, of 20% or more of the outstanding shares of stock of the Company entitled to vote in the election of directors, even if the other entity has reduced its shareholdings below 20%, if at the time the definitive agreement was entered into, the other entity was the beneficial owner, directly or indirectly, of 20% or more of the outstanding shares of Company stock or if, as of the record date for the determination of shareholders entitled to notice of and to vote on or consent to the business transaction, such other entity is an affiliate of the Company.

The term "business transaction" includes (i) any merger or consolidation of the Company with or into any other corporation, (ii) any sale or lease or other disposition (in one transaction or a series of related transactions) of all or substantially all of the assets of the Company to any other entity, (iii) any sale or lease or other disposition (in one transaction or a series of transactions) to the Company or any subsidiary thereof in exchange for securities of the Company of any assets (except assets having an aggregate fair market value of less than \$5,000,000) of any other entity, or (iv) any reclassification or recapitalization of the outstanding shares of any class of stock of the Company if at the time there is any other entity which has acquired 20% or more of the outstanding shares of stock of the Company entitled to vote in the election of directors and the effect of such transaction is to increase the relative voting power of such other entity.

Forum Selection Clause

Under the Charter, unless the Company consents in writing to the selection of an alternative forum, the sole and exclusive forum for making certain types of claims will be a state or federal court located within the State of Delaware. This provision applies to (i) any derivative action or proceeding brought on behalf of the Company, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the Company to the Company or the Company's shareholders, (iii) any action asserting a claim arising pursuant to any provision of the DGCL, or (iv) any action asserting a claim governed by the internal affairs doctrine.

Special Meetings of Shareholders

The By-Laws provide that a special meeting of shareholders may be called only by the President, or by the Board of Directors, or at the request in writing of shareholders owning a majority in amount of the entire capital stock of the Company issued and outstanding and entitled to vote.

Issuance of Preferred Stock

The Charter authorized the Board of Directors, without further shareholder action, to cause Preferred Stock to be issued in one or more series, to designate the number of shares that constitute such series, and to provide for the rights, preference and limitations of each series, including voting, dividend, redemption, liquidation, conversion and other rights. No shares of Preferred Stock are outstanding.

Advance Notice of Shareholder Proposals and Nominations

The By-Laws provide for advance notice procedures for all shareholder proposals and nominees for directors to be brought before meetings of the Company's shareholders. To be considered, the notice must be timely and contain certain information specified in the By-Laws.

**AMENDMENT TO THE
NOBLE ENERGY, INC.
2017 LONG-TERM INCENTIVE PLAN
(Amended and Restated Effective April 23, 2019)**

Pursuant to the provisions of Section 14.1 thereof, the Noble Energy, Inc. 2017 Long-Term Incentive Plan (Amended and Restated Effective April 23, 2019) (the "Plan") is hereby amended in the following respect only:

Section 2.18 of the Plan is hereby amended by restatement in its entirety to read as follows:

2.18 "Fair Market Value" means the closing sales price for the Common Stock as quoted on any established stock exchange or a national market system, including without limitation the Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market, and the New York Stock Exchange, on the date of the determination (or if there was no reported sale on such exchange or system on such date, on the last preceding day on which there was a reported sale on such exchange or system).

IN WITNESS WHEREOF, this Amendment has been executed on this 27th day of January, 2020, to be effective December 30, 2019.

NOBLE ENERGY, INC

By: /s/ David L. Stover

Name: David L. Stover

Title: Chairman and Chief Executive

**NOBLE ENERGY, INC. 2017 LONG-TERM INCENTIVE PLAN
CASH-SETTLED RESTRICTED STOCK UNIT AWARD NOTICE
[3-YEAR TIME VESTED]**

You, the Participant named below, have been awarded the following award of Restricted Stock Units (the “RSUs”) and associated Dividend Equivalent Cash Rights on the terms and conditions set forth below and in accordance with the Restricted Stock Unit Award Agreement to which this Cash-Settled Restricted Stock Unit Award Notice is attached (the “Agreement”) and the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the “Plan”):

Participant Name: _____

Number of RSUs Awarded: _____

Award Date: _____

Vesting Schedule: The RSUs and Dividend Equivalent Cash Rights will be subject to a restricted period (the “Restricted Period”) that will commence on the Award Date and end on the third anniversary of the Award Date. During the Restricted Period, the RSUs and Dividend Equivalent Cash Rights will be subject to the restrictions described in the Agreement, provided, however, that the restrictions will be removed (and such RSUs and Dividend Equivalent Cash Rights will “vest”) as to:

- (i) one third (1/3) of the RSUs and related Dividend Equivalent Cash Rights on the first anniversary of the Award Date, provided Participant is in the continuous employ or service of Noble Energy, Inc. (“Noble”) or an Affiliate until such date;
- (ii) an additional (1/3) of the RSUs and related Dividend Equivalent Cash Rights on the second anniversary of the Award Date, provided Participant is in the continuous employ or service of Noble or an Affiliate until such date; and
- (iii) the remaining RSUs and related Dividend Equivalent Cash Rights on the third anniversary of the Award Date, provided Participant is in the continuous employ or service of Noble or an Affiliate until such date.

IN WITNESS WHEREOF, the parties hereto have executed this Cash-Settled Restricted Stock Unit Award Notice to be effective as of the Award Date set forth above.

PARTICIPANT:

NOBLE ENERGY, INC.

(Signature of Participant)

David L. Stover
President and CEO

* * * * *

By clicking the *Accept* button, I am confirming that I accept the Award of RSUs and Dividend Equivalent Cash Rights and that I have read and understand and agree to be bound by the terms of this Cash-Settled Restricted Stock Unit Award Notice, the attached Agreement, and the Plan as if I had manually signed this Cash-Settled Restricted Stock Unit Award Notice. I am also consenting to receive all related information in electronic form.

NOBLE ENERGY, INC.
2017 LONG-TERM INCENTIVE PLAN

RESTRICTED STOCK UNIT AWARD AGREEMENT

This Restricted Stock Unit Award Agreement (“Agreement”), made and entered into as of the Award Date as set forth on the Cash-Settled Restricted Stock Unit Award Notice (the “Notice”), is by and between Noble Energy, Inc., a Delaware corporation (“Noble”), and the Participant named in the Notice pursuant to the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the “Plan”).

1. Award of RSUs. Effective as of the Award Date, Noble hereby awards to Participant, and Participant hereby accepts, an award (“Award”) of RSUs and Dividend Equivalent Cash Rights described in Section 2 below on the terms and conditions and subject to the restrictions, including forfeiture, set forth in this Agreement, the Notice, and the Plan. Each RSU represents the right to receive an amount of cash equal to the Fair Market Value of one share of Common Stock as of the Actual Vesting Date (as defined below).

2. Dividend Equivalent Cash Rights. In the event that, prior to the Actual Vesting Date, Noble declares and pays any cash dividends in respect of its outstanding shares of Common Stock, the Dividend Equivalent Cash Rights entitle Participant to receive, on the Actual Vesting Date with respect to each RSU vesting on such date, an additional cash payment equal to the total amount of cash dividends paid by Noble with respect to a share of its Common Stock during the period beginning on the Award Date and ending on the Actual Vesting Date with respect to such RSU, without interest or adjustment for the passage of time from the date of any such cash dividend. For the avoidance of doubt, no Dividend Equivalent Cash Rights will result from declared but unpaid dividends.

3. Vesting and Forfeiture/Payment.

(a) The RSUs and Dividend Equivalent Cash Rights will be subject to restrictions during the Restricted Period in accordance with the Vesting Schedule set forth in the Notice. Until the date the restrictions applicable hereunder to a portion of the RSUs and Dividend Equivalent Cash Rights are removed in accordance with the Vesting Schedule or, if earlier, the date on which the RSUs and Dividend Equivalent Cash Rights vest pursuant to this Agreement and the provisions of the Plan, including terms providing for earlier vesting in certain circumstances (such as earlier date, the “Actual Vesting Date”), the RSUs and Dividend Equivalent Cash Rights are subject to being forfeited by Participant.

(b) As soon as practicable (but in no event later than 30 days) following the Actual Vesting Date, Noble will make a lump sum cash payment to Participant (or in the event of Participant’s death, to Participant’s estate) in an amount equal to the sum of (i) the Fair Market Value of one share of Common Stock as of the Actual Vesting Date multiplied by the number of vested RSUs, plus (ii) the amount of any related vested Dividend Equivalent Cash Rights. Notwithstanding the preceding sentence, in the event that the Board determines that making all or a portion of the payment under this Section would jeopardize the ability of Noble to continue as a

going concern, the Board may delay such payment or portion thereof until the making of the payment or portion thereof would no longer have such effect. The Award will cease to be outstanding upon the earlier of forfeiture or upon payment with respect to the Award.

(c) Immediately after termination of Participant's employment or service with Noble and its Affiliates, all RSUs and Dividend Equivalent Cash Rights that have not by that time become vested and do not become vested as of such date pursuant to the Notice and this Agreement or the applicable provisions of the Plan will be forfeited, and neither Participant nor any of his or her heirs, beneficiaries, executors, administrators or other personal representatives will have any rights whatsoever in and to any of the forfeited RSUs or Dividend Equivalent Cash Rights.

4. No Rights As Shareholder. The Award is not an equity interest in Noble and will not entitle Participant to any voting rights, rights upon liquidation or other rights of shareholders of Noble.

5. Withholding Taxes. Noble and its Affiliates will, to the extent permitted by law, have the right to deduct from any payments made hereunder any federal, state or local taxes required to be withheld on account of amounts payable hereunder.

6. Acceptance. Participant must accept the Award by electronically executing the Notice by the date described therein. If Participant fails to accept the Award by such date, then, any provision of this Agreement to the contrary notwithstanding, Participant will forfeit all RSUs and related Dividend Equivalent Cash Rights purported to be granted pursuant to the Award and the Award will become null and void. By electronically executing the Notice, Participant agrees that he or she is bound by, and will comply with, all of the terms and condition of the Plan as well as the terms of this Agreement as a condition of his or her continuing employment or service to Noble or its Affiliates.

7. Effect on Employment or Services. Nothing contained in the Plan or in this Agreement shall confer upon Participant any right with respect to the continuation of his or her employment by, or service with, Noble or an Affiliate, or interfere in any way with the right of Noble or an Affiliate, (subject to the terms of any separate agreement to the contrary) at any time to terminate such employment or service, to change the terms and conditions of such employment or service, or to increase or decrease the compensation of Participant from the rate in existence at the date of this Agreement.

8. Confidentiality and Non-Disclosure Covenants.

(a) Acknowledgement About Confidential Information. Participant understands and acknowledges that, during the course of his or her employment by, or services to, Noble or its Affiliates, Noble or its Affiliates will continue to provide him or her with access to previously undisclosed confidential, trade secret, and proprietary documents, materials, data, and other information, in tangible and intangible form, of and relating to his or her employment by, or services to, Noble and its Affiliates, as well as existing and prospective employees, customers, suppliers, investors, and other associated third parties ("Confidential Information").

(b) Definition of Confidential Information. For purposes of this Agreement, Confidential Information includes, without limitation, all non-public information disclosed or made available to Participant that gives Noble and its Affiliates a competitive advantage in their industry and is not generally known or readily ascertainable by independent investigation, such as methods of operation and service; leases and opportunities pertaining to the lease; information relating to the acquisition, exploration, production, gathering, transporting, marketing, treating, or other processing of hydrocarbons and related products; the exploration potential of geographical areas on which hydrocarbon exploration prospects are located; information related to developing, constructing, acquiring, or operating midstream oil, natural gas, or produced water assets; technical information including inventions, computer programs, computer processes, methods of collecting, correlating and using geophysical data, computer codes, software, website structure and content, databases, formulae, designs, compilations of information and data, proprietary production processes, and know-how related to operations; financial information including margins, earnings, accounts payable, and accounts receivable; business information including business plans, expansion plans, business proposals, pending projects, pending proposals, sales data, and leases; supplier and customer information, including supplier and customer lists and identities, prices, costs, and negotiated terms; research and development and new materials research; information regarding personnel and employment policies and practices including employee lists, contact information, performance information, compensation data, benefits data, and training programs; and information regarding independent contractors and subcontractors including independent contractor and subcontractor lists, contact information, compensation, and agreements. Confidential Information also includes all information contained in any manual or electronic document or file created by Noble or its Affiliates and provided or made available to Participant. Participant understands that the above list is not exhaustive, and that Confidential Information also includes other information that is marked or otherwise identified as confidential or proprietary, or that would otherwise appear to a reasonable person to be confidential or proprietary in the context and circumstances in which the information is known or used.

(c) Confidential Information Exclusions. Participant understands that Confidential Information shall not include any information in the public domain, through no disclosure or wrongful act of Participant, to such an extent as to be readily available to competitors. Participant likewise understands that Confidential Information disclosed hereunder shall not be deemed to be within the foregoing exception solely because the Confidential Information is embraced by more general information in the public domain; neither will a combination of features be deemed within the foregoing exception merely because individual features are in the public domain.

(d) Non-Disclosure and Non-Use Covenants. Participant agrees and covenants: (i) to treat all Confidential Information as strictly confidential; (ii) not to directly or indirectly disclose, publish, communicate, or make available Confidential Information, or allow it to be disclosed, published, communicated or made available, in whole or part, to any third party not having a business need to know in order to fulfill duties to Noble or its Affiliates and authority to know and use the Confidential Information in connection with the business of Noble or its Affiliates; and (iii) not to access or use any Confidential Information, and not to copy any documents, records, files, media or other resources containing any Confidential Information, or remove any such documents, records, files, media or other resources from the premises or control of Noble or its Affiliates, except as

required in the performance of his or her authorized employment duties to, or services for, Noble and its Affiliates.

(e) Covenant to Return Confidential Information and Other Company Property. Upon (i) the voluntary or involuntary termination of Participant's employment or service relationship with Noble or its Affiliates or (ii) Noble's request at any time during his or her employment or service relationship, Participant agrees to (A) provide or return to Noble any and all property of Noble and its Affiliates, including all copies of software in any media, reports, files, compilations, disks, thumb drives or other removable information storage devices, hard drives, and data and all documents and materials belonging to Noble and its Affiliates and stored in any fashion, including but not limited to those that constitute or contain any Confidential Information, that are in Participant's possession or control, whether they were provided to Participant by Noble, its Affiliates, or any of their business associates or created by Participant in connection with his or her employment by, or services to, Noble or its Affiliates; and (B) delete or destroy all copies of any such documents and materials not returned to Noble or its Affiliates that remain in Participant's possession or control, including those stored on any non-Noble devices, networks, storage locations and media in Participant's possession or control.

(f) Duration of Covenants. Participant understands and acknowledges that his or her obligations under this Agreement with regard to any particular Confidential Information shall continue during and after his or her employment by, or service relationship with, Noble or its Affiliates until such time as such Confidential Information has become public knowledge other than as a result of his or her breach of this Agreement.

(g) Immunity and Other Permitted Activities. Notwithstanding any other provision of this Agreement, nothing in this Agreement is intended to, or does, preclude Participant from (i) contacting, reporting to, responding to an inquiry from, filing a charge or complaint with, communicating with, or otherwise participating in an investigation conducted by, any other federal, state, or local governmental agency, commission, or regulatory body, including, without limitation the Securities and Exchange Commission ("SEC"); (ii) giving truthful testimony or making statements under oath in response to a subpoena or other valid legal process or in any legal proceeding; (iii) otherwise making truthful statements as required by law or valid legal process; (iv) engaging in any concerted or other legally protected activities; or (v) disclosing a trade secret in confidence to a governmental official, directly or indirectly, or to an attorney, if the disclosure is made solely for the purpose of reporting or investigating a suspected violation of law. Accordingly, Participant will not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that (I) is made (A) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney, and (B) solely for the purpose of reporting or investigating a suspected violation of law; or (II) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Participant likewise understands that, if he or she files a lawsuit for retaliation by Noble or its Affiliates for reporting a suspected violation of law, he or she may disclose their trade secret(s) to his or her attorney and use the trade secret information in the court proceeding, if he or she (x) files any document containing the trade secret under seal; and (y) does not disclose the trade secret, except pursuant to court order. In accordance with applicable law, and notwithstanding any other provision

of this Agreement, nothing in this Agreement or any policies or agreements of Noble or its Affiliates applicable to Participant (1) impedes Participant's right to communicate with the SEC or any other governmental agency about possible violations of federal securities or other laws or regulations or (2) requires Participant to provide any prior notice to Noble or its Affiliates or obtain their prior approval before engaging in any such communications.

9. Non-Solicitation Covenants. In connection with Participant's acceptance of the Award under the Plan, and in exchange for the consideration provided hereunder, and in consideration of Noble and/or its Affiliates disclosing and providing access to Confidential Information, Participant agrees that he or she will not, during his or her employment or service relationship with Noble or its Affiliates, and for one year thereafter, directly or indirectly, for any reason, for his or her own account or on behalf of or together with any other person, entity or organization (i) call on or otherwise solicit any natural person who is employed by Noble or its Affiliates in any capacity with the purpose or intent of attracting that person from the employ of Noble or its Affiliates, (ii) call on or otherwise solicit or induce any natural person who is a non-employee independent contractor or subcontractor of, or other service provider to, Noble or its Affiliates in any capacity with the purpose or intent of inducing such person to breach any agreement or contract with, or discontinue or curtail his or her business relationship with, Noble or its Affiliates, or (iii) call on or otherwise solicit or induce any established customer of Noble or its Affiliates or other service provider of Noble or its Affiliates to breach any agreement or contract with, or discontinue or curtail his, her, or its business relationships with, Noble or its Affiliates, without, in each case of (i), (ii), or (iii), the prior written consent of Noble. Notwithstanding the previous sentence, the post-employment and post-service restrictions described in (i), (ii), and (iii) of the previous sentence apply only to those persons or established customers with whom Participant had material contact relating to the business of Noble or its Affiliates, or about whom Participant had access to Confidential Information, within 12 months before the termination of his or her employment or service relationship with Noble or its Affiliates.

10. Non-Disparagement Covenants.

(a) Non-Disparagement. Participant agrees that he or she will not, directly or indirectly, make any public or private statements (whether orally, in writing, via electronic transmission or otherwise) that disparage, denigrate, or malign Noble or any of its Affiliates; any of the businesses, activities, operations, affairs, reputations or prospects of any of the foregoing; or any of the respective officers, employees, directors, managers, partners, agents, members or shareholders of any of the foregoing.

(b) Exceptions. The obligation under this Section will not be violated by truthful statements that Participant makes (i) as permitted by this Agreement or applicable law that may supersede the terms of this Agreement, (ii) to any governmental authority in connection with legal process, required governmental testimony or filings, or administrative or arbitral proceedings (including, without limitation, depositions in connection with such proceedings), or (iii) in connection with a performance review or performance discussions.

11. Remedies.

(a) Remedies. In the event of a breach or threatened breach by Participant of any covenants in this Agreement, Noble and its Affiliates shall be entitled to equitable relief (without the need to post a bond or prove actual damages) by temporary restraining order, temporary injunction, or permanent injunction or otherwise, in addition to all other legal and equitable relief to which they may be entitled, including any and all monetary damages which Noble or its Affiliates may incur as a result of such breach, violation, or threatened breach or violation. Noble and its Affiliates may pursue any remedy available to them concurrently or consecutively in any order as to any breach, violation, or threatened breach or violation, and the pursuit of one of such remedies at any time will not be deemed an election of remedies or waiver of the right to pursue any other of such remedies as to such breach, violation, or threatened breach or violation, or as to any other breach, violation, or threatened breach or violation.

(b) Tolling. If Participant breaches any of covenants in this Agreement pertaining to non-competition or non-solicitation, the time periods pertaining to such covenants will be suspended and will not run in favor of Participant from the time he or she first breached such covenants until the time when he or she ceases such breach.

(c) Clawback. To the extent required by applicable law or any applicable securities exchange listing standards, or as otherwise determined by Noble, Participant's Award is subject to the provisions of any clawback policy implemented by Noble or any of its Affiliates, which clawback policy may provide for forfeiture, repurchase, and/or recoupment of the Award and amounts paid or payable pursuant to or with respect to Awards, including without limitation in connection with Participant's breach of any covenants in this Agreement. Notwithstanding any provision of this Agreement or the Plan to the contrary, Noble and its Affiliates reserve the right, without Participant's further consent, to adopt any such clawback policies and procedures, including policies and procedures applicable to the Plan or this Agreement with retroactive effect. Any clawback of the Award shall be in addition to any other legal and equitable rights and remedies to which Noble and its Affiliates may have under this Agreement or at law or equity in connection with any breach of any covenants in this Agreement.

12. The Plan and Cash-Settled Restricted Stock Unit Award Notice. The terms and provisions of the Plan and the Notice are hereby incorporated into this Agreement as if set forth herein in their entirety. In the event of a conflict between any provision of this Agreement and the Plan, the provisions of the Plan shall control. Capitalized terms used in this Agreement and not otherwise defined in this Agreement or the Notice shall have the respective meanings assigned to such terms in the Plan.

13. Severability and Reformation.

(a) Severability. The provisions of this Agreement are severable, and if any one or more provisions may be determined by any court of competent jurisdiction to be invalid or otherwise unenforceable, in whole or in part, the remaining provisions or parts of this Agreement shall nevertheless be binding and enforceable upon the parties to the fullest extent permitted by applicable law.

(b) Reformation. If any provision contained in this Agreement is found by a court of competent jurisdiction to contain limitations as to time or scope of activity that are not reasonable and impose a greater restraint than is necessary to protect the Confidential Information, goodwill, or other legitimate business interests of Noble or its Affiliates, then the court shall reform the covenant to the extent necessary to cause the limitations contained in the covenant as to time and scope of activity to be restrained to be reasonable and to impose a restraint that is not greater than necessary to protect the Confidential Information, goodwill, and other legitimate business interests of Noble and its Affiliates.

14. Assignment/Transferability. Noble may assign all or any portion of its rights and obligations under this Agreement. The Award and the rights and obligations of Participant under this Agreement may not be sold, transferred, pledged, exchanged, hypothecated or otherwise disposed of by Participant other than by will or the laws of descent and distribution.

15. Binding Effect/Governing Law. This Agreement shall be binding upon and inure to the benefit of (i) Noble and its successors and assigns, and (ii) Participant and his or her heirs, devisees, executors, administrators and personal representatives. This Agreement shall be governed by and construed in accordance with the internal laws (and not the principles relating to conflicts of laws) of the State of Texas, except as superseded by federal law.

16. Compensation Recoupment Policy. By accepting the Award, Participant hereby acknowledges and agrees that Participant and the Award are subject to Noble's compensation recoupment policy as contained in Noble's Code of Conduct (the "Policy"), as amended from time to time, and the terms and conditions of the Policy are hereby incorporated by reference into this Agreement.

17. Funding. The Award is unfunded. Participant's right to receive payment hereunder shall be no greater than the right of an unsecured creditor of Noble and Participant shall not have any rights in or against specific assets of Noble or its Affiliates.

18. Code Section 409A. The Award is intended to be exempt from Section 409A of the Code and any ambiguities herein shall be interpreted, to the extent possible, in a manner consistent therewith.

**NOBLE ENERGY, INC. 2017 LONG-TERM INCENTIVE PLAN
CASH-SETTLED RESTRICTED STOCK UNIT AWARD NOTICE
[3-YEAR CLIFF VESTED]**

You, the Participant named below, have been awarded the following award of Restricted Stock Units (the “RSUs”) and associated Dividend Equivalent Cash Rights on the terms and conditions set forth below and in accordance with the Restricted Stock Unit Award Agreement to which this Cash-Settled Restricted Stock Unit Award Notice is attached (the “Agreement”) and the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the “Plan”):

Participant Name: _____

Number of RSUs Awarded: _____

Award Date: _____

The third anniversary of the Award Date

Vesting Date:

IN WITNESS WHEREOF, the parties hereto have executed this Cash-Settled Restricted Stock Unit Award Notice to be effective as of the Award Date set forth above.

PARTICIPANT:

NOBLE ENERGY, INC.

(Signature of Participant)

David L. Stover
President and CEO

* * * * *

By clicking the *Accept* button, I am confirming that I accept the Award of RSUs and Dividend Equivalent Cash Rights and that I have read and understand and agree to be bound by the terms of this Cash-Settled Restricted Stock Unit Award Notice, the attached Agreement, and the Plan as if I had manually signed this Cash-Settled Restricted Stock Unit Award Notice. I am also consenting to receive all related information in electronic form.

NOBLE ENERGY, INC.
2017 LONG-TERM INCENTIVE PLAN

RESTRICTED STOCK UNIT AWARD AGREEMENT

This Restricted Stock Unit Award Agreement (“Agreement”), made and entered into as of the Award Date as set forth on the Cash-Settled Restricted Stock Unit Award Notice (the “Notice”), is by and between Noble Energy, Inc., a Delaware corporation (“Noble”), and the Participant named in the Notice pursuant to the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the “Plan”).

1. Award of RSUs. Effective as of the Award Date, Noble hereby awards to Participant, and Participant hereby accepts, an award (“Award”) of RSUs and Dividend Equivalent Cash Rights described in Section 2 below on the terms and conditions and subject to the restrictions, including forfeiture, set forth in this Agreement, the Notice, and the Plan. Each RSU represents the right to receive an amount of cash equal to the Fair Market Value of one share of Common Stock as of the Actual Vesting Date (as defined below).

2. Dividend Equivalent Cash Rights. In the event that, prior to the Actual Vesting Date, Noble declares and pays any cash dividends in respect of its outstanding shares of Common Stock, the Dividend Equivalent Cash Rights entitle Participant to receive, on the Actual Vesting Date with respect to each RSU vesting on such date, an additional cash payment equal to the total amount of cash dividends paid by Noble with respect to a share of its Common Stock during the period beginning on the Award Date and ending on the Actual Vesting Date with respect to such RSU, without interest or adjustment for the passage of time from the date of any such cash dividend. For the avoidance of doubt, no Dividend Equivalent Cash Rights will result from declared but unpaid dividends.

3. Vesting and Forfeiture/Payment.

(a) Until the Vesting Date set forth in the Notice, or, if earlier, the date on which the RSUs and Dividend Equivalent Cash Rights vest pursuant to this Agreement and the provisions of the Plan, including terms providing for earlier vesting in certain circumstances (such as earlier date, the “Actual Vesting Date”), the RSUs and Dividend Equivalent Cash Rights are subject to being forfeited by Participant.

(b) As soon as practicable (but in no event later than 30 days) following the Actual Vesting Date, Noble will make a lump sum cash payment to Participant (or in the event of Participant’s death, to Participant’s estate) in an amount equal to the sum of (i) the Fair Market Value of one share of Common Stock as of the Actual Vesting Date multiplied by the number of vested RSUs, plus (ii) the amount of any related Dividend Equivalent Cash Rights. Notwithstanding the preceding sentence, in the event that the Board determines that making all or a portion of the payment under this Section would jeopardize the ability of Noble to continue as a going concern, the Board may delay such payment or portion thereof until the making of the payment or portion thereof would no longer have such effect. The Award will cease to be outstanding upon the earlier of forfeiture or upon payment with respect to the Award.

(c) Immediately after termination of Participant's employment or service with Noble and its Affiliates, all RSUs and Dividend Equivalent Cash Rights that have not by that time become vested and do not become vested as of such date pursuant to the Notice and this Agreement or the applicable provisions of the Plan will be forfeited, and neither Participant nor any of his or her heirs, beneficiaries, executors, administrators or other personal representatives will have any rights whatsoever in and to any of the forfeited RSUs or Dividend Equivalent Cash Rights.

4. No Rights As Shareholder. The Award is not an equity interest in Noble and will not entitle Participant to any voting rights, rights upon liquidation or other rights of shareholders of Noble.

5. Withholding Taxes. Noble and its Affiliates will, to the extent permitted by law, have the right to deduct from any payments made hereunder any federal, state or local taxes required to be withheld on account of amounts payable hereunder.

6. Acceptance. Participant must accept the Award by electronically executing the Notice by the date described therein. If Participant fails to accept the Award by such date, then, any provision of this Agreement to the contrary notwithstanding, Participant will forfeit all RSUs and related Dividend Equivalent Cash Rights purported to be granted pursuant to the Award and the Award will become null and void. By electronically executing the Notice, Participant agrees that he or she is bound by, and will comply with, all of the terms and condition of the Plan as well as the terms of this Agreement as a condition of his or her continuing employment or service to Noble or its Affiliates.

7. Effect on Employment or Services. Nothing contained in the Plan or in this Agreement shall confer upon Participant any right with respect to the continuation of his or her employment by, or service with, Noble or an Affiliate, or interfere in any way with the right of Noble or an Affiliate, (subject to the terms of any separate agreement to the contrary) at any time to terminate such employment or service, to change the terms and conditions of such employment or service, or to increase or decrease the compensation of Participant from the rate in existence at the date of this Agreement.

8. Confidentiality and Non-Disclosure Covenants.

(a) Acknowledgement About Confidential Information. Participant understands and acknowledges that, during the course of his or her employment by, or services to, Noble or its Affiliates, Noble or its Affiliates will continue to provide him or her with access to previously undisclosed confidential, trade secret, and proprietary documents, materials, data, and other information, in tangible and intangible form, of and relating to his or her employment by, or services to, Noble and its Affiliates, as well as existing and prospective employees, customers, suppliers, investors, and other associated third parties ("Confidential Information").

(b) Definition of Confidential Information. For purposes of this Agreement, Confidential Information includes, without limitation, all non-public information disclosed or made available to Participant that gives Noble and its Affiliates a competitive advantage in their industry

and is not generally known or readily ascertainable by independent investigation, such as methods of operation and service; leases and opportunities pertaining to the lease; information relating to the acquisition, exploration, production, gathering, transporting, marketing, treating, or other processing of hydrocarbons and related products; the exploration potential of geographical areas on which hydrocarbon exploration prospects are located; information related to developing, constructing, acquiring, or operating midstream oil, natural gas, or produced water assets; technical information including inventions, computer programs, computer processes, methods of collecting, correlating and using geophysical data, computer codes, software, website structure and content, databases, formulae, designs, compilations of information and data, proprietary production processes, and know-how related to operations; financial information including margins, earnings, accounts payable, and accounts receivable; business information including business plans, expansion plans, business proposals, pending projects, pending proposals, sales data, and leases; supplier and customer information, including supplier and customer lists and identities, prices, costs, and negotiated terms; research and development and new materials research; information regarding personnel and employment policies and practices including employee lists, contact information, performance information, compensation data, benefits data, and training programs; and information regarding independent contractors and subcontractors including independent contractor and subcontractor lists, contact information, compensation, and agreements. Confidential Information also includes all information contained in any manual or electronic document or file created by Noble or its Affiliates and provided or made available to Participant. Participant understands that the above list is not exhaustive, and that Confidential Information also includes other information that is marked or otherwise identified as confidential or proprietary, or that would otherwise appear to a reasonable person to be confidential or proprietary in the context and circumstances in which the information is known or used.

(c) Confidential Information Exclusions. Participant understands that Confidential Information shall not include any information in the public domain, through no disclosure or wrongful act of Participant, to such an extent as to be readily available to competitors. Participant likewise understands that Confidential Information disclosed hereunder shall not be deemed to be within the foregoing exception solely because the Confidential Information is embraced by more general information in the public domain; neither will a combination of features be deemed within the foregoing exception merely because individual features are in the public domain.

(d) Non-Disclosure and Non-Use Covenants. Participant agrees and covenants: (i) to treat all Confidential Information as strictly confidential; (ii) not to directly or indirectly disclose, publish, communicate, or make available Confidential Information, or allow it to be disclosed, published, communicated or made available, in whole or part, to any third party not having a business need to know in order to fulfill duties to Noble or its Affiliates and authority to know and use the Confidential Information in connection with the business of Noble or its Affiliates; and (iii) not to access or use any Confidential Information, and not to copy any documents, records, files, media or other resources containing any Confidential Information, or remove any such documents, records, files, media or other resources from the premises or control of Noble or its Affiliates, except as required in the performance of his or her authorized employment duties to, or services for, Noble and its Affiliates.

(e) Covenant to Return Confidential Information and Other Company Property. Upon (i) the voluntary or involuntary termination of Participant's employment or service relationship with Noble or its Affiliates or (ii) Noble's request at any time during his or her employment or service relationship, Participant agrees to (A) provide or return to Noble any and all property of Noble and its Affiliates, including all copies of software in any media, reports, files, compilations, disks, thumb drives or other removable information storage devices, hard drives, and data and all documents and materials belonging to Noble and its Affiliates and stored in any fashion, including but not limited to those that constitute or contain any Confidential Information, that are in Participant's possession or control, whether they were provided to Participant by Noble, its Affiliates, or any of their business associates or created by Participant in connection with his or her employment by, or services to, Noble or its Affiliates; and (B) delete or destroy all copies of any such documents and materials not returned to Noble or its Affiliates that remain in Participant's possession or control, including those stored on any non-Noble devices, networks, storage locations and media in Participant's possession or control.

(f) Duration of Covenants. Participant understands and acknowledges that his or her obligations under this Agreement with regard to any particular Confidential Information shall continue during and after his or her employment by, or service relationship with, Noble or its Affiliates until such time as such Confidential Information has become public knowledge other than as a result of his or her breach of this Agreement.

(g) Immunity and Other Permitted Activities. Notwithstanding any other provision of this Agreement, nothing in this Agreement is intended to, or does, preclude Participant from (i) contacting, reporting to, responding to an inquiry from, filing a charge or complaint with, communicating with, or otherwise participating in an investigation conducted by, any other federal, state, or local governmental agency, commission, or regulatory body, including, without limitation the Securities and Exchange Commission ("SEC"); (ii) giving truthful testimony or making statements under oath in response to a subpoena or other valid legal process or in any legal proceeding; (iii) otherwise making truthful statements as required by law or valid legal process; (iv) engaging in any concerted or other legally protected activities; or (v) disclosing a trade secret in confidence to a governmental official, directly or indirectly, or to an attorney, if the disclosure is made solely for the purpose of reporting or investigating a suspected violation of law. Accordingly, Participant will not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that (I) is made (A) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney, and (B) solely for the purpose of reporting or investigating a suspected violation of law; or (II) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Participant likewise understands that, if he or she files a lawsuit for retaliation by Noble or its Affiliates for reporting a suspected violation of law, he or she may disclose their trade secret(s) to his or her attorney and use the trade secret information in the court proceeding, if he or she (x) files any document containing the trade secret under seal; and (y) does not disclose the trade secret, except pursuant to court order. In accordance with applicable law, and notwithstanding any other provision of this Agreement, nothing in this Agreement or any policies or agreements of Noble or its Affiliates applicable to Participant (1) impedes Participant's right to communicate with the SEC or any other governmental agency about possible violations of federal securities or other laws or regulations or

(2) requires Participant to provide any prior notice to Noble or its Affiliates or obtain their prior approval before engaging in any such communications.

9. Non-Solicitation Covenants. In connection with Participant's acceptance of the Award under the Plan, and in exchange for the consideration provided hereunder, and in consideration of Noble and/or its Affiliates disclosing and providing access to Confidential Information, Participant agrees that he or she will not, during his or her employment or service relationship with Noble or its Affiliates, and for one year thereafter, directly or indirectly, for any reason, for his or her own account or on behalf of or together with any other person, entity or organization (i) call on or otherwise solicit any natural person who is employed by Noble or its Affiliates in any capacity with the purpose or intent of attracting that person from the employ of Noble or its Affiliates, (ii) call on or otherwise solicit or induce any natural person who is a non-employee independent contractor or subcontractor of, or other service provider to, Noble or its Affiliates in any capacity with the purpose or intent of inducing such person to breach any agreement or contract with, or discontinue or curtail his or her business relationship with, Noble or its Affiliates, or (iii) call on or otherwise solicit or induce any established customer of Noble or its Affiliates or other service provider of Noble or its Affiliates to breach any agreement or contract with, or discontinue or curtail his, her, or its business relationships with, Noble or its Affiliates, without, in each case of (i), (ii), or (iii), the prior written consent of Noble. Notwithstanding the previous sentence, the post-employment and post-service restrictions described in (i), (ii), and (iii) of the previous sentence apply only to those persons or established customers with whom Participant had material contact relating to the business of Noble or its Affiliates, or about whom Participant had access to Confidential Information, within 12 months before the termination of his or her employment or service relationship with Noble or its Affiliates.

10. Non-Disparagement Covenants.

(a) Non-Disparagement. Participant agrees that he or she will not, directly or indirectly, make any public or private statements (whether orally, in writing, via electronic transmission or otherwise) that disparage, denigrate, or malign Noble or any of its Affiliates; any of the businesses, activities, operations, affairs, reputations or prospects of any of the foregoing; or any of the respective officers, employees, directors, managers, partners, agents, members or shareholders of any of the foregoing.

(b) Exceptions. The obligation under this Section will not be violated by truthful statements that Participant makes (i) as permitted by this Agreement or applicable law that may supersede the terms of this Agreement, (ii) to any governmental authority in connection with legal process, required governmental testimony or filings, or administrative or arbitral proceedings (including, without limitation, depositions in connection with such proceedings), or (iii) in connection with a performance review or performance discussions.

11. Remedies.

(a) Remedies. In the event of a breach or threatened breach by Participant of any covenants in this Agreement, Noble and its Affiliates shall be entitled to equitable relief (without

the need to post a bond or prove actual damages) by temporary restraining order, temporary injunction, or permanent injunction or otherwise, in addition to all other legal and equitable relief to which they may be entitled, including any and all monetary damages which Noble or its Affiliates may incur as a result of such breach, violation, or threatened breach or violation. Noble and its Affiliates may pursue any remedy available to them concurrently or consecutively in any order as to any breach, violation, or threatened breach or violation, and the pursuit of one of such remedies at any time will not be deemed an election of remedies or waiver of the right to pursue any other of such remedies as to such breach, violation, or threatened breach or violation, or as to any other breach, violation, or threatened breach or violation.

(b) Tolling. If Participant breaches any of covenants in this Agreement pertaining to non-competition or non-solicitation, the time periods pertaining to such covenants will be suspended and will not run in favor of Participant from the time he or she first breached such covenants until the time when he or she ceases such breach.

(c) Clawback. To the extent required by applicable law or any applicable securities exchange listing standards, or as otherwise determined by Noble, Participant's Award is subject to the provisions of any clawback policy implemented by Noble or any of its Affiliates, which clawback policy may provide for forfeiture, repurchase, and/or recoupment of the Award and amounts paid or payable pursuant to or with respect to Awards, including without limitation in connection with Participant's breach of any covenants in this Agreement. Notwithstanding any provision of this Agreement or the Plan to the contrary, Noble and its Affiliates reserve the right, without Participant's further consent, to adopt any such clawback policies and procedures, including policies and procedures applicable to the Plan or this Agreement with retroactive effect. Any clawback of the Award shall be in addition to any other legal and equitable rights and remedies to which Noble and its Affiliates may have under this Agreement or at law or equity in connection with any breach of any covenants in this Agreement.

12. The Plan and Cash-Settled Restricted Stock Unit Award Notice. The terms and provisions of the Plan and the Notice are hereby incorporated into this Agreement as if set forth herein in their entirety. In the event of a conflict between any provision of this Agreement and the Plan, the provisions of the Plan shall control. Capitalized terms used in this Agreement and not otherwise defined in this Agreement or the Notice shall have the respective meanings assigned to such terms in the Plan.

13. Severability and Reformation.

(a) Severability. The provisions of this Agreement are severable, and if any one or more provisions may be determined by any court of competent jurisdiction to be invalid or otherwise unenforceable, in whole or in part, the remaining provisions or parts of this Agreement shall nevertheless be binding and enforceable upon the parties to the fullest extent permitted by applicable law.

(b) Reformation. If any provision contained in this Agreement is found by a court of competent jurisdiction to contain limitations as to time or scope of activity that are not reasonable

and impose a greater restraint than is necessary to protect the Confidential Information, goodwill, or other legitimate business interests of Noble or its Affiliates, then the court shall reform the covenant to the extent necessary to cause the limitations contained in the covenant as to time and scope of activity to be restrained to be reasonable and to impose a restraint that is not greater than necessary to protect the Confidential Information, goodwill, and other legitimate business interests of Noble and its Affiliates.

14. Assignment/Transferability. Noble may assign all or any portion of its rights and obligations under this Agreement. The Award and the rights and obligations of Participant under this Agreement may not be sold, transferred, pledged, exchanged, hypothecated or otherwise disposed of by Participant other than by will or the laws of descent and distribution.

15. Binding Effect/Governing Law. This Agreement shall be binding upon and inure to the benefit of (i) Noble and its successors and assigns, and (ii) Participant and his or her heirs, devisees, executors, administrators and personal representatives. This Agreement shall be governed by and construed in accordance with the internal laws (and not the principles relating to conflicts of laws) of the State of Texas, except as superseded by federal law.

16. Compensation Recoupment Policy. By accepting the Award, Participant hereby acknowledges and agrees that Participant and the Award are subject to Noble's compensation recoupment policy as contained in Noble's Code of Conduct (the "Policy"), as amended from time to time, and the terms and conditions of the Policy are hereby incorporated by reference into this Agreement.

17. Funding. The Award is unfunded. Participant's right to receive payment hereunder shall be no greater than the right of an unsecured creditor of Noble and Participant shall not have any rights in or against specific assets of Noble or its Affiliates.

18. Code Section 409A. The Award is intended to be exempt from Section 409A of the Code and any ambiguities herein shall be interpreted, to the extent possible, in a manner consistent therewith.

**NOBLE ENERGY, INC.
2017 LONG-TERM INCENTIVE PLAN
PERFORMANCE SHARE AWARD NOTICE**

You, the Participant named below, have been awarded the following Performance Award of Performance Shares and associated Dividend Equivalent Cash Rights on the terms and conditions set forth below and in accordance with the Performance Share Award Agreement to which this Performance Share Award Notice is attached (the “Agreement”) and the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the “Plan”):

Participant Name: _____

Number of Performance Shares Awarded: _____

Award Date: _____

Vesting Date: The third anniversary of the Award Date

Percentage of Performance Shares subject to the TSR Performance Goal: 60%

Percentage of Performance Shares subject to the CROCE Performance Goal: 20%

Percentage of Performance Shares subject to the ESG Performance Goal: 20%

IN WITNESS WHEREOF, the parties hereto have executed this Performance Share Award Notice to be effective as of the Award Date set forth above.

PARTICIPANT: NOBLE ENERGY, INC.

(Signature of Participant)

David L. Stover
President and CEO

* * * * *

By clicking the *Accept* button, I am confirming that I accept the Performance Award and that I have read and understand and agree to be bound by the terms of this Performance Share Award Notice, the attached Agreement, and the Plan as if I had manually signed this Performance Share Award Notice. I am also consenting to receive all related information in electronic form.

NOBLE ENERGY, INC.
2017 LONG-TERM INCENTIVE PLAN

PERFORMANCE SHARE AWARD AGREEMENT

This Performance Share Award Agreement (“Agreement”), made and entered into as of the Award Date as set forth on the Performance Share Award Notice (the “Notice”), is by and between Noble Energy, Inc., a Delaware corporation (“Noble”), and the Participant named in the Notice pursuant to the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the “Plan”).

1. Definitions. For purposes of this Agreement:

(a) “Actual Vesting Date” means the Vesting Date or, if earlier, the date on which the Performance Shares and Dividend Equivalent Cash Rights vest pursuant to this Agreement and the provisions of the Plan, including terms providing for earlier vesting in certain circumstances.

(b) “Annual CROCE Performance Percentage” for each calendar year of the Performance Period means the percentage, which may range from 0% to 200%, determined by the Committee in its sole and absolute discretion based on its assessment of Noble’s level of achievement of such objectives as the Committee determines to be appropriate for such year with respect to Noble’s cash return on capital employed. For this purpose, Noble’s cash return on capital employed shall be calculated by dividing Noble’s consolidated cash flow from operations excluding changes in working capital by Noble’s average total debt and shareholder equity for such calendar year, and average total debt and shareholder equity shall be based on the simple average of such values as of the first and last day of the applicable calendar year.

(c) “CROCE Performance Goal” means the performance objective described in subsection 4(b)(ii) relating to Noble’s Final CROCE Performance Percentage.

(d) “Earned Performance Shares” means the shares that have been earned by Participant with respect to the Performance Shares awarded, as determined in accordance with Section 4 below.

(e) “ESG Performance Goal” means the performance objective described in subsection 4(b)(iii) relating to Noble’s ESG Performance Percentage.

(f) “ESG Performance Percentage” means the percentage, which may range from 0% to 200%, determined by the Committee in its sole and absolute discretion based on its assessment of Noble’s level of achievement for the Performance Period of such objectives as the Committee determines to be appropriate for the Performance Period with respect to Noble’s environmental, social, and governance goals, which objectives may include, but are not limited to, improvements in (greenhouse gas) emissions, water consumption, climate matters related to the Company’s operations, the Company’s culture of respect and inclusion, Company investment in training and education of its workforce, and ongoing activities relating to other environmental, social, and governance matters.

(g) “Final CROCE Performance Percentage” means the simple average of the Annual CROCE Performance Percentages for each calendar year of the Performance Period; provided, however, that the Committee in its sole and absolute discretion has the authority to adjust the Final CROCE Performance Percentage as of the end of the Performance Period to account for such additional factors as it determines to be appropriate, including, but not limited to, cash generated from proceeds, mergers and acquisitions, and commodity price swings.

(h) “Performance Goal” means each of the TSR Performance Goal, the CROCE Performance Goal and the ESG Performance Goal.

(i) “Performance Peer Group” means the group of companies consisting of each of the following companies in existence as of the beginning of the Performance Period and which continues in existence as an independent publicly traded corporation through the end of the Performance Period:

Apache Corp.	EOG Resources, Inc.
Cimarex Energy Co.	Hess Corp.
Continental Resources, Inc.	Marathon Oil Corp.
Chesapeake Energy Corp.	Murphy Oil Corp.
Devon Energy Corp.	WPX Energy, Inc.
Encana Corp.	

For this purpose, a company will not be considered to cease to be in existence merely on account of a name change, internal restructuring or reorganization, or similar event, if the company (or its successor) continues as substantially the same business following the change or event.

(j) “Performance Period” means the period of three consecutive calendar years beginning with the calendar year in which the Award Date occurs.

(k) “Total Shareholder Return” for Noble and for the other Performance Peer Group companies will be determined on the basis of the total investment performance that would have resulted at the end of the Performance Period from investing \$100 in the common stock of Noble and each of the other companies in the Performance Peer Group, using a beginning stock price and an ending stock price equal to the average closing price for the month of December immediately preceding the beginning of the Performance Period and the full calendar month ending on or immediately preceding the end of the Performance Period, respectively, and with all dividends reinvested.

(l) “TSR Performance Goal” means the performance objective described in subsection 4(b)(i) relating to Noble’s Total Shareholder Return relative to the Performance Peer Group Companies.

2 . Award of Performance Shares. Effective as of the Award Date, Noble hereby awards to Participant, and Participant hereby accepts, an award (“Award”) of Performance Shares and related Dividend Equivalent Cash Rights described in Section 3 below on the terms and conditions

and subject to the restrictions, including forfeiture, set forth in this Agreement, the Notice, and the Plan. Each Performance Share is a fictional share that represents the right to receive a number of shares of Common Stock, a cash payment equal to the Fair Market Value of such number of shares of Common Stock as of the Actual Vesting Date, or a combination thereof, as determined by the Committee in its sole and absolute discretion and subject to the fulfillment of performance and vesting conditions and other conditions described in this Agreement. The actual number of shares of Common Stock, if any, that becomes issuable or used to calculate the cash amount payable with respect to the Performance Shares will be determined based on the number of Earned Performance Shares in accordance with Section 4 below.

3 . Dividend Equivalent Cash Rights. In the event that Noble declares and pays any cash dividends in respect of its outstanding shares of Common Stock at any time on or after the Award Date and while any Performance Shares remain outstanding under this Award, the Dividend Equivalent Cash Rights entitle Participant to receive an additional cash payment equal to the total amount of cash dividends paid by Noble with respect to a share of its Common Stock during such period multiplied by the number of Earned Performance Shares, without interest or adjustment for the passage of time from the date of any such cash dividend. For the avoidance of doubt, no Dividend Equivalent Cash Rights will result from declared but unpaid dividends.

4. Vesting and Forfeiture/Payment.

(a) General. Until the Actual Vesting Date, the Performance Shares and Dividend Equivalent Cash Rights are subject to being forfeited by Participant.

(b) Determination of Payout Percentages. On the Vesting Date, payout percentages for each Performance Goal will be determined in accordance with this Section 4(b) and subject to the Committee's discretionary authority described in Section 4(c). Participant's number of Earned Performance Shares will be equal to the sum of the number of shares determined to be earned under subsections (i), (ii), and (iii) below for each applicable Performance Goal, with such total rounded down to the nearest whole share:

(i) TSR Performance Goal. The payout percentage applicable to the number of Performance Shares subject to the TSR Performance Goal (as determined based on the percentage of the Performance Shares subject to the TSR Performance Goal set forth in the Notice) will be determined in accordance with the schedule below based on Noble's Total Shareholder Return relative to the Total Shareholder Return of the companies in the Performance Peer Group, all determined as of the end of the Performance Period.

Noble's Total Shareholder Return Relative to
Performance

Peer Group Companies

Payout Percentage

90 th percentile or above	200%
75 th percentile	150%
50 th percentile	100%
25 th percentile	50%
Below 25 th percentile	None

If the percentile level of Noble's Total Shareholder Return is between two levels indicated on the foregoing schedule, the amount earned under such schedule will be determined on the basis of a straight-line interpolation between such levels. The number of shares earned by Participant for this TSG Performance Goal will be equal to the payout percentage determined in accordance with this subsection (as adjusted pursuant to any exercise of the Committee's discretionary authority described in Section 4(c)) multiplied by the number of Performance Shares subject to the TSR Performance Goal (as determined based on the percentage of the Performance Shares subject to the TSR Performance Goal set forth in the Notice).

(ii) CROCE Performance Goal. The payout percentage applicable to the number of Performance Shares subject to the CROCE Performance Goal (as determined based on the percentage of the Performance Shares subject to the CROCE Performance Goal set forth in the Notice) will be equal to the Final CROCE Performance Percentage determined as of the end of the Performance Period. The number of shares earned by Participant for this CROCE Performance Goal will be equal to the payout percentage determined in accordance with this subsection (as adjusted pursuant to any exercise of the Committee's discretionary authority described in Section 4(c)) multiplied by the number of Performance Shares subject to the CROCE Performance Goal (as determined based on the percentage of the Performance Shares subject to the CROCE Performance Goal set forth in the Notice).

(iii) ESG Performance Goal. The payout percentage applicable to the number of Performance Shares subject to the ESG Performance Goal (as determined based on the percentage of the Performance Shares subject to the ESG Performance Goal set forth in the Notice) will be equal to the ESG Performance Percentage determined as of the end of the Performance Period. The number of shares earned by Participant for this ESG Performance Goal will be equal to the payout percentage determined in accordance with this subsection (as adjusted pursuant to any exercise of the Committee's discretionary authority described in Section 4(c)) multiplied by the number of Performance Shares subject to the ESG Performance Goal (as determined based on the percentage of the Performance Shares subject to the ESG Performance Goal set forth in the Notice).

Any outstanding Performance Shares that do not become vested as of the Vesting Date will, along with any related Dividend Equivalent Cash Rights, be forfeited by Participant.

(c) Payment. The number of shares of Common Stock, if any, to be issued or used to calculate the cash amount payable to Participant will be equal to the number of Earned Performance Shares. As soon as practicable (but in no event later than 30 days) following the Actual Vesting Date, Noble will deliver to Participant (or in the event of Participant's death, to Participant's estate) (i) in settlement of the vested Performance Shares, the number of shares of Common Stock issuable with respect to the Earned Performance Shares, a lump sum cash payment in an amount equal to the Fair Market Value of one share of Common Stock as of the Actual Vesting Date multiplied by the number of Earned Performance Shares, or a combination thereof, such form of settlement to be determined by the Committee in its sole and absolute discretion, and (ii) a lump sum cash payment in an amount equal to any related Dividend Equivalent Cash Rights. Prior to payment of the Performance Shares and Dividend Equivalent Cash Rights pursuant to this Section 4(c), the Committee must determine and certify in writing the level of Noble's satisfaction of the Performance Goals, determined as of the end of the Performance Period. The Committee in its sole and absolute discretion has the authority to reduce, but not to increase, the payout percentage to be applied for the Performance Goals to determine the number of shares of Common Stock to be issued pursuant to this Award of Performance Shares and any related Dividend Equivalent Cash Rights to be paid. Notwithstanding the foregoing provisions of this Section, in the event that the Board determines that making all or a portion of a cash payment under this Section would jeopardize the ability of Noble to continue as a going concern, the Board may delay such payment or portion thereof until the making of the payment or portion thereof would no longer have such effect. The Award will cease to be outstanding upon the earlier of forfeiture or upon settlement of the Award.

(d) Termination of Employment or Service. Immediately after termination of Participant's employment or service with Noble and its Affiliates, all Performance Shares and Dividend Equivalent Cash Rights that have not by that time become vested and do not become vested as of the date of termination pursuant to the Notice and this Agreement or the applicable provisions of the Plan (including the default provisions of the Plan regarding termination of employment or service applicable to Restricted Stock Units) will be forfeited, and neither Participant nor any of his or her heirs, beneficiaries, executors, administrators or other personal representatives will have any rights whatsoever in and to any of the forfeited Performance Shares or Dividend Equivalent Cash Rights.

5 . No Rights as Shareholder. The Award is not an equity interest in Noble and will not entitle Participant to any voting rights, rights upon liquidation or other rights of shareholders of Noble.

6 . Withholding Taxes. Upon any payment made hereunder, Participant (or in the event of Participant's death, the administrator or executor of Participant's estate) will pay to Noble or the appropriate Affiliate, or make arrangements satisfactory to Noble or such Affiliate regarding payment of, any federal, state, or local taxes of any kind required by law to be withheld with respect to the payment. Any provision of this Agreement to the contrary notwithstanding, if Participant does not satisfy his or her obligations under the preceding sentence, Noble and its Affiliates will, to the extent permitted by law, have the right to deduct from any payments made hereunder, including withholding shares of Common Stock, in order to satisfy any federal, state or local tax withholding obligations arising on account of amounts payable hereunder.

7. Acceptance. Participant must accept the Award by electronically executing the Notice by the date described therein. If Participant fails to accept the Award by such date, then, any provision of this Agreement to the contrary notwithstanding, Participant will forfeit all Performance Shares and related Dividend Equivalent Cash Rights purported to be granted pursuant to the Award and the Award will become null and void. By electronically executing the Notice, Participant agrees that he or she is bound by, and will comply with, all of the terms and condition of the Plan as well as the terms of this Agreement as a condition of his or her continuing employment or service to Noble or its Affiliates.

8. Effect on Employment or Services. Nothing contained in the Plan or in this Agreement shall confer upon Participant any right with respect to the continuation of his or her employment by, or service with, Noble or an Affiliate, or interfere in any way with the right of Noble or an Affiliate, (subject to the terms of any separate agreement to the contrary) at any time to terminate such employment or service, to change the terms and conditions of such employment or service, or to increase or decrease the compensation of Participant from the rate in existence at the date of this Agreement.

9. Confidentiality and Non-Disclosure Covenants.

(a) Acknowledgement About Confidential Information. Participant understands and acknowledges that, during the course of his or her employment by, or services to, Noble or its Affiliates, Noble or its Affiliates will continue to provide him or her with access to previously undisclosed confidential, trade secret, and proprietary documents, materials, data, and other information, in tangible and intangible form, of and relating to his or her employment by, or services to, Noble and its Affiliates, as well as existing and prospective employees, customers, suppliers, investors, and other associated third parties (“Confidential Information”).

(b) Definition of Confidential Information. For purposes of this Agreement, Confidential Information includes, without limitation, all non-public information disclosed or made available to Participant that gives Noble and its Affiliates a competitive advantage in their industry and is not generally known or readily ascertainable by independent investigation, such as methods of operation and service; leases and opportunities pertaining to the lease; information relating to the acquisition, exploration, production, gathering, transporting, marketing, treating, or other processing of hydrocarbons and related products; the exploration potential of geographical areas on which hydrocarbon exploration prospects are located; information related to developing, constructing, acquiring, or operating midstream oil, natural gas, or produced water assets; technical information including inventions, computer programs, computer processes, methods of collecting, correlating and using geophysical data, computer codes, software, website structure and content, databases, formulae, designs, compilations of information and data, proprietary production processes, and know-how related to operations; financial information including margins, earnings, accounts payable, and accounts receivable; business information including business plans, expansion plans, business proposals, pending projects, pending proposals, sales data, and leases; supplier and customer information, including supplier and customer lists and identities, prices, costs, and negotiated terms; research and development and new materials research; information regarding

personnel and employment policies and practices including employee lists, contact information, performance information, compensation data, benefits data, and training programs; and information regarding independent contractors and subcontractors including independent contractor and subcontractor lists, contact information, compensation, and agreements. Confidential Information also includes all information contained in any manual or electronic document or file created by Noble or its Affiliates and provided or made available to Participant. Participant understands that the above list is not exhaustive, and that Confidential Information also includes other information that is marked or otherwise identified as confidential or proprietary, or that would otherwise appear to a reasonable person to be confidential or proprietary in the context and circumstances in which the information is known or used.

(c) Confidential Information Exclusions. Participant understands that Confidential Information shall not include any information in the public domain, through no disclosure or wrongful act of Participant, to such an extent as to be readily available to competitors. Participant likewise understands that Confidential Information disclosed hereunder shall not be deemed to be within the foregoing exception solely because the Confidential Information is embraced by more general information in the public domain; neither will a combination of features be deemed within the foregoing exception merely because individual features are in the public domain.

(d) Non-Disclosure and Non-Use Covenants. Participant agrees and covenants: (i) to treat all Confidential Information as strictly confidential; (ii) not to directly or indirectly disclose, publish, communicate, or make available Confidential Information, or allow it to be disclosed, published, communicated or made available, in whole or part, to any third party not having a business need to know in order to fulfill duties to Noble or its Affiliates and authority to know and use the Confidential Information in connection with the business of Noble or its Affiliates; and (iii) not to access or use any Confidential Information, and not to copy any documents, records, files, media or other resources containing any Confidential Information, or remove any such documents, records, files, media or other resources from the premises or control of Noble or its Affiliates, except as required in the performance of his or her authorized employment duties to, or services for, Noble and its Affiliates.

(e) Covenant to Return Confidential Information and Other Company Property. Upon (i) the voluntary or involuntary termination of Participant's employment or service relationship with Noble or its Affiliates or (ii) Noble's request at any time during his or her employment or service relationship, Participant agrees to (A) provide or return to Noble any and all property of Noble and its Affiliates, including all copies of software in any media, reports, files, compilations, disks, thumb drives or other removable information storage devices, hard drives, and data and all documents and materials belonging to Noble and its Affiliates and stored in any fashion, including but not limited to those that constitute or contain any Confidential Information, that are in Participant's possession or control, whether they were provided to Participant by Noble, its Affiliates, or any of their business associates or created by Participant in connection with his or her employment by, or services to, Noble or its Affiliates; and (B) delete or destroy all copies of any such documents and materials not returned to Noble or its Affiliates that remain in Participant's possession or control, including those stored on any non-Noble devices, networks, storage locations and media in Participant's possession or control.

(f) Duration of Covenants. Participant understands and acknowledges that his or her obligations under this Agreement with regard to any particular Confidential Information shall continue during and after his or her employment by, or service relationship with, Noble or its Affiliates until such time as such Confidential Information has become public knowledge other than as a result of his or her breach of this Agreement.

(g) Immunity and Other Permitted Activities. Notwithstanding any other provision of this Agreement, nothing in this Agreement is intended to, or does, preclude Participant from (i) contacting, reporting to, responding to an inquiry from, filing a charge or complaint with, communicating with, or otherwise participating in an investigation conducted by, any other federal, state, or local governmental agency, commission, or regulatory body, including, without limitation the Securities and Exchange Commission (“SEC”); (ii) giving truthful testimony or making statements under oath in response to a subpoena or other valid legal process or in any legal proceeding; (iii) otherwise making truthful statements as required by law or valid legal process; (iv) engaging in any concerted or other legally protected activities; or (v) disclosing a trade secret in confidence to a governmental official, directly or indirectly, or to an attorney, if the disclosure is made solely for the purpose of reporting or investigating a suspected violation of law. Accordingly, Participant will not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that (I) is made (A) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney, and (B) solely for the purpose of reporting or investigating a suspected violation of law; or (II) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Participant likewise understands that, if he or she files a lawsuit for retaliation by Noble or its Affiliates for reporting a suspected violation of law, he or she may disclose their trade secret(s) to his or her attorney and use the trade secret information in the court proceeding, if he or she (x) files any document containing the trade secret under seal; and (y) does not disclose the trade secret, except pursuant to court order. In accordance with applicable law, and notwithstanding any other provision of this Agreement, nothing in this Agreement or any policies or agreements of Noble or its Affiliates applicable to Participant (1) impedes Participant’s right to communicate with the SEC or any other governmental agency about possible violations of federal securities or other laws or regulations or (2) requires Participant to provide any prior notice to Noble or its Affiliates or obtain their prior approval before engaging in any such communications.

10. Non-Solicitation Covenants. In connection with Participant’s acceptance of the Award under the Plan, and in exchange for the consideration provided hereunder, and in consideration of Noble and/or its Affiliates disclosing and providing access to Confidential Information, Participant agrees that he or she will not, during his or her employment or service relationship with Noble or its Affiliates, and for one year thereafter, directly or indirectly, for any reason, for his or her own account or on behalf of or together with any other person, entity or organization (i) call on or otherwise solicit any natural person who is employed by Noble or its Affiliates in any capacity with the purpose or intent of attracting that person from the employ of Noble or its Affiliates, (ii) call on or otherwise solicit or induce any natural person who is a non-employee independent contractor or subcontractor of, or other service provider to, Noble or its Affiliates in any capacity with the purpose or intent of inducing such person to breach any agreement or contract with, or discontinue or curtail his or her business relationship with, Noble or its Affiliates,

or (iii) call on or otherwise solicit or induce any established customer of Noble or its Affiliates or other service provider of Noble or its Affiliates to breach any agreement or contract with, or discontinue or curtail his, her, or its business relationships with, Noble or its Affiliates, without, in each case of (i), (ii), or (iii), the prior written consent of Noble. Notwithstanding the previous sentence, the post-employment and post-service restrictions described in (i), (ii), and (iii) of the previous sentence apply only to those persons or established customers with whom Participant had material contact relating to the business of Noble or its Affiliates, or about whom Participant had access to Confidential Information, within 12 months before the termination of his or her employment or service relationship with Noble or its Affiliates.

11. Non-Competition.

(a) Non-Competition Covenants. In connection with Participant's acceptance of the Award under the Plan, and in exchange for the consideration provided hereunder, and in consideration of Noble and/or its Affiliates disclosing and providing access to Confidential Information, Participant agrees that he or she will not, during his or her employment or service relationship with Noble, and for one year thereafter, in the "Restricted Area" accept employment or engage in any business activity (whether as a principal, partner, joint venturer, agent, employee, salesperson, consultant, independent contractor, director, officer, or any other capacity similar to the capacity in which he or she provided services to Noble or its Affiliates) with any "Competitor" of Noble or its Affiliates where such employment or activity would involve his or her (i) providing, selling, or attempting to sell, or assisting in the sale or attempted sale of, any services or products competitive with or similar to those services or products with which he or she had any involvement, and/or regarding which he or she had access to any Confidential Information, during his or her employment or service relationship with Noble or its Affiliates (including any products or services being researched or developed by Noble or its Affiliates during his or her service as an employee of Noble or its Affiliates), or (ii) providing or performing services that are similar to any services that he or she provided to or performed for Noble or its Affiliates during his or her employment or service relationship with Noble or its Affiliates.

(b) Definition of Competitor. For purposes of this Agreement, a "Competitor" is any business or entity that, at any time during the one-year period following Participant's separation from employment or service with Noble or its Affiliates, provides or seeks to provide, any products or services similar or related to any products sold or any services provided by Noble or its Affiliates. Competitor includes, without limitation, any company or business engaged in (i) oil or gas exploration or production, including without limitation acquiring, exploring, or developing oil or natural gas assets, or (ii) developing, constructing, acquiring, or operating midstream oil, natural gas, or produced water assets, including, but not limited to, gathering, processing, transportation, compression, conditioning, storage, or treating such assets and any related services.

(c) Definition of Restricted Area. The non-competition covenants above shall be limited to the "Restricted Area" which means the geographic areas (i) where Participant was employed by, or performed services for, Noble or its Affiliates, (ii) where he or she solicited or served the customers of Noble or its Affiliates, and (iii) otherwise impacted or influenced by his or her provision of services to Noble or its Affiliates.

(d) Permitted Exception. Notwithstanding the foregoing, Participant may invest in securities of any entity, solely for investment purposes and without participating in the business thereof, if (i) such securities are traded on any national securities exchange or the National Association of Securities Dealers Automatic Quotation System or equivalent non-U.S. securities exchange, (ii) Participant is not a controlling person of, or a member of a group which controls, such entity and (iii) Participant does not, directly or indirectly, own 2% or more of any class of securities of such entity.

12. Non-Disparagement Covenants.

(a) Non-Disparagement. Participant agrees that he or she will not, directly or indirectly, make any public or private statements (whether orally, in writing, via electronic transmission or otherwise) that disparage, denigrate, or malign Noble or any of its Affiliates; any of the businesses, activities, operations, affairs, reputations or prospects of any of the foregoing; or any of the respective officers, employees, directors, managers, partners, agents, members or shareholders of any of the foregoing.

(b) Exceptions. The obligation under this Section will not be violated by truthful statements that Participant makes (i) as permitted by this Agreement or applicable law that may supersede the terms of this Agreement, (ii) to any governmental authority in connection with legal process, required governmental testimony or filings, or administrative or arbitral proceedings (including, without limitation, depositions in connection with such proceedings), or (iii) in connection with a performance review or performance discussions.

13. Remedies.

(a) Remedies. In the event of a breach or threatened breach by Participant of any covenants in this Agreement, Noble and its Affiliates shall be entitled to equitable relief (without the need to post a bond or prove actual damages) by temporary restraining order, temporary injunction, or permanent injunction or otherwise, in addition to all other legal and equitable relief to which they may be entitled, including any and all monetary damages which Noble or its Affiliates may incur as a result of such breach, violation, or threatened breach or violation. Noble and its Affiliates may pursue any remedy available to them concurrently or consecutively in any order as to any breach, violation, or threatened breach or violation, and the pursuit of one of such remedies at any time will not be deemed an election of remedies or waiver of the right to pursue any other of such remedies as to such breach, violation, or threatened breach or violation, or as to any other breach, violation, or threatened breach or violation.

(b) Tolling. If Participant breaches any of the covenants in this Agreement pertaining to non-competition or non-solicitation, the time periods pertaining to such covenants will be suspended and will not run in favor of Participant from the time he or she first breached such covenants until the time when he or she ceases such breach.

(c) Clawback. To the extent required by applicable law or any applicable securities exchange listing standards, or as otherwise determined by Noble, Participant's Award is subject to the provisions of any clawback policy implemented by Noble or any of its Affiliates, which clawback policy may provide for forfeiture, repurchase, and/or recoupment of the Award and amounts paid or payable pursuant to or with respect to Awards, including without limitation in connection with Participant's breach of any covenants in this Agreement. Notwithstanding any provision of this Agreement or the Plan to the contrary, Noble and its Affiliates reserve the right, without Participant's further consent, to adopt any such clawback policies and procedures, including policies and procedures applicable to the Plan or this Agreement with retroactive effect. Any clawback of the Award shall be in addition to any other legal and equitable rights and remedies to which Noble and its Affiliates may have under this Agreement or at law or equity in connection with any breach of any covenants in this Agreement.

14. The Plan and Performance Share Award Notice. The terms and provisions of the Plan and the Notice are hereby incorporated into this Agreement as if set forth herein in their entirety. In the event of a conflict between any provision of this Agreement and the Plan, the provisions of the Plan shall control. Capitalized terms used in this Agreement and not otherwise defined in this Agreement or the Notice shall have the respective meanings assigned to such terms in the Plan.

15. Severability and Reformation.

(a) Severability. The provisions of this Agreement are severable, and if any one or more provisions may be determined by any court of competent jurisdiction to be invalid or otherwise unenforceable, in whole or in part, the remaining provisions or parts of this Agreement shall nevertheless be binding and enforceable upon the parties to the fullest extent permitted by applicable law.

(b) Reformation. If any provision contained in this Agreement is found by a court of competent jurisdiction to contain limitations as to time, geographic area, or scope of activity that are not reasonable and impose a greater restraint than is necessary to protect the Confidential Information, goodwill or other legitimate business interests of Noble or its Affiliates, then the court shall reform the covenant to the extent necessary to cause the limitations contained in the covenant as to time, geographic area, and scope of activity to be restrained to be reasonable and to impose a restraint that is not greater than necessary to protect the Confidential Information, goodwill, and other legitimate business interests of Noble and its Affiliates.

16. Assignment/Transferability. Noble may assign all or any portion of its rights and obligations under this Agreement. The Award and the rights and obligations of Participant under this Agreement may not be sold, transferred, pledged, exchanged, hypothecated or otherwise disposed of by Participant other than by will or the laws of descent and distribution.

17. Binding Effect/Governing Law. This Agreement shall be binding upon and inure to the benefit of (i) Noble and its successors and assigns, and (ii) Participant and his or her heirs, devisees, executors, administrators and personal representatives. This Agreement shall be governed

by and construed in accordance with the internal laws (and not the principles relating to conflicts of laws) of the State of Texas, except as superseded by federal law.

18. Compensation Recoupment Policy. By accepting the Award, Participant hereby acknowledges and agrees that Participant and the Award are subject to Noble's compensation recoupment policy as contained in Noble's Code of Conduct (the "Policy"), as amended from time to time, and the terms and conditions of the Policy are hereby incorporated by reference into this Agreement.

19. Funding. The Award is unfunded. Participant's right to receive payment hereunder shall be no greater than the right of an unsecured creditor of Noble and Participant shall not have any rights in or against specific assets of Noble or its Affiliates.

20. Code Section 409A. The Award is intended to be exempt from Section 409A of the Code and any ambiguities herein shall be interpreted, to the extent possible, in a manner consistent therewith.

**NOBLE ENERGY, INC.
2017 LONG-TERM INCENTIVE PLAN
RESTRICTED STOCK AWARD NOTICE
[3-YEAR TIME VESTED]**

You, the Participant named below, have been awarded the following restricted stock award of shares (the “Restricted Shares”) of Common Stock on the terms and conditions set forth below and in accordance with the Restricted Stock Award Agreement to which this Restricted Stock Award Notice is attached (the “Agreement”) and the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the “Plan”):

Participant Name: _____

Number of Restricted Shares
Awarded: _____

Award Date: _____

Vesting Schedule: The Restricted Shares will be subject to a restricted period (the “Restricted Period”) that will commence on the Award Date and end on the third anniversary of the Award Date. During the Restricted Period, the Restricted Shares will be subject to the restrictions described in the Agreement, provided, however, that the restrictions will be removed as to:

- (i) one third (1/3) of the Restricted Shares on the first anniversary of the Award Date, provided Participant is in the continuous employ or service of Noble Energy, Inc. (“Noble”) or an Affiliate until such date;
- (ii) one third (1/3) of the Restricted Shares on the second anniversary of the Award Date, provided Participant is in the continuous employ or service of Noble or an Affiliate until such date; and
- (iii) the remaining Restricted Shares on the third anniversary of the Award Date, provided Participant is in the continuous employ or service of Noble or an Affiliate until such date.

IN WITNESS WHEREOF, the parties hereto have executed this Restricted Stock Award Notice to be effective as of the Award Date set forth above.

PARTICIPANT:

NOBLE ENERGY, INC.

(Signature of Participant)

David L. Stover
President and CEO

* * * * *

By clicking the *Accept* button, I am confirming that I accept the Award of Restricted Shares and that I have read and understand and agree to be bound by the terms of this Restricted Stock Award Notice, the attached Agreement, and the Plan as if I had manually signed this Restricted Stock Award Notice. I am also consenting to receive all related information in electronic form.

**NOBLE ENERGY, INC.
2017 LONG-TERM INCENTIVE PLAN**

RESTRICTED STOCK AWARD AGREEMENT

This Restricted Stock Award Agreement (“Agreement”), made and entered into as of the Award Date as set forth on the Restricted Stock Award Notice (the “Notice”), is by and between Noble Energy, Inc., a Delaware corporation (“Noble”), and the Participant named in the Notice pursuant to the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the “Plan”).

1. Restricted Stock Award. Effective as of the Award Date, Noble hereby awards to Participant, and Participant hereby accepts, a restricted stock award (“Award”) of Restricted Shares on the terms and conditions and subject to the restrictions, including forfeiture, set forth in this Agreement, the Notice and the Plan (including but not limited to the terms relating to Participant’s right to vote the Restricted Shares and right to receive any dividends with respect to the Restricted Shares). The Restricted Shares will be issued in book-entry or stock certificate form in the name of Participant as of the Award Date and will be held by Noble in escrow for Participant’s benefit as described in the Plan.

2. Vesting and Forfeiture.

(a) The Restricted Shares will be subject to restrictions during the Restricted Period in accordance with the Vesting Schedule set forth in the Notice. During the Restricted Period, but subject to the provisions set forth in (i) the Plan, including those providing for earlier vesting and removal of restrictions in certain circumstances, or (ii), if applicable, the Noble Energy, Inc. 2016 Severance Benefit Plan or any other severance benefits or early retirement plan or program maintained at any time by Noble (each referred to herein as a “Severance Plan”), which Severance Plan specifically provides for earlier vesting of the Restricted Shares upon a qualifying termination from employment, the Restricted Shares will be subject to being forfeited by Participant to Noble as provided in this Agreement. In addition, Participant may not sell, assign, transfer, discount, exchange, pledge or otherwise encumber or dispose of any of the Restricted Shares, other than by will or pursuant to the applicable laws of descent and distribution.

(b) As soon as practicable (but in no event later than 60 days) after the termination of the restrictions applicable hereunder to a portion of the Restricted Shares, that portion of the Restricted Shares, together with any dividends or other distributions with respect to those shares then being held by Noble, will be delivered to Participant free of such restrictions.

(c) Immediately after termination of Participant’s employment or service with Noble and its Affiliates, all Restricted Shares as to which the restrictions applicable hereunder that have not by that time been removed or are not, as of such date, being removed pursuant to (i) the Notice and this Agreement or (ii) the applicable provisions of the Plan or a Severance Plan, will be forfeited (the “Forfeited Shares”), which forfeiture will also include any accumulated dividends or distributions with respect to such Forfeited Shares. Neither Participant nor any of his or her heirs, beneficiaries, executors, administrators or other personal representatives will have any rights

whatsoever in and to any of the Forfeited Shares or related dividends or distributions, and all of the Forfeited Shares and related dividends or distributions will automatically revert to Noble at no cost.

3. Withholding Taxes.

(a) Participant may elect within 30 days of the Award Date and on notice to Noble to realize income for federal income tax purposes equal to the fair market value of the Restricted Shares on the Award Date. In such event, Participant will make arrangements satisfactory to Noble or the appropriate Affiliate to pay at such time any federal, state or local taxes required to be withheld with respect to such shares.

(b) If no election is made by Participant pursuant to Section 3(a) hereof, then upon the termination of the restrictions applicable hereunder to all or any portion of the Restricted Shares, Participant (or in the event of Participant's death, the administrator or executor of Participant's estate) will pay to Noble or the appropriate Affiliate, or make arrangements satisfactory to Noble or such Affiliate regarding payment of, any federal, state or local taxes of any kind required by law to be withheld with respect to the Restricted Shares.

(c) Any provision of this Agreement to the contrary notwithstanding, if Participant does not satisfy his or her obligations under paragraphs (a) or (b) of this Section, Noble and its Affiliates will, to the extent permitted by law, have the right to deduct from any payments of any kind otherwise due from the Noble or an Affiliate to or with respect to Participant, whether or not pursuant to this Agreement, or the Plan and regardless of the form of payment, any federal, state or local taxes of any kind required by law to be withheld with respect to the Restricted Shares.

4. Acceptance. Participant must accept the Award by electronically executing the Notice by the date described therein. If Participant fails to accept the Award by such date, then, any provision of this Agreement to the contrary notwithstanding, Participant will forfeit all Restricted Shares purported to be granted pursuant to the Award, all of the Restricted Shares and related dividends or distributions will automatically revert to Noble at no cost, and the Award will become null and void. By electronically executing the Notice, Participant agrees that he or she is bound by, and will comply with, all of the terms and condition of the Plan as well as the terms of this Agreement as a condition of his or her continuing employment or service to Noble or its Affiliates.

5. Effect on Employment or Services. Nothing contained in the Plan or in this Agreement shall confer upon Participant any right with respect to the continuation of his or her employment by, or service with, Noble or an Affiliate, or interfere in any way with the right of Noble or an Affiliate, (subject to the terms of any separate agreement to the contrary) at any time to terminate such employment or service, to change the terms and conditions of such employment or service, or to increase or decrease the compensation of Participant from the rate in existence at the date of this Agreement.

6. Confidentiality and Non-Disclosure Covenants.

(a) Acknowledgement About Confidential Information. Participant understands and acknowledges that, during the course of his or her employment by, or services to, Noble or its Affiliates, Noble or its Affiliates will continue to provide him or her with access to previously undisclosed confidential, trade secret, and proprietary documents, materials, data, and other information, in tangible and intangible form, of and relating to his or her employment by, or services to, Noble and its Affiliates, as well as existing and prospective employees, customers, suppliers, investors, and other associated third parties (“Confidential Information”).

(b) Definition of Confidential Information. For purposes of this Agreement, Confidential Information includes, without limitation, all non-public information disclosed or made available to Participant that gives Noble and its Affiliates a competitive advantage in their industry and is not generally known or readily ascertainable by independent investigation, such as methods of operation and service; leases and opportunities pertaining to the lease; information relating to the acquisition, exploration, production, gathering, transporting, marketing, treating, or other processing of hydrocarbons and related products; the exploration potential of geographical areas on which hydrocarbon exploration prospects are located; information related to developing, constructing, acquiring, or operating midstream oil, natural gas, or produced water assets; technical information including inventions, computer programs, computer processes, methods of collecting, correlating and using geophysical data, computer codes, software, website structure and content, databases, formulae, designs, compilations of information and data, proprietary production processes, and know-how related to operations; financial information including margins, earnings, accounts payable, and accounts receivable; business information including business plans, expansion plans, business proposals, pending projects, pending proposals, sales data, and leases; supplier and customer information, including supplier and customer lists and identities, prices, costs, and negotiated terms; research and development and new materials research; information regarding personnel and employment policies and practices including employee lists, contact information, performance information, compensation data, benefits data, and training programs; and information regarding independent contractors and subcontractors including independent contractor and subcontractor lists, contact information, compensation, and agreements. Confidential Information also includes all information contained in any manual or electronic document or file created by Noble or its Affiliates and provided or made available to Participant. Participant understands that the above list is not exhaustive, and that Confidential Information also includes other information that is marked or otherwise identified as confidential or proprietary, or that would otherwise appear to a reasonable person to be confidential or proprietary in the context and circumstances in which the information is known or used.

(c) Confidential Information Exclusions. Participant understands that Confidential Information shall not include any information in the public domain, through no disclosure or wrongful act of Participant, to such an extent as to be readily available to competitors. Participant likewise understands that Confidential Information disclosed hereunder shall not be deemed to be within the foregoing exception solely because the Confidential Information is embraced by more general information in the public domain; neither will a combination of features be deemed within the foregoing exception merely because individual features are in the public domain.

(d) Non-Disclosure and Non-Use Covenants. Participant agrees and covenants: (i) to treat all Confidential Information as strictly confidential; (ii) not to directly or indirectly disclose, publish, communicate, or make available Confidential Information, or allow it to be disclosed, published, communicated or made available, in whole or part, to any third party not having a business need to know in order to fulfill duties to Noble or its Affiliates and authority to know and use the Confidential Information in connection with the business of Noble or its Affiliates; and (iii) not to access or use any Confidential Information, and not to copy any documents, records, files, media or other resources containing any Confidential Information, or remove any such documents, records, files, media or other resources from the premises or control of Noble or its Affiliates, except as required in the performance of his or her authorized employment duties to, or services for, Noble and its Affiliates.

(e) Covenant to Return Confidential Information and Other Company Property. Upon (i) the voluntary or involuntary termination of Participant's employment or service relationship with Noble or its Affiliates or (ii) Noble's request at any time during his or her employment or service relationship, Participant agrees to (A) provide or return to Noble any and all property of Noble and its Affiliates, including all copies of software in any media, reports, files, compilations, disks, thumb drives or other removable information storage devices, hard drives, and data and all documents and materials belonging to Noble and its Affiliates and stored in any fashion, including but not limited to those that constitute or contain any Confidential Information, that are in Participant's possession or control, whether they were provided to Participant by Noble, its Affiliates, or any of their business associates or created by Participant in connection with his or her employment by, or services to, Noble or its Affiliates; and (B) delete or destroy all copies of any such documents and materials not returned to Noble or its Affiliates that remain in Participant's possession or control, including those stored on any non-Noble devices, networks, storage locations and media in Participant's possession or control.

(f) Duration of Covenants. Participant understands and acknowledges that his or her obligations under this Agreement with regard to any particular Confidential Information shall continue during and after his or her employment by, or service relationship with, Noble or its Affiliates until such time as such Confidential Information has become public knowledge other than as a result of his or her breach of this Agreement.

(g) Immunity and Other Permitted Activities. Notwithstanding any other provision of this Agreement, nothing in this Agreement is intended to, or does, preclude Participant from (i) contacting, reporting to, responding to an inquiry from, filing a charge or complaint with, communicating with, or otherwise participating in an investigation conducted by, any other federal, state, or local governmental agency, commission, or regulatory body, including, without limitation the Securities and Exchange Commission ("SEC"); (ii) giving truthful testimony or making statements under oath in response to a subpoena or other valid legal process or in any legal proceeding; (iii) otherwise making truthful statements as required by law or valid legal process; (iv) engaging in any concerted or other legally protected activities; or (v) disclosing a trade secret in confidence to a governmental official, directly or indirectly, or to an attorney, if the disclosure is made solely for the purpose of reporting or investigating a suspected violation of law. Accordingly, Participant will not be held criminally or civilly liable under any federal or state trade secret law

for the disclosure of a trade secret that (I) is made (A) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney, and (B) solely for the purpose of reporting or investigating a suspected violation of law; or (II) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Participant likewise understands that, if he or she files a lawsuit for retaliation by Noble or its Affiliates for reporting a suspected violation of law, he or she may disclose their trade secret(s) to his or her attorney and use the trade secret information in the court proceeding, if he or she (x) files any document containing the trade secret under seal; and (y) does not disclose the trade secret, except pursuant to court order. In accordance with applicable law, and notwithstanding any other provision of this Agreement, nothing in this Agreement or any policies or agreements of Noble or its Affiliates applicable to Participant (1) impedes Participant's right to communicate with the SEC or any other governmental agency about possible violations of federal securities or other laws or regulations or (2) requires Participant to provide any prior notice to Noble or its Affiliates or obtain their prior approval before engaging in any such communications.

7. Non-Solicitation Covenants. In connection with Participant's acceptance of the Award under the Plan, and in exchange for the consideration provided hereunder, and in consideration of Noble and/or its Affiliates disclosing and providing access to Confidential Information, Participant agrees that he or she will not, during his or her employment or service relationship with Noble or its Affiliates, and for one year thereafter, directly or indirectly, for any reason, for his or her own account or on behalf of or together with any other person, entity or organization (i) call on or otherwise solicit any natural person who is employed by Noble or its Affiliates in any capacity with the purpose or intent of attracting that person from the employ of Noble or its Affiliates, (ii) call on or otherwise solicit or induce any natural person who is a non-employee independent contractor or subcontractor of, or other service provider to, Noble or its Affiliates in any capacity with the purpose or intent of inducing such person to breach any agreement or contract with, or discontinue or curtail his or her business relationship with, Noble or its Affiliates, or (iii) call on or otherwise solicit or induce any established customer of Noble or its Affiliates or other service provider of Noble or its Affiliates to breach any agreement or contract with, or discontinue or curtail his, her, or its business relationships with, Noble or its Affiliates, without, in each case of (i), (ii), or (iii), the prior written consent of Noble. Notwithstanding the previous sentence, the post-employment and post-service restrictions described in (i), (ii), and (iii) of the previous sentence apply only to those persons or established customers with whom Participant had material contact relating to the business of Noble or its Affiliates, or about whom Participant had access to Confidential Information, within 12 months before the termination of his or her employment or service relationship with Noble or its Affiliates.

8. Non-Disparagement Covenants.

(a) Non-Disparagement. Participant agrees that he or she will not, directly or indirectly, make any public or private statements (whether orally, in writing, via electronic transmission or otherwise) that disparage, denigrate, or malign Noble or any of its Affiliates; any of the businesses, activities, operations, affairs, reputations or prospects of any of the foregoing; or any of the respective officers, employees, directors, managers, partners, agents, members or shareholders of any of the foregoing.

(b) Exceptions. The obligation under this Section will not be violated by truthful statements that Participant makes (i) as permitted by this Agreement or applicable law that may supersede the terms of this Agreement, (ii) to any governmental authority in connection with legal process, required governmental testimony or filings, or administrative or arbitral proceedings (including, without limitation, depositions in connection with such proceedings), or (iii) in connection with a performance review or performance discussions.

9. Remedies.

(a) Remedies. In the event of a breach or threatened breach by Participant of any covenants in this Agreement, Noble and its Affiliates shall be entitled to equitable relief (without the need to post a bond or prove actual damages) by temporary restraining order, temporary injunction, or permanent injunction or otherwise, in addition to all other legal and equitable relief to which they may be entitled, including any and all monetary damages which Noble or its Affiliates may incur as a result of such breach, violation, or threatened breach or violation. Noble and its Affiliates may pursue any remedy available to them concurrently or consecutively in any order as to any breach, violation, or threatened breach or violation, and the pursuit of one of such remedies at any time will not be deemed an election of remedies or waiver of the right to pursue any other of such remedies as to such breach, violation, or threatened breach or violation, or as to any other breach, violation, or threatened breach or violation.

(b) Tolling. If Participant breaches any of covenants in this Agreement pertaining to non-competition or non-solicitation, the time periods pertaining to such covenants will be suspended and will not run in favor of Participant from the time he or she first breached such covenants until the time when he or she ceases such breach.

(c) Clawback. To the extent required by applicable law or any applicable securities exchange listing standards, or as otherwise determined by Noble, Participant's Award is subject to the provisions of any clawback policy implemented by Noble or any of its Affiliates, which clawback policy may provide for forfeiture, repurchase, and/or recoupment of the Award and amounts paid or payable pursuant to or with respect to Awards, including without limitation in connection with Participant's breach of any covenants in this Agreement. Notwithstanding any provision of this Agreement or the Plan to the contrary, Noble and its Affiliates reserve the right, without Participant's further consent, to adopt any such clawback policies and procedures, including policies and procedures applicable to the Plan or this Agreement with retroactive effect. Any clawback of the Award shall be in addition to any other legal and equitable rights and remedies to which Noble and its Affiliates may have under this Agreement or at law or equity in connection with any breach of any covenants in this Agreement.

10. The Plan and Restricted Stock Award Notice. The terms and provisions of the Plan and the Notice are hereby incorporated into this Agreement as if set forth herein in their entirety. In the event of a conflict between any provision of this Agreement and the Plan, the provisions of the Plan shall control. Capitalized terms used in this Agreement and not otherwise defined in this Agreement or the Notice shall have the respective meanings assigned to such terms in the Plan.

11. Severability and Reformation.

(a) Severability. The provisions of this Agreement are severable, and if any one or more provisions may be determined by any court of competent jurisdiction to be invalid or otherwise unenforceable, in whole or in part, the remaining provisions or parts of this Agreement shall nevertheless be binding and enforceable upon the parties to the fullest extent permitted by applicable law.

(b) Reformation. If any provision contained in this Agreement is found by a court of competent jurisdiction to contain limitations as to time or scope of activity that are not reasonable and impose a greater restraint than is necessary to protect the Confidential Information, goodwill, or other legitimate business interests of Noble or its Affiliates, then the court shall reform the covenant to the extent necessary to cause the limitations contained in the covenant as to time and scope of activity to be restrained to be reasonable and to impose a restraint that is not greater than necessary to protect the Confidential Information, goodwill, and other legitimate business interests of Noble and its Affiliates.

12. Assignment/Transferability. Noble may assign all or any portion of its rights and obligations under this Agreement. The Award, the Restricted Shares and the rights and obligations of Participant under this Agreement may not be sold, transferred, pledged, exchanged, hypothecated or otherwise disposed of by Participant other than by will or the laws of descent and distribution. The Committee may issue such instructions to Noble's transfer agent in connection with the restrictions on transfer of the Restricted Shares as it deems appropriate. Any certificate for shares of Common Stock issued to Participant pursuant to the Award may include any legend that the Committee deems appropriate to reflect the restrictions on transfer of the Restricted Shares and other restrictions as the Committee may deem advisable as described in the Plan. Should such shares of Common Stock be represented by book or electronic entry rather than a certificate, the Company may take such steps to restrict transfer of the shares of Common Stock as the Committee considers necessary or advisable to comply with applicable law.

13. Binding Effect/Governing Law. This Agreement shall be binding upon and inure to the benefit of (i) Noble and its successors and assigns, and (ii) Participant and his or her heirs, devisees, executors, administrators and personal representatives. This Agreement shall be governed by and construed in accordance with the internal laws (and not the principles relating to conflicts of laws) of the State of Texas, except as superseded by federal law.

14. Compensation Recoupment Policy. By accepting the Award, Participant hereby acknowledges and agrees that Participant and the Award are subject to Noble's compensation recoupment policy as contained in Noble's Code of Conduct (the "Policy"), as amended from time to time, and the terms and conditions of the Policy are hereby incorporated by reference into this Agreement.

**NOBLE ENERGY, INC.
2017 LONG-TERM INCENTIVE PLAN
RESTRICTED STOCK AWARD NOTICE
[3-YEAR CLIFF VESTED]**

You, the Participant named below, have been awarded the following restricted stock award of shares (the “Restricted Shares”) of Common Stock on the terms and conditions set forth below and in accordance with the Restricted Stock Award Agreement to which this Restricted Stock Award Notice is attached (the “Agreement”) and the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the “Plan”):

Participant Name: _____

Number of Restricted Shares
Awarded: _____

Award Date: _____

The third anniversary of the Award Date

Vesting Date:

IN WITNESS WHEREOF, the parties hereto have executed this Restricted Stock Award Notice to be effective as of the Award Date set forth above.

PARTICIPANT:

NOBLE ENERGY, INC.

(Signature of Participant)

David L. Stover
President and CEO

* * * * *

By clicking the *Accept* button, I am confirming that I accept the Award of Restricted Shares and that I have read and understand and agree to be bound by the terms of this Restricted Stock Award Notice, the attached Agreement, and the Plan as if I had manually signed this Restricted Stock Award Notice. I am also consenting to receive all related information in electronic form.

**NOBLE ENERGY, INC.
2017 LONG-TERM INCENTIVE PLAN**

RESTRICTED STOCK AWARD AGREEMENT

This Restricted Stock Award Agreement (“Agreement”), made and entered into as of the Award Date as set forth on the Restricted Stock Award Notice (the “Notice”), is by and between Noble Energy, Inc., a Delaware corporation (“Noble”), and the Participant named in the Notice, pursuant to the Noble Energy, Inc. 2017 Long-Term Incentive Plan (the “Plan”).

1. Restricted Stock Award. Effective as of the Award Date, Noble hereby awards to Participant, and Participant hereby accepts, a restricted stock award (“Award”) of Restricted Shares on the terms and conditions and subject to the restrictions, including forfeiture, set forth in this Agreement, the Notice and the Plan (including but not limited to the terms relating to Participant’s right to vote the Restricted Shares and right to receive any dividends with respect to the Restricted Shares). The Restricted Shares will be issued in book-entry or stock certificate form in the name of Participant as of the Award Date and will be held by Noble in escrow for Participant’s benefit as described in the Plan.

2. Vesting and Forfeiture.

(a) The Restricted Shares will be subject to a restricted period (the “Restricted Period”) that will commence on the Award Date and end on the Vesting Date set forth in the Notice. During the Restricted Period, but subject to the provisions set forth in (i) the Plan, including those providing for earlier vesting and removal of restrictions in certain circumstances, or (ii), if applicable, the Noble Energy, Inc. 2016 Severance Benefit Plan or any other severance benefits or early retirement plan or program maintained at any time by Noble (each referred to herein as a “Severance Plan”), which Severance Plan specifically provides for earlier vesting of the Restricted Shares upon a qualifying termination from employment, the Restricted Shares will be subject to being forfeited by Participant to Noble as provided in this Agreement. In addition, Participant may not sell, assign, transfer, discount, exchange, pledge or otherwise encumber or dispose of any of the Restricted Shares, other than by will or pursuant to the applicable laws of descent and distribution.

(b) As soon as practicable (but in no event later than 60 days) after the termination of the restrictions applicable hereunder to the Restricted Shares, the Restricted Shares, together with any dividends or other distributions with respect to those shares then being held by Noble, will be delivered to Participant free of such restrictions.

(c) Immediately after termination of Participant’s employment or service with Noble and its Affiliates, all Restricted Shares as to which the restrictions applicable hereunder that have not by that time been removed or are not, as of such date, being removed pursuant to (i) the Notice and this Agreement or (ii) the applicable provisions of the Plan or a Severance Plan, will be forfeited (the “Forfeited Shares”), which forfeiture will also include any accumulated dividends or distributions with respect to such Forfeited Shares. Neither Participant nor any of his or her heirs, beneficiaries, executors, administrators or other personal representatives will have any rights

whatsoever in and to any of the Forfeited Shares or related dividends or distributions, and all of the Forfeited Shares and related dividends or distributions will automatically revert to Noble at no cost.

3. Withholding Taxes.

(a) Participant may elect within 30 days of the Award Date and on notice to Noble to realize income for federal income tax purposes equal to the fair market value of the Restricted Shares on the Award Date. In such event, Participant will make arrangements satisfactory to Noble or the appropriate Affiliate to pay at such time any federal, state or local taxes required to be withheld with respect to such shares.

(b) If no election is made by Participant pursuant to Section 3(a) hereof, then upon the termination of the restrictions applicable hereunder to all or any portion of the Restricted Shares, Participant (or in the event of Participant's death, the administrator or executor of Participant's estate) will pay to Noble or the appropriate Affiliate, or make arrangements satisfactory to Noble or such Affiliate regarding payment of, any federal, state or local taxes of any kind required by law to be withheld with respect to the Restricted Shares.

(c) Any provision of this Agreement to the contrary notwithstanding, if Participant does not satisfy his or her obligations under paragraphs (a) or (b) of this Section, Noble and its Affiliates will, to the extent permitted by law, have the right to deduct from any payments of any kind otherwise due from the Noble or an Affiliate to or with respect to Participant, whether or not pursuant to this Agreement, or the Plan and regardless of the form of payment, any federal, state or local taxes of any kind required by law to be withheld with respect to the Restricted Shares.

4. Acceptance. Participant must accept the Award by electronically executing the Notice by the date described therein. If Participant fails to accept the Award by such date, then, any provision of this Agreement to the contrary notwithstanding, Participant will forfeit all Restricted Shares purported to be granted pursuant to the Award, all of the Restricted Shares and related dividends or distributions will automatically revert to Noble at no cost, and the Award will become null and void. By electronically executing the Notice, Participant agrees that he or she is bound by, and will comply with, all of the terms and condition of the Plan as well as the terms of this Agreement as a condition of his or her continuing employment or service to Noble or its Affiliates.

5. Effect on Employment or Services. Nothing contained in the Plan or in this Agreement shall confer upon Participant any right with respect to the continuation of his or her employment by, or service with, Noble or an Affiliate, or interfere in any way with the right of Noble or an Affiliate, (subject to the terms of any separate agreement to the contrary) at any time to terminate such employment or service, to change the terms and conditions of such employment or service, or to increase or decrease the compensation of Participant from the rate in existence at the date of this Agreement.

6. Confidentiality and Non-Disclosure Covenants.

(a) Acknowledgement About Confidential Information. Participant understands and acknowledges that, during the course of his or her employment by, or services to, Noble or its Affiliates, Noble or its Affiliates will continue to provide him or her with access to previously undisclosed confidential, trade secret, and proprietary documents, materials, data, and other information, in tangible and intangible form, of and relating to his or her employment by, or services to, Noble and its Affiliates, as well as existing and prospective employees, customers, suppliers, investors, and other associated third parties (“Confidential Information”).

(b) Definition of Confidential Information. For purposes of this Agreement, Confidential Information includes, without limitation, all non-public information disclosed or made available to Participant that gives Noble and its Affiliates a competitive advantage in their industry and is not generally known or readily ascertainable by independent investigation, such as methods of operation and service; leases and opportunities pertaining to the lease; information relating to the acquisition, exploration, production, gathering, transporting, marketing, treating, or other processing of hydrocarbons and related products; the exploration potential of geographical areas on which hydrocarbon exploration prospects are located; information related to developing, constructing, acquiring, or operating midstream oil, natural gas, or produced water assets; technical information including inventions, computer programs, computer processes, methods of collecting, correlating and using geophysical data, computer codes, software, website structure and content, databases, formulae, designs, compilations of information and data, proprietary production processes, and know-how related to operations; financial information including margins, earnings, accounts payable, and accounts receivable; business information including business plans, expansion plans, business proposals, pending projects, pending proposals, sales data, and leases; supplier and customer information, including supplier and customer lists and identities, prices, costs, and negotiated terms; research and development and new materials research; information regarding personnel and employment policies and practices including employee lists, contact information, performance information, compensation data, benefits data, and training programs; and information regarding independent contractors and subcontractors including independent contractor and subcontractor lists, contact information, compensation, and agreements. Confidential Information also includes all information contained in any manual or electronic document or file created by Noble or its Affiliates and provided or made available to Participant. Participant understands that the above list is not exhaustive, and that Confidential Information also includes other information that is marked or otherwise identified as confidential or proprietary, or that would otherwise appear to a reasonable person to be confidential or proprietary in the context and circumstances in which the information is known or used.

(c) Confidential Information Exclusions. Participant understands that Confidential Information shall not include any information in the public domain, through no disclosure or wrongful act of Participant, to such an extent as to be readily available to competitors. Participant likewise understands that Confidential Information disclosed hereunder shall not be deemed to be within the foregoing exception solely because the Confidential Information is embraced by more general information in the public domain; neither will a combination of features be deemed within the foregoing exception merely because individual features are in the public domain.

(d) Non-Disclosure and Non-Use Covenants. Participant agrees and covenants: (i) to treat all Confidential Information as strictly confidential; (ii) not to directly or indirectly disclose, publish, communicate, or make available Confidential Information, or allow it to be disclosed, published, communicated or made available, in whole or part, to any third party not having a business need to know in order to fulfill duties to Noble or its Affiliates and authority to know and use the Confidential Information in connection with the business of Noble or its Affiliates; and (iii) not to access or use any Confidential Information, and not to copy any documents, records, files, media or other resources containing any Confidential Information, or remove any such documents, records, files, media or other resources from the premises or control of Noble or its Affiliates, except as required in the performance of his or her authorized employment duties to, or services for, Noble and its Affiliates.

(e) Covenant to Return Confidential Information and Other Company Property. Upon (i) the voluntary or involuntary termination of Participant's employment or service relationship with Noble or its Affiliates or (ii) Noble's request at any time during his or her employment or service relationship, Participant agrees to (A) provide or return to Noble any and all property of Noble and its Affiliates, including all copies of software in any media, reports, files, compilations, disks, thumb drives or other removable information storage devices, hard drives, and data and all documents and materials belonging to Noble and its Affiliates and stored in any fashion, including but not limited to those that constitute or contain any Confidential Information, that are in Participant's possession or control, whether they were provided to Participant by Noble, its Affiliates, or any of their business associates or created by Participant in connection with his or her employment by, or services to, Noble or its Affiliates; and (B) delete or destroy all copies of any such documents and materials not returned to Noble or its Affiliates that remain in Participant's possession or control, including those stored on any non-Noble devices, networks, storage locations and media in Participant's possession or control.

(f) Duration of Covenants. Participant understands and acknowledges that his or her obligations under this Agreement with regard to any particular Confidential Information shall continue during and after his or her employment by, or service relationship with, Noble or its Affiliates until such time as such Confidential Information has become public knowledge other than as a result of his or her breach of this Agreement.

(g) Immunity and Other Permitted Activities. Notwithstanding any other provision of this Agreement, nothing in this Agreement is intended to, or does, preclude Participant from (i) contacting, reporting to, responding to an inquiry from, filing a charge or complaint with, communicating with, or otherwise participating in an investigation conducted by, any other federal, state, or local governmental agency, commission, or regulatory body, including, without limitation the Securities and Exchange Commission ("SEC"); (ii) giving truthful testimony or making statements under oath in response to a subpoena or other valid legal process or in any legal proceeding; (iii) otherwise making truthful statements as required by law or valid legal process; (iv) engaging in any concerted or other legally protected activities; or (v) disclosing a trade secret in confidence to a governmental official, directly or indirectly, or to an attorney, if the disclosure is made solely for the purpose of reporting or investigating a suspected violation of law. Accordingly, Participant will not be held criminally or civilly liable under any federal or state trade secret law

for the disclosure of a trade secret that (I) is made (A) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney, and (B) solely for the purpose of reporting or investigating a suspected violation of law; or (II) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Participant likewise understands that, if he or she files a lawsuit for retaliation by Noble or its Affiliates for reporting a suspected violation of law, he or she may disclose their trade secret(s) to his or her attorney and use the trade secret information in the court proceeding, if he or she (x) files any document containing the trade secret under seal; and (y) does not disclose the trade secret, except pursuant to court order. In accordance with applicable law, and notwithstanding any other provision of this Agreement, nothing in this Agreement or any policies or agreements of Noble or its Affiliates applicable to Participant (1) impedes Participant's right to communicate with the SEC or any other governmental agency about possible violations of federal securities or other laws or regulations or (2) requires Participant to provide any prior notice to Noble or its Affiliates or obtain their prior approval before engaging in any such communications.

7. Non-Solicitation Covenants. In connection with Participant's acceptance of the Award under the Plan, and in exchange for the consideration provided hereunder, and in consideration of Noble and/or its Affiliates disclosing and providing access to Confidential Information, Participant agrees that he or she will not, during his or her employment or service relationship with Noble or its Affiliates, and for one year thereafter, directly or indirectly, for any reason, for his or her own account or on behalf of or together with any other person, entity or organization (i) call on or otherwise solicit any natural person who is employed by Noble or its Affiliates in any capacity with the purpose or intent of attracting that person from the employ of Noble or its Affiliates, (ii) call on or otherwise solicit or induce any natural person who is a non-employee independent contractor or subcontractor of, or other service provider to, Noble or its Affiliates in any capacity with the purpose or intent of inducing such person to breach any agreement or contract with, or discontinue or curtail his or her business relationship with, Noble or its Affiliates, or (iii) call on or otherwise solicit or induce any established customer of Noble or its Affiliates or other service provider of Noble or its Affiliates to breach any agreement or contract with, or discontinue or curtail his, her, or its business relationships with, Noble or its Affiliates, without, in each case of (i), (ii), or (iii), the prior written consent of Noble. Notwithstanding the previous sentence, the post-employment and post-service restrictions described in (i), (ii), and (iii) of the previous sentence apply only to those persons or established customers with whom Participant had material contact relating to the business of Noble or its Affiliates, or about whom Participant had access to Confidential Information, within 12 months before the termination of his or her employment or service relationship with Noble or its Affiliates.

8. Non-Disparagement Covenants.

(a) Non-Disparagement. Participant agrees that he or she will not, directly or indirectly, make any public or private statements (whether orally, in writing, via electronic transmission or otherwise) that disparage, denigrate, or malign Noble or any of its Affiliates; any of the businesses, activities, operations, affairs, reputations or prospects of any of the foregoing; or any of the respective officers, employees, directors, managers, partners, agents, members or shareholders of any of the foregoing.

(b) Exceptions. The obligation under this Section will not be violated by truthful statements that Participant makes (i) as permitted by this Agreement or applicable law that may supersede the terms of this Agreement, (ii) to any governmental authority in connection with legal process, required governmental testimony or filings, or administrative or arbitral proceedings (including, without limitation, depositions in connection with such proceedings), or (iii) in connection with a performance review or performance discussions.

9. Remedies.

(a) Remedies. In the event of a breach or threatened breach by Participant of any covenants in this Agreement, Noble and its Affiliates shall be entitled to equitable relief (without the need to post a bond or prove actual damages) by temporary restraining order, temporary injunction, or permanent injunction or otherwise, in addition to all other legal and equitable relief to which they may be entitled, including any and all monetary damages which Noble or its Affiliates may incur as a result of such breach, violation, or threatened breach or violation. Noble and its Affiliates may pursue any remedy available to them concurrently or consecutively in any order as to any breach, violation, or threatened breach or violation, and the pursuit of one of such remedies at any time will not be deemed an election of remedies or waiver of the right to pursue any other of such remedies as to such breach, violation, or threatened breach or violation, or as to any other breach, violation, or threatened breach or violation.

(b) Tolling. If Participant breaches any of covenants in this Agreement pertaining to non-competition or non-solicitation, the time periods pertaining to such covenants will be suspended and will not run in favor of Participant from the time he or she first breached such covenants until the time when he or she ceases such breach.

(c) Clawback. To the extent required by applicable law or any applicable securities exchange listing standards, or as otherwise determined by Noble, Participant's Award is subject to the provisions of any clawback policy implemented by Noble or any of its Affiliates, which clawback policy may provide for forfeiture, repurchase, and/or recoupment of the Award and amounts paid or payable pursuant to or with respect to Awards, including without limitation in connection with Participant's breach of any covenants in this Agreement. Notwithstanding any provision of this Agreement or the Plan to the contrary, Noble and its Affiliates reserve the right, without Participant's further consent, to adopt any such clawback policies and procedures, including policies and procedures applicable to the Plan or this Agreement with retroactive effect. Any clawback of the Award shall be in addition to any other legal and equitable rights and remedies to which Noble and its Affiliates may have under this Agreement or at law or equity in connection with any breach of any covenants in this Agreement.

10. The Plan and Restricted Stock Award Notice. The terms and provisions of the Plan and the Notice are hereby incorporated into this Agreement as if set forth herein in their entirety. In the event of a conflict between any provision of this Agreement and the Plan, the provisions of the Plan shall control. Capitalized terms used in this Agreement and not otherwise defined in this Agreement or the Notice shall have the respective meanings assigned to such terms in the Plan.

11. Severability and Reformation.

(a) Severability. The provisions of this Agreement are severable, and if any one or more provisions may be determined by any court of competent jurisdiction to be invalid or otherwise unenforceable, in whole or in part, the remaining provisions or parts of this Agreement shall nevertheless be binding and enforceable upon the parties to the fullest extent permitted by applicable law.

(b) Reformation. If any provision contained in this Agreement is found by a court of competent jurisdiction to contain limitations as to time or scope of activity that are not reasonable and impose a greater restraint than is necessary to protect the Confidential Information, goodwill, or other legitimate business interests of Noble or its Affiliates, then the court shall reform the covenant to the extent necessary to cause the limitations contained in the covenant as to time and scope of activity to be restrained to be reasonable and to impose a restraint that is not greater than necessary to protect the Confidential Information, goodwill, and other legitimate business interests of Noble and its Affiliates.

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13. Binding Effect/Governing Law. This Agreement shall be binding upon and inure to the benefit of (i) Noble and its successors and assigns, and (ii) Participant and his or her heirs, devisees, executors, administrators and personal representatives. This Agreement shall be governed by and construed in accordance with the internal laws (and not the principles relating to conflicts of laws) of the State of Texas, except as superseded by federal law.

14. Compensation Recoupment Policy. By accepting the Award, Participant hereby acknowledges and agrees that Participant and the Award are subject to Noble's compensation recoupment policy as contained in Noble's Code of Conduct (the "Policy"), as amended from time to time, and the terms and conditions of the Policy are hereby incorporated by reference into this Agreement.

**NOBLE ENERGY, INC.
SUBSIDIARIES**

NAME	JURISDICTION OF ORGANIZATION
Advantage Pipeline Holdings LLC*	Delaware
Advantage Pipeline Logistics LLC*	Texas
Advantage Pipeline Management, LLC*	Texas
Advantage Pipeline, L.L.C.*	Texas
Alba Associates LLC*	Cayman Islands
Alba Plant LLC*	Cayman Islands
AMPCO Marketing, L.L.C.*	Michigan
AMPCO Services, L.L.C.*	Michigan
Atlantic Methanol Associates LLC*	Cayman Islands
Atlantic Methanol Production Company LLC*	Cayman Islands
Atlantic Methanol Services B.V.*	Netherlands
Black Diamond Cushing LLC*	Delaware
Black Diamond Gathering Holdings LLC*	Delaware
Black Diamond Gathering LLC*	Delaware
Black Diamond Rockies Midstream LLC*	Delaware
Black Diamond Rockies Storage and Terminals LLC*	Delaware
Blanco River LLC*	Delaware
Clayton Williams Pipeline LLC*	Delaware
Colorado River LLC*	Delaware
Delaware Crossing Holdings LLC*	Delaware
Delaware Crossing LLC*	Delaware
Delaware Crossing Operating LLC*	Delaware
Dos Rios Crude Holdings LLC*	Delaware
Dos Rios Crude Intermediate LLC*	Delaware
Dos Rios Delaware Holdings LLC*	Delaware
Dos Rios DevCo LLC*	Delaware
Dos Rios Y-Grade Holdings LLC*	Delaware
DX Constellation LLC*	Delaware
East Mediterranean Gas Company S.A.E.*	Egypt
EDC Ecuador Ltd.	Delaware
EMED Pipeline B.V.*	Netherlands
Energy Development Corporation (Argentina), Inc.	Delaware
Energy Development Corporation (China), Inc.	Delaware
EPIC Crude Holdings GP, LLC*	Delaware
EPIC Crude Holdings, LP*	Delaware
EPIC Y-Grade GP, LLC*	Delaware
EPIC Y-Grade, LP*	Delaware
Green River DevCo LLC*	Delaware
Gunnison River DevCo GP LLC*	Delaware
Gunnison River DevCo LP*	Delaware
Laramie River LLC*	Delaware
Leviathan Transportation System Ltd.*	Israel
MachalaPower Cia. Ltda.	Cayman Islands
NBL Congo Holding LLC	Delaware

NBL Congo Limited	Cayman Islands
NBL Cumbia Limited	Cayman Islands
NBL Eastern Mediterranean Marketing Limited	Cayman Islands
NBL Energy Royalties, Inc.	Delaware
NBL International B.V.	Netherlands
NBL International Risk Management Limited	Cayman Islands
NBL Jordan Marketing Limited*	Cayman Islands
NBL Mexico Holding, LLC	Delaware
NBL Mexico, Inc.	Delaware
NBL Midstream Holdings LLC*	Delaware
NBL Midstream, LLC	Delaware
NBL North American Risk Management, LLC	Delaware
NBL Permian Water LLC	Delaware

NBL Rhea Limited	Cayman Islands
NBL Texas, LLC	Delaware
NCWYO Assets LLC	Delaware
NEML Leviathan Finance Company Ltd.	Israel
Noble Energy (ISE) Limited	United Kingdom
Noble Energy (Oilex) Limited	United Kingdom
Noble Energy Cameroon Limited	Cayman Islands
Noble Energy Canada Inc.	Delaware
Noble Energy Canada ULC	Canada
Noble Energy Capital Limited	United Kingdom
Noble Energy Colombia Holding LLC	Delaware
Noble Energy Colombia Limited	Cayman Islands
Noble Energy EG Ltd.	Cayman Islands
Noble Energy Egypt Holding LLC	Delaware
Noble Energy Egypt Limited	Cayman Islands
Noble Energy Egypt Marketing LLC	Egypt
Noble Energy EMEA Ventures Limited	Cayman Islands
Noble Energy EMed Midstream Limited	Cayman Islands
Noble Energy Falklands Holding, LLC	Delaware
Noble Energy Falklands Limited	United Kingdom
Noble Energy Gabon Holding Company, LLC	Delaware
Noble Energy Gabon Limited	Cayman Islands
Noble Energy Global Ventures Ltd.	Cayman Islands
Noble Energy International Holdings, Inc.	Delaware
Noble Energy International Ltd	Cyprus
Noble Energy International Trading Limited	Cayman Islands
Noble Energy International Ventures Limited	Cayman Islands
Noble Energy Jordan Limited	Cayman Islands
Noble Energy Mediterranean Ltd.	Cayman Islands
Noble Energy Mexico, S. de R.L. de C.V.	Mexico
Noble Energy New Ventures, LLC	Delaware
Noble Energy Services, Inc.	Delaware
Noble Energy Sierra Leone Holdings, LLC	Delaware
Noble Energy SL Limited	United Kingdom
Noble Energy US Holdings, LLC	Delaware
Noble Energy WyCo, LLC	Delaware
Noble Midstream GP LLC	Delaware
Noble Midstream Marketing LLC*	Delaware
Noble Midstream Partners LP*	Delaware
Noble Midstream Services, LLC*	Delaware
Optimized Energy Solutions, LLC*	Delaware
Rocinante Ventures LLC	Delaware
Rosetta Resources Holdings, LLC	Delaware
Rosetta Resources Offshore, LLC	Delaware
Rosetta Resources Operating GP, LLC	Delaware
Rosetta Resources Operating LP	Delaware
Samedan Methanol	Cayman Islands
Samedan of North Africa, LLC	Delaware
San Juan River LLC	Delaware
Seven Oaks Insurance Limited	Bermuda
Tamar 10 Inch Pipeline Ltd.	Israel
Trinity River DevCo LLC*	Delaware
West Coast Energy Properties GP, LLC	Texas
White Star Insurance LLC	Texas

Yam Tethys Ltd.*

Israel

* Indicates ownership is less than 100%

Consent of Independent Registered Public Accounting Firm

The Board of Directors

Noble Energy, Inc.:

We consent to the incorporation by reference in the registration statement (No. 333-229738) on Form S-3, and registration statements (No. 033-54084, 333-39299, 333-108162, 333-118976, 333-143203, 333-143204, 333-158922, 333-177825, 333-191878, 333-205728, 333-217605) on Form S-8 of Noble Energy, Inc. of our reports dated February 12, 2020, with respect to the consolidated balance sheets of Noble Energy, Inc. as of December 31, 2019 and 2018, the related consolidated statements of operations and comprehensive (loss) income, cash flows, and shareholders' equity for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements), and the effectiveness of internal control over financial reporting as of December 31, 2019, which reports appear in the December 31, 2019 annual report on Form 10-K of Noble Energy, Inc.

Our report refers to a change in the method of accounting for leases in 2019 due to the adoption of *Accounting Standards Update No. 2016-02, Leases*

/s/ KPMG LLP

Houston, Texas
February 12, 2020

Consent of Independent Petroleum Engineers and Geologists

We consent to the incorporation by reference in the registration statement (No. 333-229738) on Form S-3, and registration statements (No. 033-54084, 333-39299, 333-108162, 333-118976, 333-143203, 333-143204, 333-158922, 333-177825, 333-191878, 333-205728, 333-217605) on Form S-8 of Noble Energy, Inc. (the "Company") of the reference to Netherland, Sewell & Associates, Inc. and the inclusion of our report dated January 22, 2020 in the Annual Report on Form 10-K for the year ended December 31, 2019, of the Company and its subsidiaries, filed with the Securities and Exchange Commission.

NETHERLAND, SEWELL & ASSOCIATES, INC.

By: /s/ Danny D. Simmons

Danny D. Simmons, P.E.

President and Chief Operating Officer

Houston, Texas

February 12, 2020

**Certification Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002
(18 U.S.C. Section 7241)**

I, David L. Stover, certify that:

1. I have reviewed this annual report on Form 10-K of Noble Energy, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 12, 2020

/s/ David L. Stover

David L. Stover
Chief Executive Officer

**Certification Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002
(18 U.S.C. Section 7241)**

I, Kenneth M. Fisher, certify that:

1. I have reviewed this annual report on Form 10-K of Noble Energy, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 12, 2020

/s/ Kenneth M. Fisher

Kenneth M. Fisher
Chief Financial Officer

**Certification Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002
(18 U.S.C. Section 1350)**

In connection with the accompanying Annual Report of Noble Energy, Inc. (the "Company") on Form 10-K for the period ended December 31, 2019 (the "Report"), I, David L. Stover, Chief Executive Officer of the Company, hereby certify that to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 12, 2020

/s/ David L. Stover

David L. Stover

Chief Executive Officer

**Certification Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002
(18 U.S.C. Section 1350)**

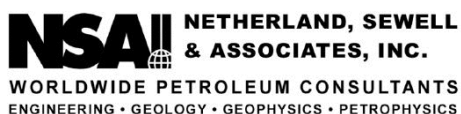
In connection with the accompanying Annual Report of Noble Energy, Inc. (the "Company") on Form 10-K for the period ended December 31, 2019 (the "Report"), I, Kenneth M. Fisher, Chief Financial Officer of the Company, hereby certify that to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 12, 2020

/s/ Kenneth M. Fisher

Kenneth M. Fisher
Chief Financial Officer



EXECUTIVE COMMITTEE
 ROBERT C. BARG • P. SCOTT FROST
 JOHN G. HATTNER • MIKE K. NORTON
 DAN PAUL SMITH • JOSEPH J. SPELLMAN
 RICHARD B. TALLEY, JR. • DANIEL T. WALKER

CHAIRMAN & CEO
 C.H. (SCOTT) REES III
 PRESIDENT & COO
 DANNY D. SIMMONS
 EXECUTIVE VP
 G. LANCE BINDER

January 22, 2020

Mr. William T. Van Kleef
 Chairman
 Noble Energy, Inc. Audit Committee
 1001 Noble Energy Way
 Houston, Texas 77070

Dear Mr. Van Kleef:

In accordance with your request, we have audited the estimates prepared by Noble Energy, Inc. (Noble), as of December 31, 2019, of the proved reserves to the Noble interest in certain oil and gas properties located in the United States, Equatorial Guinea, and Israel. It is our understanding that the proved reserves estimates shown herein constitute all of the proved reserves owned by Noble. Economic analysis was performed by Noble to confirm economic producibility and determine economic limits for the properties. We have examined the estimates with respect to reserves quantities, reserves categorization, future producing rates, and economic producibility using the definitions set forth in U.S. Securities and Exchange Commission (SEC) Regulation S-X Rule 4-10(a). The estimates of reserves have been prepared in accordance with the definitions and regulations of the SEC and conform to the FASB Accounting Standards Codification Topic 932, *Extractive Activities-Oil and Gas*. We completed our audit on or about the date of this letter. This report has been prepared for Noble's use in filing with the SEC; in our opinion the assumptions, data, methods, and procedures used in the preparation of this report are appropriate for such purpose.

The following table sets forth Noble's estimates of the net reserves, as of December 31, 2019, for the audited properties:

Category	Net Reserves		
	Oil (MBBL)	NGL (MBBL)	Gas (MMCF)
Proved Developed Producing	209,991.5	147,232.1	6,323,671.4
Proved Developed Non-Producing	818.9	227.3	548,745.3
Proved Undeveloped	202,604.4	130,126.0	1,278,743.6
Total Proved	413,414.7	277,585.4	8,151,160.4

Totals may not add because of rounding.

The oil volumes shown include crude oil and condensate. Oil and natural gas liquids (NGL) volumes are expressed in thousands of barrels (MBBL); a barrel is equivalent to 42 United States gallons. Gas volumes are expressed in millions of cubic feet (MMCF) at standard temperature and pressure bases.

When compared on a field-by-field basis, some of the estimates of Noble are greater and some are less than the estimates of Netherland, Sewell & Associates, Inc. (NSAI). However, in our opinion the estimates shown herein of Noble's reserves are reasonable when aggregated at the proved level and have been prepared in accordance with the Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information promulgated by the Society of Petroleum Engineers (SPE Standards). Additionally, these estimates are within the recommended 10 percent tolerance threshold set forth in the SPE Standards. We are satisfied with the methods and procedures used by Noble in preparing the December 31, 2019, estimates of reserves, and we saw nothing of an unusual nature that would cause us to take exception with the estimates, in the aggregate, as prepared by Noble.

Reserves categorization conveys the relative degree of certainty; reserves subcategorization is based on development and production status. The estimates of reserves included herein have not been adjusted for risk. Noble's estimates do not include probable or possible reserves that may exist for these properties.

Oil, NGL, and gas prices were used to confirm economic producibility and determine economic limits for the properties. For oil and NGL volumes, prices used by Noble are based on the 12-month unweighted arithmetic average of the first-day-of-the-month price for each month in the period January through December 2019 and are adjusted by field for quality, transportation fees, and market differentials. For gas volumes, prices used by Noble either are the contract price or are based on the 12-month unweighted arithmetic average of the first-day-of-the-month price for each month in the period January through December 2019. When applicable, gas prices have been adjusted for energy content, transportation fees, and market differentials. With the exception of contract gas prices, all other prices are held constant throughout the lives of the properties. The average adjusted product prices weighted by production over the remaining lives of the properties are US\$56.25 per barrel of oil, US\$14.18 per barrel of NGL, and US\$4.234 per MCF of gas. Average index prices along with the average realized prices for each country are shown in the following table:

Country	Pricing Index	Oil/NGL			Gas		
		Average Spot Price (US\$/Barrel)	Average Realized Prices (US\$/Barrel)		Pricing Index	Average Price (US\$/MMBTU)	Average Realized Price (US\$/MCF)
			Oil	NGL			
United States	West Texas Intermediate	55.69	56.00	13.24	Henry Hub	2.578	1.738
Equatorial Guinea	Brent	63.15	59.33	30.53	Contract	(1)	1.243
Israel	Brent	63.15	57.42	N/A	Contract	(2)	5.422

(1) For the Alba Field properties, the gas price used is the fixed contract price of US\$0.25 per MMBTU and is adjusted for energy content. For the Alen Field properties, the contract gas price used is calculated from the Brent spot price using a formula provided by Noble and is adjusted for energy content, transportation fees, and market differentials.

(2) For the Israel properties, gas prices used are based on a weighted average of all sales contracts according to their relative volume; these contract prices are derived from various formulae that include indexation to the Consumer Price Index or the Public Utility Authority.

Costs were used to confirm economic producibility and determine economic limits for the properties. Operating costs used by Noble are based on historical operating expense records. These costs include the per-well overhead expenses allowed under joint operating agreements along with estimates of costs to be incurred at and below the district and field levels. Operating costs have been divided into field-level costs, per-well costs, and per-unit-of-production costs. Headquarters general and administrative overhead expenses of Noble are included to the extent that they are covered under joint operating agreements for the operated properties. Capital costs used by Noble are based on authorizations for expenditure and actual costs from recent activity. Capital costs are included as required for workovers, new development wells, and production equipment. Abandonment costs used are Noble's estimates of the costs to abandon the wells, platforms, and production facilities, net of any salvage value. Operating, capital, and abandonment costs are not escalated for inflation.

The reserves shown in this report are estimates only and should not be construed as exact quantities. Proved reserves are those quantities of oil and gas which, by analysis of engineering and geoscience data, can be estimated with reasonable certainty to be economically producible; probable and possible reserves are those additional reserves which are sequentially less certain to be recovered than proved reserves. Estimates of reserves may increase or decrease as a result of market conditions, future operations, changes in regulations, or actual reservoir performance. In addition to the primary economic assumptions discussed herein, estimates of Noble and NSAI are based on certain assumptions including, but not limited to, that the properties will be developed consistent with current development plans as provided to us by Noble, that the properties will be operated in a prudent manner, that no governmental regulations or controls will be put in place that would impact the ability of the interest owner to recover the reserves, and that projections of future production will prove consistent with actual performance. If the reserves are recovered, the revenues therefrom and the costs related thereto could be more or less than the estimated amounts used to confirm economic producibility and determine economic limits for the properties. Because of governmental policies and uncertainties of supply and demand, the sales rates, prices received for the reserves, and costs incurred in recovering such reserves may vary from assumptions made while preparing these estimates.

It should be understood that our audit does not constitute a complete reserves study of the audited oil and gas properties. Our audit consisted primarily of substantive testing, wherein we conducted a detailed review of major properties making up 99 percent of the total proved reserves. In the conduct of our audit, we have not independently verified the accuracy and completeness of information and data furnished by Noble with respect to ownership interests, oil and gas production, well test data, historical costs of operation and development, product prices, or any agreements relating to current and future operations of the properties and sales of production. However, if in the course of our examination something came to our attention that brought into question the validity or sufficiency of any such information or data, we did not rely on such information or data until we had satisfactorily resolved our questions relating thereto or had independently verified such information or data. Our audit did not include a review of Noble's overall reserves management processes and practices.

We used standard engineering and geoscience methods, or a combination of methods, including performance analysis, volumetric analysis, analogy, and reservoir modeling, that we considered to be appropriate and necessary to establish the conclusions set forth herein. As in all aspects of oil and gas evaluation, there are uncertainties inherent in the interpretation of engineering and geoscience data; therefore, our conclusions necessarily represent only informed professional judgment.

Supporting data documenting this audit, along with data provided by Noble, are on file in our office. The technical persons primarily responsible for conducting this audit meet the requirements regarding qualifications, independence, objectivity, and confidentiality set forth in the SPE Standards. Mr. Richard B. Talley, Jr., a Licensed Professional Engineer in the State of Texas, has been practicing consulting petroleum engineering at NSAI since 2004 and has over 5 years of prior industry experience. Mr. Zachary R. Long, a Licensed Professional Geoscientist in the State of Texas, has been practicing consulting petroleum geoscience at NSAI since 2007 and has over 2 years of prior industry experience. We are independent petroleum engineers, geologists, geophysicists, and petrophysicists; we do not own an interest in these properties nor are we employed on a contingent basis.

Sincerely,

NETHERLAND, SEWELL & ASSOCIATES, INC.

Texas Registered Engineering Firm F-2699

/s/ C.H. (Scott) Rees III

By:

C.H. (Scott) Rees III, P.E.

Chairman and Chief Executive Officer

/s/ Zachary R. Long

By:

Zachary R. Long, P.G. 11792

Vice President

/s/ Richard B. Talley, Jr.

By:

Richard B. Talley, Jr., P.E. 102425

Senior Vice President

Date Signed: January 22, 2020

Date Signed: January 22, 2020

RBT:MAG

Please be advised that the digital document you are viewing is provided by Netherland, Sewell & Associates, Inc. (NSAI) as a convenience to our clients. The digital document is intended to be substantively the same as the original signed document maintained by NSAI. The digital document is subject to the parameters, limitations, and conditions stated in the original document. In the event of any differences between the digital document and the original document, the original document shall control and supersede the digital document.