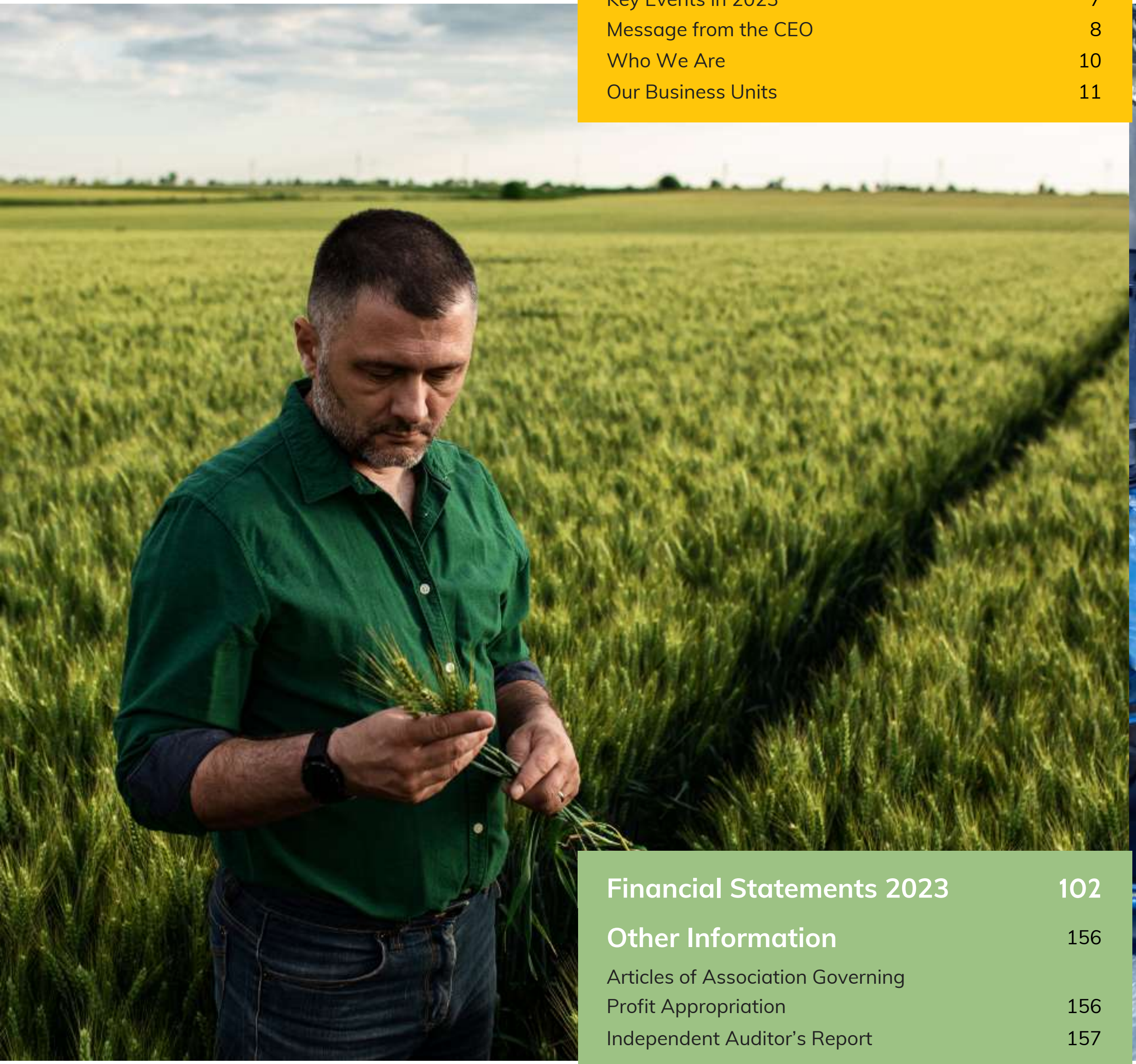
avantium

Annual Report 2023

Nearing the Inflection Point

Contents



About This Report

ESEF Reporting Package

This is the PDF version of the Annual Report 2023 Avantium N.V. This version has been prepared for ease of use, and does not contain ESEF information as specified in the RegulatoryTechnical Standards on ESEF (Delegated Regulation (EU)2019/815). The official ESEF reporting package is available on our website at www.avantium.com.

Scope of the Annual Report

This Annual Report covers Avantium N.V., including all our consolidated entities as stated in 'Note 2.2.1 subsidiaries'. Our financial and non-financial results are presented in one report and relate to all consolidated entities for the period of 1 January until 31 December 2023, unless stated otherwise.

Reporting Guidelines

Avantium prepared this Annual Report in line with the IIRC Integrated Reporting (IR) framework.

For the non-financial information included in this report, we followed the Global Reporting Initiative (GRI) Standards (GRI 1: Foundation 2021). A GRI content index shows where in the Annual Report information can be found.

The consolidated financial statements of Avantium N.V. have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union. The consolidated financial statements have been prepared under the historical cost convention unless otherwise stated.

Reporting Structure

This Annual Report outlines how Avantium creates value for our stakeholders in the long term. Our value creation model is presented at the beginning of the report, showing how our vision, mission and actions create a positive impact for our direct value chain and beyond. We present the cohesion of the different elements of our strategy, material topics, sustainability targets, key performance indicators and related risks, and of the UN's Sustainable Development Goals (SDGs).

Assurance

Currently, the financial data and related information included in the financial statements are covered by external assurance. Although we have further enhanced our non-financial reporting to increase alignment with our strategic focus – also in preparation for the new EU Corporate Sustainability Reporting Directive (CSRD) – we have opted not to seek external assurance for non-financial information at this time.

Audience

This Annual Report is intended to inform stakeholder groups that have an impact on or are impacted by our business. This includes commercial and financial partners, investors and shareholders, employees and society as a whole. It aims to give our stakeholders a balanced overview of our activities and Avantium's ability to create sustainable long-term value. Additional disclosures are available on our website: www.avantium.com.

Safe Harbor Statement

This Annual Report may include forward-looking statements. Other than reported financial results and historical information, all statements featured in this Annual Report – including, without limitation, those regarding our financial position, business strategy and management plans and objectives for future operations – are forward-looking statements. These forward-looking statements are based on our current expectations and projections about future events and are subject to risks and uncertainties that could cause actual results to differ materially from those expressed in the forward-looking statements. Many of these risks and uncertainties relate to factors that are beyond Avantium's ability to control or estimate precisely, such as future market conditions, the behaviour of other market participants and the actions of governmental regulators. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report and are subject to change without notice. Other than as required by applicable law or the applicable rules of any exchange on which our securities may be traded, we have no intention or obligation to update forward-looking statements.

This Annual Report outlines how Avantium creates value for its stakeholders

Avantium at a Glance

Key Figures 2023

Financial Information

Investments (in € million)
89.8
2022 (restated): 34.0
↑ 164%

Revenue (in € million)
19.7
2022: 17.8
↑ 11%

Number of government grants
18
2022: 17
↑ 6%

EBITDA (in € million)
-27.5
2022 (restated): -16.3
↓ -68%

Net cash outflow (in € million)
114.1
2022 (restated): 46.8
↑ 144%

Grant recognition (in € million)
5.8
2022: 7.6
↓ -24%

Non-Financial Information

Our Technologies

Newly granted patents
10
2022: 24
↓ -58%

Newly reported inventions
43
2022: 52
↓ -17%

Signed licence agreements
1
2022: 0
↑

Our People

Number of FTEs
288
2022: 249
↑ 16%

Nationalities employed
36
2022: 25
↑ 44%

Women in senior leadership positions (% of total senior leadership positions)
34%
2022: 42%
↓ -19%

Gender balance (% of total workforce)
27%
2022: 27%
↑ 0%

Our Operations

Number of safety accidents
0
2022: 0

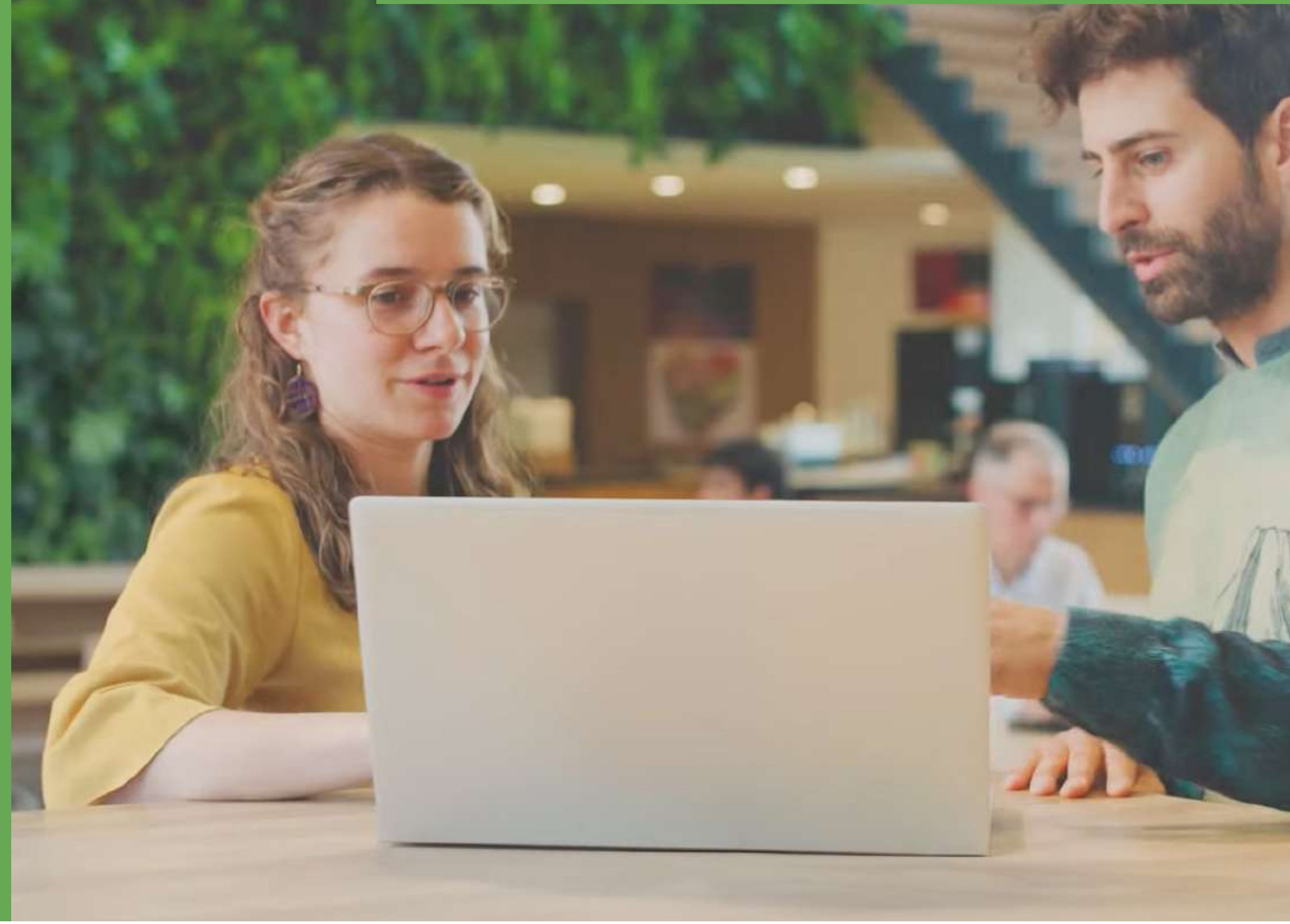
Scope 1 emissions (in tonnes CO_2e)
0.488
2022: 0.436
↑ 12%

Scope 2 emissions (in tonnes CO_2e)
396
2022: 649
↓ -39%

Key Financials 2023

We make sure to maintain ongoing dialogues with our stakeholders about our strategy, developments and activities

(€1,000)	2023	2022 (restated)[1]
Revenues	19,700	17,826
Other income from government grants	5,789	7,626
Net operating expenses	(52,948)	(41,758)
EBITDA	**(27,459)**	**(16,306)**
Depreciation, amortisation and impairment charge	(7,396)	(8,578)
Finance costs - net	221	(1,976)
Net loss for the financial year	(34,150)	(29,702)
Cash flow from operating activities	(18,818)	(11,166)
Cash flow from investing activities	(89,769)	(33,953)
Cash flow from financing activities	78,935	75,079
Net cash flow	(29,652)	29,961
Cash position	35,216	64,870
Segment revenues		
R&D Solutions	13,546	11,301
Renewable Chemistries	—	100
Renewable Polymers	5,592	6,056
Support	562	369
Total segment revenue	**19,700**	**17,826**
Other income from government grants		
R&D Solutions	87	279
Renewable Chemistries	821	3,536
Renewable Polymers	3,673	3,660
Support	1,209	150
Total segment other income	**5,789**	**7,625**



[1] In the consolidated financial statements and explanatory notes, we generally refer to 2022 as 'restated'. Refer to note 2.1.3 for ore details on the specific restatements and the relevant explantation(s)

Key Events 2023

Avantium Renewable Polymers

Commissioning activities at the FDCA Flagship Plant started in the first quarter of 2024; start of FDCA production expected in the second half of 2024

Reached total of 15 offtake agreements for PEF/FDCA from FDCA Flagship Plant, with new signings including Henkel, Kvadrat and PANGAIA

First technology licence agreement signed with Origin Materials

€64.5-million financing package secured from shareholders and lenders

Avantium Renewable Chemistries

Successful execution of several trials in the pilot plant, demonstrating the technology's readiness for scale-up to a flagship plant

Secured a conditional grant award of €53 million from the Dutch National Growth Fund

Volta Technology

Awarded a €1.5 million grant for participation in HICCUPS programme

Two strategic collaborations secured with SCG Chemicals and Norsk Hydro

R&D Solutions

Promising results from new growth strategy focusing on R&D solutions for sustainable chemistry

Proven revenue stream, with €13.5 million revenues in 2023

Company

Workforce increased by 22% to 304 employees

Avantium awarded Gold Sustainability Medal by EcoVadis for the second consecutive year

Message from the CEO

Dear Stakeholder,

Avantium is fast approaching the greatest inflection point in its history. Nearly two decades after it all started, we are preparing to begin operations at the world's first-ever commercial-scale plant for the production of furandicarboxylic acid (FDCA), the key building block for our renewable, recyclable, lower-carbon-footprint polymer, polyethylene furanoate (PEF): a plant-based and circular plastic with superior technical properties to fossil-based incumbents. In other words, we are closer than ever to bringing the next-generation plastic PEF to consumers around the world – and to helping reduce society's carbon emissions, plastic pollution and dependency on fossil resources.

Watching the plant take shape in Delfzijl during 2023 was a source of great pride. This is a remarkable achievement given the complexity of the project, and a testament to our successful collaboration with our engineering and construction partners. As a result, we are on track to produce the first commercial volumes of FDCA in the second half of 2024.

Fulfilling Market Demand

At Avantium, we are pragmatists whose innovations, technologies and business are firmly rooted in science – but we are also firm believers in the need for change. We are well positioned: with Europe's Green Deal, US President Biden's executive order to replace 90% of fossil-based plastics with bio-based alternatives and COP28's fossil phase-out agreement, the question is no longer if we should move away from fossil fuels, but how quickly we can make the transition. Avantium's PEF can catalyse meaningful change – enabling the chemical industry to reduce its dependence on petroleum and bringing a superior and sustainable alternative to a variety of multi-billion-dollar end markets.

In fact, in a year when the global financial markets defied the public mood by displaying more caution around sustainability, I am proud to report that Avantium's industry and financial partners showed no such hesitation in supporting our progress on PEF. Commercially, 2023 was a landmark year: not only did we increase our total number of FDCA Flagship Plant offtake agreements to 15, but our new deals spanned a range of high-value PEF applications, including adhesives (Henkel) and high-end textiles (PANGAIA and Kvadrat). In the packaging sphere, meanwhile, we embarked on a collaboration with the largest supermarket chain in the Netherlands, Albert Heijn. Commitments from major brands like these – with more in the pipeline – give us confidence that the market is ready to embrace the great potential and exciting versatility of our new polymer PEF.

Implementing Our Licensing Strategy

In another exciting step, we announced the signing of our first technology licensing agreement in February 2023, with the US-based sustainable materials company Origin Materials. Pursuing a licensing strategy for YXY® Technology means we can use partners' capital and capabilities to scale FDCA production faster, make PEF available in larger volumes at affordable prices and penetrate new markets. Our partnership with Origin will make PEF accessible to its many major customers around the world. Origin intends to use wood chips as a feedstock, diversifying the use of non-edible, renewable feedstocks for the production of FDCA and PEF and thus meeting the longer-term expectations of brand owners and consumers worldwide. This supplements the feedstock options for our YXY® Technology,

Tom van Aken

> "Avantium is fast approaching the greatest inflection point in its history"

“We look ahead to the start-up of the FDCA Flagship Plant in 2024”

in addition to first-generation feedstocks and second-generation sugars that are enabled by Avantium’s Dawn Technology™.

Meanwhile, we have also built a strong pipeline of potential licensees with whom we aim to start securing deals in 2024 and beyond. Assuming the sale of multiple technology licences and the successful start-up of the FDCA Flagship Plant, we have set ourselves the ambition of generating €100 million in revenues and becoming EBITDA positive in 2026.

Focus on Funding

Like those of countless construction projects around the world, the costs of engineering, building, commissioning and starting up our FDCA Flagship Plant were driven up in 2023 by interest rates, inflation and supply chain disruptions. We estimate these costs will amount to an additional €63 million (consisting of €33 million increased CAPEX, €19 million increased OPEX and €11 million additional interest costs), on top of our initial forecast of €192 million, until the end of 2024. To cover this increase, we have secured additional financing through a combination of equity and debt. In February 2024, Avantium successfully completed a €70-million capital raise to cover our own share of the increased costs for our FDCA Flagship Plant, exceeding the €50 million equity capital that we were initially targeting. Our success in securing the funding we need – in a challenging economic environment – demonstrates the strong belief of our investors and the capital markets in both our mission and our ability to execute it.

Other Strategic Progress

Elsewhere in our Company, 2023 was another strong year for our carbon capture and utilisation (CCU) solution, Volta Technology, from both a technical and a commercial perspective. We signed two new joint development agreements, as well as established a clearer focus on the high-value chemicals we aim to pursue.

Meanwhile, the year saw Avantium R&D Solutions embark on a new strategic direction, with promising results: the business unit took its first steps into four carefully chosen emerging markets in sustainable chemistry, resulting in a €2.2 million increase in revenues.

At the end of 2023, we took the decision to halt investments in Ray Technology™. This is no reflection on our technology or our team, both of which performed strongly throughout the year; rather, in line with Avantium’s reinforced strategic focus on PEF, we have concluded that putting further investments in our Ray Technology™ on hold will allow us to concentrate our financial and human resources on our FDCA Flagship Plant. This shows our dedication to making our first and most important technology a commercial success – and bringing our game-changing polymer to the market as quickly as possible.

I recognise that this was a difficult outcome for our Ray Technology™ colleagues, as it meant we also had to part ways with some of our talented employees. Fortunately, most of our colleagues working for Ray Technology™ have found new homes elsewhere in the Company. Furthermore, we have retained a small team of experts to continue assessing strategic options for Ray Technology™.

A Place to Make a Positive Impact

Our people are the backbone of our Company and the driver of our success. Even in 2023’s tight labour market, Avantium again proved its appeal as an attractive employer in the chemical and plastics industry.

With today’s workforce increasingly drawn to so-called impact companies like ours, we see our ability to hire top talent as confirmation that we are on the right track. Diverse perspectives remain crucial as we bring these solutions to life: in 2023, we counted people from 36 nationalities among our employees and reached an overall gender balance of 27% women and 73% men. We also continued to foster a safe, open and inclusive culture, where everyone feels valued for who they are and empowered to make a difference.

In 2023, we brought on board a new Managing Director of Avantium Renewable Chemistries, Yap Chie Cheung, and a new Chief Financial Officer, Boudewijn van Schaïk. It has been a pleasure to work with them: each brings not only their own strong expertise, experience and a clear understanding of our goals and vision, but also the energy we need to realise our ambitions. We also welcomed two new Supervisory Board members, Dirk Van Meirvenne and Peter Williams, with the experience and expertise we need as we prepare to start-up our FDCA Flagship Plant. I remain extremely proud of the high calibre and international profile of Avantium’s Supervisory Board members, which is critical to our success as we transition from an organisation focused on R&D to a commercial and technology licensing company. I am grateful for the Board’s ongoing support and guidance.

Nearing the Inflection Point

It is now only a matter of months until industrial production of PEF begins, marking the successful completion of Avantium’s own transition from an R&D company to a commercial organisation. As this momentous occasion approaches, I am sure I am not the only one who can feel Avantium’s collective excitement, pride and passion growing with every day that passes. I want to thank all our employees for their contributions and achievements throughout 2023.

I also wish to thank Avantium’s financial and commercial stakeholders, without whose support we would not be on the brink of our biggest accomplishment yet. I have no doubt there is much more to come: after all, together, we are not only bringing a new plant-based polymer to the market, but also helping to accelerate the global transition to the circular, fossil-free, bio-based economy our planet needs.

Tom van Aken
Chief Executive Officer, Avantium

Who We Are

Our vision speaks for itself. At Avantium, sustainability is not an afterthought; it is in our nature. With our products and technologies, we can help de-fossilise the chemical industry, drive the transition to a circular economy and create long-term, sustainable value for all our stakeholders.

Years of R&D
20+

Patent families
166+

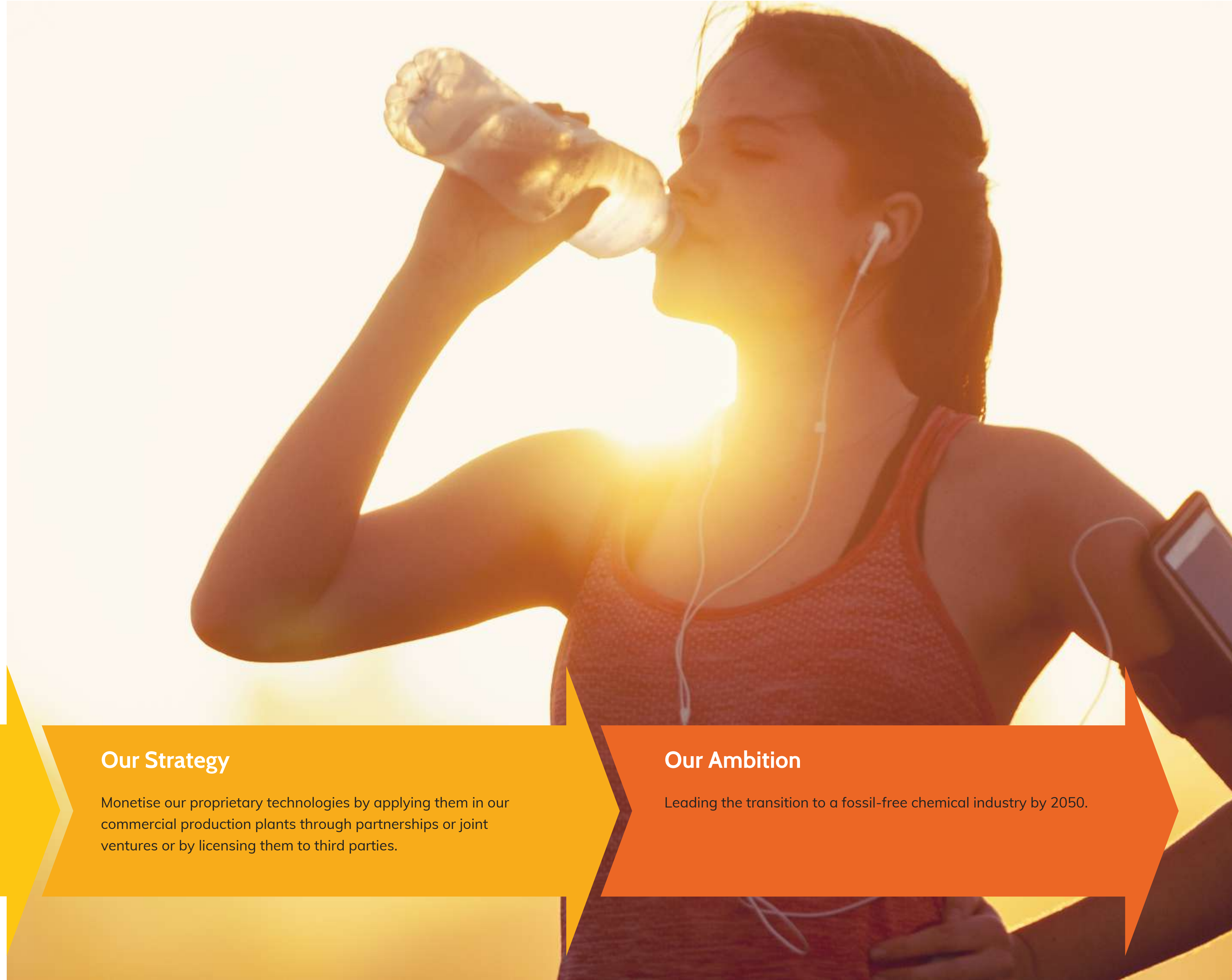
FDCA pilot plant operational since
2011

FDCA Flagship Plant on stream (expected)
2024

Technology licences sold
1

Offtake partners for PEF and FDCA
15

Employees
300+



Our Mission

Develop and commercialise disruptive technologies and products to accelerate the transition from fossil-based to renewable and circular plastics.

Our Strategy

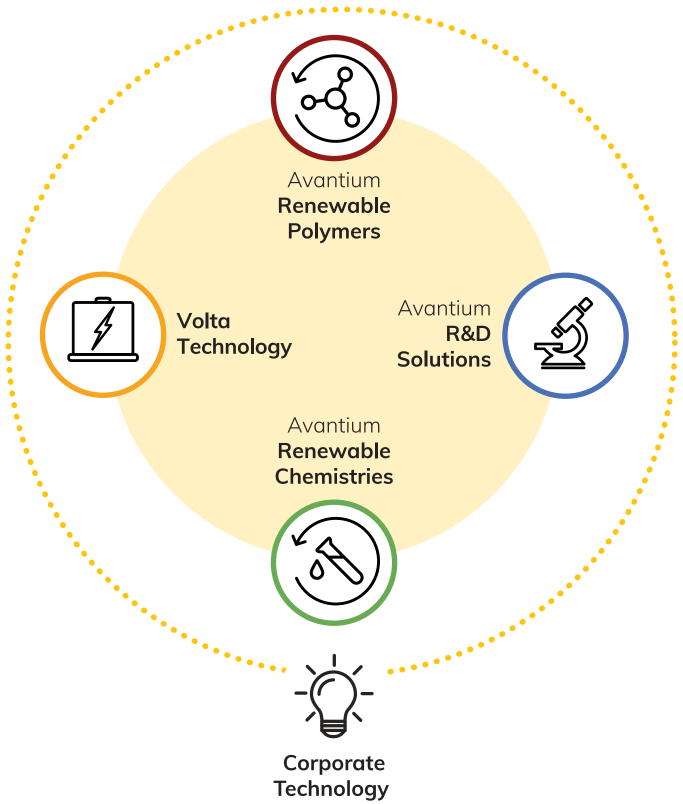
Monetise our proprietary technologies by applying them in our commercial production plants through partnerships or joint ventures or by licensing them to third parties.

Our Ambition

Leading the transition to a fossil-free chemical industry by 2050.

Our Business Units

Avantium's business units are united by a common goal: providing innovative solutions for the urgent sustainability challenges facing the chemical industry.



Avantium Renewable Polymers

Avantium Renewable Polymers is home to our lead technology, **YXY® Technology**, which converts plant sugars into furandicarboxylic acid **(FDCA)**. The monomer FDCA is in turn the key building block for making our next-generation polymer: polyethylene furanoate (**PEF**).

100% plant-based and recyclable, PEF is a higher-performing and more sustainable alternative to incumbent solutions in the packaging, film and textile sectors, thanks to its superior barrier properties, higher mechanical strength and heat resistance and lower processing temperature. The use of 100% renewable carbon in PEF instead of fossil carbon in polyethylene terephthalate (PET) for producing 500 ml bottles results in a significant reduction in greenhouse gas (GHG) emissions of 62% over the life cycle of the bottles.

In addition, the emissions from bio-based bottles upon incineration are compensated by the CO_2 removal during the renewable feedstock growth, ensuring that no additional CO_2 will be released into the atmosphere. Significant GHG emission reductions (around 39%) can also be achieved in multilayer packaging (PET/polyamide (PA)) by replacing typical fossil-based barrier layers with PEF (see our website for full LCA results).

This business unit is on track to start-up our world-first FDCA Flagship Plant in Delfzijl in the second half of 2024 and to launch PEF at commercial scale. As well as selling FDCA and PEF to offtake partners, Avantium Renewable Polymers is pursuing a technology licensing strategy with industrial partners who are expected to build production facilities with initial capacities of (more than) 100 kilotonnes per annum.

See page 24 for details of our progress.

Avantium Renewable Chemistries

Avantium Renewable Chemistries is responsible for the development and commercialisation of our plants-to-glycols Ray Technology™.

Ray Technology™ is Avantium's proprietary solution for producing plant-based mono-ethylene glycol (MEG) and plant-based mono-propylene glycol (MPG), with no compromise on quality or performance. MEG is a fundamental chemical building block for PET and PEF, and can be used in plastic packaging, textiles like clothing and household upholstery and de-icing products and coolants. LCA results from 2021 show that, using beet sugar, Ray Technology™ can produce plantMEG™ with an up-to-83%-lower carbon footprint than fossil-based incumbents. MPG, meanwhile, is a versatile chemical intermediate. An LCA study from 2022 showed a similar lifetime emissions reduction of up to 81% for plantMPG™ versus its incumbents (see our website for full LCA results).

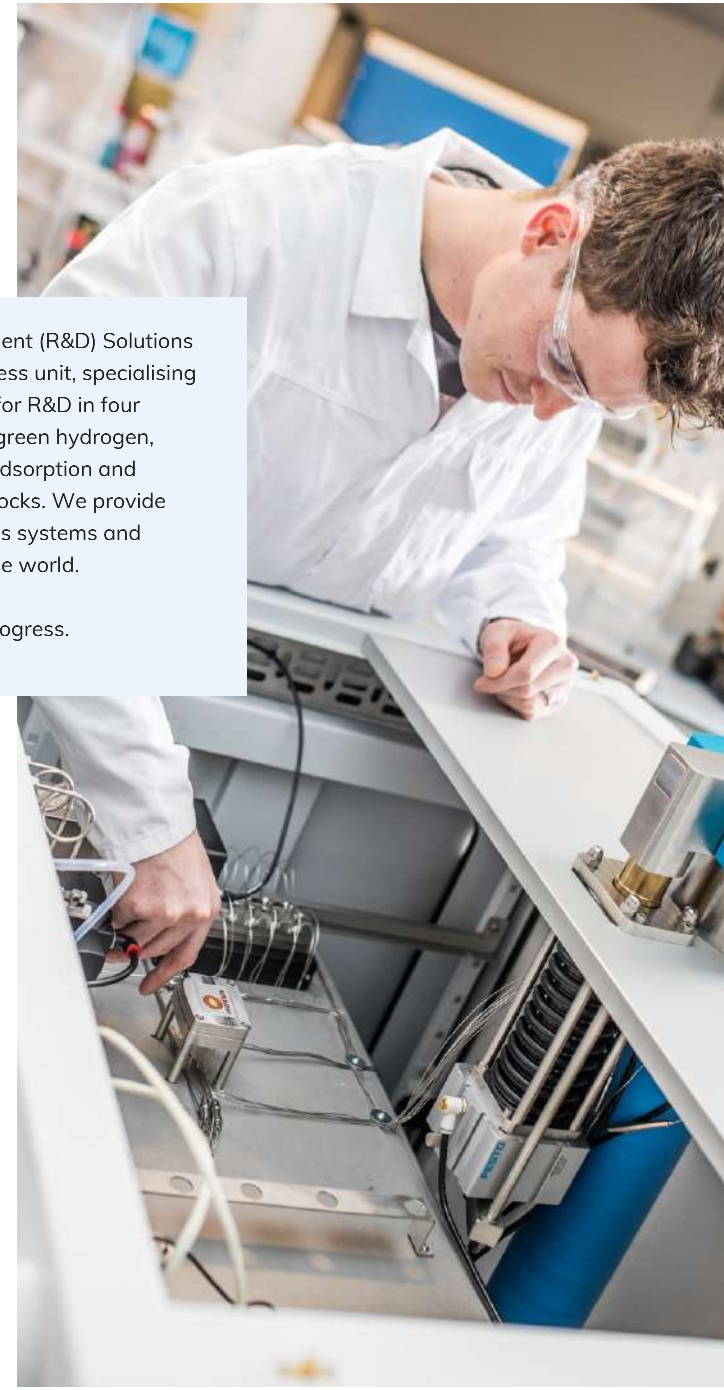
Having proven the technology at our Delfzijl pilot plant, Avantium Renewable Chemistries is seeking strategic partnerships to enable us to scale-up this solution.

See page 26 for details of our progress.

Avantium R&D Solutions

Avantium Research & Development (R&D) Solutions is our revenue-generating business unit, specialising in advanced catalysis solutions for R&D in four sustainable chemistry markets: green hydrogen, chemical recycling for plastics, adsorption and sustainable chemical building blocks. We provide tailor-made R&D units, as well as systems and services, to customers around the world.

See page 27 for details of our progress.



Volta Technology

Volta Technology uses electrochemistry to harness the power of air-based CO_2, not only capturing this waste GHG but also converting it into a fossil-free raw material suitable for a broad range of high-value chemical products.

In particular, this business unit focuses on formic acid, oxalic acid and glycolic acid – the latter two of which are key building blocks for carbon-negative plastics, including the polymer polylactic-co-glycolic acid (PLGA). PLGA with 80% glycolic acid or more is an excellent barrier against oxygen and moisture and has good mechanical properties. It is, moreover, not only recyclable but also both home compostable and marine degradable, and it can be used, for example, as a coating material and in moulded plastic materials. Our Volta Technology team is working with strategic partners to take this technology to the next stage: a pilot plant with indicative capacity of 10 kilotonnes per annum.

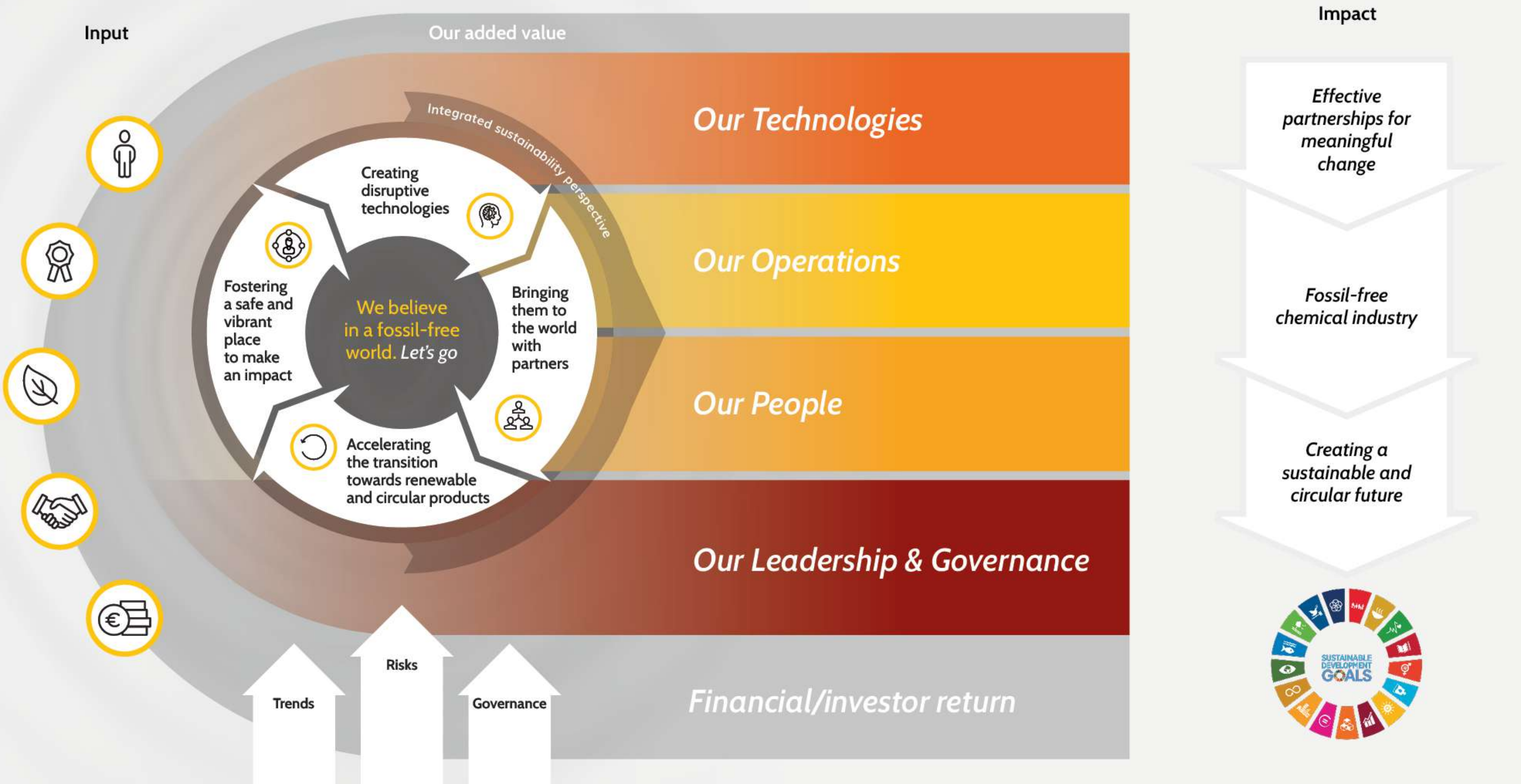
Corporate Technology

This small team of Avantium scientists and PhD students is led by Avantium's Chief Technology Officer, Gert-Jan Gruter. With strong links to the University of Amsterdam, Corporate Technology is an incubator for early-stage innovation that complements the work of our other business units, accelerating our quest for net-zero emissions. For example, our Corporate Technology team works in collaboration with our Volta Technology team on developing PLGA and oxalic acid-based polyesters known as PISOX, which provide an unprecedented combination of useful and sustainable properties including marine degradability and a carbon-negative footprint.

Our Corporate Technology team also works on optimising our Dawn Technology™, which converts biomass – such as textile waste and agricultural residues – into furan intermediates and industrial sugars that can be used as a feedstock for YXY® Technology. Our focus is on optimisation and testing for this application, in line with our strategic focus on FDCA and PEF. With Avantium Renewable Polymers, for example, the team is exploring the use of cotton-polyester-blend textile waste as a feedstock for FDCA, while promising projects are also underway with Avantium Renewable Chemistries in a range of areas.

Management Board Report

How We Create Value - Overview



How We Create Value - Insights

Input

Human
304 employees

Intellectual
166 patent families

Natural
- Volume of renewable feedstock
- Origin of feedstock

Social & relationship
- Engagement with our stakeholders
- Partnerships

Financial
- **€89.8 million** in investments
- **€35.2 million** cash position at 31 December 2023

Our added value

Trends | Risks | Governance

Output / Outcome

	Output	Outcome
Our Technologies	By 2030, 1.5 million tonnes of CO_2 savings across chemical industry By 2030, become a circular business By 2030, 100% of our feedstock from sustainable sources	Environmental impact of our technologies Circularity Sustainable feedstocks
Our Operations	By 2030, net-zero carbon emissions By 2025, zero non-hazardous waste sent to incineration and landfill By 2023, ISO45001 certification for all our plants	Occupational health & safety Greenhouse gas emissions of our operations Hazardous materials management Non-hazardous waste management
Our People	By 2030, one of the 10 best companies to work for By 2030, 100,000 students engaged in using chemistry for a fossil-free world By 2025, improve upon our baseline of being inclusive and diverse	Health & well-being Talent attraction & retention Diversity & inclusion Next generation of scientists
Our Leadership & Governance	In 2030, 100% of our advocacy will focus on transforming chemical industry to circular and fossil free	Climate advocacy Stakeholder engagement Corporate partnerships Product stewardship IP & data protection Climate-related regulation
Financial/ investor return	**€25.5 million** in consolidated revenues and other income **€-27.5 million** in EBITDA Future licensing deals with one licensing deal secured (€7.5 million milestone payment Origin Materials in 2023)	*Long-term shareholder value*

Impact

Effective partnerships for meaningful change

Fossil-free chemical industry

Creating a sustainable and circular future

The World Around Us

From the climate crisis to economic pressures, society faced significant challenges in 2023 – but there were also reasons for optimism, both for Avantium and for our world.

Demand for a new approach to plastic is rising in the consumer markets

Plastic in the Picture

Even with geopolitical turbulence frequently making the headlines during 2023, climate change continued to be a major topic of conversation. The year ended on a positive note, with the COP28 climate conference resulting in an agreement to transition away from fossil fuels. While we welcome this important step, the fact that it applies only to energy, and not to other fossil-dependent sectors like plastic, is notable. At Avantium, we know there is a better way for the plastics industry, one that replaces fossil fuels with renewable, bio-based feedstocks.

After all, despite plastic's immense value during the use phase of its life cycle, there can be no doubt that current approaches to its production – as well as to its end of life – cannot continue if we are to tackle the climate crisis, protect our environment from pollution and achieve a circular economy. Yet global plastic consumption already exceeds 450 million tonnes per year and is on track to triple by 2060. The industry is increasingly recognising that focusing solely on recycling is not enough to tackle the problems related to plastics and that structural solutions are needed. In other words, we urgently need to decouple the industry from fossil feedstocks and ensure the circularity of plastic products to protect our planet for the generations to come.

Key Developments Driving Change

At the policy level, there were some positive signs in 2023. Progress towards a global plastics treaty continued, with the UN's Intergovernmental Negotiating Committee on Plastic Pollution meeting for the third time in November. Meanwhile, in March, we welcomed the White House's announcement of a target to replace 90% of plastics in the USA with bio-based, recyclable-by-design polymers within 20 years. With our 100% plant-based polyethylene furanoate (PEF) (in combination with polyethylene terephthalate (PET)) now having received Critical Guidance Recognition from the US-based Association of

Plastic Recyclers (APR), there is significant potential for PEF to accelerate progress towards this objective – and revolutionise packaging in this region.

Elsewhere, the European Council agreed a proposal in December for a regulation on packaging and packaging waste, taking into account the full life cycle and waste hierarchy principles. Among the EU's key objectives with this regulation are to ensure all packaging – including plastic – is reusable or recyclable, in an economically viable way, by 2030, and to reduce the overall amount of packaging waste. As a fully recyclable polymer (including as a minor component in PET recycling streams) that also enables lightweighting thanks to its outstanding performance characteristics, PEF can play an important role in achieving both goals.

Producers under Pressure

In the meantime, demand for a new approach to plastic is rising in the consumer markets. At the same time, brand owners are adopting strategies on more sustainable forms of packaging and circularity as part of broader sustainability plans, with many announcing ambitious targets to reduce their use of virgin fossil-based plastic, usually by 20–50% by the end of the decade or sooner. More are likely to join them as the requirements of the EU's new Corporate Sustainability Reporting Directive (CSRD) come into effect. We see these objectives as a powerful catalyst for the widespread adoption of bio-based furandicarboxylic acid (FDCA) and PEF across a range of different market sectors.

Moreover, this movement aligns with a general increase in environmental concerns among the public, especially in relation to fossil fuels: in the Netherlands, thousands of activists joined road blockades organised by Extinction Rebellion in 2023, calling for a government phase-out plan for fossil-fuel subsidies. As consumer demand for renewable, sustainable plastic grows, so does the demand from brands – putting increasing pressure on plastic producers to embrace bio-based, circular alternatives like Avantium's PEF.

Adapting to Challenging Circumstances

The macroeconomic environment continued to prove challenging in 2023, with higher rates of interest and inflation in the Netherlands and beyond, as well as disruption to global supply chains. With Avantium (and our contractors) hard at work on constructing our FDCA Flagship Plant throughout the year, these factors had a significant impact on our costs and, in some cases, led to delays in the delivery of materials, instruments and equipment parts. As in 2022, we mitigated these impacts as far as possible through strong planning and collaboration; nevertheless, while we remain on track to start FDCA production in the second half of 2024, our anticipated costs are higher than originally planned, something we have tackled by successfully raising more funding (see 'Performance by Business').

Despite these practical challenges, we remain buoyed by the overall trend we see towards de-fossilisation, at both the governmental and societal level. As a leader in renewable polymers, and now closer than ever to commercialising our game-changing plant-based plastic, Avantium is set to capture this momentum, helping the world around us accelerate towards a fossil-free future.

Stakeholders and Materiality

It is essential that we maintain an ongoing dialogue with our stakeholders concerning the strategy, developments and activities of Avantium. We define our stakeholders as those individuals, groups or organisations that can affect or be affected by our business. We create value for our stakeholders by working towards our mission to transition the chemical industry to renewable feedstocks and to secure a sustainable future for all. We also work with our ecosystem of strategic, commercial and financial partners, expert suppliers and service providers and academia to drive better results.

Our Stakeholder Groups

We recognise six stakeholder groups: employees; partners and customers; shareholders; suppliers and contractors; governments and authorities; and society. The varied interests and variable expectations of these stakeholder groups determine Avantium's strategy, and each group is affected by Avantium's business activities and performance in a different way.

Employees

Our employees and their talents and motivation are our biggest competitive advantage. We provide a safe and vibrant workplace where everyone can thrive and contribute to our goals. We aim to be a magnet for the best people from a diverse array of backgrounds. Safety is always our number-one priority: we strive for an incident- and accident-free environment.

Partners and Customers

An integral part of Avantium's strategy and commercialisation roadmap is our collaboration with partners throughout the entire value chain. We bring our technologies to the market in collaboration with like-minded companies who complement our skills and knowledge and increase our chances of success.

We bring forward innovative solutions that benefit our customers and help them achieve their sustainability goals. We conduct dialogues with our partners and customers in order to explore common ground for building partnerships and create ecosystems for our innovations around the world. With a global customer base that includes industry leaders, we are well placed to provide tailored services and deliver meaningful results.

Shareholders

Our shareholders rely on Avantium to successfully execute its strategy and create maximum value.
By monetising our innovative technologies and bringing our game-changing products to market, we are able to deliver this value to our shareholders, for example through partnerships and licensing. We also develop and capitalise on our extensive intellectual assets portfolio. Our Avantium R&D Solutions business unit generates revenue and profits by providing extensive service projects and highly advanced catalyst testing systems.

Suppliers and Contractors

Our suppliers and contractors are integral as partners in the efficient and seamless scale-up of our technologies and in delivering on our customer commitments. We are committed to a responsible and sustainable supply chain.

Governments and Authorities

Governments and regulation authorities develop and implement legislation and associated regulations that can significantly affect Avantium. Moreover, European, national and local governments and authorities provide subsidies and grant permits. We therefore engage regularly with these bodies.

Society

Avantium also considers a range of other stakeholders when conducting business. We align our business strategy and sustainability goals with the needs of broader society, looking beyond our direct value chain. We also engage with students at schools and universities, sharing our expertise and exciting the next generation about sustainable and renewable chemistry (for full details, see 'Our People'). We have an active dialogue with local communities, industry associations, media and non-governmental organisations (NGOs).

Materiality

Avantium's materiality assessment identified and prioritised the sustainability topics and issues that are most material to our business and stakeholders, in line with the Global Reporting Initiative (GRI) Standards, the Sustainability Accounting Standards Board (SASB) and the UN Sustainable Development Goals (SDGs).

Avantium's leadership, colleagues and key internal and external partners (including business partners, NGOs and investors) rated these topics according to (i) the level of risk and opportunity they present to Avantium's business and (ii) the extent to which they influence our impact on society and the environment. This informed the finalisation and prioritisation of the key topics.

See the Supplementary Information section (page 165) for more details on our materiality assessment.

Our Strategy

Avantium's overarching strategy is founded on the four pillars of our mission: creating disruptive technologies, bringing them to the world with partners, accelerating the transition to renewable and circular products and providing a safe and vibrant place to make an impact. Based on these four pillars we aim to create sustainable value for all our shareholders.

Our goal is to be a world leader in renewable polymers and to commercialise our technologies through partnerships and licensing. An integral part of Avantium's strategy and commercialisation roadmap is close collaboration with strong partners throughout the entire value chain.

We work with companies who share our values and want to build a better world for future generations. This helps us develop innovative solutions that deliver sustainability benefits to customers and beyond.

Applying our technologies in our production plants or through partnerships

How

Divesting our technologies to a suitable party

What

We embed our safety culture in everything we do, striving to be accident and incident free. We attract talent from all over the world, creating a workplace where people both are inspired and inspire each other to work on technologies that can make a significant positive impact on our collective future.

We invent novel renewable chemistry processes to make chemicals and materials from renewable sources or feedstocks. We select opportunities that have the potential to be game-changers in the circular economy.

We have a continuous pipeline of proprietary disruptive technologies and we use our core expertise in high-throughput experimentation to test our ideas. Our focus is on the polyester value chain, as its broad reach provides the largest potential to transition the chemical industry to fossil free. We are experts at relating small-scale R&D to large-scale processes and we use this knowledge to bring our technologies to commercial scale.

We are not in this alone; nor do we do it alone. We bring technologies to market in collaboration with like-minded partners from all around the globe. Partner selection and engagement is core to our activities as we work together for global deployments and a positive environmental impact.

Licensing our disruptive technologies to third parties

Our Core Values

Our Golden Sustainability Rules

Our Golden Safety Rules

Licensing is the most capital-efficient and the fastest way to bring our technologies to market

Business Model

We have multiple strategic routes for monetising our innovative proprietary technologies. These include (i) licensing them to third parties, (ii) applying them in our production plants or through partnerships or joint ventures and (iii) divesting them to third parties. Licensing is especially important: as well as being the most capital-efficient way to commercialise our technologies, we believe it is the fastest way to bring our sustainable solutions to market and deploy them around the globe to meet the increasing demand for renewable and circular materials.

Meanwhile, our management processes allow us to manage risk and increase shareholder value. We know we must manage, plan and allocate our resources in the way that best serves all Avantium's stakeholders while enabling us to fulfil our objectives.

Business Unit Strategies

Avantium Renewable Polymers

Avantium Renewable Polymers is responsible for developing and commercialising YXY® Technology, which catalytically converts plant-based sugars into FDCA, the main building block of PEF. Our strategy can be broken down into five parts: (i) to continue developing the market for PEF by working with partners to generate global demand, (ii) to prove the technology at commercial scale at our FDCA Flagship Plant, (iii) to ensure global availability of PEF via technology licences, the first of which we sold in 2023 (see page 24), (iv) to continuously improve the technology and (v) to maintain our technology leadership through ongoing research and key partner collaborations.

Avantium started commissioning activities for our FDCA Flagship Plant in the first quarter of 2024 and expects FDCA production to start in the second half of 2024. The key commercial strategy for the FDCA Flagship Plant is to demonstrate YXY® Technology to the market at commercial scale and to serve as a stepping stone in Avantium's licensing strategy. In anticipation thereof, we have developed a licensing sales funnel covering the Americas, Asia and Europe. This funnel is being actively managed by our licensing team, which is organised according to the geography of the licensee's decision-making unit and to the licensee's position in the value chain (for instance, feedstock supplier or monomer, intermediate or polymer producer).

Volta Technology

Avantium continues to develop materials using carbon dioxide (CO_2) as a feedstock using its Volta Technology. This carbon capture and utilisation platform is in the pre-pilot stage and converts CO_2 into chemical building blocks, carbon monoxide, formic acid, oxalic acid and high-value products, including a new sustainable plastic: polylactic-co-glycolic acid (PLGA). With the support of strategic and financial partnerships (see page 25), we aim to continue developing this technology and to scale it up to a pilot plant.

Avantium Renewable Chemistries

In Avantium Renewable Chemistries, we aim to develop and commercialise Ray Technology™. At our Ray Technology™ pilot plant, Avantium produces plant-based mono-ethylene glycol (plantMEG™), a cost-competitive alternative for fossil-based MEG used in applications such as unsaturated polyester resins, industrial uses and food, feed and pharma. It also produces plant-based mono-propylene glycol (plantMPG™), a co-product of plantMEG™ production that is used in a variety of applications in functional fluids and unsaturated polyester resins. The current development stage of Ray Technology™ would allow us to advance towards the engineering of a flagship plant for this technology, but Avantium would, however, need to invest significantly – both financially and in human resources – in the design, engineering and construction of such a plant. Avantium has decided to prioritise the commercialisation and licensing of FDCA and PEF and will therefore put further investments in Ray Technology™ on hold until one or more appropriate strategic equity partners with sufficient financial resources have been secured.

Avantium R&D Solutions

Avantium R&D Solutions is our revenue-generating business unit. Since 2022, our strategy has centred on providing advanced, custom-made catalytic R&D solutions to customers in four emerging markets in sustainable chemistry: green hydrogen, chemical plastic recycling, adsorption and sustainable chemical building blocks. With this strategy, we aim to achieve profitable growth. Meanwhile, we continue to provide our proprietary advanced catalysis R&D systems and services to customers worldwide (see page 27).

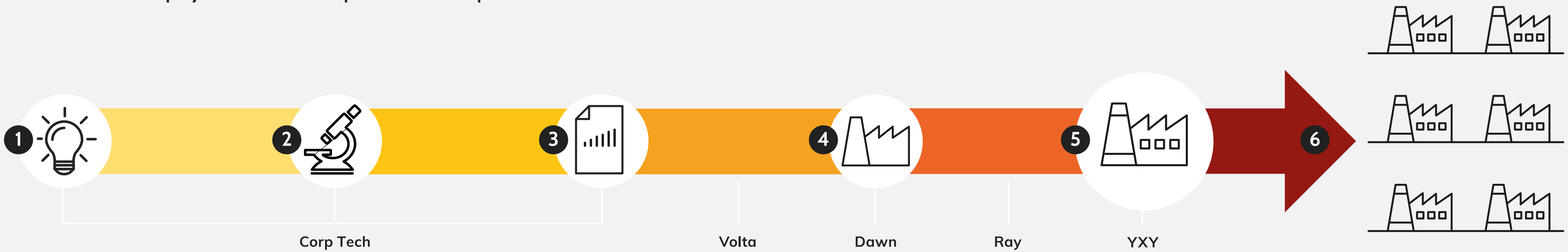
Corporate Technology

Avantium also runs a pilot biorefinery based on our Dawn Technology™. Here, we produce industrial sugars and lignin from forestry and agricultural residues and, increasingly, explore the use of waste textiles as a feedstock for FDCA production (see page 27).
We see industrial sugars made from second-generation, non-food biomass as imperative to a successful future bio-economy.

Innovation Funnel

We use a stringent stage-gate process to manage our development activities from ideation to commercial launch. Our strategic aim is to advance our technologies to the point of selling products and licensing our technologies to third parties who have the capabilities to realise industrial-scale production capacities.

Avantium's six-stage innovation funnel is used to assess and decide on the ideas to pursue as well as to enable the appropriate allocation of resources to projects at the various phases of development.



Stage 1: Ideation

We assess the idea's likelihood of technical and commercial success and its strategic fit with Avantium.

Stage 2: Feasibility

We conduct 'proof-of-concept' laboratory experiments, write 'invention disclosures' and perform a pre-market analysis, including seeking external validation.

Stage 3: Development

We prepare a preliminary business case, budget and operational plan, identify potential technology partners, allocate resources and execute our plan, with our Management Team taking significant stage-gate decisions.

Stage 4: Pilot Plant

We design a pilot plant, secure the technology and – pending the review and approval of our Supervisory Board – test, demonstrate and optimise it, as well as validate applications at the pilot plant.

Stage 5: Flagship Plant

We prepare for production at commercial scale, either on our own or in partnership, with construction beginning once a positive Final Investment Decision is made, based on three pillars: (i) technology readiness including engineering, (ii) commercial coverage and (iii) financing.

Stage 6: Industrial Take-Off

We license our validated technology to industrial partners for broader-scale deployment and market adoption.

Sustainability Strategy

Sustainability is the main driver for everything we do at Avantium. Our vision is a fossil-free world, and we help to deliver it by developing and commercialising disruptive technologies, on the basis of renewable carbon feedstock, that enable and accelerate this shift. We work together with like-minded partners to test these technologies and bring them to the world – where their sustainability potential will help address the global need to reduce plastic waste, tackle climate change and transition to a circular, sustainable, bio-based economy.

In 2021, we published our sustainability strategy under the name of Chain Reaction 2030, highlighting key stepping stones along the way to achieving Avantium's ambitious vision of a fossil-free chemical industry by 2050. More than 100 stakeholders, internal and external, participated in target-setting and provided feedback, helping us identify four sustainability pillars: Our Technologies, Our Operations, Our People and Our Leadership & Governance.

Through Chain Reaction 2030, Avantium commits to goals and targets where we have the greatest impact on social and environmental issues. This includes accelerating the development of our own technologies and operations to support the circular economy and driving responsible and sustainable business practices across the industry. The plan also sets out our actions to empower our own employees to make a lasting impact and to inspire the next generation of talent. Meanwhile, our approach to leadership and governance ensures that Avantium's voice is heard as we advocate for a global transition to a fossil-free industry.

The Value We Created in 2023

In this chapter, we report on the value we created for our stakeholders in 2023, beginning with the performance highlights from across our business. We then turn to our progress on the four pillars and ten targets of our Chain Reaction 2030 sustainability strategy, in connection with the topics identified as being most material to Avantium (see 'Stakeholders and Materiality') and with the relevant SDGs.

Performance by Business

Within our business units, we made further strategic progress towards the commercialisation of our proprietary technologies in 2023.

Avantium Renewable Polymers

It was another year of exciting progress for Avantium Renewable Polymers, the business unit home to YXY® Technology (which converts plant-based sugars into FDCA and PEF) and responsible for the construction of our FDCA Flagship Plant. By the end of 2023, with the plant's main infrastructure completed in Delfzijl, we could look back on a year of close collaboration – including zero lost-time incidents – with our engineering partner Worley, and look ahead to the start-up of the plant in 2024.

Growing Our Offtake Community

As construction progressed at our first-of-its-kind plant, Avantium Renewable Polymers also made strides in its commercial performance, signing offtake agreements for the 5-kilotonne-per-annum capacity FDCA Flagship Plant with Henkel (a global leader in adhesives), Kvadrat (a high-end interior textiles manufacturer) and PANGAIA (a sustainable fashion brand), taking our total to 15.

We continued to branch out beyond the packaging sector in 2023, demonstrating the wide-ranging potential of our renewable polymer PEF in different high-value applications. Nevertheless, PEF's sustainability and barrier properties make it a natural fit for the packaging industry. In November, we announced a collaboration with Albert Heijn, the Netherlands' largest supermarket chain, via our offtake partnership with bottle producer Refresco. Once our FDCA Flagship Plant is operational, our collaboration will see new fruit juice bottles made from 100% plant-based and circular PEF hit the shelves – the first PEF application to be introduced by Albert Heijn, which itself is the world's first supermarket chain to deploy PEF packaging for its own-brand products. We aim to ensure this agreement paves the way for more packaging projects with Albert Heijn and its many suppliers.

Albert Heijn will introduce PEF packaging for own-brand products

The fact that so many brands, including household names, are willing to associate themselves with PEF is a strong sign of their trust in our revolutionary renewable polymer. PEF enables them not only to move away from fossil fuels and realise their sustainability goals, but also to benefit from the high-performance properties of the material. We aim to announce more offtake partnerships across various industries in 2024, helping us bring our circular plastic to as many consumers as possible as soon as our FDCA Flagship Plant becomes operational.

A Landmark Licensing Agreement

Early in 2023, and in line with our technology licensing strategy, we announced our first non-exclusive licensing deal with leading sustainable materials company Origin Materials. We consider this to be an exceptional achievement: selling this licence, for a capacity of 100 kilotonnes per annum, before the FDCA Flagship Plant is operational is a sign of Origin's confidence in YXY® Technology and a reflection of the potential of FDCA and PEF. In the months since, we have worked closely with Origin to execute the terms of the licence and develop the market for different FDCA and PEF applications. Our collaboration will continue in 2024.

Using Avantium's YXY® Technology in complement with its own patented technology platform for producing chloromethylfurural (CMF), Origin Materials intends to produce FDCA from sustainable wood residues – a non-edible, renewable feedstock – on an industrial scale, thereby accelerating the mass production of FDCA and PEF for use in advanced chemicals and plastics. Origin has already signed numerous capacity reservations and offtake agreements for its own manufacturing plant with well-known brand owners.

We are conducting multiple ongoing discussions with other potential licensees, building a pipeline of partners with the resources and capabilities to build industrial-scale manufacturing facilities for FDCA and PEF in different geographies. Meanwhile, Avantium is also building a commercial pipeline for future licensees. Helios Resins,

a subsidiary of Kanzai Paint (one of the world's leading paint and coatings producers), has signed a multi-year capacity reservation to purchase FDCA developed by Avantium. Under this agreement, Helios Resins secures preferred access to FDCA volumes produced by Avantium's future licensee network.

A Positive Financial Outlook

With high inflation and interest rates in 2023, as well as supply-chain disruption, the business unit's anticipated costs, particularly including those related to building our FDCA Flagship Plant, rose higher than we had originally expected: to approximately €255 million compared to our initial estimate of €192 million. This €63-million increase consists of €33 million in increased CAPEX, €19 million in increased OPEX and €11 million in additional interest costs. In December, we announced the need for a further financing package to cover the anticipated increase until the FDCA Flagship Plant becomes fully operational, and that Avantium Renewable Polymers had successfully received commitments for such a package – totalling €64.5 million – from its shareholders (the Bio Plastics Investment Groningen consortium, Worley and Avantium N.V.) and lenders.

To cover our share in this package and ensure we remain properly capitalised, Avantium completed an equity raise in February 2024, successfully securing €70 million. This demonstrates the confidence and support of our investors, especially at a time when the financial markets are showing caution towards ESG-focused companies. For our part, we believe that Avantium Renewable Polymers' progress puts us well on track to unlocking commercial success for our Company. At the end of 2023, we announced that, assuming the successful start-up of the FDCA Flagship Plant in 2024 and the sale of further technology licences, the Company has the ambition to generate approximately €100 million in revenues and be EBITDA positive in 2026.

Preparing for Market Launch

Throughout the year, work continued at our Geleen pilot plant, optimising our technology and preparing for the next stage of Avantium Renewable Polymers' commercialisation journey. Recruitment of the people we need at the FDCA Flagship Plant remained on track in 2023 and the FDCA Flagship Plant team is now fully staffed and exchanging important knowledge and experience with colleagues from the pilot plant in Geleen.

With our business ecosystem expanding, we also began to expand our Avantium Renewable Polymers teams into new regions; namely, the USA and Asia. In the USA, for instance, we were granted Critical Guidance Recognition for PEF in a multilayer PET bottle from APR in 2023 – something we see as a significant milestone for US brands' adoption of PEF as a barrier layer in packaging applications. Developments like this make it increasingly important that we grow our own presence across the geographies where we believe FDCA and PEF can have the greatest positive impact, in order to maximise that potential for prospective licensees in those regions.

Volta Technology

Within Volta Technology, there were important developments on several fronts in 2023.

Preparing for Scale-Up

We achieved significant progress on Volta Technology with the signing of agreements for two long-term strategic partnerships. First, with SCG Chemicals (SCGC) – a leading integrated chemical player in Asia – we are developing CO_2-based polymers containing the glycolic acid produced by Volta Technology via electrochemical conversion. Following the successful evaluation and selection of different grades of PLGA (see page 13) in early 2023, Avantium and SCGC announced a joint development agreement in June to further evaluate this extremely promising carbon-negative plastic in order to subsequently scale-up production of the glycolic acid monomer and PLGA polyester in the next two years to a glycolic acid pilot plant with an indicative capacity of 10 tonnes per annum, provided that the Company can secure strategic or financial partnerships to fund this next phase of development of the Volta Technology, Glycolic acid can be used for PLGA, which can be produced in existing PET assets. Under the second collaboration agreement, announced in August 2023, we will work with Norsk Hydro – a leading aluminium and renewable energy company – to further develop Volta Technology and harness its potential to deliver innovative and sustainable solutions for this partner.

Meanwhile, all three of our Volta Technology demonstration units returned to our Zekeringstraat site in Amsterdam in 2023, where they continued to perform well. This proves the stability and robustness of our technology in using waste CO_2 to make not only glycolic acid but also oxalic acid and formic acid, three key products with high-value applications in different markets. This potential was recognised in May with the award of a €1.5-million grant from EU Horizon Europe for Avantium's participation in the R&D programme HICCUPS, which aims to demonstrate the use of CO_2 as a feedstock for producing polyesters. In 2024, we aim to attract more external funding to support the development of Volta Technology and our key products, as well as to recruit the people we need to ensure the successful scale-up to pilot phase.

Avantium is proud to lead the development of CO_2-based polyesters

Avantium Renewable Chemistries

In 2023, our Ray Technology™ team took significant steps towards pre-engineering for the potential scale-up to a flagship plant.

Technical and Commercial Validation

In the first half of 2023, the Ray Technology™ team successfully executed several essential trials as part of the pre-engineering phase. These included successful runs in the Ray Technology™ demonstration plant in Delfzijl, a combustion trial and a glycol distillation trial carried out by Sulzer Chemtech. The technical outcomes achieved were consistent with anticipated results.

Seeking Strategic Partnerships

As well as continuing to prove the technology at our pilot plant, we were conditionally awarded funding from the Dutch National Growth Fund. We also gained commercial traction with several partners interested in our plantMEG™ and plantMPG™, with several active negotiations on potential offtake and distribution agreements. However, Avantium would need to make significant investment – financially and in terms of human resources – in the design, engineering and construction of a flagship plant. In December, therefore, in light of the announcement that we are prioritising the commercialisation and licensing of FDCA and PEF, we also announced the decision to put further investments in Ray Technology™ on hold until we have secured one or more appropriate strategic equity partners with the sufficient resources.

As such, we have significantly scaled down the Ray Technology™ team to a smaller, dedicated team that will continue to pursue potential partners for further development towards a flagship plant. More than 80% of the employees working on Ray Technology™ have been redeployed either to positions at the FDCA Flagship Plant or to vacancies within Avantium Renewable Polymers and Volta Technology. We have made every effort to assist our remaining colleagues as much as possible in finding alternative employment outside Avantium (according to the work-to-work principle). Avantium's Works Council (see page 42) has agreed upon an Avantium Social Plan, which includes the provisions and (financial) compensation that apply to the affected employees.

The fact that we have retained key talent, know-how and expertise related to Ray Technology™ within the Company is expected to be valuable if we secure a strategic partnership and continue the development roadmap.

Corporate Technology

Our Corporate Technology team worked hard in 2023 to develop new solutions in line with our mission to help create a fossil-free chemical and plastics industry.

Collaboration with University of Amsterdam: A New Polymerisation Process

The University of Amsterdam research group Industrial Sustainable Chemistry, led by Avantium's Chief Technology Officer Gert-Jan Gruter, completed the five-year research project Rigid Biobased Polymers (RIBIPOL) in 2023. Co-funded by Avantium and LEGO, this research group developed new pathways for the cost-effective and large-scale synthesis of bio-based polyesters that are strong, durable and recyclable. For instance, RIBIPOL has yielded a new polymerisation process to produce high-molecular-weight polyesters from bio-based secondary alcohols, such as isosorbide, that are quite rigid but relatively unreactive. This now enables the production of very strong and durable bio-based plastics from building blocks that are already commercially available.

Avantium has acquired the rights to the five RIBIPOL patents that were filed. Three PhD students from the RIBIPOL project are now working at Avantium in positions that help the Company further boost the relevance of these novel polymers.

Dawn Technology™: Supporting Our Wider Strategy

The more mature technology under the Corporate Technology umbrella is Dawn Technology™, our pilot biorefinery. While further investments are on hold owing to market conditions and Avantium's own strategic focus on our more advanced technologies, we are using this platform to continue exploring new feedstocks for making PEF. In 2023, two PhD students researched the suitability of cotton sugars from waste textiles as a non-food – and therefore higher-value – option for making the glucose intermediates needed for FDCA production. We also continued our bio-asphalt partnership with Roelofs as well as evaluating the conversion of woody biomass into the CMF molecules that will be used by our licensing partner Origin Materials as part of its PEF manufacturing process.

Avantium R&D Solutions

In the first full year of pursuing our new strategic direction for the revenue-generating arm of our Company, we saw clear signs that we are on the right track to profitable growth. In particular, there was plenty of promising activity across the four sustainable chemistry areas we have chosen to focus on in Avantium R&D Solutions. Despite 2023's tight labour market, we also made good progress in recruiting the people we need to accelerate our journey.

Meanwhile, demand for units of our proprietary catalyst testing solution, Flowrence®, was strong, matched by increased interest from customers in Flowrence®-related contract R&D.

We also observed this platform increasingly being used in sustainable chemistry applications, such as biomass processing and sustainable feedstock testing.

We achieved these positive results despite a difficult economic climate, which hindered appetites for industrial production, and ongoing global supply-chain issues, which led to delays in receiving the parts we needed for our systems and consequently affected the speed of our project execution. The challenging inflationary environment during the year also meant that we had to increase our prices, a difficult but necessary decision that was nevertheless successfully accepted by our customers. We believe this reflects the market recognition of the value provided by our services and solutions as the industry confronts the challenges of the sustainability transition.

In 2023, total revenue from Avantium R&D Solutions reached €13.5 million, an increase of 20% compared to 2022. We will invest these funds in growing our capacity and capabilities as we continue laying solid foundations for our new strategy.

Focus area	Progress in 2023
Green hydrogen	We strengthened our science and technology team and reached out to industry partners to define technology requirements to accelerate R&D into electrolysis of water for green hydrogen.
Chemical plastic recycling	Feasibility unit constructed in collaboration with a customer to solve key technical challenges.
Adsorption	The segment of Direct Air Capture (to capture CO2 from the atmosphere) has gained much global industrial attention. Avantium has supplied units for this application, and we initiated further development programmes to deliver future technology needs of players in this segment.
Sustainable chemical building blocks	Our first commercial project neared completion and will begin operations in 2024. Several new insights and developments from this process can be applied in future projects.

Sustainability Performance

With Avantium's sustainability vision, goals and plans in place, 2023 saw us implement our sustainability governance structure, build on our baseline measurements and improve our monitoring systems. We recruited and trained the members of our Sustainability Steering Board and four sustainability task forces (one for each pillar of Chain Reaction 2030), ensuring representation from across Avantium's business units and departments.

In addition, we began creating an environmental policy and procedure document to formalise our objectives, management practices and reporting procedures. We also updated our social, ethical and labour-related management system in relation to our responsible supply chain activities. Meanwhile, Avantium joined MVO Nederland as part of our preparations for reporting in line with CSRD, which becomes compulsory for our Company in 2026.

Responsible Business

Sustainability governance sits within Avantium's approach to responsible governance more widely. We uphold high standards in matters of responsible business principles and ethics, such as bribery, fraud, anti-corruption and money laundering. Our mandatory Code of Good Business Conduct covers ethical business practices in a wide range of areas. Our Whistleblower Policy - which we revised in 2023 and now call the Avantium Speak-Up Policy - sets out the procedures under which employees can and must report relevant irregularities.

To protect our proprietary and innovative technologies, we enter confidentiality agreements when processing and sharing confidential information and materials with third parties. Avantium's Compliance Officer updates every Audit Committee meeting on fraud and irregularities, including whistleblowing cases. In 2023, there were no confirmed incidents of corruption, no legal actions taken against anti-competitive behaviour or anti-trust and no reported incidents of discrimination.

We are transparent about our technologies, products and processes and have mechanisms in place for enabling and ensuring this transparency, including our Bilateral Contacts Policy. We also follow internal policies and procedures regarding our labour, human rights, environmental and supply chain practices. See Avantium's website for more information.

For the second year in a row, Avantium was awarded a Gold Medal by EcoVadis in 2023, after a thorough audit of our performance in four categories: environment, labour and human rights, ethics and sustainable procurement. Having increased our score in 2023, Avantium is in the global top 2% of companies (across sectors) rated by EcoVadis.

- 2020: Sustainability strategy: Chain Reaction 2030
- 2021: (Double) Materiality assessment
- 2022: Setting up data monitoring systems
- 2023: Set up Chain Reaction 2030 governance structure
- 2024: Double Materiality (re-assessment)
- 2025: Adjust monitoring systems to address materiality updates and CSRD requirements
- 2027: Double Materiality (re-assessment)
- 2028: Adjust monitoring systems to address materiality updates and CSRD requirements
- 2030: Double Materiality (re-assessment)

2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2050

A fossil-free chemical industry (2050)

- 2019–2023: Annual reports based on value creation model with references to GRI, SASB and SDG's
- From 2025: Reporting according to CSRD and with external assurance

Boundaries

We have several business units at Avantium, all united by a common goal: to provide innovative solutions for using renewable sources, cutting out plastic waste and reducing CO_2. Each business unit works on one or more technologies or R&D solutions, as discussed in the Our Technologies section of this report.

Avantium operates at four different locations:

- Headquarters and laboratories at Amsterdam Zekeringstraat
- Laboratories in collaboration with the University of Amsterdam at the Amsterdam Science Park
- Pilot plants and FDCA Flagship Plant at Chemie Park Delfzijl
- Pilot plant in Geleen Brightlands Chemelot Industrial Park

Avantium is currently constructing the FDCA Flagship Plant. Commissioning of the FDCA Flagship Plant will occur in phases, which started in the first quarter of 2024 and will be followed by the sequential start-up of the different sub-units. Production of FDCA is expected to commence in the second half of 2024, meaning no data about its operations can be reported in the 2023 Annual Report.

Our main activities take place in an office environment – 71% of our employees work either in research laboratories or in our offices (on, for example, business development, analytics, strategy, project management and engineering). The remaining 29% of our employees work in our pilot plants and FDCA Flagship Plant. Since Avantium is not yet a commercial production company, the impact of our operations is more comparable to an R&D company than to a chemical manufacturing company.

Most of Avantium's suppliers are landlords and providers of office supplies. There is also a limited number of significant suppliers of feedstock (used for developing and piloting our technologies) whose impacts we address on page 33 of this report.

Scope and References

Avantium has 10 sustainability goals that form the core of the Chain Reaction 2030 programme. We engage with our stakeholders regularly to ensure our activities cover the areas that really matter to these different groups.

To determine the scope of Avantium's sustainability focus, we conducted our most recent materiality assessment in 2022. From this process, we identified a list of the topics that are most material to our business. For a full explanation of the materiality assessment process and our stakeholder engagement activities, see 'Supplementary Information'.

Each of our four task forces works on a set of Chain Reaction 2030 goals, which in turn relate to a set of material topics. Further, to aid transparency in our reporting and help readers find information in this report, we link these topics to a number of internationally renowned sustainability frameworks: the UN SDGs, GRI, SASB and ESRS.

"The Chain Reaction 2030 programme is well embedded in our Company and we are largely on track with the delivery of results. Our efforts in 2023 were mainly focused on setting up baselines and monitoring systems, as well as developing plans for improvements. In addition, we aimed to inspire our employees to behave (even) more sustainably; for example, through our Footprint Challenge, which encouraged colleagues to reduce environmental impacts at the individual and Company level. In 2024, we will focus on the further execution of our Chain Reaction 2030 plans, while also re-assessing whether our goals still capture the most material topics for Avantium and our key stakeholders."

Heleen Goorissen
Chief Sustainability Officer Avantium

References to Sustainability Reporting Frameworks

Area	Sustainability goal in Chain Reaction 2030	Material topic	GRI reference	SDG reference	SASB reference	ESRS reference
Our Technologies	Our technologies will deliver 1.5 million tonnes of CO_2 savings across the chemical industry.	Environmental Impact of Our Technologies	GRI 305 Emissions	3.9, 12.4	RT-CH-110a.1 RT-CH-110a.2	E1 Climate Change
	We will become a circular business.	Product Stewardship, Circularity		12.5		E5 Resource Use and Circularity
	All our plant-based feedstock for Renewable Polymers and Renewable Chemistries will come from sustainable sources.	Sustainable Feedstocks	GRI 308 Suppliers Environmental Assessment, GRI 414 Suppliers Social Assessment	9.4		S2 Workers in the Value Chain, E5 Resource Use and Circularity (E5-4)
Our Operations	All our plants will achieve an ISO 45001 certification (healthy and safe working environment).	Occupational Health & Safety	GRI 403 Occupational Health and Safety	3.9	RT-CH-320a.2	S1 Own Workforce (S1-14)
	We will send zero non-hazardous waste to incineration and landfill.	Health and Well-Being, Non-Hazardous Waste Management, Hazardous Materials Management	GRI 306 Waste	3.9, 12.5	RT-CH-150a.1	E5 Resource Use and Circular Economy (E5-5)
	Our own operations will achieve net-zero carbon emissions.	Greenhouse Gas Emissions of Our Operations	GRI 305 Emissions	12.4	RT-CH-110a.1 RT-CH-110a.2 RT-CH-130a.1	E1 Climate Change
Our People	Avantium will be one of the 10 best companies to work for in the Netherlands.	Talent Attraction & Retention, Health & Well-Being	GRI 2-7 Employees, GRI 2-8 Workers Who Are Not Employees, GRI 404 Training and Education	4.7, 7a, 8.5		S1 Own Workforce
	We will improve upon our baseline of being an inclusive and diverse company, ensuring that we are representative of the societies and communities we operate within.	Diversity & Inclusion	GRI 405 Diversity and Equal Opportunity	5.5, 8.2, 8.5		S1 Own Workforce (S1-9)
	We will have engaged 100,000 students about using chemistry to create a fossil-free world.	Next Generation of Scientists	GRI 404 Training and Education	4.4, 9.5, 17.7		
Our Leadership & Governance	All our advocacy will focus on transforming the chemical industry to becoming circular and fossil free.	Climate Advocacy, Climate-Related Regulation, IP & Data Protection, Responsible Licensing, Stakeholder Engagement, Corporate Partnerships	GRI 22-28 Strategy, policies and practices	13.3, 17.6, 17.16	RT-CH-530a.1 RT-CH-210a.1	G1 Business Conduct (G1-5)

Our Technologies

With our proprietary technologies and tailored R&D services, Avantium is committed to becoming a world leader in sustainable chemistry. Our solutions make a valuable contribution to the shift towards a fossil-free chemical industry and to the future of people and planet alike.

Chain Reaction 2030 Goals

- By 2030, our technologies will deliver 1.5 million tonnes of CO_2 savings across the chemical industry.
- By 2030, we will become a circular business.
- By 2030, 100% of our plant-based feedstock for Renewable Polymers and Renewable Chemistries will come from sustainable sources.

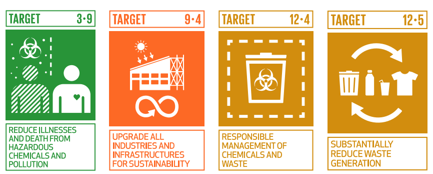
Material Topics Addressed

- Environmental Impact of Our Technologies
- Product Stewardship
- Sustainable Feedstocks
- Circularity

GRI Indicators

- GRI 305 Emissions
- GRI 308 Suppliers Environmental Assessment
- GRI 414 Suppliers Social Assessment

SDG Subtargets



Reducing Industry CO_2 Emissions

OUR GOAL

By 2030, our technologies and products will deliver 1,5 million tonnes of CO_2 savings across the chemical industry.

Avantium strives to contribute to significant CO_2 savings either through increased efficiency or novel technologies that have an improved environmental impact over fossil-based incumbents. All of Avantium's technologies aim to promote an efficient chemical industry. We expect that a considerable effect on CO_2 savings will be achieved once industrial-scale facilities of more than 100 kilotonnes start operating, using technology licences from Avantium and supported by life-cycle assessments (LCAs).

Avantium has already entered into its first licensing agreement in relation to YXY® Technology with Origin Materials for a 100-kilotonne-per-annum-scale facility. Avantium strives to have four more licence agreements in place by the end of 2026. The effective CO_2 savings can be assessed based on the scale, ramp-up and operation of each licensee, including its supply chain.

Avantium monitors its progress on this target through third-party peer-reviewed and ISO-certified LCAs to assess the potential sustainability benefits of its technologies and products and to assess how these technologies and products compete with fossil-based alternatives. Over the past years, Avantium has conducted ISO-certified LCAs for PEF, plantMEG™ and plantMPG™. The LCA results show that, compared to fossil-based incumbents, Avantium's PEF can enable a 62% reduction in greenhouse gas (GHG) emissions over the life cycle of a 500 ml bottle and that Avantium's plantMEG™ can enable a reduction of up to 83% over the life cycle (more information can be found on our website). While these LCAs demonstrate the potential of our solutions to enable significant CO_2 savings, the actual savings will only occur, and be measured, once our licensees have started operations at their commercial plants. According to our latest calculations and assuming the successful sale of multiple further technology licences for large-scale PEF production facilities in the coming years, we believe our target of enabling 1.5 million tonnes of CO_2 reductions by 2030 is achievable.

Carbon Capture and Utilisation

As well as developing technologies that help to reduce industrial carbon emissions, Avantium develops carbon-negative technologies that use waste CO_2 as a feedstock, such as our carbon capture and utilisation (CCU) platform, Volta Technology. See 'Performance by Business' for details of the team's progress in 2023.

Improved Catalyst Testing

Catalysts increase the rate of chemical reactions and can therefore make a wide variety of chemical processes more efficient. As a result, they play an essential role in limiting the environmental harm of the chemical industry. With its expertise in catalysis, Avantium R&D Solutions supports customers' businesses in becoming more sustainable. While we cannot report on the resulting CO_2 reductions at our partners' facilities, our support enables them to improve their processes and accelerate their transition to lower-emission operations.

Closing the Loop on Circularity

OUR GOAL

By 2030, we will become a circular business.

Achieving our circularity target depends on process improvements at all stages of the product life cycle, including energy, input materials, production, distribution, use, disposal, waste and emission leakage. Avantium has therefore pledged to:

- Design products that use sustainably sourced renewable materials in minimum possible amounts
- Develop products that are durable and recyclable
- Enable production scalability via the efficient use of licensing models for our technologies

Avantium's circular business model is built on developing, commercialising and licensing our sustainable technologies and R&D capabilities. This allows us to develop solutions that maintain their maximum value throughout their life cycle, contributing to the circular economy in line with the so-called 9R principles.[2]

Reduce, Reuse, Recycle and Beyond

Avantium's business vision is based on the concept of the natural carbon cycle: using bio-based feedstock inputs and de-fossilising the industry. Our technologies turn sustainable feedstock into sustainable materials. Our most advanced technology focuses on the commercialisation of the polymer PEF. Thanks to the superior mechanical and barrier properties of PEF (compared to PET), we can significantly reduce the amount of packaging our partners need for their products and/or replace multilayer packaging with mono-material solutions.

Bringing a new material to market also means taking responsibility for a sustainable end-of-life solution. As a polyester, PEF is highly suitable for recycling and circular packaging solutions. In addition to the LCAs, multiple independent third parties have recently assessed the circularity benefits of PEF compared to other polymers.

Upon request by Avantium, PTI Europe Sàrl conducted an evaluation in 2022, in accordance with the European PET Bottle Platform (EPBP) protocol, to determine the effect of multilayer PET bottles containing 10% PEF on the PET recycling stream. The results showed that PET/PEF multilayer bottles have no negative impact on haze and other properties of the resulting recycled PET products at a market penetration of 5%, even taking potential local accumulation into account. Based on this, the European PET Bottle Platform awarded an interim endorsement to the Company's PEF resin in 2022.

In 2023, Avantium was granted Critical Guidance Recognition from APR, a US-based international non-profit and the only North American organisation focused exclusively on improving recycling for plastics. We earned this recognition for the use of PEF, produced with our YXY® Technology, in a multilayer PET bottle. For the Critical Guidance Recognition testing in the US, multilayer PET/PEF bottles containing 7 wt% and 10 wt% of PEF were first evaluated by a third party (Plastics Forming Enterprises LLC) and then reviewed by an independent committee, appointed per APR's recognition operating procedures. We demonstrated compatibility with standard PET recycling practices, without impacting the physical properties of the recycled PET. It was concluded that both types of multilayer PET/PEF bottles meet or exceed the most challenging test conditions and strictest APR Critical Guidance criteria.

[2] https://op.europa.eu/en/publication-detail/-/publication/ca9846a8-6289-11ea-b735-01aa75ed71a1/language-en

We also aim to secure the necessary permits in other parts of the world. In the long term, once a critical mass of PEF volume production is reached, our aim is that PEF will be recycled in its own separate streams. We know this to be possible thanks to our polymer's unique and recognisable footprint, making it detectable by standard near-infrared (NIR) sorting equipment.

Avantium also explores new purposes for known materials. By combining the glycolic acid produced by our Volta Technology with lactic acid, we can make PLGA, a carbon-negative, recyclable, home-compostable and marine-biodegradable polymer with valuable barrier and mechanical properties. PLGA is therefore a more sustainable and cost-effective alternative to fossil-based polymers.

"In 2023, an Avantium team led by Roy Visser (Head of Polymerisation & Application Development) carried out an industrial-scale recycling trial with the well-known recycler Morssinkhof Plastics. Morssinkhof aims to ensure the quality of rPET from future waste streams and wanted to assess the influence of PEF on its proprietary MOPET recycling process. During the trial, Morssinkhof saw no negative effects on the process or final resin quality when adding up to 5% PEF to the PET flakes."

Ingrid Goumans
Teamleader Technical Account Managers

Using Sustainable Feedstocks

OUR GOAL

By 2030, 100% of our plant-based feedstock for Avantium Renewable Polymers and Avantium Renewable Chemistries will come from sustainable sources.

We aim to increase our use of second- and third-generation feedstocks in our technologies. In the meantime, our processes are mainly powered by first-generation feedstocks, and we work with suppliers who can ensure they provide us with sustainable materials. Avantium sources low-value fructose and glucose, for example, from farmers who feed their higher-value plant proteins into the food industry.

In 2023, we sourced feedstocks from three key ('tier 1') suppliers: Rafti and India Glycols for Avantium Renewable Polymers and Cosun Beet Company for Avantium Renewable Chemistries. In 2024, Tereos will become a key feedstock supplier for the Avantium Renewable Polymers FDCA Flagship Plant.

All these companies are asked to sign Avantium's Sustainable Supplier Code. This code of conduct is founded on the conventions of the International Labour Organisation and the Ethical Trading Initiative and on the principles of the Sustainable Agriculture Initiative Platform. The scope and ambition of the supplier Code reflects Avantium's commitment to source its raw materials and feedstocks in compliance with international best practice on sustainability and responsible sourcing.

We have also confirmed, via gap (risk) analysis, that these suppliers align and comply with the expectations we set out in the Code. Moreover, they are all ISO 9001 certified, indicating that they meet high standards in human rights and labour, workplace safety and conditions and environmental responsibility.

Beyond our key feedstock suppliers, Avantium also encourages sustainability across our entire supply chain, a network of more than 600 providers of goods and services. In 2023, we updated our general terms and conditions to include our Sustainable Supplier Code, meaning that every supplier we work with agrees to this Code. Furthermore, Avantium will incorporate sustainable sourcing requirements into future licence agreements for its renewable technologies.

Avantium's Leading Technologies in Renewable Chemistry

Plant-based feedstock

(First and second generation)

Avantium's FDCA Flagship Plant is using locally produced, commercially available first-generation feedstock: glucose or fructose from starch (wheat or corn). Starch is an abundant and low-value co-product. We aim to increase our use of second- and third-generation feedstocks in our technologies. Our Dawn Technology™ converts forestry residues into sugars, which can be used as feedstock for PEF. We are also exploring the suitability of cotton sugars from textile waste as an option for making the glucose intermediates needed for FDCA. For our Ray Technology™, we use sucrose from feedstock such as beet sugar or sugar cane.

Suppliers

In 2023, we sourced feedstocks from three key suppliers: Rafti and India Glycols for Avantium Renewable Polymers and Cosun Beet Company for Avantium Renewable Chemistries. In 2024, Tereos will become a key feedstock supplier for the Avantium Renewable Polymers FDCA Flagship Plant.

plantMEG™

With Ray Technology™, Avantium has found a way to produce MEG from plant-based feedstocks, rather than fossil sources. We produce plantMEG™ at pilot scale based on beet sugar from Cosun Beet Company. For PEF, we can source commercially available biobased MEG from India Glycols.

FDCA

FDCA is the key building block for the high-performance plant-based plastic PEF. For a long time, an economically viable way to manufacture FDCA remained out of reach, leading to it being labelled 'the sleeping giant of the chemicals industry' – but that has all changed with the development of Avantium's YXY® Technology. As a monomer, FDCA can realise exciting opportunities to create a wide range of useful and sustainable polymers. The most important of these is PEF.

PEF

Packaging

Textiles

Films

Numerous other applications

Numerous other applications, including adhesives, other FDCA-based polyesters, co-polyesters, polyamides, polyurethanes and coating resins.

Air-based feedstock

Where our other technologies use plant sources as their raw materials, Volta Technology uses electrochemistry to harness the power of air-based CO_2. By using carbon from the air, our technology converts a waste greenhouse gas into a raw material for a broad range of intermediate and final chemical products.

Through the electrochemical conversion of CO_2, Avantium can produce formic acid and oxalic acid, as well as derivatives including glycolic acid. These high-value chemicals have a wide range of applications, including CO_2-based polymers such as polylactic-co-glycolic acid (PLGA).

PLGA with 80% glycolic acid or more has an excellent barrier against oxygen and moisture and good mechanical properties. It is furthermore recyclable and both home compostable and marine degradable. PLGA can be used, for example, as a coating material and in moulded plastic materials. This makes PLGA an excellent alternative for fossil-based polyethylene.

CO_2

High-value chemicals

CO_2-based polymers

Our Operations

At Avantium, we create disruptive technologies to support the chemical industry's transition away from fossil feedstocks. At the same time, we remain conscious of the potential impact of our own operations and work to mitigate any adverse effects on the world around us.

Chain Reaction 2030 Goals

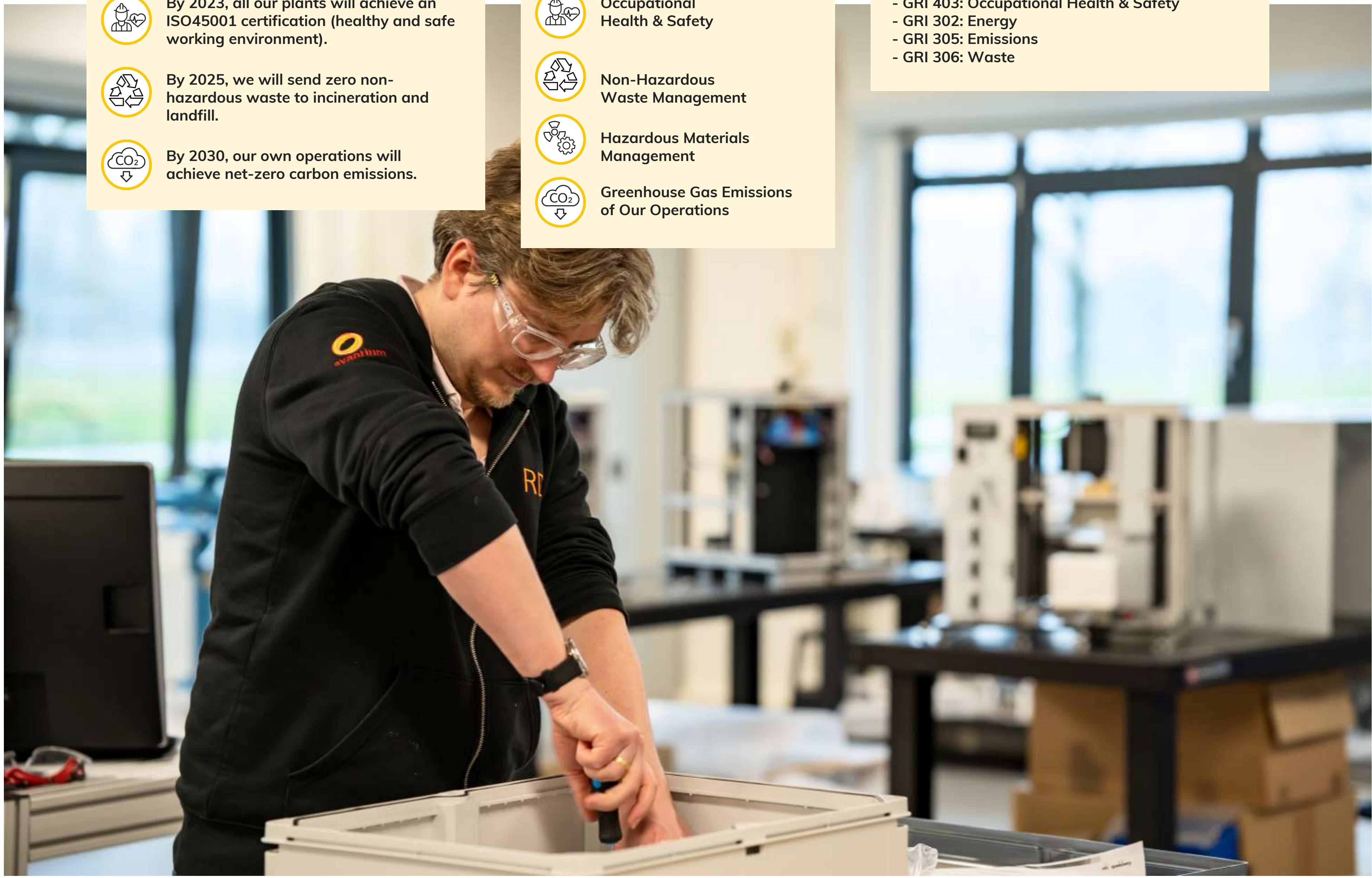
- By 2023, all our plants will achieve an ISO45001 certification (healthy and safe working environment).
- By 2025, we will send zero non-hazardous waste to incineration and landfill.
- By 2030, our own operations will achieve net-zero carbon emissions.

Material Topics Addressed

- Occupational Health & Safety
- Non-Hazardous Waste Management
- Hazardous Materials Management
- Greenhouse Gas Emissions of Our Operations

GRI Indicators

- GRI 403: Occupational Health & Safety
- GRI 302: Energy
- GRI 305: Emissions
- GRI 306: Waste



SDG Subtargets

Providing Safe and Healthy Workplaces

OUR GOAL

By 2023, all our plants plan to achieve an ISO 45001 certification.

As a chemical company, we prioritise safety above all else. Occupational health and safety (OHS) is managed by our Quality, Health, Safety and Environment (QSHE) department and involves very strict policies and management systems. The team ensures that proper onboarding, training and work practices are followed, while procedures, risk assessments and monitoring are maintained on an ongoing basis.

As a Company operating in the chemical industry, we manage both non-hazardous and hazardous materials. Avantium has strict guidelines for employees when managing hazardous materials. We take very seriously our duty to handle all waste responsibly, for the sake of our environment and the people in it. We are working towards separating waste streams as much as possible, to enable re-use and recycling rather than incineration (see page 38). We also enact a safety policy based on the Hierarchy of Control (a system for controlling risks in the workplace), in which our first action is to eliminate the use of hazardous materials whenever possible.

The nature of Avantium's chemical testing technology, centred around validating our technologies in our laboratories and pilot plants, naturally minimises hazardous waste production, in comparison with an industrial-scale chemical company. As an example, in our pilot plant in Geleen, we used 14 tonnes of acetic acid and 6 tonnes of methanol in 2023.

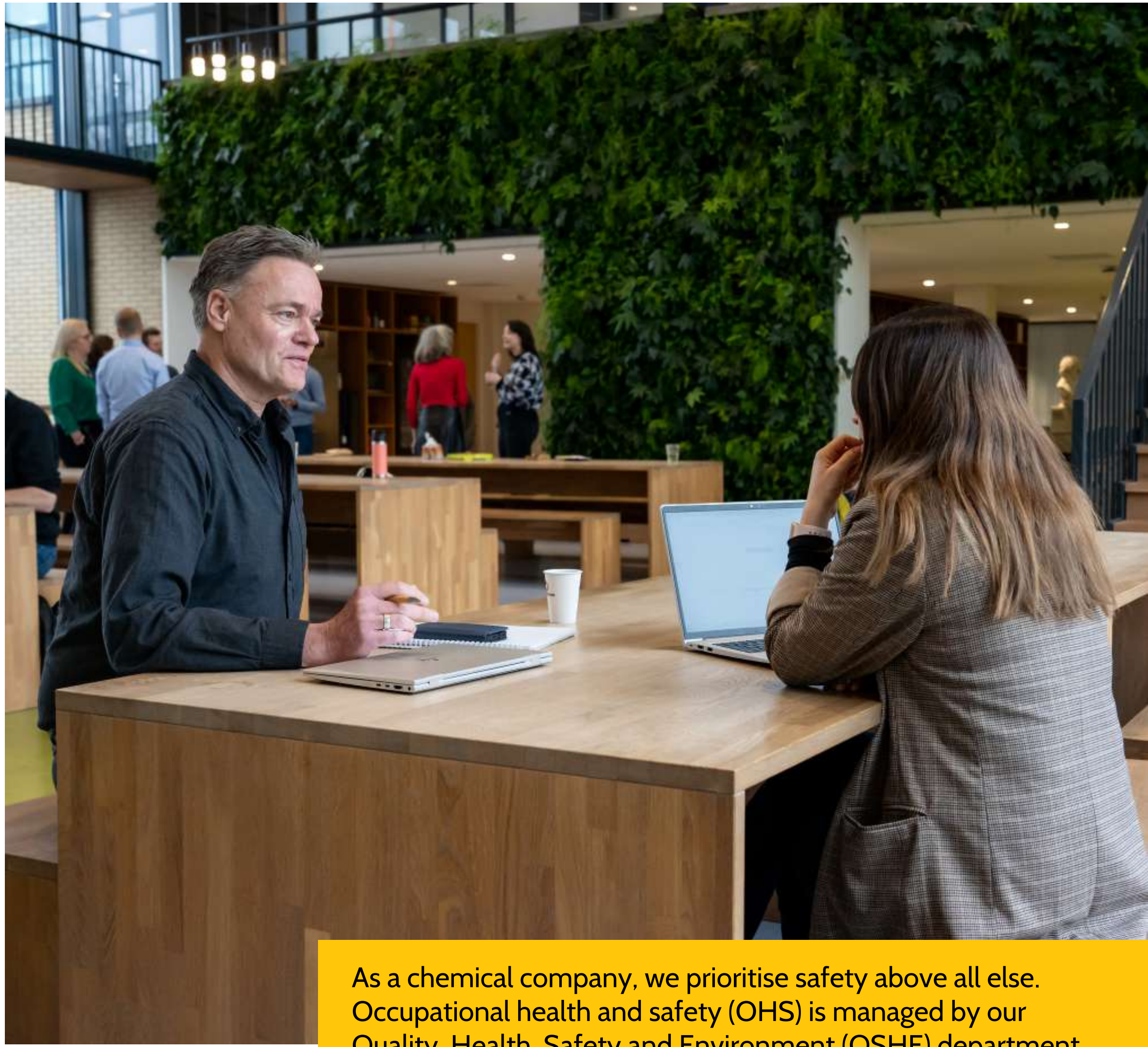
In 2023, we extended the deadline for our ISO certification target as a result of the ongoing construction of our FDCA Flagship Plant, which also entails various changes to the structure of our business. In 2024, safety management implementation is planned for the FDCA Flagship Plant, after which the implementation of ISO 45001 will become a priority. We are aiming for the first audit to take place in 2025. Our pilot plant in Geleen will be included in the scope of this certification as soon as possible, with our Amsterdam locations following thereafter. Avantium's pilot plants in Geleen and Delfzijl have already worked with an external consultant to assess the existing management systems in preparation for ISO 45001.

The implementation of ISO 9001 (Quality Management) is also planned for the FDCA Flagship Plant and, thereafter, for the Avantium R&D Solutions business unit. ISO 14001 (Environmental Sustainability) implementation at the FDCA Flagship Plant will start in 2024. As part of the Chemelot campus, our pilot plant in Geleen is already certified.

Accidents and Incidents

Every Avantium team meeting starts with an update on safety, with colleagues sharing cases that provide important learnings for the team. In 2023, we continued to follow our Golden Safety Rules and other safety protocols, including mandatory trainings before people can access operational areas. In 2023, a large group of employees from all locations successfully completed an extensive safety training programme. Every three years, a certified OHS service provider assesses our workplaces and identifies any mental or physical risks.

We encourage every colleague to report any situation they consider unsafe, after which our QHSE department discusses and classifies the report, following up where necessary. No work-related fatalities or serious injuries were recorded in 2023, although we recorded 29 incidents (2022: 43) and 652 non-conformities (potentially unsafe situations, such as unsafe behaviour).



As a chemical company, we prioritise safety above all else. Occupational health and safety (OHS) is managed by our Quality, Health, Safety and Environment (QSHE) department and involves very strict policies and management systems.

"Avantium's FDCA Flagship Plant is subject to the Seveso Directive on the control of major-accident hazards involving dangerous substances. Robust training practices are therefore crucial for our company; not only for legal compliance, but also for the safety of our people and installations. Training raises awareness around safety, which reduces the risk of accidents, and thereby contributes to employee well-being and satisfaction."

Siemon Bosker
Training Coordinator FDCA Flagship Plant

Accidents and Incidents in 2023

	Amsterdam Headquarters and Science Park	Pilot plants Delfzijl	Pilot plant Geleen
Accidents	0	0	0
Incidents	13	6	10
Non-conformities (potentially unsafe situations)	315	161	176

Safety Culture and Trainings

In addition to promoting Avantium's list of Golden Safety Rules, we deliver formalised training to every new joiner, as well as a comprehensive OHS reading list. Employees and visitors entering our pilot plants must follow a short training course and answer a list of questions before accessing operational areas.

The members of our different operational teams spent 2714.5 hours in trainings in 2023, representing an average of 30.8 hours per employee. With the full FDCA Flagship Plant team already recruited ahead of expected start-up in 2024, health and safety have played an essential role in the training and preparation of these colleagues.

Avantium also has a Safety Culture Team, comprising employees and management, which meets periodically to influence the behaviour of employees through safety campaigns and related communications. In 2023, the Safety Culture Team defined a new strategy for improving our safety culture in line with industry standards. It will be supported by a new tool, tailored specifically to our Company, for measuring our safety culture and identifying areas for improvement. This new approach will be rolled out in early 2024. Meanwhile, the team continued to strengthen Avantium's safety culture by addressing topics such as health and safety leadership and emergency-response preparedness.

Safety Trainings in 2023

	FDCA Flagship Plant	Pilot plants Delfzijl	Pilot plant Geleen
Number of safety trainings	18	13	10
Total number of hours spent in trainings	1,416	464	836
Average hours per person spent in trainings	40	17	32

Managing Waste from Our Operations

OUR GOAL

By 2025, we will send zero non-hazardous waste to incineration and landfill.

Our operations generate both hazardous and non-hazardous waste. From discussions with various stakeholders, we know the main impacts of this waste include noise, inconvenience, CO_2 generation, unpleasant odours, toxic emissions and water contamination.
We aim to avoid generating hazardous waste wherever possible, implementing stringent processes to manage the remainder (for example, through recycling or incineration) in line with governmental regulations. We follow a similar approach to non-hazardous waste, aiming primarily to avoid generating waste materials and then to reuse or recycle any we do produce.

Waste from Operations in 2023: Non-Hazardous Waste

in kg	2023	
	Weight	**%**
Amsterdam Zekeringstraat		
Incineration with energy recovery	19,100	56 %
Re-use or recycling	14,850	44 %
Total Amsterdam	**33,950**	
Pilot plant Geleen		
Incineration with energy recovery	973	49 %
Re-use or recycling	1,010	51 %
Total Geleen	**1,983**	
Pilot plants Delfzijl		
Incineration with energy recovery	16,000	52 %
Re-use or recycling	14,741	48 %
Total Delfzijl	**30,741**	
Total non-hazardous	**66,674**	

Waste from Operations in 2023: Hazardous Waste

in kg	2023	
	Weight	%
Amsterdam Zekeringstraat		
Incineration	810	7 %
Incineration with energy recovery	7,645	66 %
Re-use or recycling	3,106	27 %
Total Amsterdam	**11,561**	
Pilot plant Geleen		
Incineration with energy recovery	72,443	93 %
Re-use or recycling	5,837	7 %
Total Geleen	**78,280**	
Pilot plants Delfzijl		
Incineration with energy recovery	21,409	59 %
Re-use or recycling	14,598	41 %
Total Delfzijl	**36,007**	
Total hazardous	**125,848**	

The slight increase in our hazardous waste in 2023 (2022: 124,336 kg) is mostly the result of higher activity (more test runs) at our Delfzijl pilot plant during the year. The same applies to the increase of non-hazardous waste at our Delfzijl pilot plant (2022: 17,500 kg), while the increase of non-hazardous waste at our Amsterdam locations (2022: 26,561 kg) is due to all our employees returning to the office after optionally working from home during the COVID-19 period.

The numbers in these tables exclude the waste produced by the office that supports our lab at Amsterdam Science Park. It is our smallest office, producing insignificant waste, and is part of a large office building where there are no separate data measurements available for Avantium's office. We have therefore decided to exclude it from our reporting.

To raise awareness of good waste-management practices and promote action among our employees, we organised the Avantium Footprint Challenge in early 2023.
This contest attracted 139 participants from across our different locations, bringing people together to contribute to a more sustainable future for everyone. Over 40 days, the participants were challenged to act more sustainably at work and at home, aiming not only to reduce their (negative) footprint but also to grow their (positive) handprint. By the end of the initiative, we had achieved a collective footprint reduction equivalent to the resources provided by 30.7 hectares of land – around 43 football pitches – as well as inspiring friends and family outside the Company to embrace a more sustainable way of life.

Focus in 2024

Our action plan for 2024 includes more work to change employees' behaviour in ways that promote waste reduction and minimise other negative environmental impacts. While Dutch legislation means it might not be possible to send zero non-hazardous waste to incineration and landfill, Avantium will also continue planning to reduce operational waste as much as possible and to manage this process responsibly.

Reducing Emissions from Our Operations

OUR GOAL

By 2030, our own operations will achieve net-zero carbon emissions.

Not only do Avantium's technologies enable significant emission reductions, but we also strive to minimise our own GHG emissions by, for instance, optimising our processes and choosing more sustainable energy sources where possible. Having reported on our Scope 1 and Scope 2 emissions for several years, we – together with an external party – have now completed our Scope 3 baseline assessment project based on 2022 data.

The process included a series of workshops with relevant colleagues from different departments. We have identified five focus categories:

- purchased goods and services
- capital goods
- upstream transportation and distribution
- waste generated in operations
- business travel

We decided to use the well-established Environmentally Extended Input-Output (EEIO)[3] methodology to estimate the Scope 3 emissions based on financial data. In 2024, Avantium will improve the data integrity of each category in order to provide reliable reporting.

Emissions from Our Operations in 2023

	CO_2 emissions in tonnes
Scope 1 (direct emissions)	
Amsterdam Zekeringstraat	0
Amsterdam Science Park	0
Geleen pilot plant	0.488
CO_2	0.326
VOC	0.162
Delfzijl pilot plant	0
Delfzijl Flagship Plant	0
Total Scope 1	0.488

	2023	
	Usage	CO_2 emissions in tonnes
Scope 2 (indirect emissions)		
Amsterdam Zekeringstraat		
Electricity – fossil (MWh)	0	0
Sustainable electricity (MWh)	1520	0
Gas for heating (m^3)	81522	145
District heating (Gj)	0	0
Total Amsterdam		145
Geleen pilot plant		
Steam (GJ)	667	41
Electricity – fossil (MWh)	0	0
Sustainable electricity (MWh)	935	0
Gas for heating (m^3)	0	0
District heating (Gj)	0	0
Total Geleen pilot plant		41
Delfzijl pilot plant		
Steam (GJ)	554	110
Electricity – fossil (MWh)	406	100
Sustainable electricity (MWh)	0	0
Gas for heating (m^3)	0	0
District heating (Gj)	0	0
Total Delfzijl pilot plant		210
Total Scope 2		396

As part of Scope 1 emissions and in addition to CO_2, our pilot plants emit volatile organic compounds (VOCs). In 2023, VOC emissions at Delfzijl were insignificant; in Geleen they were estimated at 0.162 tonnes.

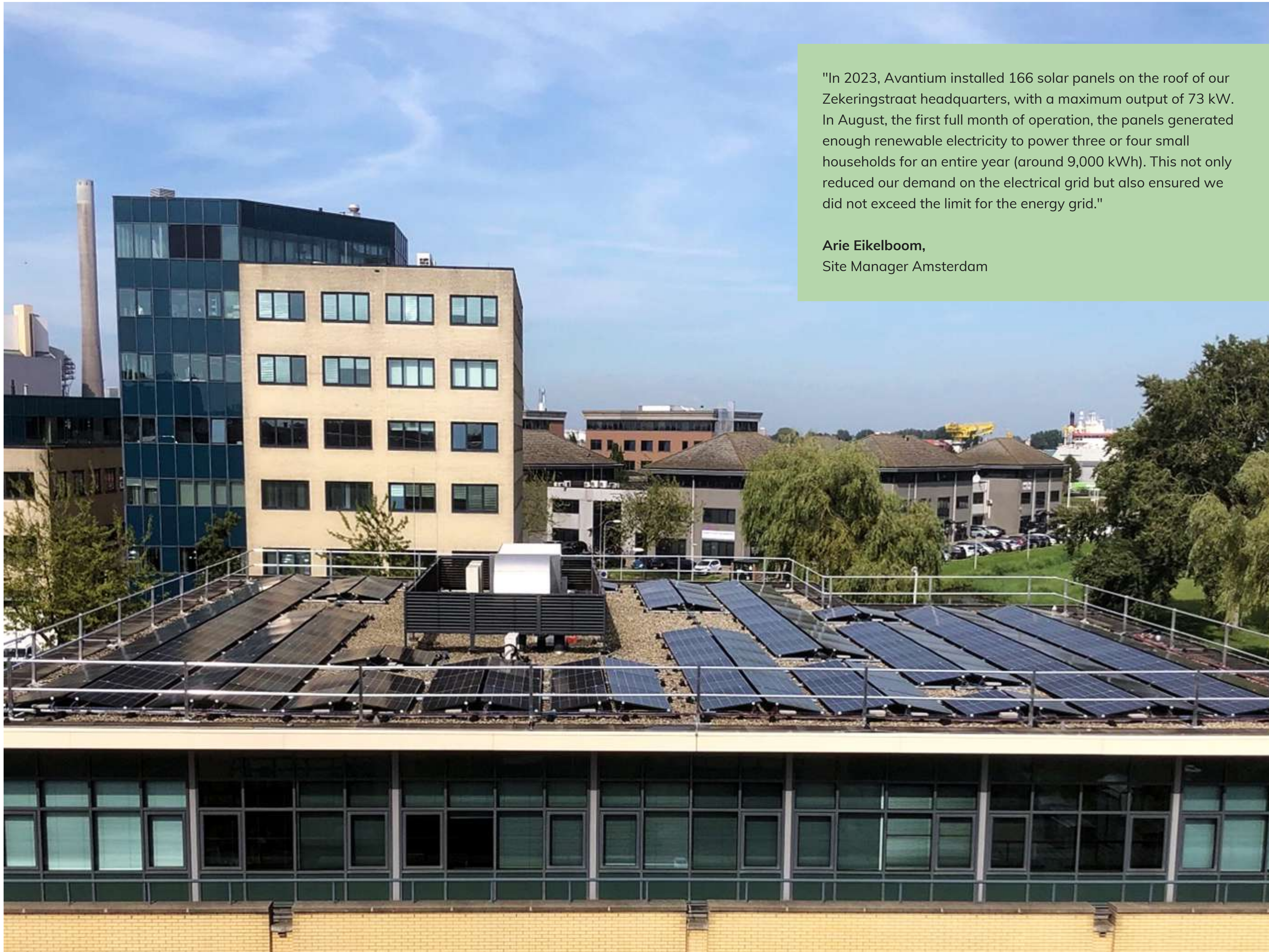
[3] https://www.epa.gov/land-research/us-environmentally-extended-input-output-useeio-models

Our Scope 1 emissions in 2023 were very low, at similar levels to 2022. The total amount of Scope 2 emissions, meanwhile, was almost half that of 2022. There are several reasons for this. First, the overall composition of energy sources across the Netherlands has changed; for example, the emissions factor for electricity is now significantly lower. This results in a significant emissions reduction at our Delfzijl pilot plant, the only Avantium location where electricity is not 100% renewable. Second, we used less energy at our pilot plant locations: there was, for instance, less steam and electricity consumed at our Geleen pilot plant (2022: 1,146 GJ and 1,090 MWh). Despite Avantium's larger workforce in 2023 and more employees working in the office during the year, electricity use at our Amsterdam headquarters was lower than the previous year, largely thanks to the installation of solar panels on the roof of our offices.

Reporting on energy and emissions excludes our office at Amsterdam Science Park; first, because no data on energy use and emissions is available and, second, because of its small size, which would lead to insignificant energy use and emissions.

Looking Ahead

The start-up of our FDCA Flagship Plant (scheduled for 2024) will have a significant impact on our emissions. In general, our main objectives for 2024 include revising our energy contracts and, where possible, using more renewable energy. We will also build on our Scope 3 baseline assessment, setting up systems to better monitor and manage these emissions as well as defining goals for their reduction.



"In 2023, Avantium installed 166 solar panels on the roof of our Zekeringstraat headquarters, with a maximum output of 73 kW. In August, the first full month of operation, the panels generated enough renewable electricity to power three or four small households for an entire year (around 9,000 kWh). This not only reduced our demand on the electrical grid but also ensured we did not exceed the limit for the energy grid."

Arie Eikelboom,
Site Manager Amsterdam

Our People

Our diverse team of 304 people is united and inspired by our common purpose of making a lasting, positive impact on the world. We aim to attract and retain talented colleagues and foster a workplace where everyone feels they belong, so they are in turn empowered to contribute to the execution of our ambitious strategy.

Chain Reaction 2030 Goals

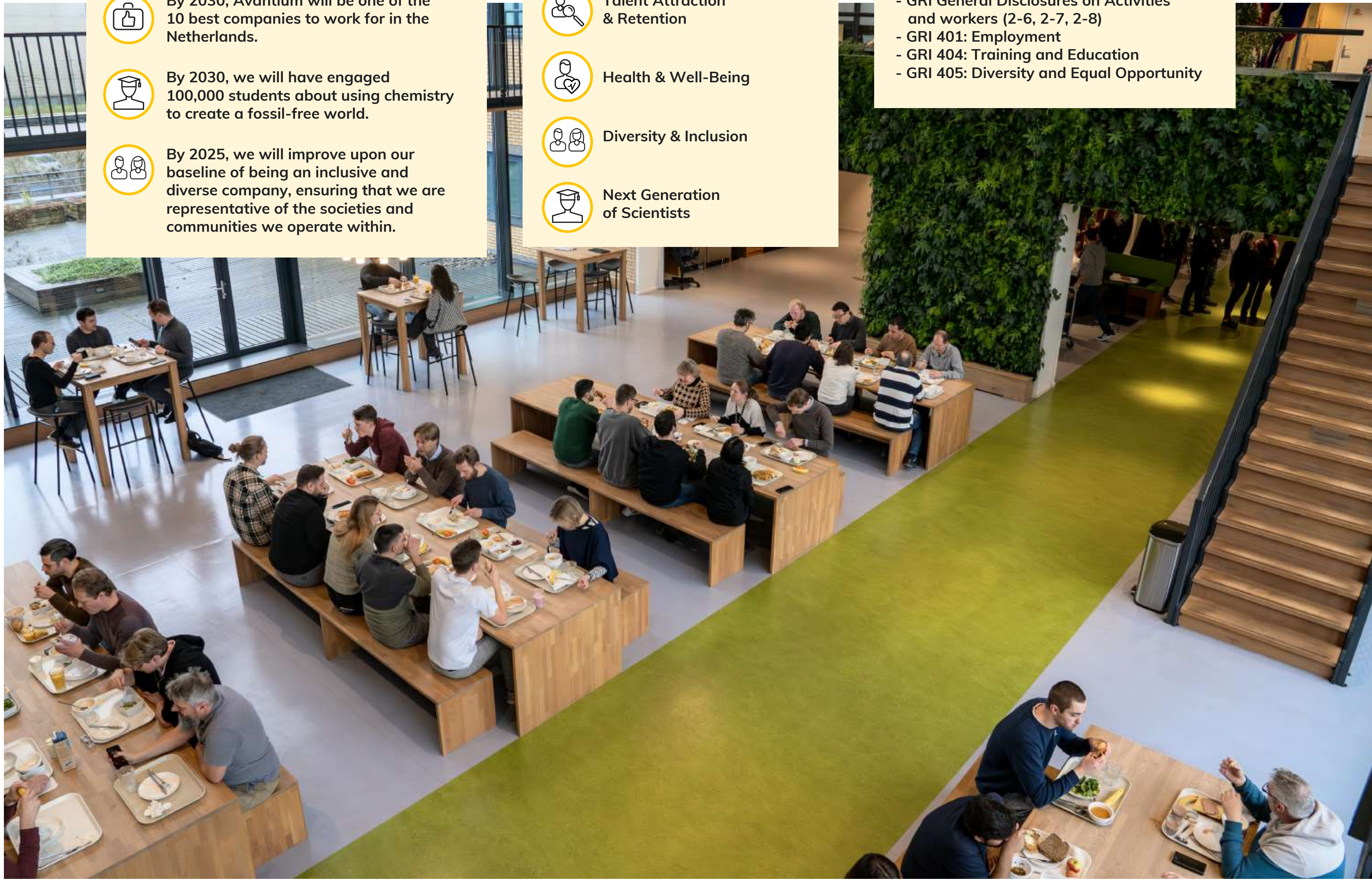
- By 2030, Avantium will be one of the 10 best companies to work for in the Netherlands.
- By 2030, we will have engaged 100,000 students about using chemistry to create a fossil-free world.
- By 2025, we will improve upon our baseline of being an inclusive and diverse company, ensuring that we are representative of the societies and communities we operate within.

Material Topics Addressed

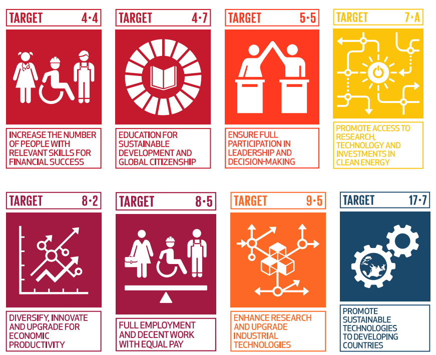
- Talent Attraction & Retention
- Health & Well-Being
- Diversity & Inclusion
- Next Generation of Scientists

GRI Indicators

- GRI General Disclosures on Activities and workers (2-6, 2-7, 2-8)
- GRI 401: Employment
- GRI 404: Training and Education
- GRI 405: Diversity and Equal Opportunity



SDG Subtargets



Becoming a Top-10 Place to Work

OUR GOAL

By 2030, Avantium will be one of the 10 best companies to work for in the Netherlands.

Avantium's 304 people share the common goal of making a lasting positive impact on the world by accelerating the transition away from fossil resources. We aim to attract and retain talented employees and foster a workplace where everyone feels they belong and can develop themselves. In this way, we support and empower our people to make their very best contribution to our ambitions and performance.

We launched a formal Working from Home Policy in 2023, containing guidance on when people can choose to work from home, what conditions they need to follow and what support Avantium provides for this. As a result, most Avantium colleagues work at the office at least two or three days per week. This provides plenty of opportunity both for in-person collaboration and alignment and for individual focus time, as well as the chance to spend fewer hours commuting, if relevant. Through this policy, we not only create more certainty around working from home, but also promote a healthier work-life balance.

As of 31 December 2023, our 304 people with employment contracts worked alongside 5 interns, 4 PhD students, 21 people with flexible contracts and 14 self-employed contractors.

Great Place to Work Programme

In 2023, as part of our journey towards Great Place to Work certification, we continued building on the results of 2021's Trust Index survey. We conducted round tables, analysed ideas and made plans for improvements, as well as assigning a Management Team sponsor to the programme. In 2024, we will focus our activities on three key improvement areas: adjusting our secondary benefits, improving our internal communications and transparency and encouraging our community feeling.

Our Human Resources (HR) department is leading our activities on secondary benefits, advised by the Great Place to Work team through regular meetings. The other two topics are both included in the 2024 action plan of Avantium's People Task Force (one of the Chain Reaction 2030 task forces). This team plans to set up more information screens in social areas, to be more physically present at all locations and to organise more joint sessions for sharing information, alignment and encouraging participation. Other community empowerment objectives in 2024 include organising Company events to embed our values, providing non-bias trainings for hiring managers and setting up an Avantium Social Club.

Works Council

Avantium's Works Council ('Ondernemingsraad') consists of seven members from different business units and sites to ensure even representation of employees. In 2023, two members left the Works Council and a new colleague joined the group.

During 2023, the Works Council was convened eight times. Its members also used their everyday contacts to stay informed about employees' concerns. As well as discussing general topics with the Management Team, the Works Council gave consent on two topics: the Working from Home Policy (following a thorough discussion with HR) and the revision of the Plan of Action (resulting from the Risk Inventory and Evaluation performed at all sites). The Works Council also gave advice on seven topics, including, at the end of 2023, the Company's intended decision to put further investments in Ray Technology™ on hold in line with its new strategic focus. The Works Council took its time to thoroughly understand the proposed decision, taking the opportunity to ask a variety of questions and to seek external advice, with special attention paid to the Social Plan applied to the employees whose job positions lapsed. The Works Council helped ensure that the affected employees would be fairly compensated for their dedication to Avantium and were assisted in finding alternative employment.

Health and Well-Being

As a chemical company, we are committed to providing safe and healthy working conditions for all our employees. Our activities at our laboratories and production sites come with inherent risks, which is why safety is always top of the agenda in meetings. We also provide guidance on ergonomic best practices and voluntary medical assessments, and are supported by the certified OHS union ArboUnie in matters related to employee health, illness and absence. In 2023, our absence rate was 5.49% (2022: 7.3%), with 41% of employees recording no absence due to illness (2022: 31.82%). Moreover, 36 line managers were trained on managing sick leave and strengthening resilience and 102 employees attended training on workload and job satisfaction. Avantium also has strong mechanisms in place to guard against and address bullying, discrimination and other unacceptable behaviour in the workplace. Employees who feel they have suffered or witnessed such behaviour, or who are struggling with a related dilemma, can contact one of our Confidants. These Confidants can give advice in a confidential setting and/or guide the employee through Avantium's complaints procedure. We also have a Whistleblower Policy - which we call the Avantium Speak-Up Policy - which sets out the process for reporting irregularities.

Performance Management and Training

We want all our employees to have the opportunity to reach their full potential at Avantium. Employees therefore set annual goals in consultation with their line manager. Business goals provide guidance for individual objectives, which should include contributions to Avantium's strategic direction as well as self-development targets. Employees and their managers then monitor progress in regular meetings throughout the year.

Our portfolio of training and development programmes is designed to help our colleagues enhance their personal and professional skills and capabilities. All Avantium employees, for instance, can access the GoodHabitz learning platform, which is home to more than 80 development programmes. An online test guides users towards the topics most relevant for them, empowering individuals to drive their own learning journey. In 2023, our people followed courses to develop their IT, social media and feedback skills, among many others.

Talent Attraction and Retention

In a tight labour market, it is more important than ever that working at Avantium appeals to the high calibre of talented people we need to achieve our goals. We consistently receive a high number of applications from interested candidates: in 2023, we had an average of 36 applications per vacancy (2022: 29), with it taking 49 days on average to fill each of these vacancies (2022: 84). In a world where people are increasingly drawn to work opportunities that offer the chance to make a meaningful positive impact, we see the level of interest in our Company as a testament to what we stand for and how we are bringing our ambitions to life.

Employee benefits at Avantium include a competitive remuneration policy, Company pension contributions and reduced health insurance costs. To promote more sustainable travel for employees, we offer the Avantium Mobility Plan, which includes NS Business Cards for public transport as well as a Company-wide bicycle scheme, which supports people's mental and physical well-being as well as the environment.

Promoting Diversity, Equality and Inclusion

OUR GOAL

By 2025, we will improve upon our baseline of being an inclusive and diverse company, ensuring we are representative of the societies and communities we operate within.

Our team expanded again in 2023, with 95 new employee contracts (2022: 64) and 53 leavers (2022: 32) taking our workforce to a total of 304 by the end of the year. Avantium is proud to attract a diverse range of colleagues, including people from all over the world: at the end of 2023, our team was consisted of people of 36 (2022: 25) different nationalities.

Celebrating Our Differences

In line with our Company values, we strive to help our people maximise their potential at all stages of their working life, in a way that does justice to their well-being, motivation, experience and knowledge. To this end, Avantium has several initiatives in place to help employees balance their work and family lives, such as care leave and parental leave. In 2023, 26 colleagues used their right to take parental leave (2022: 23) and another 3 (2022: 10) returned from parental leave. Over the year, 221 people worked full time (2022: 216) and 83 (2022: 48) worked part time.

We celebrate diversity and inclusion

We have published a Diversity & Inclusion Policy containing diversity, equality and inclusion targets for our organisation. For instance, both men and women should each represent at least one-third of the Supervisory Board and the Management Team, and we aim for a 2% year-on-year increase of women across Avantium's overall workforce and in the Leadership Team (those reporting directly to the Management Team). On 31 December 2023, 33% of the Supervisory Board's members were women. In our Management Team, however, we fell just short of reaching our gender-balance goal (see table). Although we did not achieve a 2% increase of women in our Leadership Team, women already account for more than one-third. At the end of 2023, Avantium's overall workforce comprised 27% women, the same as at the end of 2022, meaning we did not reach our goal of increasing this percentage by at least 2%. We will continue to promote diversity, equality and inclusion in line with our Diversity & Inclusion Policy.

Under the policy, we are also committed to maintaining diversity in terms of nationalities, ensuring equal pay for equal work and conducting an Engagement Survey regularly. The next survey is planned for the second half of 2024.
We did not carry out a third-party equal-pay assessment in 2023; however, the average women-to-men salary ratio for non-Management Team members was 97.35%. The diversity of nationalities in 2023, meanwhile, increased by 44%.

In 2023, we once again held our yearly Diversity Day, bringing colleagues from different backgrounds together. For the closing Integration Dinner, employees prepare a dish from their own country and share this food with other colleagues, sparking conversations about people's differences and similarities. In this way, food is used to reflect and celebrate diversity and inclusion at Avantium.

Employee Diversity in 2023

	Management Team	Leadership positions	Non-leadership positions
Female	29 %	34 %	26 %
Male	71 %	66 %	74 %
<30 years old	— %	— %	14 %
30–50 years old	29 %	45 %	54 %
>50 years old	71 %	55 %	32 %
Dutch	100 %	83 %	74 %
Non-Dutch	— %	17 %	26 %

We are committed to providing equal opportunities to our staff, our contractors and agents of and applicants to the Company, and to not discriminating on the basis of age, gender, race, disability, faith, beliefs or sexual orientation. Avantium aims to ensure that employees are selected, trained, compensated, promoted or transferred solely on the basis of abilities, qualifications and merit.

To prevent unconscious bias in our Performance & Development Review cycle, all line managers receive briefing documents that include information about and guidance on avoiding unconscious bias. To avoid bias in our recruitment processes, interviewers use standardised recruitment scorecards to evaluate candidates on their suitability for the vacancy. The hiring team compares the compiled scorecards to identify the strongest candidate.

Inspiring the Next Generation

OUR GOAL

By 2030, we will have engaged 100,000 students about using chemistry to create a fossil-free world.

At Avantium, we believe sustainable chemistry is something we can all be excited about. We aim to use our position as a leader in the field to excite the next generation of scientists, helping to build a pipeline of motivated and talented people who are keen to make a difference in the chemical sector. This approach also helps grow awareness among young people – who, after all, are also the consumers of tomorrow – of, in particular, the need to transition away from a fossil-based, linear economy towards a sustainable, circular future.

In 2023, we started a collaboration with C3 (Centrum JongerenCommunicatie Chemie) to develop a digital chemistry lesson for elementary schools. Testing will take place with a small group of students in 2024, with the official launch of the lesson planned for the 2025 National Education Exhibition. We also participated in October's annual Weekend of Science at our Amsterdam Science Park location, showing 65 children what happens to their old clothes and how we can turn textile waste into a valuable feedstock for new chemicals and materials.

In addition, to expand our pool of regular outreach speakers, we organised a public speaking workshop for all Avantium employees, as an opportunity for everyone to refresh or improve their presentation skills.

On Girls' Day in March 2023, we joined many Dutch companies in opening our doors to girls aged 10–15 and introducing them to the possibilities of science, technology and IT. We hosted 54 students, showcasing our sustainable solutions, organising a quiz and setting up experiments for them to try.

In September, we also began mentoring a group of students taking a sustainability course at a high school in Amsterdam, giving them the choice of two assignments: end-of-life for plastics or textile recycling. The students will present their results in June 2024.

At the Weekend of Science, we showed children that chemistry is fun

Outreach and Engagement in 2023

Activity	Number of students engaged
Open days/events	419
Conferences	1078
Guest lectures	818
Site visits to Avantium offices	208
Social media, including Avantium's website, LinkedIn, X,	7305

In total, we engaged 9828 students in 2023, in addition to the 18,133 we have reached in previous years. Our main focus in 2024 will be on further implementing the digital lesson with C3 – through which we expect to reach approximately 30,000 children – as well as following up with recurring events and improving our internal and external communications. We are confident that we will be able to achieve our target of 100,000 by 2030.

Our Leadership and Governance

At Avantium, we believe we have a responsibility to make our voice heard. We are determined advocates for a sustainable chemical sector, engaging with different stakeholders to deliver the innovation and collaboration we need to make the global transition a success.

Chain Reaction 2030 Goals

By 2030, 100% of our advocacy will focus on transforming the chemical industry to becoming circular and fossil-free.

Material Topics Addressed

- Climate Advocacy
- Climate-Related Regulation
- Stakeholder Engagement
- IP & Data Protection
- Corporate Partnerships
- Responsible Licensing

GRI Indicators

- GRI 22-28 Strategy, policies and practices

SDG Subtargets

Advocating for a Fossil-Free Industry

OUR GOAL

By 2030, 100% of our advocacy will focus on transforming the chemical industry to becoming circular and fossil free.

Climate Advocacy

Our media presence grew significantly in 2023 with the agreement of our first technology licensing deal (see 'Performance by Business'). Avantium was featured in 504 articles and 13 interviews during the year, as well as participating in 126 conferences, speaking at 44 events and publishing 13 peer-reviewed papers. Meanwhile, we continued to engage different players in discussions around the climate crisis and the de-fossilisation of the chemical industry. This forms a large part of our stakeholder engagement activities (see page 48). In 2023, as well as joining the sustainable business network MVO Nederland, we continued to participate in associations such as European BioPlastics (EUPB), Industry Table Northern Netherlands, the Royal Association of the Dutch Chemical Industry (VNCI), Renewable Carbon Initiative, the Bio-based Industries Consortium, CO_2 Value Europe and the Chemistry Top Team.

Corporate Partnerships

In 2023, to accelerate progress towards our strategic goals, Avantium entered partnerships with other companies including:

- Henkel, a global leader in adhesives, sealants and functional coatings and a leading manufacturer of well-known consumer brands. Avantium will supply Henkel with FDCA to be used in innovative, high-performance polyurethane adhesives in electronics applications
- Kvadrat, a leader in design innovation and producer of quality contemporary textiles and related products for architects, designers and private consumers. Our offtake agreement will give Kvadrat a first-mover advantage in developing PEF-based textiles for commercial and residential interiors
- PANGAIA, a purpose-driven materials science and apparel company. PANGAIA will use Avantium's PEF in its clothing collection, with the goal of creating fossil-free and recyclable materials and products

In connection with the offtake agreement entered into with Refresco, Avantium announced in November 2023 that it has entered into a collaboration with Albert Heijn for the use of PEF in this leading supermarket's own-brand

products (see page 25). For our Volta Technology, we entered into a partnership with SCG Chemicals, a leading integrated chemicals player in Asia and an innovator of chemical innovations and solutions. Under this partnership, Avantium and SCG Chemcials will further develop CO_2-based polymers and scale up to a pilot plant with an indicative capacity of 10 tonnes per annum, provided that the Company can secure strategic or financial partnerships to fund this next phase of development of the Volta Technology.

Meanwhile, Avantium also works closely with other companies in various grant consortia. One example is PEFerence, a consortium of organisations aiming to replace a significant share of fossil-based polyesters with 100% plant-based PEF, whose members include Carlsberg Group, LVMH, Henkel, LEGO and Nestlé Waters. We also actively engage with governments and authorities to help shape climate policy and plastic regulations. We do this both as Avantium and in collaboration with industry organisations, partners in grant consortia and other like-minded partners.

In all our partnerships, we follow the responsible business principles set out in our Code of Business Conduct. This document includes norms on labour and human rights, ethics, bribery, fraud and anti-corruption, transparency, governance and accountability.

Climate-Related Regulation

We proactively collaborate with governmental bodies and authorities to influence climate policy and regulations concerning plastics. This engagement occurs under the banner of Avantium and in partnership with industry organisations, grant consortia, and other partners who share our vision.

Intellectual Property

The way we manage our intellectual property (IP) is critical to Avantium's success. We have an active IP management programme, which includes regular reviews of competitors' patent publications as well as discussions with Avantium's scientists about (potential) patent filings related to new technology developments. To expand our freedom to operate, we file third-party observations and lodge oppositions; we also investigate potential opportunities in acquiring the right to practise under the patent rights of third parties ('non-assertion').

Patents and Patent Applications in 2023

Business unit	Intellectual asset portfolio	Current number of patent families (incl. newly filed patent applications)[4]	Newly filed patent applications in 2023[5]	Newly granted patents in Europe (EPO) or the USA in 2023	Newly reported inventions in 2023[6]
Renewable Polymers	YXY® Technology	66	1	6	6
Renewable Chemistries	Ray Technology™	18	3	0	10
Volta Technology	Volta Technology[7]	37	5	1	18
R&D Solutions	RDS[8]	12	1	0	6
Corporate Technology	Dawn Technology™	8	0	2	0
Corporate Technology	Early stage	25	5	1	3
	Total	166	15	10	43

Data Management and Information Security

Our data and data management systems are vital assets for Avantium. To protect our IT infrastructure, we conduct ongoing assessments, with a particular focus on cybersecurity. In 2023, we also raised awareness of cybersecurity among our employees, with all colleagues asked to participate in nine training courses covering topics including data privacy, password strength, phishing and generative artificial intelligence. Over 80% of employees have completed the trainings. During the year, no IT security incidents were recorded.

We protect our data privacy in line with the EU's General Data Protection Regulation (GDPR) requirements. Avantium received no substantiated complaints in 2023 concerning breaches of customer privacy or losses of customer data.

Responsible Licensing

As part of our commercialisation strategy, Avantium is actively exploring licensing opportunities for the large-scale production of our technologies. We are currently in active discussions with multiple potential licensees and aim to have five licence agreements in place by the end of 2026. We incorporate sustainable sourcing requirements into our licence agreements.

We signed our first such agreement in 2023 with Origin Materials. Our partnership includes a non-exclusive industrial technology licensing agreement that provides Origin with access to the parts of Avantium's process technology relevant for enabling the conversion of Origin-produced derivatives of chloromethylfurfural (CMF) into FDCA at a 100-kilotonnes-per-annum-scale facility. Under the agreement, Avantium will also execute a development programme to establish a bridge between our technologies and Origin's. Origin expects to incorporate Avantium's process technology into the supply chain for product from its future plants.

[4] A patent family is a collection of several national and/or regional patents and/or patent applications covering the same invention.
[5] A patent application is a request pending at a patent office for the grant of a patent for an invention. Once the patent application complies with the laws of the country or region concerned, a patent may be granted for the invention.
[6] Newly reported inventions may mature into a publication or patent application or may be kept as a trade secret.
[7] Including former Liquid Light patent families.
[8] Formerly called Catalysis.

Stakeholder Engagement

Continuous stakeholder engagement, in which we embrace open dialogue and knowledge-sharing, is important in an innovation-driven industry and helps us to identify areas for improvement. We communicate with our stakeholders through various channels and at a variety of levels. Our methods of engagement vary depending on the stakeholder, the key issues and the purpose of engagement. The following tables provide an overview of our main stakeholder groups, the ways we communicate with them and the topics most relevant to them.

Stakeholder	Form and frequency of dialogue	Topics discussed	Effect of dialogue on Avantium
Employees	▪ Social intranet (YIP) ▪ Company meetings with all employees (every two months or when appropriate) ▪ Leadership Team meetings (every two months or when appropriate) ▪ Business unit town hall meetings (every two months or when appropriate) ▪ Performance reviews (twice a year) ▪ Training and development programmes (when appropriate) ▪ Works Council (at least every two months or when appropriate) ▪ Onboarding programme for new employees (when appropriate)	▪ Strategy ▪ Business highlights and performance ▪ Health and safety ▪ Human Resources-related topics, including vitality ▪ Diversity and inclusion ▪ Training and development	With a continuous and open dialogue, we aim to help our employees embrace our values and familiarise themselves with our strategy and mission. We celebrate our successes and share our challenges and setbacks. We believe employee engagement is key to Avantium's business, and that our success is built on the commitment, ambition and expertise of our people.
(Prospective) Partners and customers	▪ Business meetings and site visits, joint (research and development) projects and business development (when appropriate) ▪ Phone and video calls, email exchanges and virtual tours by commercial or technical teams (daily) ▪ Conferences, symposia and special events (when appropriate)	▪ Technologies, lead products and services ▪ Business development and innovation ▪ Customer support and quality ▪ Technology licences ▪ Environmental, social and governance (ESG) targets (e.g., circular business models, carbon footprint)	An integral part of Avantium's strategy and our commercialisation roadmap is close collaboration with strong partners and customers throughout the entire value chain. We work with companies who share our values and want to build a better world for future generations. This helps us develop innovative solutions that deliver sustainability benefits to customers and beyond.
Shareholders	▪ Direct interaction with Investor Relations, CEO or CFO in (video and audio) calls, email exchanges, site visits (daily) ▪ Annual General Meeting (annually) ▪ Extraordinary General Meeting (when appropriate) ▪ Capital Markets Day (Technology & Markets Day/Retail Investors Day) (annually or when appropriate) ▪ Annual or half-year results presentation and press release (bi-annually) ▪ Investor conferences and roadshows (when appropriate)	▪ Strategy, business activities and performance ▪ Financial results ▪ Funding options ▪ Market outlook ▪ Company roadmap and technology portfolio ▪ Lead products and end-market ▪ ESG performance ▪ Board composition and remuneration	This group consist of current shareholders, potential investors and financial analysts. We aim to help them understand the (long-term) investment opportunities Avantium offers. With shareholders, we discuss our strategy and business model, financial performance and outlook, funding strategies and opportunities, as well as our sustainable solutions.

Stakeholder	Form and frequency of dialogue	Topics discussed	Effect of dialogue on Avantium
Suppliers and contractors	■ Direct interaction via supplier account teams/procurement in calls, email exchanges and virtual meetings (daily) ■ Site visits at Avantium and/or at the supplier's office (when appropriate)	■ Products and technology ■ Innovation ■ Supply chain of renewable feedstock ■ Supplier performance and risk management ■ Health and safety ■ Compliance ■ Human rights and labour standards ■ Environmental topics, including biodiversity ■ IP/information security ■ Business continuity	We rely heavily on our supplier network. Our suppliers and contractors are integral as partners in the efficient and seamless scale-up of our technologies and in delivering on our customer commitments. We are committed to a responsible and sustainable supply chain, as laid out in our Sustainable Supplier Code.
Governments and authorities	■ (Pro)active dialogue with government, regulators and authorities and municipalities (when appropriate) ■ Safety and compliance reporting (when appropriate)	■ Our technologies and lead products ■ Strengthening innovation in the industry and society where we operate ■ Compliance ■ Safety ■ Permitting	Avantium takes part in open dialogues with relevant governments and authorities. We have regular meetings with government bodies, authorities and local municipalities to discuss Avantium's business, opportunities and challenges, with the aim of strengthening our licence to operate and generally promoting an environment conducive to investment and development, as well as to mitigate regulatory and political risk.
Society	**Industry associations** ■ Member conferences, regular meetings, round tables of relevant industry associations (when appropriate) **Community, universities, media, NGOs and other** ■ www.avantium.com (continuously) ■ Avantium's social media channels (continuously/when appropriate) ■ Press releases, interviews, engagement calls/meetings (when appropriate) ■ Collaboration with University of Amsterdam (continuously) ■ Community engagement programmes (when appropriate) ■ Company visits (when appropriate)	■ Our technologies and lead products ■ Strengthening innovation in the industry, society and where we operate ■ Compliance ■ Circular economy ■ Community engagement ■ Our people ■ Exciting the next generation about renewable chemistry ■ Local developments	We align our business strategy and sustainability goals with the needs of our wider society, beyond our direct value chain. We also engage with students at schools and universities, sharing our expertise and exciting the next generation about sustainable and renewable chemistry.

Financial Performance in 2023

Income Statement

Revenue

in millions of €	2023	2022	% change
R&D Solutions	13.5	11.3	20%
Renewable Chemistries	0.0	0.1	-100%
Renewable Polymers	5.6	6.1	
Unallocated	0.6	0.4	100%
Total revenue	**19.7**	**17.8**	11%

In 2023, Avantium's consolidated revenue increased by 11% from €17.8 million in 2022 to €19.7 million. The increase in revenue was driven by Avantium R&D Solutions, whose revenues increased by 20% owing to new orders and the delivery of several Flowrence® systems and contract R&D projects during the year.

Other Income: Government Grants

Income from government grants showed a decrease of 24%, from €7.6 million in 2022 to €5.8 million in 2023. This decrease was mainly due to the fact that the maximum grant income was already recognised in 2022, resulting in limited recognition for these grants in 2023.

EBITDA[9]

in millions of €	2023	2022 (restated)	% change
R&D Solutions	1.1	2.3	-52%
Renewable Chemistries	-7.6	-3.6	-111%
Renewable Polymers	-9.4	-5.5	-71%
Company overheads/other	-11.6	-9.5	-22%
EBITDA	**(27.5)**	**(16.3)**	-68%

In Avantium R&D Solutions, the decrease in EBITDA for 2023 related to higher raw materials and contract costs in the market. In addition, and as planned, we invested in additional FTEs, resulting in higher employee benefit expenses.

The lower EBITDA of Avantium Renewable Chemistries was mainly due to the lower income from government grants and lower revenues.

Avantium Renewable Polymers showed a decrease in EBITDA in 2023. This was owing mainly to the increased costs of our additional FTEs resulting in higher employee benefit expenses, in addition to slightly lower revenue.

For further information on the EBITDA of Avantium's business segments, please refer to note 23 in the financial statements.

Total EBITDA for Avantium decreased from €-16.3 million (restated) in 2022 to €-27.5 million in 2023.

Operating Expenses

in millions of €	2023	2022 (restated)	% change
Raw materials and contract	(7.1)	(3.8)	-87%
Employee benefit expenses	(28.6)	(23.4)	-22%
Office and housing expenses	(3.3)	(3.1)	-6%
Patent, licence, legal and advisory expenses	(5.0)	(5.4)	7%
Laboratory expenses	(4.3)	(3.3)	-30%
Advertising and representation expenses	(2.0)	(1.3)	-54%
Other operating expenses	(2.6)	(1.5)	-73%
Net operating expenses	**(52.9)**	**(41.8)**	-27%

Net operating expenses amounted to €52.9 million in 2023, an increase of €11.2 million compared to 2022 (€41.8 million (restated). This increase is due to the planned increase in FTEs during 2023, additional costs relating to Ray Technology™ development and additional costs relating to the compliance assessments and related international registrations of PEF and FDCA needed for its use as food contact material.

[9] EBITDA is an important measurement of the Company's financial performance before taking the cost of capital, depreciation and taxes into consideration. EBITDA margins provide a view of operational efficiency and enable a more accurate and relevant comparison between peer companies

Financial Position and Balance Sheet

Cash Position and Cash Flow

The total cash position (including restricted cash[10]) as at 31 December 2023 was €35.2 million (31 December 2022: €64.9 million). During 2023, Avantium's cash position decreased due to the planned investment in capital expenditure for the engineering and construction of the FDCA Flagship Plant, as well as other operating expenses. The decrease was offset by drawdowns of the Debt Financing facility in 2023 of €75.0 million, the receipt of the Fonds Nieuwe Doen Loan of €2.5 million in February 2023 and the receipt of the Shareholders' Loan of €6.7 million in December 2023.

Avantium's net cash used in operating, investing and financing activities in 2023 was €114.1 million, versus €46.8 million (restated) in 2022. The cash outflow in 2023 mainly related to a €55.6 million increase investments in capital expenditure for the engineering and construction of the FDCA Flagship Plant.

The increased capital expenditure was partially compensated by a net-positive movement of €8.4 million in working capital, compared with €6.1 million (restated) in 2022. The positive movement in working capital is the result of €13.6 million higher trade and other payables, partially offset by €5.5 higher trade and other receivables. Trade and other payables increased mainly due to the increased capital expenditure for the construction of the FDCA Flagship Plant. Furthermore, Avantium received pre-financing for a number of grant programmes during 2022, for which most of the work is yet to be performed.

Looking ahead, we are committed to strengthening our solvency position through disciplined financial management and strategic initiatives. This includes optimising our capital structure, cost management and where appropriate pursuing cost-saving measures. Our main priority remains the safe commissioning and start-up of the FDCA Flagship Plant in 2024.

The following table provides an overview of the net cash outflow during the year, excluding extraordinary cash flows:

in millions of €	2023	2022 (restated)	% change
EBITDA	(27.5)	(16.3)	-68%
Lease payments	(2.0)	(1.6)	-25%
Working capital movement	8.4	6.1	36%
Capital expenditures	(89.8)	(34.1)	-163%
Interest and commitment fees from borrowings	(4.1)	(1.7)	100%
Other[11]	0.9	0.8	15%
Net cash outflow	**(114.1)**	**(46.8)**	-144%

Balance Sheet

Total assets increased to €228.5 million in 2023 (2022: €163.6 million), mainly as a result of the planned investment in the FDCA Flagship Plant and the capitalisation of the borrowing cost. Total equity decreased to €53.9 million (2022: €93.0 million) as a result of the increase in accumulated losses in 2023.

Total borrowings increased to €86.6 million (2022 (restated): €12.6 million), which relates to the full drawdown of the Debt Financing facility, which is measured at amortised cost and the receipt of the Fonds Nieuwe Doen Loan.

Financial lease obligations decreased to €9.6 million (2022: €11.9 million), and primarily consist of lease agreements on offices, plants and laboratory facilities. This decrease relates to lower inflationary increases during the year.

Non-current assets increased from €88.1 million (restated) in 2022 to €174.2 million in 2023, primarily as a result of the planned investment in the construction of the FDCA Flagship Plant and the capitalisation of the borrowing cost.

[10] For more information, refer to note 10 of the consolidated financial statements
[11] Other includes non-cash movements related to share-based payments

Investor Relations and Share Performance

Investor Relations

Avantium values its strong relationship with shareholders and the broader investment community. We therefore set high standards for our communications strategy to ensure that we provide transparent, accurate and relevant information to our shareholders and investors, thereby helping them to make informed investment decisions. We are committed to providing consistent and high-quality information to all stakeholders simultaneously and in a timely way to ensure that the public market also has access to this information. To this end, Avantium regularly updates the markets on its performance, the progress made on the execution of our strategy and any other relevant developments within the Company, through press releases, webcasts, conference calls and other forms of communication.

Our activities comply with the rules and regulations of Euronext Amsterdam and the Dutch Authority for the Financial Markets (AFM). More information about Investor Relations can be found on our website.

Dialogue with the Investment Community

To ensure we maintain an open and continuous dialogue with the financial community, we engage with investors extensively through (virtual) roadshows, investor meetings and conferences. We also accommodate meeting requests from the financial community wherever feasible and in adherence with all applicable regulatory and confidentiality obligations.

When we publish our annual and half-yearly results, or when we provide an update on significant strategic events, our Chief Executive Officer (CEO) and Chief Financial Officer (CFO) host a conference call for research analysts to discuss our recent business and financial performance. We release transcripts of these calls or other relevant information on our website immediately thereafter. We also use events to inform both institutional and retail investors about our business and strategy.

Our policy is to have at least two representatives of Avantium present at each conversation with shareholders and investors, where possible. Bilateral meetings and conference calls with analysts, investors and shareholders are not held during 'closed periods', which normally start one month prior to the publication of Avantium's annual or half-yearly results. Our policy of holding bilateral meetings with shareholders is set out in the Bilateral Contact Policy that can be found in the Corporate Governance section of our website.

In 2023, Avantium participated in various investor conferences, organised by Bank of America Merrill Lynch, ABN AMRO / ODDO, ING Bank, Berenberg, Bryan Garnier and Degroof Petercam. We also organised various in-person and virtual non-deal roadshows with management, following the release of our full-year and half-year results and also ahead of the planned capital raise which was announced on 13 December. During these virtual and in-person investor meetings, our CEO, CFO and Investor Relations team engaged with more than 100 UK, US, Benelux and European investors.

On 13 December 2023, we held our Capital Markets Day at Avantium headquarters in Amsterdam. During the event, Company management engaged with shareholders and investors on various topics, such as the progress made on the FDCA Flagship Plant in Delfzijl, the increased commercial traction for FDCA and PEF, the prioritisation of FDCA and PEF and the financing package for the FDCA Flagship Plant, including a planned capital raise of up to €70 million through the issuance of shares.

General Meetings of Shareholders

Avantium organises an Annual General Meeting of Shareholders (AGM) once a year. Extraordinary General Meetings of Shareholders (EGMs) are held as often as the Management Board or Supervisory Board deems desirable. No later than 42 days before the AGM or EGM, we announce the date and the agenda and other meeting documents on the Investor Relations section of our website.

On 10 May 2023, the AGM took place at the Amsterdam Science Park, where Avantium has its offices and laboratories for Volta Technology and the Corporate Technology team. Avantium's shareholders granted the requested approvals on all items on the agenda, including the adoption of the 2022 financial statements and the re-appointment of PricewaterhouseCoopers Accountants N.V. as the external independent auditor of Avantium for the financial year 2023. Edwin Moses was re-appointed as Chair of the Supervisory Board and Dirk Van Meirvenne and Peter Williams were appointed as members of the Supervisory Board until the end of the AGM in 2027. More information about the 2023 AGM, including the minutes, voting results and attendance, can be found on our website.

Capital Raise

On 13 December 2023, Avantium called an EGM to seek shareholders' approval to raise up to €70 million in equity capital. At the EGM on 24 January 2024, shareholders granted approval for the authorisation of the Management Board to issue up to €50 million in ordinary shares in connection with an equity raise, which could be increased by up to €20 million. On 26 January 2024, Avantium announced the launch of a fully underwritten rights offering. On 9 February 2024, we announced that the Company had successfully raised €50.5 million by means of a rights offering, corresponding to the issuance of 27,018,772 new ordinary shares at an issue price per share of €1.87.

In light of the high take-up rate by existing shareholders of Avantium, the rump was not sufficient to cover the guaranteed allocation to cornerstone investors. As a result, Avantium placed additional offer shares to cornerstone investors as well as to the pre-committed shareholders for an amount of €9.1 million at the issue price. Furthermore, given the interest in the transaction of both existing shareholders as well as new investors, Avantium decided to use its full authorisation of €70 million. A private placement offering of €10.4 million was completed after close of market on 8 February 2024 in order to accommodate the excess demand from institutional investors. These offer shares were placed at a price of €2.30 per offer share. The price represents a discount of 3.2% to the closing price on 8 February 2024 and a premium of 23.0% to the issue price under the Rights Offering. The net proceeds of the equity raise will primarily be used to ensure Avantium remains well capitalised until our FDCA Flagship Plant is commercially operational, in addition to general corporate purposes. The raise also enables us to further enhance our balance sheet and to accelerate our technology licensing strategy.

Listing and Indices

Avantium's shares are listed and traded on both Euronext Amsterdam and Euronext Brussels, under the ticker symbol AVTX. Avantium is included in the Euronext Amsterdam SmallCap Index (AScX), which consists of the 25 listed companies ranked 51–75 (in terms of market capitalisation) on Euronext Amsterdam.

Share Capital and Voting Rights

At the end of 2023, the number of issued and outstanding ordinary shares amounted to 43,230,036. The ordinary shares issued and outstanding have equal voting rights (one share equals one vote).

Indicative Free Float

Avantium's free float amounted to approximately 63% at the end of 2023.

Major Shareholders

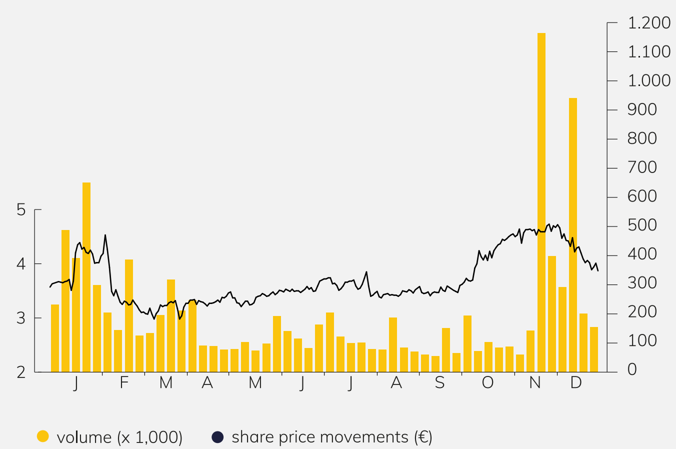
The Dutch Financial Markets Supervision Act requires Avantium's investors who hold a (potential) capital and/or voting interest of 3% or more to disclose this to the AFM, which publishes these major shareholding disclosures in its publicly available register at www.afm.nl.

As at year-end 2023, APG Asset Management N.V. remained our largest shareholder and held 9.3% of our registered shares. Shares held by retail shareholders represented by Wierda & Partners Vermogensbeheer represented circa 9% of our capital. The group of top three shareholders by year-end was completed by PMV, with 5.3% of Avantium shares.

In 2023, Avantium continued to have a large shareholder base of Dutch and Belgian retail investors who actively trade Avantium stock.

Share Price Performance and Liquidity

Avantium's share price ended the year 2023 at €3.53, which is more or less stable in comparison with the closing price of 30 December 2022. Avantium's market capitalisation on 31 December 2023 was €152.6 million, compared to €156 million at year-end 2022. The total and average number of Avantium shares also traded in line with the volumes of 2022. In 2023, the total number of shares traded was circa 44.0 million (versus circa 44.4 million in 2022) and the average daily trading volume was 172,670 (versus circa 172,690 in 2022). Announcement of new offtake agreements or collaborations in relation to our FDCA Flagship Plant are among the typical events that drove share price and volumes (see the chart below for more details).



1. 24-01-23: Offtake agreement with Henkel for FDCA for adhesives to be used in electronics applications
2. 22-02-23: First technology licence agreement with Origin Materials
3. 22-03-23: 2022 FY results and offtake agreement with Kvadrat for the development of PEF for interior textiles
4. 21-11-23: Collaboration with Albert Heijn for the use of PEF in packaging for its own-brand products
5. 13-12-23: Capital Markets Day

Analyst Recommendations

Avantium is currently covered by six equity research analysts. The analyst target prices and recommendations on 31 December 2023 were as follows:

Bank	Target price	Recommendation
ABN AMRO - Oddo BHF	€3.90	Neutral
Berenberg	€4.60	Buy
Bryan Garnier	€7.00	Buy
ING	€9.57	Buy
Kepler Cheuvreux	€3.00	Reduce
Degroof Petercam	€5.50	Under review

Dividend Policy

Avantium intends to retain any profits for the foreseeable future to expand the growth and development of its business. Therefore, the Company does not anticipate paying dividends to its shareholders in the foreseeable future.

Going Concern

The financial statements have been prepared on a going concern basis.

Due to its nature as a technology development company, with significant R&D expenses and negative cash flow used in operating activities over the year ended on 31 December 2023 of €-31.7 million (31 December 2022: €-22.4 million), Avantium remains dependent on additional external funding. Fundamental to Avantium's continuity are:

- the completion and successful start-up of the FDCA Flagship Plant for Avantium Renewable Polymers, for which financing was arranged and for which the Financial Close took place in April 2022;
- refinancing or extension of the €105 million Debt Financing facility (plus accrued and capitalised interest) before 31 March 2025; and
- the ongoing funding for Avantium as a group, excluding Avantium Renewable Polymers, which includes further development of Avantium's other technologies.

On 13 December 2023 Avantium announced the intention to raise additional financing of €64.5m to fund, amongst others, the anticipated cost increase for Avantium Renewable Polymers which covers the anticipated increase in construction costs related to the FDCA Flagship Plant, for which Avantium contributes €42.9m. This financing is fully secured as Avantium successfully completed a €70.0 million equity raise on the 8th of February 2024, also being one of the conditions for a €15.0 million Debt Financing facility increase.

If the Group is unable to refinance or extend its Debt Financing facility for the FDCA Flagship Plant of which repayment is due on 31 March 2025, the Group may require additional funding or cash resources to provide the Group with sufficient working capital after the twelve months following the date of the 2023 financial statements.

Failure to achieve sufficient funding in a timely fashion may result in the Company being unable to fulfil its obligations or to fund working capital, all of which are necessary to execute the Company's strategy, retain contract partners, retain key employees and meet our payment obligations. Accordingly, without timely funding, the Company's going concern is at risk.

These events indicate the existence of a material uncertainty that may cast significant doubt on Avantium's ability to continue as a going concern and therefore, that it may be unable to realise its assets and discharge its liabilities in the normal course of business.

In light of the above, management has assessed the going concern assumption, which is the basis on which Avantium's consolidated financial statements for the year ended on 31 December 2023 have been prepared.

In this assessment management has considered the following: On 9 December 2021, Avantium announced that it had taken a positive Final Investment Decision (FID) to construct the FDCA Flagship Plant. On 31 March 2022, Avantium announced that it entered into a three-year Debt Financing facility of €90 million with a consortium of lenders for the financing of the construction and the operational expenses until project completion date of the FDCA Flagship Plant of Avantium Renewable Polymers. The consortium of lenders comprises four Dutch banks; (ABN AMRO Bank, ASN Bank, ING Bank and Rabobank) and the government backed Dutch impact investment fund Invest-NL. Each bank had committed €15.0 million under the Debt Financing facility, and Invest-NL had committed €30 million. The interest over this Debt Financing facility is EURIBOR based and is, at today's rates, approximately 8% on an annualized basis over the amounts drawn and an annual commitment fee of 2% over the aggregated committed and undrawn funding is charged to Avantium. With the €90 million Debt Financing facility, Avantium Renewable Polymers had secured a total financing package of €192.5 million which included €27.5 million in grants, €30.0 million in equity by minority shareholders Groningen consortium and Worley, €90.0 million in debt financing, and an equity investment of €45.0 million by Avantium in its subsidiary Avantium Renewable Polymers.

On 13 December 2023, Avantium announced an anticipated increase in the costs for Avantium Renewable Polymers business unit of €63.0 million to €255.0 million compared to the original estimate from December 2021. This anticipated cost increase is based on a detailed and thorough assessment performed by Avantium and Worley and includes all reasonable assumptions known to date. Although Avantium is reasonably confident in this assessment, we cannot exclude future additional cost increases based on unforeseen circumstances materializing. The estimated total cost increase is planned to be covered by an additional financing package of €64.5 million, comprising: (i) subordinated shareholder loans by minority shareholders Groningen consortium and Worley of €2.5 million and €4.2 million respectively, (ii) an anticipated €15 million increase of the Debt Financing facility by ABN AMRO Bank, ASN Bank, ING Bank and Rabobank, as well as Invest-NL, adding to the existing €90.0 million Debt Financing facility (which was fully drawn by Q3 2023), and a €42.9 million subordinated shareholder loan by Avantium N.V. The draw down of the additional €15 million under the Debt Financing facility is subject to the fulfilment of certain conditions (other than customary conditions for a financing of this nature) that Avantium and Avantium Renewable Polymers do not yet comply with at the date of this report. These conditions are that Avantium (i) provides a liquidity forecast evidencing that Avantium has sufficient funds to meet the liquidity needs of Avantium over the life of the Debt Financing facility, and (ii) has achieved mechanical completion of the Sugar Dehydration Unit (SDH). If any of the aforementioned conditions are not met, Avantium will not be able to draw down the additional €15.0 million.

The bank financing package provided by the lenders – both the original €90.0 million and the anticipated increase of €15.0 million will be non-amortizing and have a final maturity date of 31 March 2025. On this date, the full principal amount due must be repaid, included all accrued and unpaid interest. Under the terms of the bank financing agreement, Avantium may request two (2) extension options of up to 1 year each, which is subject to approval by the banks. Although it is likely that the Company will initiate the process to request these extensions, on the date of this report it has not yet been discussed with the banks.

Avantium's consolidated cash position was €35.2 million as at 31 December 2023, however these funds will be required to fund the payments under the EPC contract to Worley, and the other operating costs of Avantium Renewable Polymers, as well as the remaining business and support activities of Avantium. Having successfully completed the €70.0 million equity raise, it is management's expectation that there is enough cash to fund ongoing operations and future capital expenditure for a period of at least 15 months as of the balance sheet date of these 2023 financial statements, provided that the above-mentioned repayment extensions are granted or alternative financing is secured.

Based on management's analyses and assessments, although a material uncertainty remains for the Company's going concern due to the final maturity date of its Debt Financing facility of 31 March 2025, management believes it is appropriate to prepare Avantium’s consolidated financial statements for the period ended 31 December 2023 using the going concern assumption.

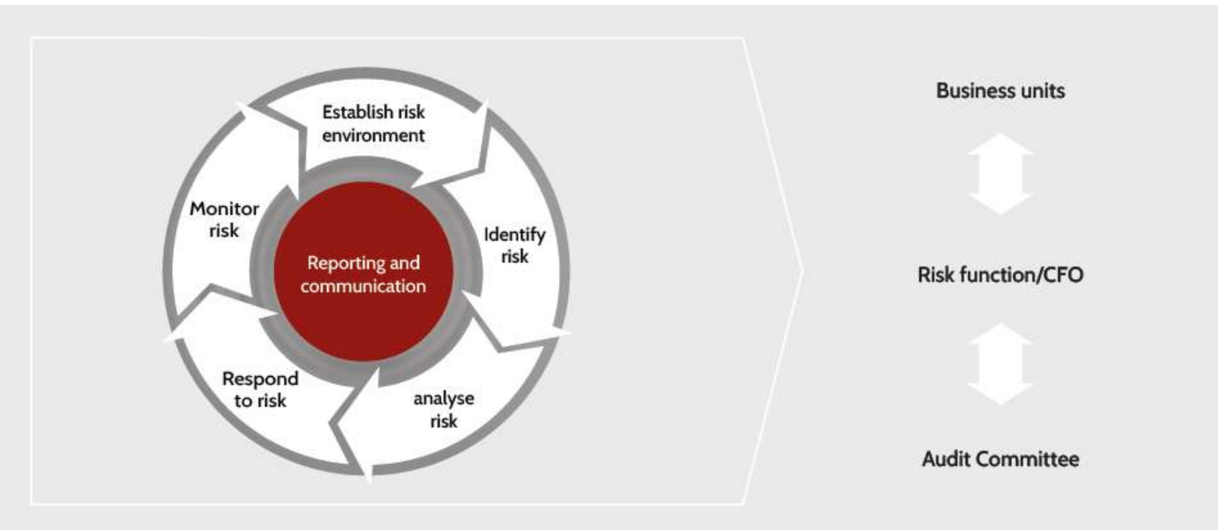
Governance

Risk and Opportunity Management

Framework

Risk management is one of the key responsibilities of Avantium's Management Team and Supervisory Board. Avantium's principal risks and uncertainties are highly dynamic and our assessment of and responses to them are critical to the Company's future business and prospects. Avantium's approach to risk management is framed by the ongoing challenge of understanding the risks that the Company is exposed to, the assessment of the Company's risk appetite and how these risks change over time. This section provides an overview of Avantium's Risk and Control Framework and its effectiveness, in order to substantiate the Risk and Control Statement.

Risk Management Process



Risk Appetite

The Management Team determines Avantium's risk appetite, monitors Avantium's risk exposure and sets the group-wide targets, which are reviewed on an ongoing basis. This process is supported and supervised by the Supervisory Board. Avantium manages its risks and opportunities through the boundaries defined by the risk appetite.

Our risk appetite is broken down into the following risk areas:

Risk areas	Description of risk areas	Appetite
Strategy and Technology	Avantium develops new technologies through R&D projects, which are 'industry disruptive'. Avantium seeks to protect its proprietary technology. We aim to demonstrate scale-up of these technologies from laboratory scale via a pilot plant to a flagship plant, and subsequently to sell technology licences. Funding these technologies is inherently risky.	**High**
Operations	Avantium's operational risk is related to managing its laboratories and offices, starting up and operating its pilot plants and building and operating the FDCA Flagship Plant.	**Low (safety and quality)** **Medium (scale up technology)**
Finance and Reporting	Avantium has a conservative financial strategy and strives to ensure that there are no reporting errors.	**Low**
Legal and Compliance	Avantium strives to avoid non-compliance with laws and regulations, which include health and safety regulations, competition law and environmental laws, and aims to limit any liability risk and to avoid fraud and bribery.	**Low**

Control Environment

The control environment relates to our standards, processes, culture, and structures.

The Management Team sets the tone on the importance of internal risk control by demonstrating its commitment to integrity and ethical values. Avantium's Code of Good Business Conduct supports this open culture.

Avantium is committed to appropriate business controls and disciplined processes. Business controls are incorporated into our automated systems as far as possible and complemented by effective processes outside our systems. The focus of financial reporting is on cash management and bottom-up cash forecasting.

Avantium regularly reviews our insurable risk and our insurance policies together with our insurance broker to determine whether we have sufficient coverage.

Assessments and Audits

The audit function supports Avantium in accomplishing its objectives by providing an independent and professional view on its processes and controls.

The Management Board has decided, in consultation with the Audit Committee, that the Company is too small to install its own dedicated internal audit officer. Within the Finance department, a Risk and Control Manager is dedicated to risk and control management, with an independent reporting line to the CFO and the General Counsel. The CFO ultimately oversees risk management tasks. The Risk and Control Manager performs periodic control assessments and, where necessary, engages external subject matter experts to objectively review and advise the Company on identified risks and the relevant control framework. An update on risk management activities, findings, conclusions, and actions is provided to the Audit Committee on a regular basis. During these Audit Committee meetings priorities are set and guidance is provided to follow up on identified areas of concern and to further enhance risk and control management.

The Technology Board is established and appointed by the Management Board to act in an advisory capacity. The Technology Board provides advice and recommendations to the Management Board regarding technology aspects of major investment decisions, as well as technology strategies the Company is pursuing or plans to implement, including risks and risk mitigation strategies.

The Industrialisation Committee of Avantium serves as its advisory and risk review forum for the Company's (i) technology strategy, (ii) industrialisation roadmaps and (iii) technology portfolio, all as determined, formulated and executed by the Company's Management Board and Management Team.

In 2023, Avantium conducted an internal risk assessment on our Human Resource department to identify any risks within the operational process. The findings as identified were not deemed critical and the resulting action plan for improvement has been agreed, including clearly defined deliverables. In addition, Avantium conducted an independent review of the completeness and adequacy of its insurance portfolio, particularly taking into account the changing nature of business and related risks, and subsequently appointed a new insurance brokerage firm to manage all Avantium insurances.

Avantium has assessed the possible effects of climate change on its financial position. Based on the various positive developments in the groundbreaking technologies we develop (as shared throughout this report), Avantium's management has concluded that climate change does not negatively impact the financial position of the Company. On the contrary, climate change may accelerate the demand for alternative renewable materials and provide further opportunities for Avantium.

Risk Assessment

The Management Team, the business units and the functional department heads are responsible for their respective risk management; they perform an integral risk assessment at least once a year. These assessments are supported and prepared by senior staff members within the Finance department. The risk assessment for 2023 was presented and approved by the Management Team on 12 February 2023. The risk plan for 2024 was subsequently presented to the Audit Committee for endorsement on 7 February 2024.

These risk assessments identify risks, taking into account the likelihood of risks occurring and the impact on the Company, both from a reputational and financial viewpoint. Mitigating actions are subsequently defined and monitored. Material conclusions of these assessments are shared with and analysed by the Audit Committee.

Key Risks in 2023

The key risks identified are those that threaten the achievement of Avantium's objectives. Below is an overview of the key risk factors and mitigating actions. These risk factors are viewed by Avantium's Management Team as being the most relevant. The Company has put in place mitigating actions to counter the identified risks, which are categorised as follows: Strategy and Technology; Operations; Finance and Reporting; and Legal and Compliance.

Strategy and Technology

Risks	Mitigating factors
Financing ▪ Avantium may fail to obtain in a timely manner the necessary equity, grants or debt funding, which may also be subject to various conditions and requirements, thereby preventing the Company from continuing as a going concern; violating loan covenants; and preventing the company from executing its strategy, delivering on its commitments and obligations towards partners, lenders and in grant programmes. It may also fail to retain key employees and meet payment obligations. Capital markets can be very volatile and it is possible that this would make it difficult for Avantium to complete a successful capital raise at the appropriate and relevant time. ▪ Available funding may be subject to certain conditions and could be inaccessible if these conditions are not met, which could disrupt or halt certain activities or projects within Avantium. ▪ Not meeting certain loan conditions, overspending on capital expenditure and/or operational costs or having major project delays could result in higher funding needs, which could trigger bank guarantees, pledges, sales of assets at depressed prices, capital raises at steep discounts or even bankruptcy. ▪ Avantium may not be able to refinance its loans when due at acceptable rates or may be unable to refinance at all. Failure to refinance could trigger bank guarantees, pledges, sales of assets at depressed prices, capital raises at steep discounts or even bankruptcy. ▪ Historically Avantium has incurred financial losses and may continue to do so for the foreseeable future, which will negatively impact its cash position in the short to medium term and may result in the Group never achieving or sustaining profitability in the long-term.	▪ Executing its commercial, technical and business plans ensuring strict project management, adequate staffing, project governance and oversight. ▪ Actively managing relationships with all relevant stakeholders, including existing shareholders, potential new investors/ partners, financial institutions, service providers, customers, and licensees. ▪ Managing and forecasting cash prudently.. ▪ Constantly monitoring the national/international grant landscape for new opportunities. Actively monitoring commitments and compliance under grant programmes. ▪ Managing portfolios and prioritising scarce resources. ▪ Maintaining a dialogue with banks and prospective investors and actively seeking strategic opportunities to raise new funding, and obtaining the flexibility to raise new equity when market conditions are optimal.
Commercial validation of YXY® Technology ▪ Avantium Renewable Polymers may not be able to commercialise its YXY® Technology through the production and sale of its products furandicarboxylic acid (FDCA) and polyethylene furanoate (PEF) and may not be able to subsequently execute its licensing strategy. This may be due to a variety of factors, including unforeseen operational challenges for which Avantium Renewable Polymers is unable to develop a workable solution, that may result in significant additional costs or that could even prevent production of FDCA at sufficient volumes, in sufficient quality and in accordance with the planned timelines. ▪ The commercial success of the YXY® Technology depends on the market acceptance of FDCA, PEF and PEF products and the Group's ability to sell FDCA, PEF and Licenses, which may only become clear after the FDCA Flagship Plant becomes operational. ▪ Market acceptance of FDCA, PEF and PEF-based products will directly impact the Company's ability to sell FDCA, PEF and licenses and may only become clear after the FDCA Flagship Plant becomes operational.	▪ Actively managing a sales funnel process targeting and engaging potential and future customers. ▪ Implementing a market entrance strategy based on YXY® Technology's value propositions in different applications and market segments. In time, when volumes increase and cost price decreases, additional segments should become accessible. ▪ Selling licences for larger, industrial-scale plants. As a a result of economies of scale, operational excellence and continuous technology development, cost price will decrease further. ▪ Developing and executing a detailed marketing plan for licensing the technology. ▪ Reviewing the commercial strategy and licensing model across the organisation to ensure that market, business and financial assumptions remain valid and robust.

Strategy and Technology (continued)

Risks	Mitigating factors
Continuation of the commercialisation of Ray Technology™ ■ Avantium may not be able to secure funding from one or more appropriate strategic partners with sufficient financial resources to pursue the commercialisation of Ray Technology™.	■ Avantium has a dedicated team pursuing potential partnering opportunities for the continuation of Ray Technology™. ■ An external advisor will be mandated to support the strategic partnering efforts. ■ The advanced development stage of Ray Technology™ would allow potential strategic partners to progress towards the engineering of a flagship plant for Ray Technology™.
R&D Solutions customer and contract cost management ■ Avantium's current main source of revenue is from its R&D Solutions business unit, which for a large part, are generated from a small number of customers and based on fixed fees. Avantium cannot be certain that it will be able to meet those customers' requirements and expectations in the future and may face cost overruns on its projects.	■ Actively managing relationships with all relevant stakeholders, including customers, and licensees. ■ Prudent cost and contract management, including forecasting of expected expenses.
Competition ■ The technologies Avantium is developing may not be competitive with other new emerging technologies and systems, which could provide lower cost or better solutions for potential customers. Avantium does not have full oversight of the technologies developed by competitors.	■ Investing in continuous technology development to maintain competitiveness. ■ Maintaining strong industry and business partner relationships. ■ Monitoring and analysing competitors through various sources (trade associations, universities, banks, etc.) and their IP filings. ■ Actively maintaining, protecting and expanding our current IP portfolio. ■ Taking appropriate action against potential violators who may be infringing our IP.

Operations

Risks	Mitigating factors
Recruit, retain, develop and engage employees ▪ Avantium may not be able to recruit and/or retain the highly skilled and engaged employees it needs or may be affected by the limited availability of consultants or advisors, which will have a direct negative impact on reaching its strategic objectives and may result in business interruptions. ▪ Avantium may not be able to find a desired balance between levels of experience within our R&D projects and business operations, which could have a direct negative impact on reaching its strategic objectives in an efficient and effective manner.	▪ Offering employees competitive compensation, the opportunity to make a direct business impact, autonomy, an inspiring culture and colleagues, as well as, a multitude of learning and development opportunities. ▪ Using Avantium's sustainability strategy, Chain Reaction 2030, as a communication instrument for engaging new and existing talents. ▪ Initiating learning workshops where people can share knowledge on a variety of topics to promote development. Avantium invests in skill development courses, management trainings and leadership programmes to enable the personal and professional growth of all our employees. ▪ Securing equal opportunities and fostering a feel-safe culture.
Construction and operations of FDCA Flagship Plant ▪ Due to operational, financial, environmental and/or technical reasons, or in the context of geopolitical developments, Avantium Renewable Polymers may not be able to safely start-up and operate its Flagship Plant for the production of FDCA on time, within budget or within specification. ▪ If construction and commissioning of the FDCA Flagship Plant takes longer than expected, Avantium Renewable Polymers may not be able to meet the demands of (potential) customers, which may hamper and/or delay the commercialisation of FDCA and PEF products. ▪ When operational in the FDCA Flagship Plant the YXY® Technology may not perform as expected and FDCA produced may not meet the required product quality standards, performance tests, or specifications.	▪ Ensuring effective and strict project management; supervision, forecasting, risk and cost (spending) control; adequate resourcing including staffing; and quality of the engineering, procurement and construction (EPC) contract. Risk sharing is an important element, as foreseen in the EPC contract. ▪ Ensuring, by hiring the appropriate expertise, that the FDCA Flagship Plant operates robustly after commissioning, covering all disciplines including staffing, systems, safety, logistics, regulations and finance. ▪ Assessing risks: establishing and continuously monitoring an appropriate risk register. Managing construction and operational risks diligently together with constant monitoring of their potential influence on capital and operational expenditure. ▪ Obtaining independent review of process and control design to ensure the FDCA Flagship plant is geared towards operating effectively upon conclusion of construction.
Intellectual property (IP) protection ▪ Avantium may not be successful in adequately protecting its proprietary technology, products and processes, information, trade secrets and know-how.	▪ Actively maintaining, protecting and expanding Avantium's IP portfolio in line with the Company's IP strategy. ▪ Actively monitoring and analysing worldwide trends and technology developments, especially with respect to the patent landscape. ▪ Ensuring regular reviews with the technical teams and committees to consider proactively publishing or seeking patent protection. ▪ Imposing IP assignment obligations for employees (and – if applicable – consultants, interns and secondees). ▪ Maintaining adequate information and communications (ICT) and HR security and IP protection controls. ▪ Providing recurring confidentiality and IP protection awareness training to Avantium staff.
Liability claims in the event of injury, damage, loss, or misrepresentation ▪ Any person may bring a liability claim against Avantium if one of its products, materials, processes or services causes, or appears to have caused, an injury, damage or loss. ▪ Avantium may incur liability for errors in its scientific or licensing documentation, or for a misunderstanding of, or inappropriate reliance upon, the information provided by or on behalf of Avantium to customers and licensees. If Avantium cannot successfully defend itself against such liability claims, it may incur substantial liabilities.	▪ Actively managing relationships with all relevant stakeholders, including customers, and licensees. ▪ Continuing to register Avantium products in accordance with applicable regulations and directives allowing the manufacture, distribution and use of these products in the jurisdictions of interest. ▪ Where applicable, including liability caps in customer contracts. ▪ Establishing product liability insurance to partially cover the risk.

Operations (continued)

Risks	Mitigating factors
Freedom to operate and product liability ▪ Avantium may not be able to ensure and maintain its required freedom to operate, and/or Avantium may inadvertently infringe the IP rights of third parties in its commercial operations, which may result in liability for damage and adversely affect the Company's reputation as technology licensor ▪ Litigation or third-party claims of alleged IP infringement could require substantial time and money to resolve even if proven unfounded. Litigations and claims against Avantium may result in liability for damage and adversely affect the Company's reputation as a technology licensor if successful. ▪ Unfavourable outcomes in these proceedings could limit Avantium's intellectual property rights and prevent it from commercialising its lead technologies, products, and processes. ▪ Any person may bring a liability claim against the company if one of its products, materials, processes or services causes an injury, damage or loss. Furthermore, the Company may incur liability for errors in its scientific or licensing documentation provided by the Company to customers and licensees. If the company cannot successfully defend itself against such liability claims, it may incur substantial liabilities.	▪ Actively maintaining, protecting and expanding our current IP portfolio, for use, if required, in cross-licensing. ▪ Publishing on technologies for which exclusivity is not desired. ▪ Actively monitoring and analysing the patent landscape, reviewing competitors' patent portfolios, lodging oppositions and filing third-party observations where appropriate. ▪ Ensure compliance with laws, regulation and directives including food contact safety. ▪ continuously monitor the regulatory landscape and apply for appropriate and prerequisite regulatory approvals and registrations. ▪ Seek insurance cover where possible and appropriate. ▪ We negotiate appropriate liability provisions in our contracts including limitation of liability, liquidated damages and where possible, exclusion of consequential damages.
Food safety ▪ Food safety is an important qualifier for many of our future customers. Inability to adhere to food contact materials regulations may negatively affect the Company's ultimate ability to sell products for the desired applications and to sell subsequent licences under the Company's licensing strategy. Avantium may not be able to obtain or maintain the required food contact approvals worldwide.	▪ Continuing to register Avantium products in accordance with applicable regulations and directives allowing the manufacture, distribution and use of these products in the jurisdictions of interest. ▪ Co-operating closely with customers to ensure appropriate product application testing to support the food contact approvals and compliance investigations. Where possible, the Company aims to obtain initial food contact approval with the material produced at pilot-plant phase and validate materials produced at commercial scale, which has been successful in Europe and is now being applied in other jurisdictions. ▪ Retaining reputable consultants to support the food contact approval submission process in different jurisdictions of interest for our customers. ▪ Following strict manufacturing protocols and quality assurance procedures in future operations to ensure that our products are fully in line with specifications according to regulations and customer needs. ▪ Where applicable, including liability caps in customer contracts. ▪ Establishing product liability insurance to partially cover the risk.

Operations (continued)

Risks	Mitigating factors
Cybersecurity and ICT ▪ ICT security risks are changing rapidly. Not keeping ICT infrastructure, systems, procedures and user awareness up to date may result in security risks, business interruptions, information loss or leakage and reporting omissions.	▪ Implementing recommendations on Avantium's ICT infrastructure and security. ▪ Updating ICT security and data governance policies. Actively managing compliance with these through preventive, monitoring and detection controls. ▪ Providing compulsory training for employees and building their awareness on cybersecurity. ▪ Making daily backups of our critical systems/servers and conducting regular restore tests. ▪ Keeping hardware, software and firewall solutions and accessibility up to date. ▪ Upgrading the enterprise resource planning system (planned as part of the scale-up of Avantium Renewable Polymers and the FDCA Flagship Plant project).
Permits and regulations ▪ Risks such as (i) new or changing regulations, (ii) inability to obtain regulatory approvals or permits, (iii) non-compliance with Avantium's current permits and/or environmental regulations applicable to an Avantium or company sub-contractor's location or (iv) unwanted (unintentional) emissions and/or wastewater release.	▪ Regularly engaging with the relevant regulatory bodies and other stakeholders. ▪ Diligently and swiftly acting upon observations and recommendations made during inspections by line management, staff, consultants and relevant regulatory bodies.

Operations (continued)

Risks	Mitigating factors
Handling hazardous substances ▪ Handling hazardous substances within Avantium's operations brings a risk of spills (environmental damage) and personal exposure (health damage). Inherent health, safety and environmental hazards in our operations and insufficient awareness of unsafe plant conditions can lead to injuries, casualties or environmental consequences and a (temporary) plant shutdown. ▪ If an accident occurs on site during the construction of the FDCA Flagship Plant, this may result in severe health consequences, severe personal trauma, and prolonged shutdown of construction activities.	▪ Applying strict design criteria for the factories handling hazardous substances. Special attention is paid to hazardous substances in our Chemical Hazard Assessments (CHAs), which embed safe usage of these chemicals into design and operational activities. ▪ Ensuring that hazard and risk assessments are performed for all planned operational activities, allowing for proper preventive and mitigating measures (Lines of Defence – LOD). ▪ Implementing work methods to ensure mechanical integrity of installations as well as installing systems and sensors to detect loss of containment (LOC) to prohibit incidents and accidents. ▪ Prior to commencing any operational activities, carrying out thorough assessments in which all eventualities are considered and necessary preventive measures are implemented. ▪ Maintaining a system to register all (hazardous) chemicals in process streams and inventories. ▪ Giving every employee (as well as students, interns and hired specialists such as contractors and consultants) adequate safety training at the start of their engagement as well as a list of all standard operating policies that apply to their relevant activities and locations (laboratory/office/plant), including the proper use of personal protective equipment. ▪ Creating awareness for HSE issues through leadership engagement, training procedures, safety systems, internal memos, instructions and Company Meetings, as well as a continuous safety culture programme across the Company. ▪ Monthly reporting of all safety incidents and non-conformities (events) to monitor safety performance. Maximising learnings by implementing corrective or preventive measures. ▪ Implementing an ISO-certified quality programme to promote standard operating procedures and working instructions for day-to-day operations whereby training will help ensure the safe execution of extraordinary activities (such as maintenance and troubleshooting). ▪ Hiring specialists to improve our knowledge of occupational hygiene and process safety. For other fields, specialists like toxicologists are hired on a project basis.
Inflation and rising commodity costs, energy costs and supply chain ▪ Failure to manage inflation and price increases in the supply chain (subcontractors, materials and services) and insufficient access to qualified and cost-effective vendors may result in increased operational and financing cost which may adversely affect Avantium's business cases.	▪ Closely monitoring market developments to better anticipate and assess any impact on the relevant parts of the Company's supply chain and business activities. ▪ Frequently reviewing the budget and forecasts to provide insight on the effect of any increased cost on the Company's supply chain and business. ▪ Continuously reviewing alternatives for sourcing, actively negotiating applicable terms and holding (pro)active and transparent dialogue with business partners, vendors and subcontractors. ▪ For the construction of the FDCA Flagship Plant, an EPC contract with Worley is in place, including a contractual sourcing strategy, actively managed by joint project teams.

Operations (continued)

Risks	Mitigating factors
Sustainability – feedstock ■ Avantium currently uses agricultural crops as feedstock for its YXY® Technology. The agricultural sector is one of the sectors most sensitive to climate change, which could impact crop growth and yields. This could lead to significant price increases. ■ Using agricultural crops as feedstock for YXY® Technology could generate negative sentiment among the general public.	■ Avantium aims to develop technologies to be feedstock flexible, allowing the Company to switch to other second-generation agricultural feedstocks if necessary. ■ The impact of plant-based feedstocks could be further reduced by a switch to lignocellulosic feedstocks, such as those originating from second-generation biomass. Avantium's Dawn Technology™ converts non-food biomass into industrial sugars and lignin in order to help transition the chemical and materials industries to non-fossil resources, and Avantium runs a pilot biorefinery in Delfzijl, the Netherlands, based on this technology. The use of second-generation feedstock is already being tested by Avantium Renewable Polymers in the framework of the BBI-JU PEFerence project, which should confirm that the YXY® Technology process can use second-generation biomass when it becomes available at commercial volumes and pricing.
Sustainability – climate change ■ Avantium's laboratories, offices, pilot plants and FDCA Flagship Plant depend on energy and aim to use sustainable energy in the future. The issue of energy availability is becoming increasingly important and demand for renewable energy is increasing. Access to reliable weather, water and climate information, which might be hindered due to the physical impacts of climate change, is critical for access to sustainable energy. ■ Climate change – and the extreme weather events that accompany it, could disrupt global supply chains, exacerbate shortages, delay deliveries and lead to higher prices.	■ Avantium's business model and product designs aim to incorporate sustainability principles that reduce our dependency on conventional energy. The Delfzijl location is strategically chosen to promote access to a variety of sustainable energy sources: wind energy, hydrogen and other. ■ Continuously reviewing alternatives for sourcing, actively negotiating applicable terms and holding (pro-)active and transparent dialogue with business partners, vendors and subcontractors.

Finance and Reporting

Risks	Mitigating factors
Interest rate ▪ Increases in benchmark interest rates could lead to higher interest rate charges in case of debt instruments with a floating interest rate.	▪ If applicable and not cost prohibitive, the use of interest rate hedges prevents exposure to the costs already factored in the higher-interest-rate environment. After careful consideration of timing and circumstances, the Company has opted not to enter into an interest rate hedge.
Safeguarding Avantium's cash ▪ The banks and/or financial institutions where Avantium deposits its cash may experience disruptions or defaults, leading to a situation where cash is no longer accessible to Avantium.	▪ Regularly checking the risk profiles of the financial institutions where we have deposited cash. ▪ Following the Company policy of not speculating with its cash reserves.
IFRS and sustainability compliance ▪ Non-compliance with International Financial Reporting Standards (IFRS) and sustainability reporting requirements. Not informing our shareholders and other stakeholders in conformity with reporting might lead to a loss of trust, reputational damage, a declining share price and, possibly, legal claims.	▪ Maintaining corporate accounting policies and making them available across the Company. Our control framework includes financial reporting controls for compliance with IFRS. ▪ Using external expert advice if necessary. ▪ Implementing a sustainability reporting roadmap. ▪ Using timely integration of standards and collection of data to keep up with required sustainability disclosures and provide investors and other stakeholders with the information they need.
Grant reporting ▪ Grants and subsidies are subject to various conditions and requirements and there is no assurance that Avantium will be able to secure any additional grants and subsidies in the future, which could negatively impact Avantium's business. ▪ Non-compliance with internal process and external grant rules and regulations may result in a correction (at least) or pay-back of the full amount received (in the worst-case scenario) or missed opportunities under grant programmes.	▪ Maintaining grant policies and communicating them across the Company. ▪ Working actively to train employees on internal processes (e.g., time writing) and external regulations, including monitoring compliance on the processes.

Legal and Compliance

Risks	Mitigating factors
New laws and regulations ■ New government laws, regulations or measures, or changes in the interpretation of existing laws, regulations, or measures, including increased and evolving regulations on the production and use of sustainable versus oil-based products, may have a major impact on our business and financial position, and could lead to a threat to our activities.	■ Monitoring and adapting to relevant (changes in) rules and regulations. ■ Maintaining a dialogue with authorities, where possible.
Sanction regulation compliance ■ Avantium may unknowingly or unwilfully have partners, customers, agents, consultants or other company contacts who are iin breach of sanctions regulations, which could adversely affect our business.	■ Continuing to adhere to (sanctions) laws and regulations, with Avantium's policies, procedures and ethics codes prohibiting us from entering into business with sanctioned parties. ■ Using up-to-date sanctions-screening software tools for business relationships the Company enters into.
Bribery, corruption and money laundering ■ Avantium may be exposed to bribery, corruption and money laundering.	■ Managing a stringent approach to bribery and corruption with internal controls, coordinated by the Finance and Legal teams. ■ Retaining an external, independent organisation to assist, where necessary, in monitoring interactions with suppliers, agents and distributors. ■ Where appropriate, including clauses on anti-bribery, corruption, anti-money laundering and appropriate remedial actions in the agreements the Company enters into. ■ Avantium has a Whistleblower Policy (the Avantium Speak-Up Policy) in place to report corruption, bribery and money laundering. ■ Avantium has an Anti-Money Laundering, Anti-Bribery and Anti-Corruption Policy in place. ■ Avantium performs regular risk assessments on corruption, bribery and money laundering and reports those assessments to the Audit Committee on a regular basis. ■ The Avantium Code of Good Business Conduct contains a specific procedure for sensitive transactions (e.g., gifts).
Fraud ■ Avantium may be subject to fraudulent activities.	■ Clearly setting the tone by Senior Management that fraud is not tolerated. ■ Implementing segregation of duties and other internal control activities. ■ Promoting awareness through continuous communication and training. ■ Encouraging employees to safely report any suspicion of non-compliance with our ethics code. Following a report, any potential violation will be investigated. The outcome may lead to disciplinary action, the severity of which is determined by the nature and circumstances of the incident. Impacts may include termination of employment. Where applicable, the Company may take additional action to prevent similar incidents in the future. ■ Using the processes described in the Whistleblower and Confidant policies. ■ Where appropriate, Including clauses on fraud and appropriate remedial actions in the agreements the Company enters into.

Legal and Compliance (continued)

Risks	Mitigating factors
Confidential information ■ An employee or former employee of Avantium or a third party may, intentionally or otherwise, disclose unauthorised confidential information belonging to Avantium, or confidential information received from a customer or business partner.	■ Entering into a non-disclosure agreement (NDA) with each employee and where necessary with any third party (such as business partners, customers, suppliers and consultants), to cover the protection of the company's confidential information. In most cases, the Company NDA template is used (governed by Dutch law). ■ Creating awareness and ensuring that employees understand their confidentiality obligations. Employees are educated during in-house training sessions on the handling of Avantium's confidential information. ■ Making employees aware that it is important to strictly limit the disclosure of Avantium's confidential information only to the particular third parties concerned. ■ Using the standard operating procedure policy stipulating how to handle confidential information (belonging either to Avantium or to a third party).
Compliance with market abuse regulation ■ Avantium, or a (former) employee of Avantium, may fail to comply with market abuse regulations, and may misuse and/or disclose Avantium's inside information (intentionally or unintentionally).	■ Creating employee awareness around adherence to Avantium's insider trading policy and legislation through training programmes and communication. ■ Establishing timely log files on classified information that is likely to become inside information. ■ Establishing and maintaining insider lists of Avantium employees who have access to and knowledge of inside information. ■ Having an appropriate meeting schedule (in terms of frequency) for the Disclosure Committee, which reports to the Management Board and Supervisory Board. ■ If applicable, notifying insiders, in a timely manner, about their obligations, creating explicit status acceptance. ■ Disclosing inside information to the market when appropriate.

In-Control Statement

Our systems and procedures are not designed to provide certainty as to the realisation of strategic, operational, compliance and reporting objectives, nor that they can prevent all misstatements, inaccuracies, errors, fraud, and non-compliance with laws and regulations.

The continuous transformation of the Company, including the construction and financing of the FDCA Flagship Plant, has resulted in a significant increase of complexity and (internal) control and reporting requirements. We are reviewing, and where appropriate adjusting our processes and finance function to address such increased complexity and risk. As a result of this ongoing review, some misstatements were identified in our 2022 financial statements which we have adjusted in this Annual Report. These misstatements are the result of the incorrect application of IFRS. While we are going through this transformation process, we have engaged an external accounting firm to support and advise us with regard to the interpretation and application of IFRS in our accounting and reporting.

On this basis, and in accordance with provision 1.4.3. of the Dutch Corporate Governance Code, Avantium's Management Board states to the best of its knowledge that:

- the Annual Report provides sufficient insight into the any failings in the effectiveness of Avantium's internal risk management and control systems;
- the aforementioned risk management and control systems provide reasonable assurance, other than as mentioned above, that the financial reporting does not contain any material inaccuracies; and
- based on the current state of affairs, financial reporting on a going concern basis is justified (refer to Going Concern note).
- the sections in the Report of the Management Board list those material risks and uncertainties relevant to expectations regarding Avantium's continuity for the period of 12 months after the preparation of this Report of the Management Board;

In accordance with Article 5:25c of the Financial Markets Supervision Act, Avantium's Management Board confirms, to the best of its knowledge, that:

- the financial statements in this Annual Report give a true and fair view of the assets, liabilities, financial position as at 31 December 2023, and the results of our consolidated operations for the financial year 2023; and
- the sections in the Report of the Management Board provide a true and fair view of the situation on the balance sheet date and the business development during the financial year of Avantium and of our affiliated group companies included in the financial statements, and describe the principal risks that Avantium N.V. faces..

Amsterdam, 25 March 2024

Tom van Aken	**Boudewijn van Schaïk**
Chief Executive Officer	Chief Financial Officer

Corporate Governance

General

Avantium N.V. ('Avantium' or 'the Company') is a publicly limited liability company incorporated under the laws of the Netherlands, with its registered seat in Amsterdam and its offices at Zekeringstraat 29, 1014 BV Amsterdam, the Netherlands, chamber of commerce registration number 34138918. Avantium's shares are listed on Euronext Amsterdam and Euronext Brussels (symbol: AVTX).

Avantium's corporate governance framework is based on the requirements of the Dutch Civil Code, the Dutch Code, the Company's Articles of Association as amended on 25 January 2022, the applicable securities laws and the regulations concerning the Management Board and the Supervisory Board. Our Articles of Association, which are published online, include most of the Dutch Code's principles and best practice provisions applicable to a two-tier governance structure. Since the financial year 2017, Avantium has been subject to the 2016 Dutch Code, most recently updated on 20 December 2022, which regulates the relationships between the Management Board, Supervisory Board and General Meeting of Shareholders (the General Meeting). Listed companies in the Netherlands must render account for their compliance with the Dutch Code. This chapter of the report gives an overview of how Avantium applies the Dutch Code.

Avantium has a two-tier board structure consisting of the Management Board and the Supervisory Board. The Management Board is responsible for the day-to-day management of the Company. The Management Board and the Supervisory Board are jointly responsible for the governance structure of Avantium. Sustainable long-term value creation is the key consideration for the Management Board and Supervisory Board when determining strategy and making decisions, with stakeholder interests taken into careful consideration. Both the Management Board and the Supervisory Board, including the committees of the Supervisory Board, have their own regulations, which set rules regarding their duties and responsibilities, composition and working methods. These regulations are available on our website. In addition to the Management Board and the Supervisory Board, Avantium has a third governing body – the General Meeting. Avantium's Works Council, representing, promoting and protecting the interests of the employees, maintains an ongoing dialogue with the Management Board and the Supervisory Board in which they represent their respective responsibilities and provide constructive feedback. In the following sections, we provide information on these bodies and their responsibilities and duties.

Management Board

Powers, Responsibilities and Functioning

The Management Board is the statutory executive body. The Company has appointed certain key employees to manage Avantium together with the Management Board. The Management Board and these key employees together constitute the Management Team, which is responsible for the day-to-day management of Avantium and for achieving Avantium's objectives, strategy, policy and results. It formulates and implements our (business) strategy and policies in line with the associated risk profile and takes responsibility for internal control systems.

The Management Board may take any actions necessary or useful for achieving Avantium's objectives, except those prohibited by or expressly attributed to the General Meeting or Supervisory Board by law or by the Articles of Association. In performing its duties, the Management Board must consider the interests of Avantium's stakeholders (including shareholders, employees, partners and customers) as well as the sustainability issues relevant to the business.

The Management Board must submit certain important decisions to the Supervisory Board or the General Meeting for approval. The Management Board keeps the Supervisory Board informed and consults with the Supervisory Board on important matters. The Management Board has informed the Supervisory Board of the main outlines of the Company's strategy, the general and financial risks and the risk management and control systems. The Management Board must, in a timely way, provide the Supervisory Board with all the information it needs to carry out its own duties.

Composition of the Management Board

The Management Board consists of at least two members. The Supervisory Board has appointed one of the Managing Directors as Chief Executive Officer (CEO). In addition, the Supervisory Board has appointed one of the Managing Directors as Chief Financial Officer (CFO) specifically to oversee the Company's financial affairs. The Supervisory Board is authorised to make binding nominations for the appointment of a Management Board member to the General Meeting. Each Management Board member is appointed for no more than four years, with their appointment period ending immediately after the General Meeting held in the fourth calendar year after their initial appointment. A Management Board member may be re-appointed for a term of no more than four years at a time.

The Management Board is composed of the following members:

Name	Years in Management Board	Date of initial appointment	Date of re-appointment	Term ends in
Tom van Aken	18	2005	AGM 2021	AGM 2025
Boudewijn van Schaïk	1	2023	n.a.	AGM 2027

Evaluation

At least once a year, the Management Board evaluates itself and its individual members. The performance of the Management Board and its individual members is also evaluated at every closed session of the Supervisory Board, with the findings communicated by the Chair to the Management Board.

Remuneration
Information on the remuneration policy for Management Board members and their individual remunerations can be found in the Remuneration Report 2023 (page 84).

Supervisory Board

Powers, Responsibilities and Functioning
The Supervisory Board supervises the Management Board and the general course of affairs of the Company, its subsidiaries and the business affiliated therewith. The Supervisory Board is accountable for these matters to the General Meeting. The Supervisory Board also provides advice to the Management Board. The Supervisory Directors assist the Management Board with advice on general policies related to the activities of Avantium.

In performing their duties, the Supervisory Board members act in accordance with the interests of the Company, considering stakeholder interests. They focus furthermore on the effectiveness of Avantium's internal risk management and control systems and the integrity and quality of the financial reporting.

The Supervisory Board is responsible for nominating and supervising an external accountant who audits, reports on and issues a statement concerning the Company's annual financial statements to the General Meeting.

Composition of the Supervisory Board
Avantium's Supervisory Board consists of at least three members and is authorised to make binding nominations for the appointment of a Supervisory Board member. It appoints one of its members to be Chair. In line with the Dutch Code, each member is appointed for no more than four years, with their appointment period ending immediately after the General Meeting held in the fourth calendar year after their initial appointment. The Supervisory Board member may then be re-appointed for up to two further two-year periods. For an appointment to continue beyond eight years, justification should be given in the consultative Report of the Supervisory Board.

On 10 May 2023, the General Meeting appointed Dirk Van Meirvenne and Peter Williams as Supervisory Board members. The Supervisory Board is now composed of the following members:

Name	Member since	Year of possible re-election	End of final term
Edwin Moses	2019	2027	2031
Michelle Jou	2020	2024	2032
Margret Kleinsman	2017	2025	2029
Nils Björkman	2022	2026	2034
Dirk Van Meirvenne	2023	2027	2035
Peter Williams	2023	2027	2035

Evaluation
At least once a year, the Supervisory Board evaluates its own performance as well as the performance of its committees, the Management Board and all individual members thereof. More information on the evaluation of the Supervisory Board in 2023 can be found in the Report of the Supervisory Board (page 77).

Remuneration
Information on the remuneration policy for Supervisory Board members and their individual remunerations can be found in the Remuneration Report 2023 (page 84).

Supervisory Board Committees

The Supervisory Board's Audit Committee, Industrialisation Committee, Remuneration Committee and Nomination Committee advise the Supervisory Board and inform its decision-making, although the Supervisory Board remains collectively responsible for the fulfilment of the duties delegated to its committees. The Committee Regulations are published on Avantium's website.

Audit Committee
The Audit Committee assists the Supervisory Board in overseeing the integrity and quality of our financial reporting and the effectiveness of our internal risk management and control systems. This includes supervising the enforcement of the relevant legislation and regulations and the effect of our codes of conduct. The Audit Committee supervises the financing of the Company, assessing the external independent audit process and the scope and approach of the external auditor as well as monitoring progress and performance. The relationship with the external independent auditor is evaluated annually. Together with the Management Board, the Audit Committee reviews half-year and full-year financial statements, independent auditor reports and the Management Letter. The Audit Committee supervises the Company's policy on tax planning and the applications of ICT, including risks relating to cybersecurity.

Industrialisation Committee
The Industrialisation Committee has been established to serve as the Supervisory Board's advisory and risk review forum in providing oversight of the Company's (i) technology strategy, (ii) industrialisation roadmaps and (iii) technology portfolio, all as determined, formulated and executed by the Company's Management Board and senior management.

Remuneration Committee
The Remuneration Committee reviews and makes recommendations regarding the remuneration policy for the Management Board and the Supervisory Board, for adoption by the General Meeting. The approved policy then forms the basis for the fixed and variable remuneration of the Management Board.

Nomination Committee
The Nomination Committee is tasked with advising on candidates to fill vacancies in the Management Board and Supervisory Board, assessing the functioning of both Boards and their members, supervising the policy of the Management Board on the selection criteria and appointment procedures for senior management and ensuring long-term succession planning.

Independence and Conflicts of Interest

In line with the Supervisory Board Regulations, the Management Board Regulations and the Dutch Code, Board members must immediately report any real or potential conflict of interest to the Chair of the Supervisory Board and/or to the other members of the Management Board. In 2023, there were no reports of potential conflicts of interest relating to members of the Supervisory Board and Management Board. The Supervisory Board was also able to carry out its tasks independently pursuant to principles 2.1.7 to 2.1.9 of the Dutch Code.

General Meetings of Shareholders

An Annual General Meeting of Shareholders (AGM) is held within six months of the end of every financial year. The main purpose of the AGM is to decide on matters as specified in Avantium's Articles of Association and under Dutch law, such as the adoption of the financial statements and the discharge of the Management Board and Supervisory Board members of their respective management and supervision duties. Extraordinary General Meetings (EGMs) are held if the Management Board and Supervisory Board deem it necessary or at the request of one or more shareholders who, alone or jointly, represent at least one-tenth of Avantium's issued share capital.

An AGM or EGM is called by a convening notice sent by the Management Board or the Supervisory Board. Shareholders who, alone or jointly, represent at least 0.03% of the Company's issued capital may ask for items to be added to the agenda. Every shareholder may attend, speak at and vote at the meeting. Unless Dutch law or the Articles of Association require a larger majority, resolutions of the General Meeting are adopted by a simple majority of the votes cast. Certain resolutions require a qualified majority of two-thirds of the votes cast, if less than half of the issued share capital is represented at the respective AGM or EGM.

The draft minutes must be published on our corporate website no later than three months after the AGM or EGM. Shareholders are given three months to respond to the draft minutes, which are subsequently adopted and signed by the Chair of the Supervisory Board and the General Counsel, acting as the secretary to the AGM or EGM.

Works Council

Avantium's Works Council ('Ondernemingsraad') acts to ensure employee participation in both the daily operation of Avantium and the decision-making for the Company's future direction. The Works Council is beneficial to both Avantium as an employer and Avantium's employees, by enabling representation in the workplace and providing a forum for constructive feedback that can help the business to progress. Avantium's Works Council is composed of nine members, chosen from different business units and sites. The Works Council members are elected by employees in the Works Council Election. The Works Council elects a chair and a deputy chair from among its members, with the chair preferably already having completed one term in the Works Council.

The Works Council members meet once a month. They also meet every six weeks with the CEO and the General Counsel to discuss general topics such as safety, vitality and budget. Frequently, and depending on the agenda, the CFO, the Head of HR and/or the Head of Quality, Health, Safety and Environment will also be present at the meeting to provide relevant updates on topics and facilitate a broader discussion. In addition to the recurring topics on health and safety, Company business and HR updates, topics, for example, include the financing of the Company, the Working from Home Policy and the Risk Inventory and Evaluation for all sites. More information on the Works Council can be found on page 42.

Diversity and Inclusion

On 1 January 2022, the Diversity Act entered into force in the Netherlands. In accordance with the Diversity Act, Avantium has set an appropriate and ambitious target figure for a balanced number of men and women in the Management Team, the Supervisory Board and the sub-top management level. Avantium aspires to be an inclusive and diverse company with an open and inspiring culture, where people feel safe to develop and share ideas. Avantium's Diversity & Inclusion Policy and targets are published on our corporate website.

The Management Team and the Supervisory Board can be considered diverse and balanced from the perspective of educational background and work experience. They consist of people with a good mix of sector knowledge, financial expertise and management capabilities. The Supervisory Board annually assesses the composition of the Supervisory Board, Management Board and Management Team and agrees to measurable objectives for achieving diversity on the Boards and at the sub-top management level.

The Supervisory Board has drawn up a profile for its size and composition, setting out (i) the size of the Supervisory Board, (ii) the desired expertise and backgrounds represented in the Supervisory Board, (iii) the desired diversity among and independence of Supervisory Board members and (iv) the qualifications of the Supervisory Board. This profile can be found on our website.

With the Supervisory Board comprising four men and two women and the Management Team comprising five men and two women, both meet the quota as prescribed by Section 2:166 of the Dutch Civil Code. More broadly, Avantium has a very diverse group of employees with people of different genders from different backgrounds, cultures and religions. More information on (the impact of) our Diversity & Inclusion Policy can be found on page 43.

Governance Avantium Renewable Polymers B.V.

Avantium Renewable Polymers B.V., a 77.4%-owned subsidiary of Avantium N.V., is a Dutch limited liability company based and registered in Amsterdam, the Netherlands. It acts as the holding company for Avantium RNP Flagship Plant B.V., the entity constructing the world's first commercial furandicarboxylic acid (FDCA) manufacturing plant (the FDCA Flagship Plant), which will be operated by Avantium Renewable Polymers and located in Delfzijl, the Netherlands.

In view of the equity participation by the Bio Plastics Investment Groningen Consortium B.V. and Worley Nederland B.V., Avantium N.V. entered into a shareholders' agreement (SHA) that governs the relationship between the shareholders of Avantium Renewable Polymers B.V. The SHA contains a number of specific governance mechanisms in addition to the customary arrangements on governance matters.

Supervisory Board Avantium N.V.

The Supervisory Board of Avantium N.V. will, in its capacity as Supervisory Board to Avantium Renewable Polymers' major shareholder, also supervise the business of Avantium Renewable Polymers B.V. and in particular the engineering, construction and commissioning of the FDCA Flagship Plant. Avantium will ensure that at least one of the members of the Supervisory Board has specific competences in this area.

Project Oversight Board

Avantium Renewable Polymers B.V. has installed a Project Oversight Board whose representatives will be appointed and dismissed in accordance with the Project Oversight Board's regulations. During the engineering, construction and commissioning of the FDCA Flagship Plant, the Project Oversight Board will meet at least once every two months. The minutes of the meetings of the Project Oversight Board will be provided to the shareholders of Avantium Renewable Polymers B.V.

Shareholders' Committee

Avantium Renewable Polymers B.V. has a Shareholders' Committee consisting of one representative of each shareholder, which representative will be appointed and dismissed by such shareholder. The Shareholders' Committee meets at least once every three months. The Managing Director (or their replacement within the Management Board) attends these meetings and informs the members of the Shareholders' Committee of the progress and all other relevant matters regarding the FDCA Flagship Plant and Avantium Renewable Polymers' business in general.

Corporate Governance Statement

Since being listed on Euronext Amsterdam, Avantium has been required to abide by the Dutch Code. Avantium acknowledges the importance of good corporate governance and agrees with the principles of the Dutch Code. We have taken, and will take, further appropriate steps to apply its principles and best practice provisions.

Compliance with the Dutch Code

Avantium is committed to applying the principles and best practice provisions of the Dutch Code. The Dutch Code recognises that a one-size fits all approach does not work for a Company's governance structure by definition, and deviations can be justified. The comply-or-explain principle stresses the responsibility of the boards for the Company's governance structure and the compliance with the Dutch Code, and must provide a clear explanation on a deviation. Below, we list the principles and best practice provisions where we deviate from the Dutch Code.

Principle 1.3.6: Absence of Internal Audit Department

Avantium's internal audit function assesses the design and operation of our internal risk management and control systems. The Management Board is responsible for the internal audit function; the Supervisory Board oversees this function and maintains regular contact with the people involved. In 2023, the duties and responsibilities of the internal audit function were allocated to various senior support staff functions within the Company (e.g., Legal and Finance). These support staff functions have direct access to the Audit Committee and the external independent auditor. Minutes are taken to record how the Audit Committee is informed by the internal audit function.
The Supervisory Board annually assesses whether or not the allocation to various senior support functions within the company is still adequate. The senior staff members rely on external subject matter expertise where appropriate.

Best Practice Provision 2.3.4: Composition of the Committees

Under this provision, the role of Chair of the Audit Committee or the Remuneration Committee may not be filled by the Chair of the Supervisory Board, nor by a former member of the Management Board of the Company. The position of Chair of the Remuneration Committee was filled by the Chair of the Supervisory Board in 2023. The Chair of the Supervisory Board has significant subject matter expertise on remuneration topics and is assisted in the Remuneration Committee by two Supervisory Board members with relevant experience and background. Where necessary, the Remuneration Committee is assisted by external advisors. In 2023, the Chair of the Supervisory Board remained Chair of the Remuneration Committee, also in view of the continuous dialogue with the major shareholders and shareholder representative bodies to discuss Avantium's Remuneration Policy and the subsequent revision of the remuneration policy, which is intended to be submitted for approval to the General Meeting. Particularly when considering the importance of remuneration topics in Avantium's transition from an R&D company to a commercial organisation, the Company, including the other members of the Supervisory Board, is of the opinion that the Company's and stakeholders' interests are best served by having a Chair of the Remuneration Committee with such significant subject matter expertise on remuneration topics in a public market environment, and that therefore a deviation is justified.

Best Practice Provision 3.3.2: Remuneration of Supervisory Board Members

This provision states that Supervisory Board members may not receive remuneration in the form of shares and/or rights to shares. To continue to attract and retain top talent in a competitive global environment, and to help the Supervisory Board create sustainable added value, Avantium's Remuneration Policy, as adopted by the General Meeting on 14 May 2020, includes the option for Supervisory Board members to receive upon (re-)appointment a one-off fixed award of share options. Avantium's Employee Stock Option Plan, as adopted on 5 October 2016, allows for such award. A revised Supervisory Board remuneration policy, including an adjustment to the share based remuneration component for the members of the Supervisory Board will be submitted to the General Meeting for approval.

The Chair of the Supervisory Board is entitled to 85,000 share options, and the other members are entitled to share 30,000 options. A member may decline the award. For the applicable terms, reference is made to the Supervisory Board remuneration policy. Any Avantium share options or shares held by the Supervisory Board members serve as a long-term investment in Avantium and align members' interests with those of other shareholders.

The Company does not grant loans to members of the Supervisory Board. See the Remuneration Report 2023 for more information.

Best Practice Provision 4.3.3: Cancelling the Binding Nature of a Nomination or Dismissal

This provision states that General Meetings of a Company that does not have statutory two-tier status ('structuurregime') may, by an absolute majority of the votes cast, cancel the binding nature of a nomination for the appointment and/or dismissal of a Management Board or Supervisory Board member. It may be provided that this majority should represent a given proportion (maximum one-third) of the issued capital. If this proportion is not represented at the meeting, but an absolute majority of the votes cast is in favour of a resolution to cancel the binding nature of a nomination or dismissal, a new General Meeting may be convened where the resolution may be passed by an absolute majority of the votes cast, regardless of the proportion of the capital represented at the new meeting.

Avantium's Articles of Association allow the Supervisory Board to make binding nominations. If it makes a binding nomination for the appointment of a Management Board or Supervisory Board member, the nominee shall be appointed regardless of the majority of the votes cast in favour. The General Meeting may override the binding nature of such a nomination by a majority of two-thirds of the votes cast, when these votes represent more than half of the issued share capital.

If the Supervisory Board has not made a binding nomination, the General Meeting can appoint a member of the Management Board or Supervisory Board at its discretion by a simple majority representing at least one-third of the issued share capital. In line with the Company's Articles of Association, the General Meeting may at any time dismiss a member of the Management Board or the Supervisory Board. To pass, the resolution needs a two-thirds majority of the votes cast, representing more than half of the issued share capital. However, if the dismissal is proposed by the Supervisory Board, a simple majority is sufficient. Avantium deviates from the Dutch Code on this provision in order to safeguard the continuity of the Company.

Decree Article 10 EU Takeover Directive

The information required by the Decree Article 10 EU Takeover Directive ('Besluit artikel 10 overnamerichtlijn'), to the extent applicable to the Company, is included in this Corporate Governance section, as well as in the Investor Relations section of this Annual Report.

The contractual conditions of the Company's key financing agreements (potentially) entitle the banks to claim early repayment of the amounts borrowed by the Company and its subsidiaries in the event of a change of control over the Company (as defined in the respective agreement).

In connection with the Debt Financing facility of €90 million committed from ABN AMRO Bank N.V. and its subsidiaries, ING Sustainable Investments B.V., Invest-NL Capital N.V., De Volksbank N.V. (trading as ASN Bank) and Coöperatieve Rabobank U.A. (the lenders), the Company issued approximately 2.84 million warrants, convertible into the Company's ordinary shares with a 1:1 conversion ratio for an exercise price of €0.10 per share (the Warrants) to the Lenders pursuant to the Warrant Agreement. The Warrants had anti-dilution protection for the equity raise of up to €45.0 million by the Company in the offering of April 2022. The Warrants will become exercisable when the FDCA Flagship Plant is operational or when other additional conditions included in the Warrant Agreement have been met. Such additional conditions include a change of control, certain joint ventures, permitted acquisitions, disposals and certain other events.

On 12 December 2023, Avantium and Avantium Renewable Polymers received commitments from their existing lenders for a €15-million increase of the Debt Financing facility. As part of the increase of the Debt Financing facility, Avantium is required to grant to the lenders a number of rights to subscribe for ordinary shares, convertible into ordinary shares with a 1:1 conversion ratio for an exercise price of €0 per ordinary share (the new Warrants) upon the drawdown of the increased Debt Financing facility agreement. The number of new Warrants to be issued to the Lenders (excluding ASN Bank) is based on (i) the new Warrant value, being €1,322,917 divided by (ii) the volume weighted average share price over a period of 60 days up to and including the earlier date of drawdown of the increased Debt Financing facility agreement and 15 April 2024. The holders of new Warrants have the right to exercise the new Warrants from the date that is 180 days after either the earlier of (i) the date of drawdown of the increased Debt Financing facility or (ii) 15 April 2024.

Certain government grants and subsidies are subject to restrictions, such as change of control clauses and other requirements, that could potentially lead to the amount of such grants or subsidies being reduced.

Sustainability Governance

Although Avantium started its sustainable business journey in 2000 when it was founded, the Company formalised its sustainability strategy in 2019. We first engaged with internal and external stakeholders in 2019 to determine the most important sustainability topics that we need to work on. This engagement process resulted in Avantium's Sustainability Manifesto, outlining our pathway for tackling the global climate emergency. In 2021, our sustainability strategy was published under the name of Chain Reaction 2030, highlighting key stepping stones along the way to achieving Avantium's ambitious vision of a fossil-free chemical industry by 2050. More than 100 stakeholders, internal and external, participated in the target-setting process and provided feedback. As a result, four sustainability pillars were identified: Technologies, Operations, People and Leadership & Governance. Chain Reaction 2030 commits Avantium to a series of goals and targets where it has the greatest impact on social and environmental issues. This includes accelerating the development of its own technologies and operations to support the circular economy and driving responsible and sustainable business practices across the industry. The plan also includes Avantium's actions to empower its own employees to make a lasting impact and inspire the next generation of talent. Meanwhile, our approach to leadership and governance ensures that Avantium's voice is heard as we advocate for a global transition to a fossil-free industry.

Having published Chain Reaction 2030, we set up a cross-functional and cross-departmental governance model and implementation team:

- The Sustainability Steering Board steers the execution of Chain Reaction 2030. It approves plans and courses of action and represents sustainability within different Avantium bodies, including the leadership teams, the Management Team and the Supervisory Board.
- The Chain Reaction 2030 Task Force comprises a number of teams that execute the implementation of the Chain Reaction 2030 targets. These teams also drive the planning, implementation and monitoring of different policies, processes and activities in support of these aims.
- Members of the Steering Board and Task Force have these activities included in their annual personal goals and are evaluated accordingly on their progress.

Management Team

Tom van Aken (1970, Dutch)

Chief Executive Officer (CEO) and member of the Management Board

- Joined Avantium: 2002
- Appointed CEO: 2005
- Current term: 2021–2025

Tom van Aken joined Avantium in 2002 as Vice President of Business Development. After becoming Vice President of Global Marketing and Sales in 2004, he was appointed CEO the following year. Prior to joining Avantium, Tom was Business Development Director at DSM Fine Chemicals, Inc.

Tom holds a master's degree in Chemistry from the University of Utrecht (the Netherlands).

Ancillary positions

- Member of Top Team Chemistry.NL (SME representative)
- Member of the Board of Directors TKI Green Chemistry & Circularity

Boudewijn van Schaïk (1979, Dutch)

Chief Financial Officer (CFO) and member of the Management Board

- Joined Avantium: 2023
- Appointed CFO: 2023
- Current term: 2023–2027

Boudewijn van Schaïk has served as Avantium's CFO since 1 January 2023. Between 2013 and 2022, he held senior roles in Treasury, Strategy and M&A at SBM Offshore, including the position of Corporate Finance Director. Prior to this, he served in various senior finance positions at NIBC Bank, ABN AMRO Bank, Main Corporate Finance and Alexander Forbes Financial Services (South Africa).

Boudewijn holds a Business Science degree (Accounting and Corporate Finance) from the University of Cape Town (South Africa).

Ancillary positions

None

Gert-Jan Gruter (1963, Dutch)

Chief Technology Officer (CTO)

- Joined Avantium: 2000
- Appointed CTO: 2004

Gert-Jan Gruter has been Avantium's CTO since 2004 and Professor of Industrial Sustainable Chemistry at the University of Amsterdam since 2016. Before joining Avantium, he was responsible for setting up the Chemicals Service business at Avantium (2000–2004) and was a Group Leader in New Catalyst Research at DSM (1993–2000).

Gert-Jan holds a master's degree in Organic Chemistry and a PhD in Organometallic Chemistry & Catalysis from the Vrije Universiteit in Amsterdam (the Netherlands). He is the inventor on more than 100 patents and was elected CTO of the Year Europe in 2014.

Ancillary positions

- Professor of Industrial Sustainable Chemistry at the University of Amsterdam
- Visiting Professor at Chulalongkorn University Bangkok, Thailand

Carmen Portocarero (1967, Dutch)

General Counsel

- Joined Avantium: 2012
- Appointed General Counsel: 2012

Carmen Portocarero joined Avantium in 2012, bringing expertise from various corporate legal positions, including during more than 17 years at US telecommunications company AT&T.

Carmen holds a master's degree in Law from Radboud University Nijmegen (the Netherlands) and completed various law programmes at Harvard University to obtain US qualifications.

Ancillary positions

None

Steven Olivier (1964, Dutch)

Managing Director Avantium R&D Solutions

- Joined Avantium: 2015
- Appointed Managing Director of Avantium R&D Solutions: 2015

Steven Olivier joined Avantium in 2015 to lead the Avantium R&D Solutions business unit. Previously, he worked at Albemarle (2005–2014) and AkzoNobel (1994–2004) in a range of senior executive and commercial roles in the catalyst industry. From 2011 to 2013, he was a representative director of Nippon Ketjen (Japan).

Steven holds a master's degree in Chemistry from Leiden University (the Netherlands).

Ancillary positions

None

Bas Blom (1964, Dutch)

Managing Director Avantium Renewable Polymers

- Joined Avantium: 2021
- Appointed Managing Director of Avantium Renewable Polymers: 2021

Bas Blom has been Managing Director of the Avantium Renewable Polymers business unit since 2021. Before this, Bas held various P&L and commercial leadership roles in global listed companies such as GE, SABIC and Renewi, where he focused on profitable growth in engineering plastics and sustainable products.

Bas holds a master's degree in Aerospace Engineering from Delft University of Technology (the Netherlands) as well as an MBA in Information Management from Business School Netherlands. He is also a GE Certified SixSigma Master Black Belt.

Ancillary positions

- External Advisor at Bain Advisor Network

Yap Chie Cheung (1974, Dutch)

Managing Director Avantium Renewable Chemistries

- Joined Avantium: 2023
- Appointed Managing Director of Avantium Renewable Chemistries: 2023

Yap Chie Cheung joined Avantium on 1 February 2023 as Managing Director of the Avantium Renewable Chemistries business unit. Between 2020 and 2023, she held the position of Global Business Unit Director at the Nourish Division of International Flavors & Fragrances (IFF). As well as working as Director Bioindustrial and Proteins Europe for Cargill (2015–2020), she also previously held several positions at DSM (1998–2015), including in the Bio-based Products & Services division.

Yap Chie holds a master's degree in Business Economics from the Vrije Universiteit in Amsterdam (the Netherlands).

Ancillary positions

None

Supervisory Board

Edwin Moses (1954, British & Belgian)

Chair of the Supervisory Board

- Member of the Supervisory Board since: 2019
- Current term: 2019–2023

Background

Edwin Moses is a serial entrepreneur and value creator in European life science companies. He has expertise in high-value service provision to the pharmaceutical industry and in drug discovery and development. His primary focus is on high-growth businesses and change management, with 25 years of board-level experience in more than 15 companies, mostly as Chair.

Responsibilities

Edwin Moses is Chair of the Nomination Committee, Chair of the Remuneration Committee and a member of the Audit Committee

Ancillary positions

- Chair of the Supervisory Board Achilles Therapeutic plc
- Chair of the Supervisory Board LabGenius Ltd

Nils Björkman (1954, Swedish)

- Member of the Supervisory Board since: 2022
- Current term: 2022–2026

Background

Nils Björkman worked for 33 years at food processing and packaging solutions company Tetra Pak Group in a variety of senior positions around the world, including Sweden, Canada, the USA, the UK and Switzerland. His last position was Executive Vice President of all commercial operations of the Tetra Pak Group, which he held until his retirement in March 2015. He has worked as a non-executive board member for several companies and holds an MBA from the Stockholm School of Economics (Sweden).

Responsibilities

Nils Björkman is Chair of the Industrialisation Committee and a member of the Remuneration Committee and the Nomination Committee

Ancillary positions

None

Michelle Jou (1969, Taiwanese)

- Member of the Supervisory Board since: 2020
- Current term: 2020–2024

Background

Michelle Jou serves as Chief Executive Officer at Castrol (part of the BP group). Prior to this, she worked for around 19 years at Covestro (formerly Bayer Material Science) in various senior management positions in Asia and Europe, including President of Covestro's global Polycarbonates Segment in Shanghai. She holds a BA in French from Fu-Jen University (Taiwan) and an MBA from the EMLYON Business School (France).

Responsibilities

Michelle Jou is a member of the Nomination Committee and the Remuneration Committee

Ancillary positions

- CEO, Castrol (part of the BP group)

Margret Kleinsman (1963, Dutch)

- Member of the Supervisory Board since: 2017
- Current term: 2021–2025

Background

Margret Kleinsman, CFO of Agrifirm, graduated from the University of Twente and completed her post-doctoral research at the Vrije Universiteit in Amsterdam (both in the Netherlands). She was CFO of Holland Colours N.V. from 2014 until 2020. Before this, she worked for AkzoNobel, with particular responsibilities in the areas of chemicals, fibres and coatings, and including two longer-term assignments in the USA.

Responsibilities

Margret Kleinsman is Chair of the Audit Committee

Ancillary positions

- CFO of Agrifirm

Dirk Van Meirvenne (1964, Belgian)

- Member of the Supervisory Board since: 2023
- Current term: 2023-2027

Background
Dirk Van Meirvenne serves as Head of the Advanced Industrial Intermediates business unit at Lanxess, a global specialty chemicals company in Cologne, Germany. Prior to this, he served in various senior management positions in R&D and technology at Bayer, in both Europe and Asia. He holds an PhD in Polymer Chemistry from the University of Ghent (Belgium).

Responsibilities
Dirk Van Meirvenne is a member of the Industrialisation Committee

Ancillary positions
- Head of the Advanced Industrial Intermediates business unit at Lanxess

Peter Williams (1956, British)

- Member of the Supervisory Board since: 2023
- Current term: 2023-2027

Background
Peter Williams serves as Group Technology Director and Head of Investor Relations at global chemical company INEOS and was previously CEO of INEOS Technologies. Before joining INEOS, Peter worked for BP in the UK, where he held various senior technology and business roles. He currently also serves as as non-executive director at hydrogen commercial vehicle developer First Hydrogen and at advanced materials technology company V-Carbon. He holds a PhD in Chemistry from the University of York (UK).

Responsibilities
Peter Williams is a member of the Industrialisation Committee

Ancillary positions
- Group Technology Director and Head of Investor Relations at INEOS
- Non-executive director at V-Carbon

Report of the Supervisory Board

Introduction

This report explains how Avantium's Supervisory Board fulfilled its responsibilities in 2023. The Report of the Supervisory Board should be read in conjunction with the Corporate Governance section, which provides information on the Company's corporate governance structure.

Composition, Diversity and Independence

The Supervisory Board currently consists of six members: Edwin Moses (Chair), Nils Björkman, Michelle Jou, Margret Kleinsman, Dirk Van Meirvenne and Peter Williams. The biographies of the Supervisory Board members are available on the preceding pages of this report and on the Avantium website.

In January 2023, the Supervisory Board proposed the appointment of Dirk Van Meirvenne and Peter Williams as members of the Supervisory Board. At the Annual General Meeting (AGM) held on 10 May 2023, both were appointed as Supervisory Board members for a term of four years.

As detailed in Promoting Diversity, Equality and Inclusion (page 43), Avantium strives to foster an inclusive and diverse environment characterised by an open and inspirational culture. This commitment extends to the composition of the Supervisory Board, which actively promotes diversity across various dimensions, including age, gender, nationality, industry experience, background, skills, knowledge and perspectives. In 2023, women accounted for 33% of Avantium's Supervisory Board, in accordance with both our internal target and the Dutch legislative requirement of at least 33% male or female Supervisory Board members to ensure gender balance.

Diversity Profile

Name	Year of birth	Nationality	Expertise and experience	Gender
E. Moses	1954	British and Belgian	▪ Scaling-up and financing innovative companies ▪ Executive and non-executive experience	Male
N. Björkman	1954	Swedish	▪ International expertise in the packaging innovations business ▪ International industry experience	Male
M.B.B. Jou	1969	Taiwanese	▪ International executive experience, especially Asian region ▪ Commercial experience from chemical and plastics industries	Female
M.G. Kleinsman	1963	Dutch	▪ Financial expertise in chemical and plastics industries ▪ International experience	Female
D. Van Meirvenne	1964	Belgian	▪ Extensive knowledge and experience in the chemical sector ▪ International industry experience	Male
P.S. Williams	1956	British	▪ Extensive knowledge and experience in the chemical sector ▪ Comprehensive finance and general management experience	Male

Retirement and Re-Election Schedule

Name	(Re-)appointment date	Year of possible re-election	End of final term
E. Moses	10 May 2023	2027	2031
N. Björkman	25 January 2022	2026	2034
M.B.B. Jou	14 May 2020	2024	2032
M.G. Kleinsman	19 May 2021	2025	2029
D. Van Meirvenne	10 May 2023	2027	2035
P.S. Williams	10 May 2023	2027	2035

All members of the Supervisory Board are deemed independent. In the Supervisory Board’s opinion, the composition of the Supervisory Board is such that the members can act critically and independently from one another and from the Management Board, as stipulated in the Dutch Code (principles 2.1.7 to 2.1.9). This means that the tasks of the Supervisory Board as laid down in Avantium’s Articles of Association can be fulfilled, including providing the Management Board with solicited and unsolicited advice and support.

In 2023, there was no actual or potential conflict of interest between Avantium and any Supervisory Board member. In line with legislation and as part of the key control framework of the Company, members of the Supervisory Board (as well as the Management Board) are required to annually state their related parties and any transactions between these related parties and the Company. No related-party transactions occurred in 2023, except for cases in which members of the Supervisory Board used a management company to invoice their related directors' fees to Avantium.

Education and Self-Evaluation

Continuous learning plays a vital role in effective governance. The Supervisory Board members regularly visit Avantium's offices to engage with senior management and other internal stakeholders such as representatives of the Company's Works Council, gaining a more profound understanding of the Company's operations, opportunities and challenges. The Chair of the Supervisory Board and the CEO meet frequently (online and face-to face). Similar interaction takes place between the committee chairs and relevant members of the Management Team. Additionally, one-on-one interactions between Supervisory Board members and the Management Team often occur as a result of discussions during the Supervisory Board meetings. These conversations leverage the specialised knowledge of individual Supervisory Board members, who are consulted for advice on specific topics as the need arises.

The Company runs an induction programme for newly appointed Supervisory Board members to ensure they gain a good understanding of the Company's business and strategy, as well as the key risks it faces. The induction programme includes meetings with other Supervisory Board members, the Management Board and other management members; detailed presentations on the business, operational topics and risks; and visits to the Company's various facilities. Dirk Van Meirvenne and Peter Williams completed this programme on joining the Supervisory Board.

The Supervisory Board believes in an ongoing evaluation process as a means of continually improving the way it works. Each year, based upon the Dutch Corporate Governance Code and Section 2.2 of the Supervisory Board Regulations of Avantium N.V., the Supervisory Board evaluates the composition, competence and functioning of the Supervisory Board and its committees, the relationship between the Supervisory Board and the Management Board, its individual members and the Chairs of both the Supervisory Board and its committees, as well as the composition and functioning of the Management Board and its individual members. In 2023, the self-evaluation of the Supervisory Board consisted of assessments and reviews conducted during the Supervisory Board's closed sessions at each Supervisory Board meeting, in the absence of the Management Board, and one-on-one interviews between the Chair and individual Supervisory Board members, and between the Chair and individual members of the Management Board. The 2023 evaluation was particularly centred around the onboarding and meeting dynamics of the Supervisory Board after the appointment of two new members in May 2023. The appointment of the new Supervisory Board members led to, among other things, a different composition of the Supervisory Board committees, based on the expertise and knowledge of the respective Supervisory Board members.

The overall assessment from the 2023 evaluation was positive. Specifically, the Supervisory Board members deem the size and diversity of the Supervisory Board appropriate in terms of competencies, nationalities/geographical representation, experience and gender. The Supervisory Board effectively carries out its duties and responsibilities in a professional and constructive manner. Members are well prepared for meetings and respect each other's input and perspectives, while opinions and views are regularly challenged, sparking constructive debates. One area identified for improvement was the concise and timely provision of briefing materials for Supervisory Board meetings. Furthermore, the members of the Supervisory Board place significant importance on personal interactions and aim to increase face-to-face engagement where possible.

The evaluation of the Supervisory Board is periodically performed under the supervision of an external expert, and is foreseen to take place in 2024.

The performance of the Management Board was also assessed as part of the evaluation. This takes place throughout the year during face-to-face or video conference meetings with the Management Board and its individual members. The Remuneration Committee specifically conducts the performance assessment of the Management Board and its individual members. The Remuneration Committee reports back on these discussions to the full Supervisory Board.

Supervisory Board Meetings in 2023

Meetings and Attendance

Regular meetings of the Supervisory Board are convened to review the Company's accomplishments and strategic plans, the composition and functionality of the Supervisory Board and the performance of the Management Board. In its supervisory role, the Supervisory Board maintains frequent communication with the Management Board, both during and between formal meetings. Throughout 2023, the Supervisory Board convened seven times. All meetings were attended by the full Management Board, with the exception of closed sessions designated for the Supervisory Board alone. Informal dinners were organised for the Supervisory and Management Boards in 2023, either preceding or following the regular meetings.
In addition, at least five update meetings were held via video conference to consider matters requiring updates or consultation with the Supervisory Board.

The individual attendance per meeting can be found in the table below.

Name	Supervisory Board meeting	Audit Committee meeting	Industrialisation Committee meeting	Nomination Committee meeting	Remuneration Committee meeting
E. Moses	7/7	3/3	n.a.	3/3	3/3
N. Björkman	7/7	n.a.	5/5	3/3	3/3
M.B.B. Jou[12]	6/7	n.a.	2/5	2/3	2/3
M.G. Kleinsman	6/7	3/3	n.a.	n.a.	n.a.
D. Van Meirvenne[13]	7/7	n.a.	4/5	n.a.	n.a.
P.S. Williams[14]	6/7	n.a.	4/5	n.a.	n.a.

Topics Discussed in 2023

The Supervisory Board meets at least five times a year and always prior to the publication of Avantium's annual and half-year results, which are discussed with the Management Board along with related documents, such as the draft press release and the independent auditor's report on procedures performed. These results and related documents are discussed by the Audit Committee prior to the Supervisory Board meeting. The external independent auditor was present for the discussion of the 2023 Annual Report and accounts.

In addition to the standard agenda items for meetings, such as the develofinancials and the business performance throughout the year, the Supervisory Board discussed (with the Management Board) the following topics in 2023:

- detailed progress reports on individual business units' results and progress on strategic milestones
- Avantium's sustainable value creation and capital allocation strategy
- the equity financing that ultimately took place in February 2024
- financial planning, equity and debt financing
- the assessment of strategic, technological, operational, financial and legal risks, and control and compliance issues
- strategic focus, including the decision to put further investments in Ray Technology™ on hold
- new technology developments
- the preparation, evaluation and follow-up of the General Meetings
- topics related to sustainability
- the views of analysts and investors, as well as changes in the shareholder structure and base
- initiatives related to public relations and thought leadership
- senior leadership performance, organisational changes and senior management appointments
- the budget for the second half of 2023 and the budget for 2024

The following topics in particular were discussed extensively by the Supervisory Board.

Progress on the Construction of the FDCA Flagship Plant

Throughout 2023, the construction of the FDCA Flagship Plant, along with its associated capital expenditures, staffing, governance and timeline, were the subject of extensive discussions during Supervisory Board meetings. These discussions were frequently led by one of the committees, most often the Industrialisation Committee. Avantium conducted periodic internal audits on the construction project, sharing the outcomes with the Supervisory Board.

Since the start of construction of this first-of-its-kind commercial facility in April 2022, the project has been subjected to exceptionally challenging external circumstances, including high inflation, scarcity of materials and contractors and supply chain constraints. In 2023, Avantium finalised a thorough risk analysis together with its engineering partner Worley, which resulted in an updated budget, capital plan and commissioning and start-up plan for the project. The Supervisory Board meticulously discussed this risk analysis and the impact on both schedule and costs, as well as the resulting impact on the Company.

[12] Michelle Jou was a member of the Industrialisation Committee until May 2023.
[13] Dirk Van Meirvenne was appointed as member of the Supervisory Board as per 10 May 2023; meetings that he attended as an observer in 2023 are taken into account.
[14] Peter Williams was appointed as member of the Supervisory Board as per 10 May 2023; meetings that he attended as an observer in 2023 are taken into account.

In addition to overseeing Avantium N.V., the Supervisory Board also supervises the activities of Avantium Renewable Polymers B.V., in particular the engineering, construction and commissioning of the FDCA Flagship Plant. To this end, reports from the Project Oversight Board and the Shareholders' Committee of Avantium Renewable Polymers were reviewed. Details regarding the governance of Avantium Renewable Polymers B.V. can be found in the Corporate Governance section on page 70.

Funding Strategy

The Supervisory Board and Management Board dedicated considerable time to funding options and funding scenarios based on short- and medium-term operational cashflow forecasts and required minimum cash balances. In February 2024, Avantium raised €50.5 million through a rights offering of new Avantium shares and completed an additional upsize offering of €19.5 million – a great achievement given the challenging environment. In several meetings, the Supervisory Board extensively discussed and endorsed the proposed process, structure and timelines of this capital raise.

Licensing Strategy

The Supervisory Board actively discussed and monitored the pipeline of potential licencees for YXY® Technology. Significant time was also devoted to overseeing negotiations with the first licensing partner, Origin Materials, in early 2023. The Board gave its mandate on the key terms of the technology licence agreement, the offtake agreement and related arrangements with Origin Materials.

Commercial Pipeline

The Supervisory Board furthermore closely followed progress on the conditional offtake agreements for FDCA and PEF from the FDCA Flagship Plant and discussed and mandated the key terms for such agreements.

Strategic Portfolio Review

The Supervisory Board dedicated significant time to reviewing the comprehensive technology portfolio within Avantium Renewable Chemistries and the strategic decisions pertaining to each technology. It meticulously oversaw and approved developments regarding Ray Technology™, Volta Technology and the progress within the Corporate Technology team (including Dawn Technology™).

In a dedicated strategy meeting, the Supervisory Board discussed at length with the Management Board and management the necessity to reinforce the strategic focus on the commercialisation of FDCA and PEF. In view of the prioritisation of the commercialisation and licensing of FDCA and PEF, and the significant investments and resources required for the next phase of commercialisation of the Ray Technology™, in its meeting on 7 December 2023 the Supervisory Board endorsed the decision to put further investments in Avantium's Ray Technology™ on hold until strategic equity partners have been secured. Moreover, the Supervisory Board supported management's decision to operate Avantium R&D Solutions as an independent business unit with a dedicated leadership team, while also actively seeking strategic opportunities for developing the business.

Safety

The Supervisory Board dedicated considerable attention to safety at Avantium, including the integration of diverse ISO (International Organisation for Standardisation) standards and fostering a robust safety culture throughout the Company.

Stakeholder Management

The Supervisory Board proactively engages in understanding Avantium's stakeholders, their perspectives and their stances on topics related to the Company's business domains. In 2023, the Supervisory Board received updates on stakeholders' viewpoints from the Management Board, with individual members also gathering insights through their own networks.

Supervisory Board Committee Activities in 2023

The Supervisory Board divides its tasks among four committees: the Audit Committee, the Industrialisation Committee, the Remuneration Committee and the Nomination Committee. These Committees are responsible for making recommendations on specific topics before decisions are made in meetings of the Supervisory Board.

At the end of 2023, the composition of the Supervisory Board committees was as follows:

Audit Committee	Industrialisation Committee	Remuneration Committee	Nomination Committee
Margret Kleinsman (Chair)	Nils Björkman (Chair)	Edwin Moses (Chair)	Edwin Moses (Chair)
Edwin Moses	Dirk Van Meirvenne	Michelle Jou	Michelle Jou
	Peter Williams	Nils Björkman	Nils Björkman

Report of the Audit Committee

The Audit Committee supports the Supervisory Board in its responsibility to oversee Avantium's financing, financial reporting process and financial statements, as well as its internal control, risk management and audit systems.

In 2023, the Audit Committee met three times (2022: five) and held two calls to approve the annual and half-year results. The meetings were also attended by the CEO, the CFO, the Compliance Officer, the Head of Accounting and Reporting and the external independent auditor. Minutes of all meetings were submitted to the Supervisory Board. At each meeting, the Audit Committee discussed relevant financial reporting and accounting topics, including the prior year restatements, the impact of high inflation and supply chain disruptions on Avantium's 2023 financials and operations. The Audit Committee also discussed the Going Concern note in the 2023 Annual Report and the impact of the upcoming Corporate Sustainability Reporting Directive (CSRD). Additionally, the Audit Committee discussed the accounting principles of the Debt Financing facility agreement for the FDCA Flagship Plant. Extensive time was also spent discussing the implementation of a new enterprise resource planning (ERP) system.

The Audit Committee also discussed risk management targets and the findings of internal and external risk assessments. This included an internal risk assessment on HR processes, as well as a risk assessment on the insurances portfolio. Of the findings identified, none were deemed critical.

Moreover, the Audit Committee monitored the Company's progress on risk identification and implementation of risk mitigation actions and approved the 2024 Risk Planning. The Audit Committee spent significant time on business ethics topics, such as bribery, fraud and corruption. At every meeting of the Audit Committee, Avantium's Compliance Officer gave an update on fraud and irregularities, including whistleblowing cases. In 2023, there were no confirmed incidents of corruption, no legal actions taken against anti-competitive behaviour or anti-trust and no incidents of discrimination reported.

Report of the Industrialisation Committee

The Industrialisation Committee serves as the Supervisory Board's advisory and risk review forum in providing oversight of the Company's (i) technology strategy, (ii) industrialisation roadmaps and (iii) technology portfolio, all as determined, formulated and executed by the Company's Management Board and senior management. The Industrialisation Committee addresses strategic and technology portfolio topics via deep dive sessions leveraging the relevant subject matter expertise of its members and other Supervisory Board members. The Industrialisation Committee met five times in 2023 (2022: six).

In 2023, the Industrialisation Committee primarily focused on reviewing the development and execution of Avantium's technology portfolio and roadmap. Significant time was spent on the business case, the IP position and competitive landscape, the technological roadmap and the business development of YXY® Technology, Ray Technology™ and Volta Technology. In-depth discussions were conducted on the progress of the construction of the FDCA Flagship Plant, including the impact of high inflation, supply chain constraints and scarcity of materials on the costs and the construction schedule.

Report of the Remuneration Committee

The Remuneration Committee is responsible for advising the Supervisory Board and prepares the Supervisory Board's resolutions with respect to remuneration of the Management Board and the Supervisory Board. One of its duties is to assess whether the Management Board's performance targets have been achieved. The Remuneration Committee met three times in 2023 (2022: three) to discuss and formulate proposals for the remuneration of the individual members of the Management Board. The Remuneration Committee presented its findings and proposals to the Supervisory Board, which then finalised the performance assessments and related remuneration of the individual Management Board members.

Report of the Nomination Committee

The Nomination Committee prepares proposals for nominations, appointments and re-appointments. At least once a year, the size and composition of the Supervisory Board and the Management Board and the functioning of the individual members are assessed by the Nomination Committee and discussed by the Supervisory Board. The meetings of the Nomination Committee are attended by the CEO, except when issues relating to his performance and remuneration are discussed. The Nomination Committee and the Supervisory Board continually discuss succession planning with respect to the Supervisory Board and Management Board.

General Meetings of Shareholders in 2023

On 10 May 2023, the Annual General Meeting took place at the Amsterdam Science Park, home to Avantium's offices and laboratories for Volta Technology and the Corporate Technology team. Avantium's shareholders granted the requested approvals on all items on the agenda, including the adoption of the 2022 financial statements and the re-appointment of PricewaterhouseCoopers Accountants N.V. (PwC) as the external independent auditor of Avantium for the financial year 2023. Edwin Moses was re-appointed as Chair of the Supervisory Board and Dirk Van Meirvenne and Peter Williams were appointed as members of the Supervisory Board until the end of the AGM in 2027. As in previous years, the Chair of the Audit Committee elaborated on the work of the Audit Committee in 2022, on the Company's collaboration with PwC and on other items relevant in the past year. The lead partner of PwC elaborated on the audit procedure and the independent auditor's report for 2022. More information about the 2023 AGM, including the minutes, voting results and attendance, can be found on Avantium's website.

Financial Statements 2023 and Profit Appropriation

The financial statements for the financial year 2023 were prepared by the Management Board in compliance with Articles 20 and 21 of the Articles of Association. Attached to these statements was the unqualified report from the independent auditor, PwC, with a paragraph indicating a material uncertainty related to going concern. The financial statements and the outcome of the external audit were discussed by the Audit Committee with the Management Board in the presence of the external independent auditor.

The 2023 financial statements were endorsed by all Management Board and Supervisory Board members and are, together with PwC's independent auditor's report, included in this Annual Report. The Management Board will present the 2023 financial statements at the AGM on 15 May 2024.

The Supervisory Board requests that the AGM grants discharge to the members of the Management Board and to the members of the Supervisory Board for their respective duties in 2023.

Gratitude

The Supervisory Board would like to thank all Avantium employees for their outstanding contributions and unwavering commitment and perseverance, which have enabled Avantium to evolve from a company primarily focused on R&D to one on the cusp of having large-scale manufacturing and commercialisation capabilities. Additionally, the Supervisory Board extends its heartfelt appreciation to the Management Board and senior management of Avantium for their leadership and transparent and constructive dialogues with the Supervisory Board. Finally, the Supervisory Board would like to thank the Company's shareholders for their outstanding support in ensuring that Avantium is well-capitalised as it moves forward on the next stage of its exciting journey.

Amsterdam, 25 March 2024

On behalf of the Supervisory Board,

Edwin Moses, Chair
Nils Björkman
Michelle Jou
Margret Kleinsman
Dirk Van Meirvenne
Peter Williams

Remuneration Report 2023

Letter from the Chair of the Remuneration Committee

On behalf of the Remuneration Committee, I am pleased to present the 2023 Remuneration Report, which provides a summary of the remuneration policies for the Management Board and the Supervisory Board. The following pages explain how these policies were applied in 2023.

In the sections below, I will reflect on the Company's performance in 2023 and the resulting pay outcomes, as well as the Remuneration Committee's key activities in 2023 and the outlook for 2024.

2023 Company Performance and Remuneration Outcomes

Looking back at 2023, Avantium has undergone a significant transition, evolving from a company primarily focused on R&D to one at the cusp of having large-scale manufacturing and commercialisation capabilities.

Strategic Progress

- After a thorough review of its technology portfolio, Avantium decided to reinforce its strategic focus and prioritise the commercialisation of its FDCA and PEF technology together with the acceleration of its related licensing strategy. Although Avantium Renewable Chemistries made significant technical and commercial progress in 2023, the Company decided to halt further investments in Ray Technology™ until appropriate strategic equity partners have been secured.

Commercial Progress

- To date, Avantium has signed 15 conditional offtake agreements for FDCA and PEF from the Flagship Plant with major brand owners, for a diverse range of applications, including packaging, bottles and textiles.
- In February 2023, Avantium Renewable Polymers entered into its first licensing agreement with Origin Materials for the conversion of CMF derivatives produced by Origin Materials into FDCA at a proposed 100-kilotonne-per-annum-scale facility. Under this licensing agreement, Avantium is eligible to receive upfront milestone payments and royalties for each tonne of FDCA produced at the licensed plant.
- Volta Technology made significant progress with the signing of agreements for two long-term collaborations with SCG Chemicals and Norsk Hydro.
- Avantium R&D Solutions embarked on a new strategic direction by focussing on emerging markets in sustainable chemistry, which helped generate a €2.2 million increase in revenues.

Operational Progress: Financial Progress

- The construction of the FDCA Flagship Plant in Delfzijl, the Netherlands, has progressed in line with the goal of starting FDCA production in the second half of 2024. Since the start of construction of the FDCA Flagship Plant in April 2022, the project has been subjected to exceptionally challenging circumstances, including high inflation, scarcity of materials, human resource shortages among contractors and supply chain constraints. Avantium has continuously monitored the impact of these circumstances on the project and finalised a thorough risk analysis together with its engineering partner Worley in 2023. This analysis resulted in an updated budget, capital plan and commissioning and start-up plan for the project.
- A €64.5-million financing package from minority shareholders (Bio Plastics Investment Groningen, Worley and Avantium N.V.) and lenders was secured in December 2023, to cover the increased costs anticipated before the FDCA Flagship Plant is operational.
- Avantium successfully completed a €70 million equity raise in February 2024, partly to cover Avantium's share in the financing package for Avantium Renewable Polymers,
- In 2023, Avantium's consolidated revenue increased by 11% from €17.8 million in 2022 to €19.7 million.

Operational Progress: Organisational Progress

- In line with the decision to put further investments in its Ray Technology™ on hold, Avantium redeployed all of the Ray Technology™ pilot plant employees to the FDCA Flagship Plant project in Delfzijl, allowing the FDCA Flagship Plant to become fully staffed.
- Despite 2023's tight labour market, Avantium R&D Solutions made good progress in recruiting employees with the required talent and expertise to accelerate the strategic initiative to focus on sustainable chemistry markets.
- In 2023, Avantium hired a new Managing Director for the Renewable Chemistries business, Yap Chie Cheung, and a new Chief Financial Officer for Avantium, Boudewijn van Schaïk.

ESG: Safety

- No work-related fatalities or serious injuries were recorded in 2023. In 2023, Avantium extended the deadline for its ISO 45001 certification target as a result of the ongoing construction of the FDCA Flagship Plant.

ESG: Chain Reaction 2030

- Avantium strives to contribute to significant CO_2 savings either through increased efficiency or the use of novel technologies that have an improved environmental impact over fossil-based incumbents. Avantium monitors its progress on this target through third-party peer-reviewed and ISO-certified LCAs. LCA results show that, compared to fossil-based incumbents, Avantium's PEF can enable a 62% reduction in GHG emissions over the life cycle of a 500 ml bottle and that Avantium's plantMEG can enable a reduction of up to 83% over the life cycle. While these LCAs demonstrate the potential of Avantium's solutions to enable significant CO_2 savings, the actual savings will only occur, and be measured, once the licensees have started operations at their commercial plants.
- Avantium reports on emissions under Scope 1 (direct emissions from owned or controlled sources) and Scope 2 (indirect emissions from the generation of purchased electricity, steam, heating and cooling). In 2023, Avantium completed a Scope 3 (indirect emissions, occurring in the Company's value chain) baseline assessment project based on 2022 data.

- The Code of Conduct was revised in 2023 and will be implemented in 2024.
- In 2023, Avantium asked its key suppliers to sign its Sustainable Supplier Code. Avantium also confirmed, via a gap (risk) analysis, that its key suppliers align and comply with the expectations Avantium sets out in the Code.

The Remuneration Committee has carefully weighed all aspects of events in 2023, and has taken care to ensure that their impact was reflected in a fair application of the remuneration policy and the assessment of this year's achievement of targets. The fact that Avantium made significant strategic, commercial and operational progress in the delivery of its business plan, and was able to meet important ESG targets, is reflected in the remuneration to be paid to the Management Board.

After careful consideration and following the assessment made by the Remuneration Committee on the level of achievement for each of the goals for 2023, the Supervisory Board made the following decisions:

- There was an average total Company achievement of 78% of the 2023 goals.
- The 78% achievement assessment of the Company's 2023 goals will form the basis for the cash incentive bonus payment to all staff, and will be used to determine the Management Board and senior management's annual performance-related cash bonus component (Short-Term Incentive) and the non-cash long-term annual variable incentive component (Long-Term Incentive).
- The Supervisory Board used its upward discretionary power to adjust the incentive pay-out to the Management Board over 2023 with respect to the operational target related to securing financing. As a result, the overall average achievement of the Management Board for the performance year 2023 amounts to 100.6% of the on-target bonus.
- The timing of the (cash) pay-out of the bonus will be Q2 2024.

2023 Remuneration Committee Focus Areas

In 2023, the Remuneration Committee met three times. In addition to detailed discussions on the corporate targets, and then assessment of their subsequent level of achievement, special attention was paid to:

- Further refinement of the target-setting for non-financial key performance indicators (KPIs). As per the remuneration policy, the performance measures represent a balanced mix of strategic, commercial and operational performance targets, which together ensure a focus on both the performance of the Company in the short-term and on the attainment of its long-term strategic objectives.
- The selection and determination of the 2024 targets, based on financial performance (52.5%) and non-financial performance (47.5%). These targets are set taking into account Avantium's strategy and five-year business plan. As an important element thereof, the short- and long-term goals aim to drive the Company's performance on ESG criteria. As a technology leader in sustainable and circular chemicals and plastics, Avantium aims to meet ESG standards and report in a transparent way on its progress in implementing its sustainability plan, Chain Reaction 2030.
- Increasing the level of disclosure. While the 2022 Remuneration Report received support at the 2023 AGM, transparency around remuneration continues to be a topic of focus for the Remuneration Committee. In 2023, the Remuneration Committee considered the extent to which the targets could be more transparently communicated externally, without releasing commercially sensitive information.
- Improving the dialogue with shareholders. In 2023, the Company and the Remuneration Committee had an extensive dialogue with Avantium's major shareholders and shareholder representative bodies to discuss its Remuneration Policy and Remuneration Report. We have carefully considered this feedback. When setting remuneration policies, we aim to listen and respond constructively to the diverse views of all our stakeholders.
- Constantly improving corporate governance policies. These continue to evolve and we follow the developments in this area. Based on these developments and carefully considering the feedback from major shareholders and shareholder representative bodies, the Remuneration Committee and the Supervisory Board aim to submit an updated Remuneration Policy for approval to the General Meeting.

Looking Forward

In accordance with Article 2:135a (2) of the Dutch Civil Code, every four years the Company needs to submit for adoption to the General Meeting an updated Remuneration Policy for both the Management Board and the Supervisory Board, taking into consideration any adjustments required on the basis of Dutch legislation or EU directives, shareholders' and shareholder representatives' feedback, and other changes deemed necessary based on remuneration trends and benchmarking. As the last policies were adopted in 2020, the updated remuneration policies for the Management Board and the Supervisory Board will be proposed for adoption by the General Meeting. We remain committed to remuneration practices and policies that allow us to attract, retain and motivate high-performing employees while paying close attention to appropriate alignment with all stakeholders. We are aiming to address certain remuneration concerns in the future updated policies.

I would like to thank the members of the Remuneration Committee and the Supervisory Board for their time, skills and commitment over the past year.

We will continually gather input from key stakeholders, both internal and external, on our new incentive measures to help inform our thinking, while also paying close attention to trends in the relevant marketplaces. I look forward to discussing the policy and actual remuneration practices in the 2024 AGM, and will be happy to answer any questions you may have.

Edwin Moses
Chair of the Remuneration Committee

Introduction

This Remuneration Report provides a summary of the remuneration policies for Avantium's Management Board and Supervisory Board, as well as an overview of the remuneration of the members of the Management Board and the Supervisory Board paid in the financial year 2023. This Remuneration Report is prepared in accordance with the relevant parts of Section 135, Book 2 of the Dutch Civil Code, in line with the EU guidelines based on the EU Shareholders' Rights Directive. The remuneration is furthermore determined in accordance with the Remuneration Policy adopted at the AGM on 14 May 2020, with an effective date of 1 January 2020. After approval by the Supervisory Board, the Remuneration Report will be submitted to the AGM on 15 May 2024 for an advisory vote by our shareholders, in line with Section 135b subsection 2, Book 2 of the Dutch Civil Code.

The Remuneration Report for the financial year 2022 was submitted to the AGM of 2023 and received a positive advisory vote.

Remuneration Policy

Introduction and Governance of the Remuneration Policy

The last update of the Remuneration Policy was adopted by the General Meeting at the AGM of 14 May 2020 and became effective as of 1 January 2020.

The Remuneration Policy supports the purpose, long-term development and strategy of the Company, while aiming to respect all stakeholders' requirements and maintaining an acceptable risk profile. The Supervisory Board ensures that the Policy and its implementation are linked to Avantium's strategic goals and objectives. The remuneration structure is aimed at achieving a balance between short-term and long-term results and objectives, and is designed to encourage behaviour that is focused on long-term value creation for all stakeholders, while ensuring that the highest standards of integrity and good corporate governance are maintained. It is aimed at motivating the accomplishment of outstanding achievements, using a combination of financial and non-financial performance measures. At Avantium, sustainability is at the heart of the Company's strategy. Avantium's vision of a fossil-free world is fundamental to all Avantium does, and Avantium's technologies and products are designed to revolutionise the chemical industry and reshape a broad range of high-value markets.

Avantium's long-term and short-term sustainability objectives are increasingly linked to the company's remuneration structure.

For this year's Remuneration Report, the Remuneration Committee further developed its approach to reporting, including its level of reporting transparency on target-setting and achievement, both retroactively for 2023 and in advance for 2024. This is in anticipation of submitting an updated Remuneration Policy to the General Meeting for adoption. The Company now intends to link variable remuneration more directly to its sustainability objectives.

As part of an updated Remuneration Policy, the Remuneration Committee will propose a redefined external benchmark group (please refer to the paragraph External Perspective on page 86).

Transparency around remuneration and target-setting continued to be a topic of focus for the Remuneration Committee. In 2023, we made further efforts to improve this transparency, taking into account feedback we received from our stakeholders during our engagement sessions. The Remuneration Committee maintains its view that actual targets are strategically and commercially sensitive information. It understands, however, that more transparency towards its external stakeholders is desired. This Remuneration Report includes the Remuneration Committee's assessment of the goal achievement level for 2023.

The 2024 targets represent a list of long- and short-term goals that are aligned with the Company's business strategy. As an important element thereof, these goals reflect the Company's ESG criteria. The Remuneration Committee has selected and determined the 2024 targets based on financial performance (52.5%) and non-financial performance (47.5%). These targets have been set taking into account Avantium's strategy and five-year business plan.

The Remuneration Committee maintains its view on the principle of a one-off share-based award to members of the Supervisory Board upon their appointment (and any subsequent re-appointment). The remuneration package for its Supervisory Board members should enable Avantium to attract and retain diverse members with a broad international background and the right balance of personal skills, competences and experience required to oversee the development and execution of Avantium's long-term strategy. A one-off share-based award contributes to the alignment between the interests of the Supervisory Board and other shareholders.

The Supervisory Board is responsible for the development and execution of the remuneration policy. The Remuneration Committee will continue to regularly assess the remuneration policy and advise the Supervisory Board on the need for any changes.

The Remuneration Committee intends to submit an updated version of Avantium's Remuneration Policy for the Management Board and the Supervisory Board for approval by the General Meeting. This will include any updates to address further developments in remuneration practices and take into consideration any adjustments resulting from remuneration benchmark assessments and feedback received from shareholders.

External Perspective: Reference Group and Market Positioning

As with the remuneration philosophy for all Avantium employees, the remuneration of the Management Board should be competitive compared with a relevant reference market. To define this market, a reference benchmark group is approved by the Supervisory Board, consisting of companies that are selected on criteria such as size, complexity, geography, governance framework, scope and type of industry. In principle, a benchmark exercise is conducted at least once every four years and one is in progress early 2024. In the years without a new benchmarking exercise, the Supervisory Board considers the appropriateness of any change of base salary based on the market environment, as is also the case concerning salary adjustments for other Avantium employees.

As a guiding principle, the total direct remuneration of the Management Board is aimed to be set within a competitive range of +/-20% at or around the median of the reference market.

The remuneration benchmark assessment is performed on the following compensation elements:

- Base salary
- Target short-term incentive (STI)
- Total cash compensation (TCC) – base salary plus STI
- Long-term incentive (LTI) – as a percentage of base salary
- Total direct compensation (TDC) – TCC plus LTI

In 2024, the Supervisory Board will conduct a remuneration benchmark assessment of the market competitiveness of the current compensation package of the members of the Management Board, in preparation for submitting an updated Remuneration Policy to the General Meeting for approval. As part thereof, the Supervisory Board will also review the reference group for the benchmark assessment and will amend where necessary according to the previously mentioned criteria.

Management Board Remuneration 2023

The remuneration paid to the members of the Management Board in 2023 was based on Avantium's Management Board Remuneration Policy.

For 2023, the remuneration of the members of the Management Board continued to consist of the following components:
- i) fixed annual base salary;
- ii) short-term annual variable remuneration (in cash);
- iii) long-term annual variable remuneration in the form of shares (LTIP) and options (employee stock option plan; ESOP); and
- iv) allowance for pension and fringe benefits.

Avantium does not grant any personal loans, guarantees or advance payments to members of the Management Board.

i) Fixed Annual Base Salary

The objective of the fixed annual base salary is to compensate for the performance of day-to-day activities. The fixed annual base salary of the members of the Management Board is based on the level of responsibility and performance and is aimed to be set at or around the median of the remuneration levels payable within the reference group as determined by the most recent benchmark group assessment.

In line with the Management Board Remuneration Policy, in 2023 the full-year base salary of the CEO, Tom van Aken, increased by 9.9% to an annual base salary of €300,116. The full-year base salary for the CFO, Boudewijn van Schaïk, was €251,080.

ii) Short-Term Annual Variable Remuneration

The objective of the short-term annual variable remuneration is to ensure that the members of the Management Board focus on realising their short-term operational objectives, leading to long-term value creation.

The bonus refers to the annual performance-related cash and non-cash incentive that is applicable to the members of the Management Board and comprises (i) a cash component consisting of no more than 50% of the aggregate bonus, if any, and (ii) a non-cash component equivalent to the cash component that must be invested in Investment Shares (see under iii).Long-Term Investment Plan in the Form of Matching Shares)

The Supervisory Board has the discretionary power to adjust the incentive pay-out up- or downwards if it feels that the outcome is unreasonable or inappropriate due to exceptional circumstances during the performance period, such as by taking into account the long-term interests and sustainability of the Company as a whole. Scenario analyses of the possible outcomes of the variable remuneration components and their effects on the remuneration of the Management Board are conducted, The Supervisory Board used its upward discretionary power to adjust the incentive pay-out over 2023 with respect to the operational target related to securing financing. The Supervisory Board did not use its power to recover any remuneration from present or former Management Board members.

Performance Goals

The performance goals are a balanced mix of ESG, strategic, commercial and operational performance targets, which together ensure a focus on both the performance of the Company in the short-term and the Company's long-term strategic objectives. For each of the performance goals, the Supervisory Board agrees challenging, but realistic, targets and target levels.

The performance goals are specific and measurable, and are formulated and communicated at the beginning of each financial year (except for circumstances where the Supervisory Board considers semi-annual target-setting more appropriate), although the Supervisory Board may adjust the targets and their relative weighting during a given year if circumstances warrant this. Following a presentation by the Management Board, the Supervisory Board sets the goals, based on progress on sustainability targets, commercial performance and operational performance, in relation to Avantium's strategy and long-term objectives, as set out in the management Board Remuneration Policy (www.avantium.com/corporate-governance/#remuneration).

In setting the performance goals, the interests of all stakeholders, internal and external, are considered.

In order to achieve alignment in the remuneration structure of the Management Board and other Avantium employees, a subset of the bonus performance goals, target-setting and pay-out schemes as set out in the Remuneration Policy is applicable to Avantium employees.

The strategic progress goals aim to create long-term value for shareholders and may include securing financing and strategic partnerships and achieving strategic milestones. The targets for commercial performance are based on securing partnerships for the commercialisation of technology programmes and reaching the commercialisation phase of the different technology programmes (path from laboratory scale to demonstration scale and finally commercialisation scale). The operational performance targets are based on reaching the operational milestones of the different technology programmes. The ESG targets are based on the Company's roadmap for execution of its sustainability plan, Chain Reaction 2030.

Although Avantium maintains its view that detailed targets qualify as strategically and commercially sensitive information, it understands that more transparency towards its external stakeholders is desired, both in advance of target-setting and retrospectively, and will continue to give this matter careful consideration.

For the annual bonus 2023, the on-target bonus is equal to 100% of (i) 70% of base salary for the CEO and (ii) 50% of base salary for the CFO. The maximum bonus in case of above-target performance is equal to 150% of the on-target bonus. If performance is below a pre-defined threshold level, no bonus will be paid out. The members of the Management Board are, together with senior management, obliged to invest the total non-cash component of their (net) bonus in Investment Shares. The non-cash component percentage of the bonus is 50%. The cash component of the bonus may, at the discretion of the relevant member of the Management Board, also be invested in Investment Shares.

The bonus pay-out levels are prorated based upon the level of achievement of the aforementioned performance goals.

For the annual bonus 2023, the performance targets and their relative weighting were set as follows:

Performance Targets Weighting 2023

Name	Weight factor	Target
T.B. van Aken	35%	Strategic
	15%	Commercial
	40%	Operational
	10%	ESG
B.W. van Schaïk	35%	Strategic
	15%	Commercial
	40%	Operational
	10%	ESG

The Remuneration Committee has carefully weighed all aspects of this year's events to ensure a fair application of the Management Board Remuneration Policy and assessment of the 2023 goals. The fact that Avantium made significant strategic, commercial and operational progress in the delivery of its business plan, and was able to meet important ESG targets, is reflected in the remuneration to be paid to the Management Board.

After careful consideration and following the proposal made by the Remuneration Committee on the level of achievement for each of the goals identified for 2023, the Supervisory Board made the following decisions:

- There was an average total Company achievement of 78% of the 2023 goals.
- The 78% achievement assessment of the Company's 2023 goals will form the basis for the cash incentive bonus payment to all staff, and will be used to determine the Management Board and senior management's annual performance-related cash bonus component (Short-Term Incentive) and the non-cash long-term annual variable incentive component (Long-Term Incentive).
- The Supervisory Board used its upward discretionary power to adjust the incentive pay-out to the Management Board over 2023 with respect to the operational target related to securing financing. As a result, the overall average achievement of the Management Board for the performance year 2023 amounts to 100.6% of the on-target bonus.
- The timing of the (cash) pay-out of the bonus will be Q2 2024.

For the assessment of the goal achievements in 2023, the following considerations were made:

- The Company's focus on operational progress was the main reason for weighing the operational targets highest. These targets were related to the financial and organisational performance, as well as to securing sufficient funding in order to ensure Avantium remains well capitalised for the next phase of commercialising the FDCA and PEF technology. Financial targets were deemed to be partly achieved on the basis of top- and bottom-line results. Organisational targets for staff retention and recruitment were achieved.. For financing, the 2023 target was exceeded, as result of the successful €70-million capital raise that was completed in Q1 2024. For the operational target related to securing Company financing, the Supervisory Board used its discretionary power and decided to give a higher score to the Management Board as this exceeded the target.
- The strategic targets were partly achieved. The target relating to the construction of the FDCA Flagship Plant in Delfzijl (the Netherlands) was not achieved due to the higher costs of construction and the extension of timelines as a result of supply chain problems and late deliveries of parts and equipment. On the other hand, the target related to the licensing business was achieved, as the Company signed its first technology licensing agreement with Origin Materials. In addition, the Company decided to sharpen its strategic focus on the commercialisation of FDCA and PEF, and consequently halted its investments in the development of Ray Technology™.
- The commercial targets were deemed to be partly achieved. The Company successfully expanded its customer base for the offtake of its FDCA Flagship Plant with three additional offtake agreements and a collaboration agreement with Albert Heijn. For the development of Volta Technology, Avantium signed partnerships with Norsk Hydro and SCG Chemicals. In the R&D Solutions business, Avantium increased its custom-made business, but at a lower percentage than it had planned. Avantium did not succeed in securing a partnership or licensing deal for its Ray Technology™.
- With respect to the ESG targets, Avantium extended its positive safety record with zero safety accidents. For the ESG target on Chain Reaction 2030 implementation, the Company reported on its Scope 1 and 2 emissions and conducted a baseline assessment for its Scope 3 emissions. The LCA for PEF products was updated in 2023, demonstrating that PEF can enable a 62% reduction in GHG emissions over the life cycle of a 500 ml bottle, compared to its fossil-based incumbent. Moreover, key suppliers were asked to sign Avantium's Sustainable Supplier Code and the Company also revised its Code of Conduct.

The table below sets out the performance per target. The Supervisory Board used upward discretion with respect to the operational target related to securing financing.

The overall average achievement of the Management Board for the performance year 2023 amounts to 100.6% of the on-target bonus. Reference is made to the table below.

The on-target bonus for Tom van Aken is 70%, resulting in a variable remuneration for 2023 of 70% of his annual base salary. The on-target bonus for Boudewijn van Schaïk is 50%, resulting in a variable remuneration for 2023 of 50% of his annual base salary.

Total Performance 2023

Name	Weight factor	Target	Measured performance	Total performance in 2023
T.B. van Aken	35%	Strategic	28%	101%
	15%	Commercial	9%	
	40%	Operational	55%	
	10%	ESG	9%	
B.W. van Schaïk	35%	Strategic	28%	101%
	15%	Commercial	9%	
	40%	Operational	55%	
	10%	ESG	9%	

Performance Targets and Outcome 2023

Performance measure	Objective	Target	Performance
ESG	Safety & health	1. Zero accidents and zero loss of containments as per Avantium's newly approved incident classification	1. Achieved
ESG	Chain Reaction 2030 implementation	1. Define and plan how technologies impact carbon emission reductions; calculate and report reductions achieved 2. Map Scope 1, 2 and 3 emissions and implement ISO-certified management systems (ISO 45001) 3. Commitment of key suppliers to Code of Conduct 4. Implement organisation code of business conduct; implement KPI for diversity and improve on baseline	1. Achieved 2. Partly achieved 3. Partly achieved 4. Achieved
Strategic	Portfolio & team	1. Reach engineering stage-gate decision as next step of Ray Technology™ commercialisation 2. Determine and execute technology portfolio changes in line with Company strategy 3. Strengthening of executive team to prepare company for next phase of commercialisation	1. Achieved 2. Achieved 3. Partly achieved
Commercial	Drive commercial performance	1. Ensure full capacity loading for FDCA Flagship Plant 2. Avantium Renewable Polymers: enter into licensing deal in line with company strategy 3. Avantium R&D Solutions: execution of growth strategy (to be measured in revenues) 4. Avantium Renewable Chemistries: enter into Ray Technology™ licensing deal in line with Company strategy 5. Attract industrial partners for commercialisation of Volta Technology	1. Achieved 2. Achieved 3. Partly achieved 4. Not achieved 5. Achieved
Operational	Drive financial performance	1. Keep the FDCA Flagship Plant construction on track in terms of costs and schedule 2. Realise significant increase of topline compared to 2022 3. Ensure the Company is sufficiently funded for execution of strategy 4. Control of expenses and company cash flows	1. Not achieved 2. Partly achieved 3. Exceeded 4. Achieved
Operational	Drive organisational performance	1. Staff retention: ensure staff turnover below 10% 2. Recruitment: hiring of staff for FDCA Flagship Plant and Avantium R&D Solutions growth strategy	1. Achieved 2. Achieved

iii) Long-Term Variable Remuneration in the Form of Shares (LTIP) and Options (ESOP)

On 5 October 2016, Avantium adopted the Employee Stock Option Plan (ESOP) for all key employees, senior management and members of the Management Board and the Long Term Incentive Plan (LTIP) for the members of the Management Board and the Management Team (collectively, the Incentive Plans). The ESOP furthermore allows for participation by members of the Supervisory Board. The Incentive Plans encourage a long-term focus and alignment with Avantium's strategy.

iii.a) Long-Term Investment Plan in the Form of Matching Shares

The members of the Management Board are obligated to invest the total non-cash component of their (net) bonus in shares to be delivered by the Company (Investment Shares). The non-cash component percentage is 50%. The cash component of the bonus may, at the discretion of the relevant member of the Management Board, also be invested in Investment Shares. The Investment Shares are subject to a retention period of five years following the investment date. After the end of the retention period, Avantium will match the Investment Shares in a 1:1 ratio (Matching Shares); that is, one Matching Share is granted for each Investment Share. These Matching Shares are delivered by the Company at the end of the five-year retention (lock-up) period of the Investment Shares. Only in the event that the member of the Management Board is no longer engaged by the Company at the end of the retention period will the number of Matching Shares be decreased as provided for in the LTIP (depending on the employment termination date and cause of departure, the number of Matching Shares will be decreased pro rata parte, based on the number of full months of the Management Board member not being engaged). The objective of the plan is that Management Board members build an equity position in the Company, so aligning their interests with, the Company's stakeholders.

Based on the feedback from shareholders on the current Remuneration Policy and the Remuneration Report 2022, the Remuneration Committee is reviewing the current LTIP. This will be reviewed in the context of the Remuneration Policy to be submitted for approval to the General Meeting.

iii.b) Long-Term Variable Remuneration in the Form of Share Options (under the ESOP)

On an annual basis, share options under the ESOP (Options) may be awarded to members of the Management Board in accordance with the performance parameters pre-determined by the Supervisory Board. These parameters are consistent with the performance measures applied for the senior management and key employees of Avantium, to ensure optimal alignment with the employees of Avantium who receive Options. Options are awarded within a pre-determined range, as stated in the Management Board Remuneration Policy (Section 4.6), where the actual annual award is set by the Supervisory Board. Based on the feedback from shareholders, the Remuneration Committee wishes to clarify that the pre-determined performance targets consist of a combination of (i) the Company's short-term and long-term goals, (ii) the performance goals that are determined for each of Avantium's technologies and (iii) individual targets for the members of the Management Board.

The Options fully vest on the third anniversary following the date of the award. The exercise period of the Options is up to five years after the date of vesting. The Options vest at the end of a three-year vesting term and not on an annual pro-rata basis during this three-year vesting period. Only in the event that the member of the Management Board is no longer employed by the Company at the date of vesting will the number of options be decreased as provided for in the ESOP (depending on the cause of departure and termination date, pro rata parte, based on the number of full months of the Management Board member not being engaged during the three-year vesting period) . The ESOP plan rules will be reviewed in the context of the Remuneration Policy to be submitted for approval to the General Meeting.

iii.c) Adjustments to Variable Remuneration

In line with Dutch law, the variable remuneration of the members of the Management Board may be reduced, or Management Board members may be obliged to repay (part of) their remuneration to the Company, if one of the circumstances as described in Section 5 (Management Board Remuneration: Adjustments to Variable Remuneration) of the Remuneration Policy apply.
In 2023, no adjustments based upon this section of the Remuneration Policy were made.

iv) Allowance for Pension and Fringe Benefits

The members of the Management Board are allowed to participate in Avantium's pension plan, available to all Avantium employees, whereby Avantium provides the employer's contribution of the pension contributions. The pension plan is based on a defined contribution system. Legislation in 2015 reduced the maximum pension accrued to 1.875% (from 2.15%) of the full pensionable salary. The members of the Management Board can choose to build up the part of the pensionable salary above €128,810 (2023) in a separate defined contribution plan. There are no arrangements for early retirement.

The members of the Management Board are entitled to additional remuneration elements, such as Company car costs, travel expenses, social security costs and a contribution to health and disability insurance, all in line with Avantium policies, plans and arrangements as applicable to Avantium's employees.
The table hereafter provides a breakdown of the aggregate remuneration of the members of the Management Board in 2023.

Management Board Agreements and Severance Payments

For 2023, Tom van Aken continued on the basis of his employment agreement with Avantium Support B.V., a subsidiary of the Company. This agreement is for an indefinite period of time and does not contain severance payment provisions.

To ensure consistency across the Management Board it has been decided that the employment agreement of Tom van Aken, with an effective date of 1 November 2002, will be replaced by a Management Board agreement in 2024, being a services agreement ('overeenkomst van opdracht') according to Article 7:400 of the Dutch Civil Code. This follows Article 2:132(3) of the Dutch Civil Code, which stipulates that agreements concluded between a Dutch listed company and a member of its Management Board cannot be qualified as an employment agreement.
There are no changes to his remuneration components. The Company and Tom van Aken have agreed that, for the purpose of calculating seniority under this Management Board agreement the service years as of 1 November 2002 shall be taken into account. Any severance payment shall not exceed one year's base salary, in line with the Dutch Corporate Governance Code.

On 30 November 2022, the General Meeting appointed Boudewijn van Schaïk as CFO with an effective date of 1 January 2023, pursuant to a Management Board agreement.

Total Remuneration Received by Members of the Management Board

(In €1,000)	Fixed remuneration		Variable					
Management Board member	**Salary**	**Other benefits**[15]	**Short-term bonus**[16]	**Long-term award**[17]	**Post-employee benefits**	**Total remuneration**	**% of fixed remuneration**	**% of variable remuneration**
T.B. van Aken								
2023	300	28	211	55	21	615	57%	43%
2022	273	24	165	71	20	553	57%	43%
B.W. van Schaïk								
2023	251	69	126	—	14	460	73%	27%
2022	—	—	—	—	—	—	0%	0%
B.J.J.V. Welten (former CFO)								
2023	—	—	—	47	—	47	0%	100%
2022	240	24	51	21	28	364	80%	20%
Total - 2023	**551**	**97**	**337**	**102**	**35**	**1,123**	**61%**	**39%**
Total - 2022	**513**	**48**	**215**	**92**	**48**	**917**	**66%**	**34%**

The total remuneration based on the International Financial Reporting Standards (IFRS) in 2023 for Tom van Aken amounted to €695,000 (2022: €596,000) due to the share-based payment expenses of €134,000 recognised during the year (2022: €115,000). The total remuneration based on IFRS in 2023 for Boudewijn van Schaïk amounted to €532,000 (2022: €nil) due to the share-based payment expenses of €72,000 recognised during the year (2022: €nil).

[15] Other benefits mainly include contributions to social security plans and benefits in kind such as company cars, medical expenses and legal expenses.
[16] Including the cash and non-cash part of the awarded bonus for the specific performance year.
[17] Including the value of the various performance share-based plans that vested during the year. The value of the LTIP reward is calculated based on the number of matching shares that have vested and of the share price at the date of vesting. The value of the ESOP reward is calculated based on the number of share options that have vested during the year and the net of the share price at vesting date less the exercise price.

Internal Pay Ratio

In setting the Remuneration Policy for the members of the Management Board, the Supervisory Board also takes into account the internal pay ratio. The internal pay ratio between the average pay of Avantium employees vis-à-vis the average pay of the CEO is calculated based on the average 2023 remuneration of all Avantium employees vis-à-vis the 2023 remuneration of the CEO. Since 2020, we have also included pension contributions and long-term incentive components.

The 2023 pay ratio is 6:1 (2022: 6:1 2021: 6:1 2020: 5:1 2019: 5:1 2018: 5:1) for the CEO. The 2023 pay ratio is based on the specific guidance on the calculation methodology of the pay ratio effective as from 1 January 2023 as provided in the Dutch Code.[18] The following table provides an overview of the remuneration of the members of the Management Board compared with the average total remuneration of an Avantium employee (defined as gross wages, holiday allowance, other benefits, pension, bonus and long-term awards) and Company performance since the listing of the Company's shares in 2017.

The table includes information on a five-year period, as of 2018.
It is noted that Frank Roerink's severance payment is included in his total remuneration for the year 2019.

(In €1,000)	2023	% change	2022	% change	2021	% change	2020	% change	2019	% change	2018
Management Board member											
T.B. van Aken	615	11%	553	-6%	589	34%	440	2%	432	41%	306
B.W. van Schaïk	460	0%	—	0%	—	0%	—	0%	—	0%	—
B.J.J.V. Welten (former CFO)	47	-87%	364	-12%	411	35%	304	0%	—	0%	—
F.C.H. Roerink (former CFO)	—	0%	—	0%	—	0%	—	-100%	616	120%	280
Average employee salary	**97**	1%	**96**	6%	**91**	11%	**81**	16%	**70**	0%	**70**

The average total Company performance over 2023 was 78%. The total Company performance represents an average achievement score, as Avantium's employees are paid 50% on basis of Company achievements (Strategic, Commercial, Operational and ESG target achievement) and 50% on the achievements of their respective business unit, being more granular financial, commercial, operational and organisational targets relevant for the specific business unit.

	2023	% change	2022	% change	2021	% change	2020[19]	% change	2019	% change	2018
Total Company performance	**78%**	-6%	**83%**	-1%	**84%**	100%	**0%**	-100%	**65%**	122%	**29%**

[18] Starting as of 1 January 2021, the value of the share-based component of the remuneration is determined at the time of assignment in accordance with the applicable rules under IFRS. Before 1 January 2021, the value of the share-based component of the remuneration was determined based on the value of the options that vested during the year and the net of the share price at vesting date less the exercise price.
[19] The Company's performance and achievement of the performance measures for 2020 was set to zero percent herein; as the Management Board and senior management decided to forfeit their respective annual cash bonus, the Company elected not to disclose the realised achievement of the 2020 performance targets.

Number of Investment Shares and Matching Shares Outstanding and Awarded to the Management Board

		The main conditions of share plans				Information regarding the reported financial year							
Management Board member	**Specification of plan**	**Performance period**	**Award date**	**Vesting date**	**End of retention period**	**Number of awards outstanding 1 January**	**Shares allocated during the year**	**Shares forfeited during the year**	**Shares vested during the year**	**Value of matching shares vested during the year in EUR[20]**	**Matching Shares unvested as at 31 December**	**Shares subject to retention period as at 31 December**	**Matching Shares vested as at 31 December**
T.B. van Aken, CEO	LTIP – Investment Shares	2017-2018	16/3/2018	16/3/2018	16/3/2023	7,441	—	—	—	—	—	—	—
		2019-2020	14/5/2020	14/5/2023	14/5/2025	15,365	—	—	—	—	—	15,365	—
		2021-2022	18/5/2022	18/5/2025	18/5/2025	20,630	—	—	—	—	—	20,630	—
		2022-2023	10/5/2023	10/5/2026	10/5/2026	—	14,606	—	—	—	—	14,606	—
	LTIP – Matching Shares	n/a	16/3/2018	16/3/2021	16/3/2023	7,441	—	—	—	—	—	—	7,441
		n/a	14/5/2020	14/5/2023	14/5/2025	15,365	—	—	5,122	18,192	—	—	15,365
		n/a	18/5/2022	18/5/2025	18/5/2027	20,630	—	—	6,877	19,586	9,169	—	11,461
		n/a	10/5/2023	10/5/2026	10/5/2028	—	14,606	—	3,246	11,360	11,360	—	—
B.J.J.V. Welten, former CFO	LTIP – Investment Shares	2021-2022	18/5/2022	18/5/2025	18/5/2025	9,947	—	—	—	—	—	9,947	—
		2022-2023	18/5/2023	31/12/2023	31/12/2023	—	7,297	—	7,297	25,540	—	—	—
	LTIP – Matching Shares	n/a	18/5/2022	18/5/2025	18/5/2025	9,947	—	—	3,316	9,444	4,421	—	3,316
F.C.H. Roerink, former CFO	LTIP – Investment Shares	2017-2018	16/3/2018	16/3/2018	16/3/2023	5,789	—	(5,789)	—	—	—	—	—
	LTIP – Matching Shares	n/a	16/3/2018	16/3/2021	16/3/2023	1,930	—	(1,930)	—	—	—	—	—
					Total Management Board members	**86,872**	**29,212**	**—**	**15,244**	**49,138**	**20,529**	**50,601**	**34,267**
					Total former Management Board members	**27,613**	**7,297**	**(7,719)**	**10,613**	**34,983**	**4,421**	**9,947**	**3,316**

[20] The value of Matching Shares vested during the year is expressed in EUR and is determined by the share price at vesting date.

Number of Options Outstanding and Awarded to the Management Board

					The main conditions of share option plans							Information regarding the reported financial year
Management Board member	Specification of plan	Award date	Vesting date	Exercise period	Exercise price of the option in EUR	Number of options outstanding as at 1 January	Share options granted during the year	Share options forfeited during the year	Share options vested during the year	Value of share options vested during the year[21]	Share options unvested as at 31 December	Share options vested as at 31 December
T.B. van Aken, CEO	ESOP	19/10/2006	19/10/2009	10 years	7.60	20,230	—	—	—	—	—	20,230
		1/10/2008	1/10/2011	10 years	0.10	20,657	—	—	—	—	—	20,657
		1/5/2009	1/5/2012	10 years	0.10	35,000	—	—	—	—	—	35,000
		1/5/2010	1/5/2013	10 years	0.10	29,770	—	—	—	—	—	29,770
		4/11/2010	4/11/2013	10 years	0.10	28,000	—	—	—	—	—	28,000
		30/11/2011	30/11/2014	10 years	0.10	135,000	—	—	—	—	—	135,000
		1/10/2015	15/3/2017	10 years	0.10	22,000	—	—	—	—	—	22,000
		1/10/2015	15/3/2017	10 years	9.80	7,500	—	—	—	—	—	7,500
		2/3/2017	15/3/2017	10 years	0.10	13,000	—	—	—	—	—	13,000
		2/3/2017	15/3/2017	10 years	9.80	18,000	—	—	—	—	—	18,000
		17/5/2017	17/5/2020	8 years	10.58	50,000	—	—	—	—	—	50,000
		28/3/2018	28/3/2021	8 years	5.34	50,000	—	—	—	—	—	50,000
		16/5/2019	16/5/2022	8 years	2.60	100,000	—	—	—	—	—	100,000
		14/5/2020	14/5/2023	8 years	3.59	50,000	—	—	5,556	3,890	—	50,000
		19/5/2021	19/5/2024	8 years	4.56	50,000	—	—	16,667	—	5,556	44,444
		18/5/2022	19/5/2025	8 years	3.07	50,000	—	—	16,667	1,841	22,222	27,778
		10/5/2023	10/5/2026	8 years	3.50	—	50,000	—	11,111	—	38,889	11,111
B.W. van Schaïk, CFO	ESOP	30/12/2022	30/12/2025	8 years	3.68	50,000	—	—	16,667	—	—	18,056
		10/5/2023	10/5/2026	8 years	3.50	—	20,000	—	4,444	—	—	4,444
					Total Management Board members	**729,157**	**70,000**	**—**	**71,111**	**5,731**	**66,667**	**684,990**

In 2022, 70,000 additional share options were granted to the Management Board. Boudewijn van Schaïk (appointed by the General Meeting on 30 November 2022, with an effective date of 1 January 2023) was awarded 50,000 share options on 30 December 2022 at an exercise price of €3.68 per option. The share-based payment expenses of the Management Board of €237,000 comprise the part of the share-based compensation (note 14) attributable to the share options granted in previous years.

[21] The value of share options vested during the year is expressed in EUR and is determined by the average share price at vesting date less the exercise price.

Number of Options Outstanding and Awarded to Former Management Board Member

				The main conditions of share option plans						Information regarding the reported financial year		
Management Board member	**Specification of plan**	**Award date**	**Vesting date**	**Exercise period**	**Exercise price of the option in EUR**	**Number of options outstanding as at 1 January**	**Share options exercised during the year**	**Share options forfeited during the year**	**Share options vested during the year**	**Value of share options exercised during the year[22]**	**Share options unvested as at 31 December**	**Share options vested as at 31 December**
		14/5/2020	14/5/2023	8 years	3.59	44,444	—	—	—	—	—	44,444
		19/5/2021	19/5/2024	8 years	4.56	16,667	—	—	—	—	—	16,667
B.J.J.V Welten, former CFO	ESOP	18/5/2022	19/5/2025	8 years	3.07	6,667	—	—	—	—	—	6,667
					Total former Management Board members	**44,444**	**—**	**—**	**—**	**—**	**—**	**44,444**

[22] The value of share options exercised during the year is expressed in EUR and is determined by the share price at exercise date less the exercise price.

Management Board Remuneration 2024

In accordance with Article 2:135a (2) of the Dutch Civil Code, every four years the Company needs to submit for adoption to the General Meeting an updated Remuneration Policy for both the Management Board and the Supervisory Board, taking into consideration any adjustments required on the basis of Dutch legislation or EU directives, shareholders' and shareholder representatives' feedback, other changes deemed necessary based on remuneration trends and benchmarking.

As the last policies were adopted in 2020, updated Remuneration Policies for the Management Board and the Supervisory Board will be proposed for adoption by a General Meeting. We remain committed to remuneration practices and policies that allow us to attract, retain and motivate high-performing employees while paying close attention to appropriate alignment with all stakeholders. We are looking to address remuneration topics and concerns in the proposed updated policies.

For 2024, increases to the fixed annual base salary for the Management Board and senior management have not yet been considered. They will be reviewed in due course and may retroactively, as of 1 January 2024, take into consideration the outcome of a benchmarking exercise and any further updates to the total remuneration for the Management Board, including the short- and long-term incentive components as included in an updated Management Board Remuneration Policy, subject to adoption by a General Meeting..

The 2024 goals are only being disclosed to the extent that they are not share-price or competition sensitive. For this reason, some of these goals here are described generically.

As per the current Management Board Remuneration Policy of 2020, the on-target bonus for Tom van Aken is 70% of his annual base salary. The on-target bonus for Boudewijn van Schaïk is 50% of his annual base salary.

Performance Targets Weighting 2024

Performance measures 2024	CEO	CFO
Strategic	45%	45%
Commercial	15%	15%
Operational	30%	30%
ESG	10%	10%
Total performance	**100%**	**100%**

Performance Targets and Weighting 2024

Performance measure	Objective	Target	Weight Management Board	Financial	Non-financial
ESG	Safety & health	1. Zero accidents as per Avantium's incident classification system	5.0 %	0.0 %	5.0 %
ESG	Chain Reaction 2030 implementation	1. Achieve ecological, operations, supplier and people targets related to CO_2 reduction potential, circularity, Scope 1, 2 and 3 emissions, diversity and inclusion, engagement and advocacy	5.0 %	0.0 %	5.0 %
Strategic	Achieve strategic milestones	1. Timely completion of construction of FDCA Flagship Plant; budget controls and safe and timely start-up of FDCA Flagship Plant 2. Partnering deals for financing of next phase of Volta Technology scale-up and commercialisation 3. Partnering deals for next phase of Ray Technology™ commercialisation	45.0 %	22.5 %	22.5 %
Commercial	Drive commercial performance	1. Drive commercial loading of FDCA Flagship Plant – signing of sufficient offtake agreements 2. Drive licensing deals of YXY® Technology in accordance with financial plan 3. Continue profitable growth of R&D Solutions business	15.0 %	15.0 %	0.0 %
Operational	Drive financial performance	1. Increase of Company revenues in line with long-term plan 2. Control of operating expenses in line with annual plan 3. Preparations for refinancing of loans of FDCA Flagship Plant to be executed in 2025	15.0 %	15.0 %	0.0 %
Operational	Drive organisational performance	1. Staff retention: manage regretted loss percentage below 10% 2. Invest in training and development of employees	15.0 %	0.0 %	15.0 %
Total			**100.0 %**	**52.5 %**	**47.5 %**

For 2024, the Supervisory Board has set a lower performance threshold, at which short-term annual variable remuneration and subsequent ability to become eligible for participation in the long-term variable remuneration (in the form of shares (LTIP) and share options (ESOP)) is awarded as follows: if (i) the performance score on financial targets is below 20% and (ii) the performance score on non-financial targets is below 15%, there will be no variable remuneration pay-out to the Management Board.

Supervisory Board Remuneration 2023

Remuneration Policy for the Supervisory Board

The remuneration of the members of the Supervisory Board consists of the following components:
i. annual fee;
ii. travel expenses and other expenses; and
iii. one-off fixed awards of share options (Options; pursuant to ESOP) related to the member's appointment and then at any subsequent re-appointment..

i) Annual Fee

The Supervisory Board Remuneration Policy determines the annual (gross) fees for each position of the Supervisory Board, separated into membership and chairpersonship of the Supervisory Board and membership and chairpersonship of a committee.

In line with the Remuneration PPolicy, the members of the Supervisory Board received the following annual (gross) fees:

- Membership of the Supervisory Board: €40,000;
- Chairpersonship of the Supervisory Board: €35,000 (additional);
- Membership of a committee of the Supervisory Board: €5,000 (per committee); and
- Chairpersonship of the Audit Committee of the Supervisory Board: €5,000 (additional).

The table hereafter provides a breakdown of the Supervisory Board members' remuneration in 2023.

Avantium does not grant any personal loans, guarantees or advance payments to members of the Supervisory Board.

ii) Travel Expenses and Other Expenses

Supervisory Board members are reimbursed for all reasonable costs incurred in connection with their attendance of meetings. Travel costs are reimbursed in line with Avantium's travel policy. Any other expenses are only reimbursed, either in whole or in part, if incurred with the prior consent of the Chair of the Supervisory Board.

iii) One-Off Fixed Awards of Options (ESOP) Related to the Member's Appointment

The ESOP allows for participation by members of the Supervisory Board. A member is, upon such member's appointment (and any subsequent re-appointment), entitled to thirty thousand (30,000) Options. The Chair of the Supervisory Board is entitled to eighty-five thousand (85,000) Options. A member may choose not to receive the award.

For the applicable terms, reference is made to the Supervisory Board Remuneration Policy.

A revised Supervisory Board Remuneration Policy for the members of the Supervisory Board, is intended to be submitted to the General Meeting for approval.

Total Overview of Supervisory Board Remuneration 2023

(In €1,000)	Fixed remuneration		Variable remuneration				
	Membership	Committees	Other compensation[23]	Long-term award[24]	Total remuneration	% of fixed remuneration	% of variable remuneration
E. Moses	75	15	1	7	**98**	**92 %**	**8 %**
M.B.B. Jou	40	10	3	2	**55**	**91 %**	**9 %**
D. Van Meirvenne	26	3	1	—	**30**	**97 %**	**3 %**
M.G. Kleinsman	40	10	—	—	**50**	**100 %**	**— %**
P.S. Williams	26	3	—	—	**29**	**100 %**	**— %**
N. Björkman	40	15	**4**	**1**	**60**	**92 %**	**8 %**
Total – 2023	**247**	**56**	**9**	**10**	**322**	**94 %**	**6 %**

[23] Other compensation includes expenditures related to travel.
[24] Long-term award includes the value of the ESOP plan. The value of the ESOP reward is calculated based on the number of share options that have vested during the year and the net of the share price at vesting date less the exercise price.

The following table provides detail on the total remuneration received by each Supervisory Board member in 2023

(In €1,000)	2023	2022	2021	2020	2019	2018
E. Moses	98	123	121	133	3	—
M.G. Kleinsman	50	50	50	50	50	50
M.B.B. Jou	55	67	70	47	—	—
N. Björkman	60	57	—	—	—	—
D. Van Meirvenne	30	—	—	—	—	—
P.S. Williams	29	—	—	—	—	—
Total Supervisory Board members	**322**	**297**	**241**	**230**	**53**	**50**
Remuneration of former Supervisory Board members						
C.A. Arnold (member until 31 March 2022)	—	17	53	14	—	—
G.E. Schoolenberg (member until 1 September 2022)	—	25	44	13	—	—
D.J. Lucquin (member until 30 September 2020)	—	—	—	44	50	50
R.W. van Leen (member until 31 December 2019)	—	—	—	—	30	—
K. Verhaar (member until 20 December 2019)	—	—	—	—	90	80
G.E.A Reijnen (member until 15 May 2019)	—	—	—	—	21	55
J.S. Wolfson (member until 15 May 2019)	—	—	—	—	18	50
Total former Supervisory Board members	**—**	**42**	**97**	**71**	**209**	**235**
Total remuneration	**322**	**339**	**338**	**301**	**262**	**285**

The total remuneration based on IFRS in 2023 for Edwin Moses amounted to €156,000 (2022: €112,000) due to the share-based payment expenses of €65,000 recognised during the year (2022: €22,000). The total remuneration based on IFRS in 2023 for Michelle Jou amounted to €55,000 (2022: €63,000) due to the share-based payment expenses of €2,000 recognised during the year (2022: €8,000). The total remuneration based on IFRS in 2023 for Nils Björkman amounted to €80,000 (2022: €78,000) due to the share-based payment expenses of €21,000 recognised during the year (2022: €22,000). The total remuneration based on IFRS in 2023 for Dirk Van Meirvenne amounted to €51,000 (2022: €nil) due to the share-based payment expenses of €21,000 recognised during the year (2022: €nil). The total remuneration based on IFRS in 2023 for Peter Williams amounted to €50,000 (2022: €nil) due to the share-based payment expenses of €21,000 recognised during the year (2022: €nil).

Number of Options Supervisory Board

					The main conditions of share option plans
	Specification of plan	Award date	Vesting date	Exercise period	Exercise price of the option in EUR
E. Moses	ESOP	14/5/2020	14/5/2023	8 years	3.59
E. Moses	ESOP	10/5/2023	10/5/2026	8 years	3.50
M.B.B. Jou	ESOP	14/5/2020	14/5/2023	8 years	3.59
N. Björkman	ESOP	18/5/2022	19/5/2025	8 years	3.07
D. Van Meirvenne	ESOP	10/5/2023	10/5/2026	8 years	3.50
P.S. Williams	ESOP	10/5/2023	10/5/2026	8 years	3.50
C.A. Arnold (former member)	ESOP	30/9/2020	30/9/2023	8 years	5.78
J.S. Wolfson (former member)	ESOP	2/3/2017	2/3/2020	10 years	9.80
J.M. van der Eijk (former member)	ESOP	2/3/2017	2/3/2020	10 years	9.80

										Information regarding the reported financial year
	Specification of plan	Number of options outstanding 1 January	Share options granted during the year	Share options exercised during the year	Share options forfeited during the year	Share options vested during the year	Value of share options vested during the year[25]	Value of share options exercised during the year[26]	Share options unvested as at 31 December	Share options vested as at 31 December
E. Moses	ESOP	85,000	85,000	—	—	28,333	6,613	—	66,111	103,889
M.B.B. Jou	ESOP	30,000	—	—	—	3,333	2,334	—	—	30,000
N. Björkman	ESOP	30,000	—	—	—	10,000	1,105	—	13,333	16,667
D. Van Meirvenne	ESOP	—	30,000	—	—	6,667	—	—	23,333	—
P.S. Williams	ESOP	—	30,000	—	—	6,667	—	—	23,333	—
C.A. Arnold (former member)	ESOP	15,000	—	—	—	15,000	—	—	—	15,000
J.S. Wolfson (former member)	ESOP	4,000	—	—	—	—	—	—	—	4,000
J.M. van der Eijk (former member)	ESOP	4,000	—	—	—	—	—	—	—	4,000
Total Supervisory Board members		**145,000**	**145,000**	**—**	**—**	**55,000**	**10,052**	**—**	**126,111**	**150,556**
Total former Supervisory Board members		**23,000**	**—**	**—**	**—**	**15,000**	**—**	**—**	**—**	**23,000**

As per 31 December 2023, the following Supervisory Board members held Options:

- Edwin Moses, Chair of the Supervisory Board: eighty-five thousand (170,000) options;
- Michelle Jou, member of the Supervisory Board: thirty thousand (30,000) options;
- Nils Björkman, member of the Supervisory Board: thirty thousand (30,000) options;
- Dirk Van Meirvenne, member of the Supervisory Board: thirty thousand (30,000) options; and
- Peter Williams, member of the Supervisory Board: thirty thousand (30,000) options.

Margret Kleinsman chose not to receive the Options award.

With respect to compliance with and deviations from the Dutch Code, reference is made to page 70.

[25] The value of share options vested during the year is expressed in EUR and is determined by the share price at vesting date less the exercise price
[26] The value of share options exercised during the year is expressed in EUR and is determined by the share price at exercise date less the exercise price

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Consolidated Statement of Financial Position

As at December 31

in Euro x 1,000	Notes	2023	2022 (restated)[27]
ASSETS			
Non-current assets			
Property, plant and equipment	5	164,121	60,906
Intangible assets	6	2,323	1,974
Right-of-use assets	7	7,778	9,945
Non-current prepayments	9	—	15,248
Total non-current assets		**174,222**	**88,073**
Current assets			
Inventories	8	1,368	1,567
Trade and other receivables	9	12,390	9,075
Cash and cash equivalents	10	35,216	64,870
Asset held for sale	11	5,291	—
Total current assets		**54,265**	**75,512**
Total assets		**228,487**	**163,584**
EQUITY			
Equity attributable to owners of the parent			
Ordinary shares	12	4,321	4,261
Share premium		271,006	270,829
Other reserves	12	6,924	12,785
Accumulated losses		(236,078)	(205,291)
Total equity attributable to the owners of the parent		**46,173**	**82,584**
Non-controlling interest	13	7,690	10,437
Total equity		**53,863**	**93,021**

in Euro x 1,000	Notes	2023	2022 (restated)[27]
LIABILITIES			
Non-current liabilities			
Borrowings	17	86,602	12,649
Shareholder loan	18	12,603	—
Financial liability	20	13,609	14,091
Lease liabilities	7	7,501	10,046
Decommissioning provision	19	1,581	—
Total non-current liabilities		**121,896**	**36,786**
Current liabilities			
Lease liabilities	7	2,115	1,897
Trade and other payables	16	48,625	31,644
Provisions for other liabilities and charges	19	323	236
Liabilities associated with asset held for sale	11	1,665	—
Total current liabilities		**52,728**	**33,777**
Total liabilities		**174,624**	**70,563**
Total equity and liabilities		**228,487**	**163,584**

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

[27] Refer to note 2.1.3 for detail on the restatements of the balances as at 31 December 2022

Consolidated Statement of Profit or Loss and Comprehensive Income

For the financial year ended December 31

in Euro x 1,000	Notes	2023	2022 (restated)[28]
Revenues	21	19,700	17,826
Other income	22	5,789	7,626
Total revenues and other income		**25,489**	**25,452**
Operating expenses			
Raw materials and contract costs	24	(7,064)	(3,770)
Employee benefit expenses	24; 25	(28,629)	(23,401)
Office and housing expenses	24	(3,336)	(3,062)
Patent, license, legal and advisory expenses	24	(4,979)	(5,386)
Laboratory expenses	24	(4,329)	(3,272)
Advertising and representation expenses	24	(1,983)	(1,329)
Other operating expenses	24	(2,628)	(1,538)
Net operating expenses		**(52,948)**	**(41,758)**
EBITDA[29]		**(27,459)**	**(16,306)**
Depreciation, amortisation and impairment charge	24	(7,396)	(8,578)
Operating loss		**(34,854)**	**(24,884)**
Finance income	26	1,194	12
Finance costs	26	(973)	(1,988)
Fair value remeasurement	20	483	(2,841)
Loss before income tax		**(34,150)**	**(29,702)**
Income tax expense	27	—	—
Loss for the period		**(34,150)**	**(29,702)**
Other income		—	—
Total expense for the year		**(34,150)**	**(29,702)**

in Euro x 1,000	Notes	2023	2022 (restated)[28]
Loss attributable to:			
Owners of the parent		(31,402)	(28,127)
Owners of Non-controlling interest		(2,748)	(1,575)
		(34,150)	**(29,702)**

in Euro	Note	2023	2022 (restated)[30]
Loss per share attributable to the ordinary equity holders of the company			
Basic earnings per share	15	(0.73)	(0.71)
Diluted earnings per share	15	(0.73)	(0.71)

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

[28] Refer to note 2.1.3 for detail on the restatements of the balances as at 31 December 2022
[29] EBITDA is an important measurement of the Company's financial performance before taking the cost of capital, depreciation and taxes into consideration. EBITDA margins provide a view of operational efficiency and enable a more accurate and relevant comparison between peer companies
[30] Refer to note 2.1.3 for detail on the restatements of the balances as at 31 December 2022

Consolidated Statement of Changes in Equity

For the year ended December 31

in Euro x 1,000	Ordinary shares	Share premium	Other reserves	Accumulated losses	Non-controlling interest	Total Equity
Balance at 1 January 2022	**3,129**	**230,252**	**11,936**	**(195,291)**	**—**	**50,025**
Result for the year	—	—	—	(29,583)	(1,970)	(31,554)
Restated result[31]	—	—	—	1,456	395	1,851
Total Comprehensive expense for the year	**—**	**—**	**—**	**(28,127)**	**(1,575)**	**(29,702)**
Transactions with owners						
– Employee share schemes - value of Employee services	—	—	809	—	—	809
– Share-based payment - purchase of intangible assets	—	—	180	—	—	180
– Transfer value share scheme to accumulated losses	—	—	(139)	139	—	—
– Issue of ordinary shares due to capital raise	1,125	40,427	—	—	—	41,552
– Issue of ordinary shares option plan	7	151	—	—	—	158
Total transactions with owners	**1,132**	**40,577**	**849**	**139**	**—**	**42,698**
Disposal of subsidiary	**—**	**—**	**—**	**17,987**	**12,013**	**30,000**
31 December 2022 (restated)	**4,261**	**270,829**	**12,785**	**(205,291)**	**10,437**	**93,021**
Balance at 1 January 2023 (restated)	**4,261**	**270,829**	**12,785**	**(205,291)**	**10,437**	**93,021**
Result for the year	—	—	—	(31,402)	(2,748)	(34,150)
Total Comprehensive expense for the year	**—**	**—**	**—**	**(31,402)**	**(2,748)**	**(34,150)**
Transactions with owners						
– Employee share schemes-value of Employee services	—	—	933	—	—	933
– Employee share schemes – LTIP investment shares granted	—	—	174	—	—	174
– Informal capital distribution - shareholder loan	—	—	(5,879)	—	—	(5,879)
– Share-based payment - purchase of intangible asset	—	—	(473)	—	—	(473)
– Transfer value share scheme to accumulated losses	—	—	(615)	615	—	—
– Issue of ordinary shares from share option plan	60	176	—	—	—	237
Total transactions with owners	**60**	**176**	**(5,861)**	**616**	**—**	**(5,008)**
Balance at 31 December 2023	**4,321**	**271,006**	**6,924**	**(236,078)**	**7,690**	**53,863**

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

[31] Refer to note 2.1.3 for detail on the restatements of the balances as at 31 December 2022

Consolidated Statement of Cash Flows

For the year ended December 31

in Euro x 1,000	**Notes**	**2023**	**2022 (restated)[32]**
Cash flows from operating activities			
Loss for the year from continuing operations		(34,150)	(29,702)
Adjustments for:			
■ Depreciation of property, plant and equipment	5	4,859	5,721
■ Amortisation	6	91	35
■ Depreciation of right of use assets	7	2,447	2,387
■ Share-based payment	14	933	809
■ Finance costs - net	26	(221)	1,976
■ Fair value remeasurement	20	(483)	2,841
■ Impairment of property, plant and equipment	5	—	435
Changes in working capital (excluding exchange differences on consolidation):			
■ (Increase)/decrease in inventories	8	199	(329)
■ (Increase)/decrease in trade and other receivables	9	(5,543)	(2,762)
■ Increase in trade and other payables	16	13,635	9,057
■ Increase in provisions	19	87	40
		(18,146)	**(9,492)**
Interest paid on current accounts	26	—	—
Interest received on current accounts	26	1,194	12
Other interest and bank charges	26	(1,867)	(1,686)
Net cash used in operating activities		**(18,818)**	**(11,166)**
Cash flows from investing activities			
Purchases of property, plant and equipment (PPE)	5	(89,320)	(33,778)
Purchases of intangible assets	6	(449)	(174)
Net cash used in investing activities		**(89,769)**	**(33,953)**

in Euro x 1,000	**Notes**	**2023**	**2022 (restated)[32]**
Cash flows from financing activities			
Transaction with non-controlling interest	13	—	20,002
Net proceeds from Capital raise		—	41,552
Net proceeds of option exercises		237	158
Proceeds from borrowings	17	77,500	15,000
Proceeds from shareholder loan	18	6,683	—
Interest paid on borrowings		(3,450)	—
Principal elements of lease payments	7	(2,035)	(1,632)
Net cash generated from financing activities		**78,935**	**75,079**
Net increase in cash and cash equivalents		**(29,652)**	**29,961**
Cash and cash equivalents at beginning of the year	10	64,870	34,911
Effect of exchange rate changes	26	(2)	(1)
Cash and cash equivalents from continuing operations at end of financial year	10	**35,216**	**64,870**
Cash and cash equivalents at end of financial year	10	**35,216**	**64,870**

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

[32] Refer to note 2.1.3 for detail on the restatements of the balances as at 31 December 2022

Main Notes to the Consolidated Financial Statements

1. General Information

Avantium N.V. ('the Company') is a company incorporated and domiciled in the Netherlands, with its statutory seat at Zekeringstraat 29-31, 1014 BV in Amsterdam. The Company is listed on Euronext Amsterdam and Brussels.
The consolidated financial statements of the Company for the year ended 31 December 2023 comprise of the Company and its subsidiaries (together referred to as 'the group'). The Company is also the ultimate parent of the group.

The Company is primarily involved in developing and commercialising next generation bio-based plastics and chemicals based on our unique technological capabilities in advanced catalysis research & development. Avantium also provides R&D solutions in the field of sustainable chemistry and is the leading provider of advanced catalyst testing technology and services to accelerate catalyst R&D.

For setting the principles for the recognition and measurement of assets and liabilities and determination of the result of its Company financial statements, Avantium N.V. makes use of the option provided in Section 2:362 (8) of the Dutch Civil Code. This means that the principles of the recognition and measurements of assets and liabilities and determination of the result (hereafter referred to as accounting policies) of the Company financial statements of Avantium N.V. are the same as those applied for the consolidated financial statements under IFRS (refer to note 2). By applying this option, reconciliation is maintained between the group's and the Company's equity.

These consolidated financial statements were approved for issue by both the Supervisory Board and the Management Board on 25 March 2024.

2. Summary of Material Accounting Policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

2.1. Basis of Preparation

The consolidated financial statements of Avantium N.V. have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union. The consolidated financial statements have been prepared under the historical cost convention unless otherwise stated.

2.1.1 Going Concern

The financial statements have been prepared on a going concern basis.

Due to its nature as a technology development company, with significant R&D expenses and negative cash flow used in operating activities over the year ended on 31 December 2023 of €-31.7 million (31 December 2022: €-22.4 million), Avantium remains dependent on additional external funding. Fundamental to Avantium's continuity are:

- the completion and successful start-up of the FDCA Flagship Plant for Avantium Renewable Polymers, for which financing was arranged and for which the Financial Close took place in April 2022;
- refinancing or extension of the €105 million Debt Financing facility (plus accrued and capitalised interest) before 31 March 2025; and
- the ongoing funding for Avantium as a group, excluding Avantium Renewable Polymers, which includes further development of Avantium's other technologies.

On 13 December 2023 Avantium announced the intention to raise additional financing of €64.5m to fund, amongst others, the anticipated cost increase for Avantium Renewable Polymers which covers the anticipated increase in construction costs related to the FDCA Flagship Plant, for which Avantium contributes €42.9m. This financing is fully secured as Avantium successfully completed a €70.0 million equity raise on the 8th of February 2024, also being one of the conditions for a €15.0 million Debt Financing facility increase.

If the Group is unable to refinance or extend its Debt Financing facility for the FDCA Flagship Plant of which repayment is due on 31 March 2025, the Group may require additional funding or cash resources to provide the Group with sufficient working capital after the twelve months following the date of the 2023 financial statements.

Failure to achieve sufficient funding in a timely fashion may result in the Company being unable to fulfil its obligations or to fund working capital, all of which are necessary to execute the Company's strategy, retain contract partners, retain key employees and meet our payment obligations. Accordingly, without timely funding, the Company's going concern is at risk.

These events indicate the existence of a material uncertainty that may cast significant doubt on Avantium's ability to continue as a going concern and therefore, that it may be unable to realise its assets and discharge its liabilities in the normal course of business.

In light of the above, management has assessed the going concern assumption, which is the basis on which Avantium's consolidated financial statements for the year ended on 31 December 2023 have been prepared.

In this assessment management has considered the following: On 9 December 2021, Avantium announced that it had taken a positive Final Investment Decision (FID) to construct the FDCA Flagship Plant. On 31 March 2022, Avantium announced that it entered into a three-year Debt Financing facility of €90 million with a consortium of lenders for the financing of the construction and the operational expenses until project completion date of the FDCA Flagship Plant of Avantium Renewable Polymers. The consortium of lenders comprises four Dutch banks; (ABN AMRO Bank, ASN Bank, ING Bank and Rabobank) and the government backed Dutch impact investment fund Invest-NL. Each bank had committed €15.0 million under the Debt Financing facility, and Invest-NL had committed €30 million. The interest over this Debt Financing facility is EURIBOR based and is, at today's rates, approximately 8% on an annualized basis over the amounts drawn and an annual commitment fee of 2% over the aggregated committed and undrawn funding is charged to Avantium. With the €90 million Debt Financing facility, Avantium Renewable Polymers had secured a total financing package of €192.5 million which included €27.5 million in grants, €30.0 million in equity by minority shareholders Groningen consortium and Worley, €90.0 million in debt financing, and an equity investment of €45.0 million by Avantium in its subsidiary Avantium Renewable Polymers.

On 13 December 2023, Avantium announced an anticipated increase in the costs for Avantium Renewable Polymers business unit of €63.0 million to €255.0 million compared to the original estimate from December 2021. This anticipated cost increase is based on a detailed and thorough assessment performed by Avantium and Worley and includes all reasonable assumptions known to date. Although Avantium is reasonably confident in this assessment, we cannot exclude future additional cost increases based on unforeseen circumstances materializing. The estimated total cost increase is planned to be covered by an additional financing package of €64.5 million, comprising: (i) subordinated shareholder loans by minority shareholders Groningen consortium and Worley of €2.5 million and €4.2 million respectively, (ii) an anticipated €15 million increase of the Debt Financing facility by ABN AMRO Bank, ASN Bank, ING Bank and Rabobank, as well as Invest-NL, adding to the existing €90.0 million Debt Financing facility (which was fully drawn by Q3 2023), and a €42.9 million subordinated shareholder loan by Avantium N.V. The draw down of the additional €15 million under the Debt Financing facility is subject to the fulfilment of certain conditions (other than customary conditions for a financing of this nature) that Avantium and Avantium Renewable Polymers do not yet comply with at the date of this report. These conditions are that Avantium (i) provides a liquidity forecast evidencing that Avantium has sufficient funds to meet the liquidity needs of Avantium over the life of the Debt Financing facility, and (ii) has achieved mechanical completion of the Sugar Dehydration Unit (SDH). If any of the aforementioned conditions are not met, Avantium will not be able to draw down the additional €15.0 million.

The bank financing package provided by the lenders – both the original €90.0 million and the anticipated increase of €15.0 million will be non-amortizing and have a final maturity date of 31 March 2025. On this date, the full principal amount due must be repaid, included all accrued and unpaid interest. Under the terms of the bank financing agreement, Avantium may request two (2) extension options of up to 1 year each, which is subject to approval by the banks. Although it is likely that the Company will initiate the process to request these extensions, on the date of this report it has not yet been discussed with the banks.

Avantium's consolidated cash position was €35.2 million as at 31 December 2023, however these funds will be required to fund the payments under the EPC contract to Worley, and the other operating costs of Avantium Renewable Polymers, as well as the remaining business and support activities of Avantium. Having successfully completed the €70.0 million equity raise, it is management's expectation that there is enough cash to fund ongoing operations and future capital expenditure for a period of at least 15 months as of the balance sheet date of these 2023 financial statements, provided that the above-mentioned repayment extensions are granted or alternative financing is secured.

Based on management's analyses and assessments, although a material uncertainty remains for the Company's going concern due to the final maturity date of its Debt Financing facility of 31 March 2025, management believes it is appropriate to prepare Avantium's consolidated financial statements for the period ended 31 December 2023 using the going concern assumption.

2.1.2 Changes in Accounting Policy and Disclosures

New Standards, Amendments and Interpretations Adopted

There were no changes to the financial reporting requirements this year that affected the financial statements of the group. In May 2021, the IASB issued amendments to IAS 12. The amendments require companies to recognize deferred tax on transactions that, on initial recognition, give rise to equal amounts of taxable and deductible temporary differences. For the Company, this applies to transactions such as leases of lessees and decommissioning obligations and required the recognition of deferred tax assets and liabilities. The amendments were effective for annual periods beginning on or after January 1, 2023. As a result, the Company has accounted for deferred tax liabilities and deferred tax assets retrospectively as at January 1, 2022. Since deferred tax assets for deductible temporary differences could only be recognized up to the amount of available reversing taxable temporary differences, and resulting deferred tax and liabilities are offset for presentation purposes, the implementation of this amendment did not have an impact on the Company's balance sheet as at January 1, 2022, as well as at 31 December 2022 and 31 December 2023, nor the income statement of profit or loss for 2022 and 2023. Details on the deferred tax positions are disclosed in note 27.

In February 2021, the IASB issued amendments to IAS 8. The amendments clarify how companies should distinguish changes in accounting policies from changes in accounting estimates. The distinction is important, because changes in accounting estimates are applied prospectively to future transactions and other future events, but changes in accounting policies are generally applied retrospectively to past transactions and other past events as well as the current period. The amendments are effective for annual periods beginning on or after 1 January 2023. These amendments had no significant effect on the consolidated financial statements.

New Standards, Amendments and Interpretations not yet Adopted

A number of new standards and amendments to standards and interpretations have been published that are not mandatory for 31 December 2023 reporting periods and have not been early adopted by the Company. These standards are not expected to have a material impact on the Company in the current or future reporting periods and on foreseeable future transactions.

Use of Estimates

The preparation of financial statements in accordance with IFRS requires the use of certain accounting estimates. It also requires management to exercise its judgement in the process of applying the group's accounting policies. Estimates and judgments are continually evaluated, and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

2.1.3 Corrections of prior period misstatements

Four prior period misstatements were identified for which the comparative figures for the year ended 31 December 2022 have been restated. The nature of the restatements is as follows:

1. All borrowing costs were presented in the Consolidated Statement of Income as finance cost or corporate cost. However, the Debt Financing facility agreement and certain lease liabilities were specifically entered into for the construction of the FDCA Flagship Plant, and the FDCA Flagship Plant is a qualifying asset. Avantium has reassessed the requirements for the capitalisation of borrowing costs and concluded that the borrowing costs are both directly attributable and related to the qualifying asset and therefore should be capitalised. Additionally, upfront fees were paid in accordance with the Debt Financing facility agreement. The upfront fee was erroneously recognised as finance expense, as it related to the Debt Financing facility from which it was expected that these would be drawn in full, in line with the project plan for the construction of the FDCA Flagship Plant. Management concluded that the upfront fee should have been recognised as a prepayment and subsequently amortised as part of the effective interest of the loans drawn from the Debt Financing facility from the point in time when the drawdown was done.
2. The sale of the non-controlling interest to Bio Plastics Investment Groningen BV was presented in the Statement of Cash Flows as a cash flow from investing activities. As the Company retained control over its subsidiary, Avantium Renewable Polymers B.V., the cash flow should be presented as a cash flow from financing activities.
3. The Company recognised an in-kind prepayment for services to be delivered under the engineering, procurement and construction agreement for the FDCA Flagship Plant. The prepayment is set off against the invoices received from the supplier, resulting in a lower cash out flow because of the net settlement. In the Consolidated Statement of Cash Flows, the additions to property, plant and equipment have been restated to reflect such net settlements.
4. The Company recognised additions to Property, Plant and Equipment which had not been paid but were accrued for as at 31 December 2022. However, the Consolidated Statement of Cash Flows showed such additions for which no cash flow occurred yet in 2022.

These restatements have been reflected in the consolidated financial statements; their combined impact on the comparatives, including earnings per share, are disclosed in the table below. These restatements did not impact the opening balance as at 1 January 2022.

The impact of each restatement is disclosed in the table below:

Consolidated Statement of Financial Position

(In Euro x 1,000)	As previously reported at 31 December 2022	1 .Borrowing Cost	Restatement Total	31 December2022 (restated)
ASSETS				
Non-current assets				
Property, Plant and Equipment	60,394	511	511	60,906
Total non-current assets	**87,561**	**511**	**511**	**88,073**
Current assets				
Trade and other receivables (prepayment)	8,035	1,040	1,040	9,075
Total current assets	**74,472**	**1,040**	**1,040**	**75,512**
Total assets	**162,033**	**1,551**	**1,551**	**163,584**
EQUITY				
Equity attributable to owners of the parent				
Accumulated losses	(206,748)	1,456	1,456	(205,291)
Non-controlling interest	10,042	395	395	10,437
Total equity	**91,171**	**1,851**	**1,851**	**93,022**
LIABILITIES				
Non-current liabilities				
Borrowings	12,856	(207)	(207)	12,649
Total non-current liabilities	**36,993**	**(207)**	**(207)**	**36,786**
Current liabilities				
Trade and other payables	31,738	(93)	(93)	31,645
Total current liabilities	**33,870**	**(93)**	**(93)**	**33,777**
Total liabilities	**70,863**	**(300)**	**(300)**	**70,563**
Total equity and liabilities	**162,033**	**1,551**	**1,551**	**163,585**

Consolidated Statement of Profit or Loss and Comprehensive Income

(In Euro x 1,000)	As previously reported at 31 December 2022	1 .Borrowing Cost	Restatement Total	31 December2022 (restated)
Patent, licenses, legal and advisory expenses	(6,766)	1,380	1,380	(5,386)
Net operating expenses	(43,138)	1,380	1,380	**(41,758)**
EBITDA	(17,687)	1,380	1,380	**(16,307)**
Operating loss	**(26,265)**	**1,380**	**1,380**	**(24,885)**
Net finance costs	(2,448)	471	471	(1,976)
Loss before income tax	**(31,554)**	**1,851**	**1,851**	**(29,702)**
Loss before for the year	**(31,554)**	**1,851**	**1,851**	**(29,702)**

(In Euro x 1,000)	As previously reported at 31 December 2022	1 .Borrowing Cost	Restatement Total	31 December2022 (restated)
Loss attributable to:				
Owners of the parent	(29,583)	1,456	1,456	(28,127)
Owners of Non-controlling interest	(1,970)	395	395	(1,575)
	(31,554)	**1,851**	**1,851**	**(29,702)**

(In Euro x 1,000)	As previously reported at 31 December 2022	1 .Borrowing Cost	Restatement Total	31 December2022 (restated)
Loss per share attributable to the ordinary equity holders of the Company				
Basic earnings per share	(0.80)	0.09	0.09	(0.71)
Diluted earnings per share	(0.80)	0.09	0.09	(0.71)

Consolidated Statement of Cash Flows

(In Euro x 1,000)	As previously reported at 31 December 2022	1 .Borrowing Cost	2. Sale of NCI	3. In-Kind payments	4. Non-cash PPE	Restatement Total	31 December2022 (restated)
Cash flows from operating activities							
Loss for the year	(31,554)	1,851	—	—	—	1,851	(29,702)
Adjustment for:							
■ Finance costs - net	2,448	(471)	—	—	—	(471)	1,976
Changes in working capital (excluding exchange differences on consolidation):							
■ (Increase)/decrease in trade and other receivables	(1,422)	(1,340)	—	—	—	(1,340)	(2,762)
■ Increase in trade and other payables	18,728	—	—	(3,750)	(5,921)	(9,671)	9,058
Other interest and bank charges	(1,554)	90	—	—	—	90	(1,464)
Net cash used in operating activities	**(1,404)**	**130**	**—**	**(3,750)**	**(5,921)**	**(9,541)**	**(10,944)**
Cash flows from investing activities							
Purchases of property, plant and equipment (PPE)	(43,226)	(130)	—	3,750	5,921	9,541	(33,686)
Transaction with non-controlling interest	20,002	—	(20,002)	—	—	(20,002)	—
Net cash used in investing activities	**(23,399)**	**(130)**	**(20,002)**	**3,750**	**5,921**	**(10,461)**	**(33,860)**
Cash flows from financing activities							
Transaction with non-controlling interest	—	—	20,002	—	—	20,002	20,002
Net cash generated from financing activities	**54,762**	**—**	**20,002**	**—**	**—**	**20,002**	**74,764**

2.2 Consolidation

2.2.1 Subsidiaries

Subsidiaries are all entities over which the group has control. The group controls an entity when the group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the group. They are de-consolidated from the date that control ceases.

The consolidated companies are listed below (indicating the consolidation percentage):

- Avantium Technologies B.V., Amsterdam (100%)
- Avantium Support B.V., Amsterdam (100%)
- Renewable Technologies B.V. Amsterdam (100%)
- Avantium Chemicals B.V., Amsterdam (100%)
- Avantium Knowledge Centre B.V., Amsterdam (100%)
- Furanix Technologies B.V., Amsterdam (100%)
- YXY Technologies B.V., Amsterdam (100%)
- Stichting Administratiekantoor Avantium, Amsterdam (100%)
- Stichting Stock Options Avantium, Amsterdam (100%)
- Feedstock Technologies B.V., Amsterdam (100%)
- Avantium Renewable Polymers B.V., Amsterdam (100%)
- Avantium RNP Flagship Plant B.V., Amsterdam (100%)
- Avantium Japan K.K., Tokyo (100%)
- Synvina C.V., Amsterdam (100%)

Inter-company transactions, balances and unrealised gains on transactions between group companies are eliminated. Unrealised losses are also eliminated. When necessary, amounts reported by subsidiaries have been adjusted to conform to the group's accounting policies.

2.2.2 Changes in Ownership Interests in Subsidiaries Without Change of Control

Transactions with non-controlling interest that do not result in loss of control are accounted for as equity transactions. The difference between fair value of any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to non-controlling interest are also recorded in equity. On 31 March 2022, there was a change in ownership of Avantium Renewable Polymers B.V., a subsidiary of Avantium N.V. Worley Nederland B.V. and Bio Plastics Investment Groningen B.V. together have acquired a 22.6% shareholding in Avantium Renewable Polymers B.V., while Avantium continues to hold 77.4% of the equity. The change in shareholding did not result in Avantium N.V. losing control over the subsidiary Avantium Renewable Polymers B.V. This resulted in an amount of €18.0 million to be presented as a movement in the Consolidated Statement of Changes in Equity.

The details of the transactions between the equity participants are as follows:

(In Euro x 1,000)	**31 March 2022**
Consideration received	30,000
Increase in the non-controlling interest	(12,013)
Adjustment to equity attributable to owners of the parents	**17,987**

2.2.3 Disposal of Subsidiaries

When the group ceases to have control, any retained interest in the entity is remeasured to its fair value at the date when control is lost with the change in carrying amount recognised in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognised in comprehensive other income are reclassified to profit or loss.

2.2.4 Non-Controlling interest

Non-controlling interest are measured at their proportionate share of the acquiree's identifiable net assets at the date of acquisition.

2.2.5 Principles of Consolidation and Equity Accounting

When the group ceases to consolidate or equity account for an investment because of a loss of control, joint control or significant influence, any retained interest in the entity is remeasured to its fair value with the change in carrying amount recognised in profit or loss. This fair value becomes the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognised in other comprehensive income are reclassified to profit or loss.

If the ownership interest in a joint venture or an associate is reduced but joint control or significant influence is retained, only a proportionate share of the amounts previously recognised in other comprehensive income are reclassified to profit or loss where appropriate.

2.2.6 Segment Reporting

Operating segments are reported in a manner consistent with the business responsibilities and internal reporting. The Management Board has appointed the Management Team which assesses the financial performance and position of the group, and makes strategic decisions. The Management Team, consists of the Chief Executive Officer, the Chief Financial Officer, the Chief Technology Officer, the Group Legal Counsel, the Managing Director of Avantium Renewable Chemistries, the Managing Director of Avantium R&D Solutions and the Managing Director of Avantium Renewable Polymers.

2.3 Foreign Currency Translation

Functional and Presentation Currency
Items included in the financial statements of each of the group's entities are measured using the currency of the primary economic environment in which the entity operates ('the functional currency'). The consolidated financial statements are presented in euros, which is the Company's functional currency.

Transactions and Balances
Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuations where items are remeasured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the statement of comprehensive income.

Foreign exchange gains and losses that relate to borrowings and cash and cash equivalents are presented in the statement of comprehensive income within 'finance income or cost'.

Group Companies
The results and financial position of all the group entities (none of which has the currency of a hyper-inflationary economy) that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- Assets and liabilities for each balance sheet presented are translated at the closing rate at the date of that balance sheet.
- Income and expenses for each statement of comprehensive income are translated at the average exchange rates.
- All resulting exchange differences are recognised as a separate component of other comprehensive income.

2.4 Use of Estimates

The preparation of consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingencies at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The use of estimates is or could be a significant factor affecting the reported carrying values of property, plant and equipment, intangibles, trade and other receivables and trade and other payables. Despite management's best efforts to accurately estimate such amounts, future results could materially differ from those estimates.

2.5 Property, Plant and Equipment

Property, plant and equipment comprise mainly of laboratory equipment, hardware and leasehold improvements. Leasehold improvements include machinery that is located in at the pilot plant sites and FDCA Flagship Plant. All property, plant and equipment is stated at historical cost less accumulated depreciation. Historical cost includes expenditures that are directly attributable to the acquisition of the items and includes capitalisation of decommissioning and restoration costs associated with provisions for asset retirement (refer 2.19 Provisions).

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the group and the cost of the item can be measured reliably. All other repairs and maintenance charges are expensed in the financial period in which they are incurred.

Depreciation is calculated using the straight-line method to allocate their cost of the assets to their residual values over their estimated useful lives as follows:

Leasehold improvements	5-20 years
Machinery, laboratory equipment and vehicles	5 -10 years
Computer hardware	3 years
Office furniture and equipment	3-5 years

Management performed the yearly review of the useful life estimate and concluded the useful life of some the machinery, laboratory equipment and vehicles should be increased to 10 years. The change in useful life will be applied prospectively and it is not expected to have a material impact on subsequent periods.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount. Gains and losses are included in the consolidated statement of comprehensive income.

2.6 Intangible Assets

Research and Development
Research expenditures are recognised as expenses as incurred. Development costs that are directly attributable to the design and testing of identifiable and unique products controlled by the group are recognised as intangible assets when the following criteria are fulfilled:

- It is technically feasible to complete the intangible asset so that it will be available for use or sale.
- Management intends to complete the intangible asset and use or sell it.
- There is an ability to use or sell the intangible asset.
- It can be demonstrated how the intangible asset will generate probable future economic benefits.
- Adequate technical, financial and other resources to complete the development and to use or sell the intangible asset are available.
- The expenditure attributable to the intangible asset during its development can be reliably measured.

Other development expenditures that do not meet these criteria are recognised as an expense as incurred. Development costs previously recognised as an expense are not recognised as an asset in a subsequent period. Capitalised development costs are recorded as intangible assets and amortised from the point at which the asset is ready for use on a straight-line basis over its estimated useful life of five years. Intangible assets not ready for use are tested for impairment at least on an annual basis.

Amortisation of development costs is included in depreciation, amortisation and impairment charge in the statement of comprehensive income. All development costs arose from internal development.

Computer Software and Other Intangibles

Acquired computer software licenses are capitalised on the basis of the costs incurred to acquire and use the specific software. These costs are amortised straight-line over their estimated useful lives of three years.

Costs associated with developing or maintaining computer software programmes are recognised as expenses as incurred. Development costs that are directly attributable to the design and testing of identifiable and unique software products controlled by the group, that will probably generate economic benefits exceeding costs beyond one year, are recognised as intangible assets.

Other intangibles consisting of an in-kind contribution of a shareholder for their software at the foundation of the group and compensation paid to a third party to exclusively use parts of their technology. Amortisation is calculated using the straight-line method over the estimated useful life of three years.

Intellectual Property

Following the acquisition of Liquid Light on 30 December 2016, the Company records intellectual property (patent portfolio acquired) on its consolidated balance sheet. The intellectual property is stated at historical cost, which will subsequently be lowered with accumulated amortisation in the following years, when the technology on which the intellectual property is filed is ready to deploy commercially.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the group and the cost of the item can be measured reliably

Amortisation is calculated using the straight-line method to allocate their cost of the assets to their residual values over their estimated useful lives (average lifetime of patent portfolio) as follows:

- Intellectual property 5-20 years

License rights

Acquired licenses that grants the Company the right to use technologies not owned/developed by the Company are recorded on its consolidated balance sheet. The license rights are stated at historical cost, which will subsequently be lowered with accumulated amortisation in the following years.

License rights contain variable royalty fee payment terms that are linked to production of the License Products once the FDCA Flagship Plant starts production. The fees will equal to $20 USD per metric ton of Licensed Products produced from the FDCA Flagship Plant. Variable royalty fee payments that depend on the volume of production of the Licensed Products will be recognised in profit or loss in the period in which the condition that triggers those payments.

Amortisation is calculated using the straight-line method to allocate their cost of the assets to their residual values over their estimated useful lives (average lifetime of license rights) as follows:

- License rights 5-20 years

2.7 Impairment of Non-Financial Assets

Assets that are subject to amortisation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units). Non-financial assets other than goodwill that suffered impairment are reviewed for possible reversal of the impairment at each reporting date.

2.8 Non-Current Assets (or Disposal Groups) Held for Sale

Non-current assets (or disposal groups) are classified as assets held for sale when their carrying amount is to be recovered principally through a sale transaction and a sale is considered highly probable. They are stated at the lower of carrying amount and fair value less costs to sell.

2.9 Financial Assets

2.9.1 Classification

The group classifies its financial assets in assets to be measured at amortised cost.

The classification depends on the Company's business model for managing the financial assets and the contractual terms of the cash flows. Management determines the classification of its financial assets at initial recognition. The group classifies its financial assets as assets held for collection of contractual cash flows.

2.9.2 Recognition and Measurement

Regular purchases and sales of financial assets are recognised on the trade-date, the date on which the group commits to purchase or sell the asset. Financial assets are derecognised when the rights to receive cash flows from the financial assets expire or if the Company transfers the financial asset to another party and does not retain control or substantially all risks and rewards of the asset. Financial liabilities are derecognised when the Company's obligations specified in the contract expire or are discharged or cancelled.

Financial assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortised cost. Interest income from these financial assets is included in finance income using the effective interest rate method. Any gain or loss arising on derecognition is recognised directly in the statement of comprehensive income and presented in other gains/ (losses). Impairment losses are presented as separate line item in the statement of comprehensive income.

2.10 Offsetting Financial Instruments

Financial assets and liabilities are offset and the net amount reported in the balance sheet when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Company or the counterparty.

2.11 Impairment of Financial Assets

Assets Carried at Amortised Cost

Impairment provisions for trade receivables are recognised based on the simplified approach within IFRS 9 to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables and contract assets.

To measure the expected credit losses, trade receivables and contract assets have been grouped based on shared credit risk characteristics and the days past due. The contract assets relate to unbilled work in progress and have substantially the same risk characteristics as the trade receivables for the same types of contracts. The group has therefore concluded that the expected loss rates for trade receivables are a reasonable approximation of the loss rates for the contract assets.

If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised (such as an improvement in the debtor's credit rating), the reversal of the previously recognised impairment loss is recognised in the consolidated statement of comprehensive income.

2.12 Inventories

Inventories are stated at the lower of cost and net realisable value. Cost is determined using the first-in, first-out (FIFO) method. The cost of raw materials, finished goods and work in progress comprises all purchase costs including charges incurred to bring inventories to their current location and into their current state. It excludes borrowing costs. Net realisable value is the estimated selling price in the ordinary course of business, less applicable variable selling expenses.

2.13 Trade Receivables

Trade receivables are amounts due from customers for products sold or services performed in the ordinary course of business. If collection is expected in one year or less (or in the normal operating cycle of the business if longer), they are classified as current assets. If not, they are presented as non-current assets.

Trade receivables are recognised initially at fair value and subsequently measured at amortised cost using the effective interest method, less provision for impairment. Refer to note 2.11 for further information about the group's impairment policy on financial assets.

2.14 Cash and Cash Equivalents

In the Consolidated Statement of Cash Flows, cash and cash equivalents includes cash in hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less and bank overdrafts.
In the consolidated statement of financial position, bank overdrafts are shown within borrowings in current liabilities.

Restricted Cash

The restricted cash includes cash deposits, which is measured at an amount equal to the current outstanding bank guarantees issued to third parties and/or cash deposits held in designated accounts for an equity reserve as agreed with lenders. The restricted cash is not available for use by the Company to meet the short-term cash obligations. In the consolidated statement of financial position the restricted cash is shown within cash and cash equivalents as current assets.

2.15 Share Capital

Ordinary Shares

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of new ordinary shares or options are shown in equity as a deduction, net of tax, from the proceeds.

Treasury Shares

Where any group company or liquidity provider appointed by the group, purchases the Company's equity share capital (treasury shares), the consideration paid, including any directly attributable incremental costs (net of income taxes), is deducted from equity attributable to the Company's equity holders until the shares are cancelled or reissued. Where such ordinary shares are subsequently reissued, any consideration received, net of any directly attributable incremental transaction costs and the related income tax effects, is included in equity attributable to the Company's equity holders.
No gain or loss is recognised in the statement of comprehensive income on the purchase, sale, issuance or cancellation of the Company's own equity instruments.

2.16 Trade and Other Payables

Trade payables are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Accounts payable are classified as current liabilities if payment is due within one year or less (or in the normal operating cycle of the business if longer). If not, they are presented as non-current liabilities.

Trade payables are recognised initially at fair value and subsequently measured at amortised cost using the effective interest method.

2.17 Current and Deferred Income Tax

The tax expense for the year comprises current and deferred tax. Tax is recognised in the statement of comprehensive income, except to the extent that it relates to items recognised in other comprehensive income or directly in equity. In this case, the tax is also recognised in other comprehensive income or directly in equity respectively.

The current income tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the balance sheet date in the countries where the Company's subsidiaries and associates operate and generate taxable income. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax is recognised, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, the deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss and does not give rise to equal taxable and deductible temporary differences. Deferred income tax is determined using tax rates (and laws) that have been enacted or substantially enacted by the balance sheet date and are expected to apply when the related deferred income tax asset is realised or the deferred income tax liability is settled.

Deferred income tax assets are recognised only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised.

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income tax assets and liabilities relate to income taxes levied by the same taxation authority on either the taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

2.18 Employee Benefits

Pension Obligations

The group operates a defined contribution pension plan for all employees funded through payments to an insurance company. The group has no legal or constructive obligations to pay further contributions if the plan does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior years. The contributions are recognised as employee benefit expense when they are due. Prepaid contributions are recognised as an asset to the extent that a cash refund or a reduction in the future payments is available.

Share-Based Payments

The group operates a share-based compensation plans for its employees, which consist of an Employee Stock Option Plan (ESOP) and a Long-term Incentive Plan (LTIP), also refer to note 14. These plans are classified as an equity-settled share-based payment plans.

Share options granted to employees are measured at the fair value of the equity instruments granted under the indirect method of measurement. Fair value is determined through the use of an option-pricing model considering, amongst others, the following variables:

a) The exercise price of the option
b) The expected life of the option
c) The current value of the underlying shares
d) The expected volatility of the share price
e) The dividends expected on the shares
f) The risk-free interest rate for the life of the option

For the Company's share option plan, management's judgment is that the Black-Scholes valuation model is most appropriate for determining fair values as this model allows accounting for non-transferability and early exercise. Since the Company became listed in March 2017, there is published share price information available to determine the fair value of its shares and the expected volatility of that value. These assumptions and estimates are further discussed in note 14 to the IFRS consolidated financial statements. The result of the share option valuations and the related compensation expense is dependent on the model and input parameters used.

For the equity-settled Avantium ESOP, the fair value of the grant is determined at the grant date. For the LTIP, the fair value is determined by the share price of the award at the grant date.

The fair value of the employee services received in exchange for the grant of the awards is recognised as an expense. For share-based payments that do not vest until the employees have completed a specified period of service, the group recognises the cost of services received as the employees render service during that period.

At each balance sheet date, the Company revises its estimates of the number of awards that are expected to become exercisable. It recognises the impact of the revision of original estimates, if any, in the statement of comprehensive income and a corresponding adjustment to equity.

The proceeds received from exercised options net of any directly attributable transaction costs are credited to share capital (nominal value) and share premium.

Profit-sharing and Bonus Plans

The group recognises a liability and an expense for bonuses and profit-sharing where contractually obliged or where there is a past practice that has created a constructive obligation.

Termination Benefits

Termination benefits are payable when employment is terminated by the group before the normal retirement date, or when an employee accepts voluntary redundancy in exchange for these benefits. The group recognises termination benefits at the earlier of the following dates: (a) when the group can no longer withdraw the offer of those benefits; and (b) when the entity recognises costs for a restructuring that is within the scope of IAS 37 and involves the payment of terminations benefits. In the case of an offer made to encourage voluntary redundancy, the termination benefits are measured based on the number of employees expected to accept the offer. Benefits falling due more than 12 months after the end of the reporting period are discounted to present value.

2.19 Provisions

Provisions are recognised when the group has a present legal or constructive obligation as a result of past events; it is probable that an outflow of resources will be required to settle the obligation; and the amount can be reliably estimated.

A provision for restructuring is recognised after the group has approved a detailed and formal restructuring plan and the restructuring has either commenced or been announced publicly.

The group provides for the estimated cost of product warranties at the time revenue is recognised and the group has a constructive obligation. Warranty provision is established based on the group's best estimates of the amounts necessary to settle future and existing claims on products sold as of the balance sheet date. A provision for decommissioning and restoration costs is recognised (together with a corresponding amount as part of the related property, plant and equipment) for legal or constructive obligations to dismantle an item of property, plant and equipment and to restore the site on which it is located. Provisions for decommissioning and restoration costs are measured on the basis of the current requirements, technology and price levels; the present value is calculated using amounts discounted over the useful economic life of the assets. The effects of changes resulting from revisions to the timing or the amount of the original estimate of the provision are reflected on a prospective basis, generally by adjustment to the carrying amount of the related property, plant and equipment.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation using a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the obligation.

2.20 Revenue Recognition

Revenue comprises the fair value of the consideration received or receivable for the sale of goods and services in the ordinary course of the group's activities. Revenue is shown net of value-added tax, returns, rebates and discounts and after eliminating sales within the group.

The group recognises revenue when specific criteria have been met for each of the group's activities as described below. The group bases its estimates on historical results, taking into consideration the type of customer, the type of transaction and the specifics of each arrangement.

Sales of Goods

For the supply of goods, revenue is recognised at a point in time, as soon as the control relating to the title of the goods have been transferred to the customer and the entity has a present right to payment. In practice, this is at the shipment date or after installation (if applicable). Contracts related to sale of goods are typically the following:

- System parts
- Consumables
- Material offtake and collaboration agreements

A receivable is recognised when the goods are shipped as this is the point in time that the consideration is unconditional because only the passage of time is required before the payment is due.

Deferred revenue is recognised when the the consideration has been received from the customer but the goods/services have not been delivered and/or ownership has not yet transferred.

Construction Contracts

Revenue and expenses related to Flowrence® systems are accounted over time, which recognises revenue as performance of the contract progresses. The Company satisfies the criteria prescribed under IFRS 15 for recognising revenue over time, since each sales contract agreed with a customer relates to the creation of a Flowrence® system, a tailor-made machine, with varying components for the various chemistries which cannot be used for alternative purposes by the Company and the Company has an enforceable right to payment for the performance completed to date. The customer has full control over the Flowrence® as it is being created. The customer can direct the specifics of how the asset is to be used and has input on the varying components of the Flowrence® being created. The stage of completion is measured by referring to the contract costs incurred up to the end of the reporting period as a percentage of total estimated costs for each contract. Costs incurred in the year in connection with future activity on a contract are excluded from contract costs in determining the stage of completion.

On the balance sheet, the group reports the net contract position for each contract as either a contract asset or a contract liability. A contract represents a contract asset where costs incurred plus recognised profits (less recognised losses) exceed progress billings; a contract represents a contract liability where the opposite is the case.

Variations in contract work, claims and incentive payments are included in contract revenue to the extent that may have been agreed with the customer and can be reliably measured.

Where the income of a revenue contract cannot be estimated reliably, contract revenue that is likely to be recovered is recognised to the extent of contract costs incurred. Contract costs are recognised as expenses in the period in which they are incurred.

Multiple Element Arrangements

In certain circumstances, it is necessary to apply the recognition criteria to the separately identifiable components of a single transaction in order to reflect the substance of the transaction. Conversely, the recognition criteria are applied to two or more transactions together when they are linked in such a way that the commercial effect cannot be understood without reference to the series of transactions as a whole.

The group offers arrangements whereby a customer purchases systems and installations services under one arrangement. When such multiple element arrangements exist, an element is accounted for as a separable element if it has value to the customer on a standalone basis and the fair value can be determined objectively and reliably. The transaction price is allocated to each separate element based on the stand-alone selling prices.

When R&D Solutions systems revenues and installation service revenues are identified as separable elements in a multiple element transaction, the systems revenue recognised is determined based on the standalone selling price of the systems in relation to the transaction price of the arrangement taken as a whole and is recognised as discussed above. The revenue relating to the installation service element, which represents the standalone selling price of the installation services in relation to the transaction price of the arrangement, is recognised on completion of the installation services.

This separation is justified due to the fact that the supply and installation of the goods are offered to the customer separately as the installation can also be executed by an independent third party.

Timing of payment by the customer from the supply of goods is based on the contractual identified instalments. This could result, on a product by product basis, in advanced payments. These amounts are reported as contract liabilities on the balance sheet under other current liabilities.

Sales of Services

Revenue from the sales of services is recognised over time recognising revenue based on the actual services provided to the end of the accounting period as a proportion of the total services to be performed.

Timing of payment by the customer from sale of services is based on the contractual identified technical milestones. This could result, on a project by project basis, in contract assets or contract liabilities. These amounts are reported on the balance sheet under other receivables or other current liabilities.

As part of the Renewable Chemistries business development agreements, which constitute solely a step-in, management identified this as one-off revenue recognition at moment of signing the agreements, in accordance with IFRS 15, since it is deemed that once the agreement is signed, no future obligation is to be fulfilled.

As part of the Renewable Polymers business non-refundable technical due diligence procedures were performed. At the completion of the technical due diligence procedures revenue was recognised.

If circumstances arise that may change the original estimates of revenues, costs or extent of progress toward completion, estimates are revised. These revisions may result in increases or decreases in estimated revenues or costs and are reflected in income in the period in which the circumstances that give rise to the revision become known by management.

Sale of Licenses

Avantium issues licenses to its intellectual property to customers in conjunction with design an engineering services. Generally such licenses are not distinct from these services provided in connection with the licenses and as a consequence they are accounted for as a single performance obligation. In addition, license contracts may contain additional support services in the form of technical and SLA support. Such support services are considered as a separate performance obligation as they are promises that are transferred separately to the customer and which the customer can benefit from separately. License contract may also include the sale of goods which is recognised as a separate performance obligation.

License contracts typically include a combination of fixed (including upfront non-refundable payments) and variable consideration. An estimate of variable consideration is included in the transaction price to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognised will not occur when the uncertainty associated with the variable consideration is resolved. In addition, license contracts may include sales or usage-based royalties. Such royalties are considered variable consideration which is recognised at the earlier of when the related performance obligation is satisfied or when the sales or usage occurs.

The transaction price is allocated to the various performance obligations identified in the agreement based on their relative stand-alone selling prices.

For the combination of the license and design and engineering services, revenue is generally recognised over time based on the fact that the Company's performance does not create an asset with an alternative use and the Company is has an enforceable right to payment for performance completed to date. Management measures the progress towards the performance obligation in a way that most faithfully depicts the Company's performance, typically based on an input measure of costs incurred compared to total expected costs.

With respect to such support services and the sale of goods, reference is made to the respective sections above which describe the accounting applied to these performance obligations.

Contact Balances

Timing of payment of consideration by the customer from the supply of goods and services is based on the contractually identified instalments. This could result, on a contract by contract basis, in the recognition of a contract asset or liability.

A contract asset represents the right to consideration in exchange for goods or services transferred to the customer, before the customer pays consideration or before payment is due. In such circumstances, a contract asset is recognized for the earned consideration that is conditional. A contract asset becomes a receivable when the Company's right to consideration becomes unconditional, which is the case then only the passage of time is required before payment of the consideration is due.

A contract liability is the obligation to transfer goods or services to a customer for which the Company has received consideration (or an amount of consideration is due) from the customer. These amounts are reported as contract liabilities on the balance sheet under the trade and other payables. Contract liabilities are recognized as revenue when the Company satisfies the related performance obligation.

2.21 Grants

Grants and subsidies from third parties are recognised at their fair value when there is a reasonable assurance that the grant will be received, and the group will comply with all attached conditions. Any outstanding receivables related to these grants are recorded as other receivables under current receivables.

Government grants pre-financed amounts received are deferred and recognised in the income statement over the period necessary to match them with the costs that they are intended to compensate.

Government grants relating to property, plant and equipment are included in non-current liabilities as deferred government grants and are credited to the income statement on a straight-line basis over the expected lives of the related assets.

2.22 Leases

The group leases various offices and a vehicle. Rental contracts are generally made for fixed periods of 3 to 10 years but may have extension options. Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease agreements do not impose any covenants, but leased assets may not be used as security for borrowing purposes.

Contracts may contain both lease and non-lease components. The group allocates the consideration in the contract to the lease and non-lease components based on their relative stand-alone prices.

Leases are recognised as right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the group. Each lease payment is allocated between the lease liability and finance cost. The finance cost is charged to the statement of comprehensive income over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. Right-of-use asset are depreciated on a straight-line basis over the remaining term of the lease or over the remaining economic life of the asset, if this is judged to be shorter than the lease term.

Assets and liabilities arising from a lease are initially measured on a present value basis.

Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease agreements do not impose any covenants other than the security deposits in the leased assets that are held by the lessor. Leased assets may not be used as security for borrowing purposes.

Lease Liability

Lease liabilities include the net present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable;
- variable lease payments are based on an index or a rate - decommissioning costs; and
- payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

The group is exposed to potential future increases in variable lease payments based on an index or rate, which are not included in the lease liability until they take effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is reassessed and adjusted against the right-of-use asset.

Right-of-Use Assets

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of the lease liability;
- any lease payments made at or before the commencement date less any lease incentives received - any initial direct costs; and
- onerous contract provisions.

Right-of-use assets are generally depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis. If the group is reasonably certain to exercise a purchase option, the right-of-use asset is depreciated over the underlying asset's useful life.

Payments associated with short-term leases and leases of low-value assets are recognised on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise IT-equipment and small items of office furniture.

2.23. Financial Liability

Financial liabilities are recognised when the group becomes a party to the contractual provision of a financial instrument. Financial liabilities are derecognised when the group's obligations specified in the contract expire or are discharged or cancelled.

All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings, net of directly attributable transaction costs.

2.23.1 Classification

The group classifies all financial liabilities as subsequently measured at amortised cost, except for derivatives.
Any difference between the proceeds and redemption value is recognised in the income statement over the period of the loans and short-term borrowings using the effective interest method.

Financial liabilities are classified as current liabilities unless the group has an unconditional right to defer settlement of the liability for at least 12 months after the balance sheet date.

2.23.2 Recognition and Measurement

The derivatives are measured initially and subsequently at fair value through profit or loss at each reporting date. Gains and losses resulting from the fair value remeasurement are recognised in the income statement as fair value gains(losses) on financial instruments.

2.23.3 Interest Income and Expense

Interest income and interest expense is recognised using the effective interest method. When a loan or receivable is impaired, the group reduces the carrying amount to its recoverable amount, being the estimated future cash flow discounted at the original effective interest rate of the instrument and continues unwinding the discount as interest income. Interest income on impaired loan and receivables is recognised using the original effective interest rate.

Interest income and interest expense is recognised in the income statement using the effective interest rate method, except if it is accounted for as borrowing cost. Refer to note 2.24.

2.24. Borrowing Costs

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalised during the period of time that is required to complete and prepare the asset for its intended use or sale. Qualifying assets are assets that necessarily take a substantial period of time to get ready for their intended use or sale.

All interest payments relating to the loan are included in the Cash Flow Statement under Financing activities.

2.25 Earnings per Share

Basic Earnings per Share

Basic earnings per share is calculated by dividing:

- The profit attributable to owners of the Company, excluding any costs of servicing equity other than ordinary shares
- By the weighted average number of ordinary shares outstanding during the financial year, excluding treasury shares (note 15).

Diluted Earnings per Share

Diluted earnings per share adjusts the figures used in the determination of basic earnings per share to take into account:

- The after-income tax effect of interest and other financing costs associated with dilutive potential ordinary shares
- The weighted average number of additional ordinary shares that would have been outstanding assuming the conversion of all dilutive potential ordinary shares.

2.26 Cash Flow Statement

The cash flow statement is presented using the indirect method. Cash flow in foreign currencies are converted at the exchange rate on the date of the cash flow, or based on the average rate. A distinction is made in the cash flow statement between the cash flows from operating, investment and financing activities.

3. Financial Risk Management

3.1 Financial Risk Factors

The group's activities expose it to a variety of financial risks: market risk (including currency risk, interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk. The group's risk management programme focuses on the unpredictable nature of financial markets and seeks to limit any potential adverse effects on financial performance.

Risk management is carried out by the central Finance & Accounting department (Group F&A) under policies approved by the Management Board. Group F&A identifies, evaluates and covers financial risks in close cooperation with the group's operating units. The board provides principles for overall risk management, as well as written policies covering specific areas such as foreign-exchange risk, interest rate risk, credit risk, use of non-derivative financial instruments, and investment of excess liquidity.

Financial instrument

Non-Current Financial assets as at December 31:

in Euro x 1,000	Notes	2023	2022 (restated)
Prepayment	9	—	15,248

Non-Current Financial liabilities as at December 31:

in Euro x 1,000	Notes	2023	2022 (restated)
Borrowings	17	86,602	12,649
Shareholder loan	18	12,603	—
Lease liabilities	7	8,326	10,046
Financial liability	20	13,609	14,091

Current Financial assets as at December 31:

in Euro x 1,000	Notes	2023	2022 (restated)
Trade receivables	9	3,793	2,634
Prepayment	9	1,807	2,219
Other receivables	9	7,018	4,372
Cash and cash equivalents	10	35,216	64,870

Current Financial liabilities as at December 31:

in Euro x 1,000	Notes	2023	2022 (restated)
Trade payables	16	12,133	8,628
Other liabilities	16	27,294	14,521
Lease liabilities	7	2,139	1,897

The carrying amounts of these financial assets and liabilities are assumed to approximate their fair values due to their short-term nature. Also refer to note 16 for an overview of trade and other payables.

Interest Rate Risk

The most significant interest rate risk for the Company relates to borrowings (refer to note 17). As at 31 December 2023 the borrowings of the Company consisted of five drawdowns on a three-year Debt Financing facility agreement amounting to €90.0 million (2022: €15 million). This Debt Financing facility agreement is based on EURIBOR. The accrued cash and PIK interest expense at 31 December 2023 amounted to €4.4 million (2022: €182,000).

Interest rate risk is the risk that changes in the market interest rates affect the fair value or cash flows of a financial instrument. If market interest rates had been 50 basis points higher on average during 2023, with all other variables held constant, net interest expenses for the year would have been €306,326 higher (2022: €8,125). The opposite applies in the case of a 50 basis points decrease in the interest rates.

Currency Risk

The group operates internationally and is exposed to foreign exchange risk primarily in relation to the US dollar.
Foreign exchange risk arises from future commercial transactions, recognised assets and liabilities. Management has set up a policy that requires group companies to manage their foreign exchange risk against their functional currency. The group companies are required to close commercial transactions in euros. Certain US-based customers negotiate US-dollar contracts. There are a limited number of these contracts, and the group companies can only close these with management's written approval. The group's operations are therefore not subject to significant foreign exchange rate risks. Foreign exchange risk arises when future commercial transactions or recognised assets and liabilities are denominated in a currency that is not the entity's functional currency.

The group outstanding trade receivables in US dollars of $0 (2022: $3,000). The group had no trade receivables in another foreign currency. The group had outstanding trade payables in US dollars of $88,000 (2022: $65,000), in British pound of £7,000 (2022: £13,000) and in Japanese Yen of ¥601,000 (2022: ¥347,000).

If at 31 December 2023, the euro had weakened by 10% against the US dollar with all other variables held constant, post-tax loss for the year would have been €9,000 higher (2022: €6,000 higher). The US dollar cash position as at 31 December 2023 is $68,134 (2022: $19,039). The Japanese Yen cash position as at 31 December 2023 is ¥7,572,633 (2022: ¥2,907,000). The group had no cash position in other foreign currencies.

Credit Risk

Credit risk is managed on group basis. The group does have a significant concentration of credit risk and is limited to outstanding trade receivables, cash and cash equivalents. On 31 December 2023, the largest single client exposure consisted of 61% of the outstanding trade receivables, having received the amount in January 2024. The group clients are subject to creditworthiness tests. Sales are subject to payment conditions varying between payments in advance and 30 days after invoice date. For certain projects, deviations to this rule may apply only after approval of group F&A, in which case additional security, including guarantees and documentary credits, may be required. Management does not expect any losses from non-performance by its clients nor from concentration of this risk.

In 2023, €150,000 (2022: €0) of trade or other receivables was written off; €1,847,000 was past due, of which 88% had been paid before 4 March 2024.

The amount of trade and other receivables past due as at December 31, were as follows:

in Euro x 1,000	**2023**	**2022 (restated)**
Less than 3 months past due	1,760	1,425
Between 3 and 6 months past due	79	65
More than 6 months past due	7	347
	1,846	**1,837**

Impairment provisions for trade receivables are recognised based on the simplified approach within IFRS 9 to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables and contract assets.

Trade receivables and contract assets are written off where there is no reasonable expectation of recovery. Indicators that there is no reasonable expectation of recovery include, amongst others, the failure of a customer to engage in a repayment plan with the group, and a failure to make contractual payment for a period of greater than 6 months past due. Management has therefore concluded that a provision of doubtful debt of €228,000 (2022: €150,000) on the trade receivables had to be recognised as at 31 December 2023.

The maximum exposure to credit risk at the reporting date is the carrying value of each class of receivable mentioned above. The group does not hold any collateral as security. The long-term credit ratings of banks used by the group, as at 31 December 2023 at Moody's and S&P subsequently, are as follows. Group funds are held at Rabobank with a long-term credit rating of Aa2 and A+, ABN AMRO Bank with a long-term credit rating of between Aa3 and A, and at ING Bank with a long-term credit rating between A- and A+.

Liquidity Risk

Prudent liquidity risk management implies maintaining sufficient cash and marketable securities, the availability of funding through an adequate amount of committed credit facilities and the ability to close out market positions.

The table below analyses the group's financial liabilities into relevant maturity groupings based on the remaining period at the balance sheet to the contractual maturity. The amounts disclosed in the table are the contractual discounted cash flows for continuing operations. The specific time buckets are not mandated by the standard but are based on a choice of management. The tables include both interest and principal cash flows:

As at December 31, 2023:

in Euro x 1,000	Less than 1 year	Between 1 and 2 years	Between 2 and 5 year	Over 5 years	Total
Borrowings	—	(92,500)	—	—	(92,500)
Shareholder loan	—	(12,603)	—	—	(12,603)
Lease liabilities	(2,404)	(2,945)	(4,997)	(1,188)	(11,534)
Financial liability	(13,609)	—	—	—	(13,609)
Trade payables	(12,133)	—	—	—	(12,133)
Other current liabilities	(27,294)	—	—	—	(27,294)
	(55,440)	**(108,049)**	**(4,997)**	**(1,188)**	**(169,674)**

As at December 31, 2022 (restated):

in Euro x 1,000	Less than 1 year	Between 1 and 2 years	Between 2 and 5 year	Over 5 years	Total
Borrowings	—	—	(15,000)	—	(15,000)
Lease liabilities	(2,200)	(2,049)	(6,877)	(2,072)	(13,198)
Financial liability	(14,091)	—	—	—	(14,091)
Trade payables	(8,628)	—	—	—	(8,628)
Other current liabilities	(14,521)	—	—	—	(14,521)
	(39,440)	**(2,049)**	**(21,877)**	**(2,072)**	**(65,438)**

All financial assets and financial liabilities are measured at amortised cost, except for the financial liability for the warrants which is carried at Fair Value through Profit or Loss. The carrying amounts of these financial liabilities are assumed to approximate their fair values.

Fair value
The group applies the following hierarchy for determining and disclosing the fair value of the financial instruments by valuation technique:

Level 1: Quoted (unadjusted) prices in active markets for identical assets or liabilities;

Level 2: Valuation techniques whereby the lowest-level input as significant for valuation at fair value is directly or indirectly observable;

Level 3: Valuation techniques whereby the lowest level input as significant for valuation at fair value is not observable.

Changes in the fair value of the financial instruments measured at fair value are recognised in the Income Statement.

Trade and Other Receivables, Payables to Suppliers, Other liabilities due to expire within one year are included in the financial statements at amortized cost. The amortized cost is considered to be a reflection of fair value due to the short duration.

The fair value measurement for borrowings are categorized within level 3 of the fair value hierarchy. The fair value is determined based on the discounted cash flow method.

The financial liability (warrants) are categorized within level 2 of the fair value hierarchy as this is not a trading instrument.

3.2 Capital Management

The group's objective when managing capital is to safeguard its ability to continue as a going concern (also refer to 2.1.1) in order to provide returns for shareholders and benefits for other stakeholders, and to maintain an optimal capital structure to reduce the cost of capital. To maintain or adjust the capital structure, the group monitors capital on the basis of its adjusted solvency ratio. This ratio is calculated as adjusted equity divided by the adjusted balance sheet total.

The adjusted equity is calculated as equity:
- Minus the intangible assets, participating interests and receivables from shareholders

The adjusted balance sheet total is calculated as total assets:
- Minus the intangible assets, participating interest, receivables from shareholders and shares held in the own Company

The adjusted solvency ratios as at December 31, were as follows:

in Euro x 1,000	2023	2022 (restated)
Equity attributable to owners of the parent	46,173	82,584
Intangible assets	(2,323)	(1,974)
Adjusted equity total	43,850	80,610
Adjusted balance sheet total	226,163	161,611
Adjusted solvency ratio	**19%**	**50%**

4. Critical Accounting Estimates and Judgments

The preparation of financial statements in accordance with IFRS requires the use of certain accounting estimates. It also requires management to exercise its judgement in the process of applying the group's accounting policies. Estimates and judgments are continually evaluated, and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

The resulting accounting estimates will, by definition, seldom equal the related actual results.
The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are addressed below.

Income Taxes

The group, which has a history of recent tax losses, recognises deferred tax assets arising from unused tax losses or tax credits only to the extent that the relevant fiscal unity has sufficient taxable temporary differences or there is convincing other evidence that sufficient taxable profit will be available against which the unused tax losses or unused tax credits can be utilised by the fiscal unity. Management's judgment is that there is not a high degree of certainty that sufficient profits will be earned to utilise the losses. Consequently, based on management's judgment, sufficient convincing other evidence is not available, and a deferred tax asset is therefore not recognised.

Share-based Payments

Share options granted to employees are measured at the fair value of the options granted (indirect method of measurement). For the Company's share option plan, management's judgment is that the Black-Scholes valuation method is most appropriate for determining fair values. The assumptions and estimates used in the valuation are further discussed in note 14 to the consolidated financial statements.

The result of the share option valuations and the related compensation expense is dependent on the model and input parameters used. Even though management considers the fair values reasonable and defensible based on the methodologies applied and the information available, others might derive at a different fair value for the options granted under the Company's share option plan.

Research and Development Expenditures

The project stage forms the basis in the decision of whether costs made for the group's product development programmes should be capitalised or not. Management judgment is required in determining when the group should start capitalising development costs as intangible assets.

Management determined that for a system, commercial feasibility is, in general, probable when the group has built a successful prototype and has interested customers for the commercial product. Management determined that for product development, (note 2.6) commercial feasibility is, in general, probable when the group has successfully completed essential testing phases and are in a late stage of discussions with potential partners for commercialisation opportunities.

Revenue Recognition

The group recognises revenue over time or at point in time depending on the agreed contract performance obligations.
For Flowrence® systems and services contracts the group recognises revenue over time as performance of the contract progresses. The performance on a contract relates to fixed-price contracts to construct tailor-made Flowrence® systems which the customers control and cannot be of alternative use to the Company. For the Flowrence® systems, the stage of completion is measured by reference to the total contract costs incurred up to the end of the reporting period as a percentage of total estimated costs for each contract. Value is delivered to customers up to each of these points.
For services, in order to recognise revenue over time, the group is required to estimate the series of distinct services performed to date as a proportion of the total services to be performed, where also stage gates are present, and value is added up to that point. To define the recognised revenues, the group estimates the required total costs (Flowrence®) or man-hours (services) to complete each project. On a regular basis a review of the total costs or man-hours is performed.

The group recognised license revenue over time. The group measures it performance towards completion of the performance obligation based on an output measure of surveys of work performed compared to the overall project timeline. This measures is deemed to represent the patter of transfer of control to the customer since the work performed is of a technical nature. The group assesses on an ongoing basis whether the estimated project timeline is still in line with expectations and will make adjustments should there be a delay or faster progression than initially estimated.

Going Concern

For the critical accounting judgment with regard to the going concern situation and assumption, see note 2.1.1.

Government Grants

The group uses the percentage-of-completion (POC) method in accounting for its government grants it has been awarded. For grant programmes, use of the POC method requires the group to estimate the services/actions performed to date as a proportion of the total services or actions to be performed. For further considerations and assumptions with regard to the critical accounting estimate in relation to government grants, see note 2.21.

Impairment

Judgments and estimates are required, not only to determine whether there is an indication that an asset may be impaired, but also whether indications exist that impairment losses previously recognized may no longer exist or may have decreased (impairment reversal). After indications of impairment have been identified, judgments and estimates are also involved in the determination of the recoverable amount of a non-current asset. The recoverable amount is determined based on the higher of the fair value less cost to sell and the value-in-use. These involve estimates of expected future cash flows (based on future growth rates and remaining useful life) and residual value assumptions, as well as discount rates to calculate the present value of the future cash flows.

Notes to the Consolidated Statement of Financial Position

5. Property, Plant and Equipment

in Euro x 1,000	Leasehold improvements	Laboratory equipment	Hardware	Office furniture and equipment	Construction in progress	Total
At 1 January 2022						
Cost	26,209	34,743	3,229	2,131	6,777	73,089
Accumulated depreciation	(15,682)	(29,094)	(2,893)	(2,096)	—	(49,765)
Net book amount	**10,528**	**5,649**	**336**	**34**	**6,777**	**23,324**
Year ended 31 December 2022						
Opening net book amount	10,528	5,649	336	34	6,777	23,324
Additions	48	21	75	76	43,006	43,226
Restated borrowing costs	—	—	—	—	511	511
Transfers	—	107	3	—	(110)	—
Impairment charge	(355)	(66)	(11)	(3)	—	(435)
Depreciation charge	(3,501)	(2,018)	(161)	(42)	—	(5,721)
Closing net book amount	**6,720**	**3,693**	**242**	**66**	**50,184**	**60,906**
At At 31 December 2022 (restated)						
Cost	25,902	34,805	3,296	2,204	50,184	116,391
Accumulated depreciation	(19,183)	(31,112)	(3,054)	(2,138)	—	(55,486)
Net book amount	**6,719**	**3,693**	**242**	**66**	**50,184**	**60,906**
Year ended 31 December 2023						
Opening net book amount (restated)	6,719	3,693	242	66	50,184	60,906
Additions	208	557	135	—	98,476	99,376 [1]
Borrowing costs	—	—	—	—	11,587	11,587 [2]
Disposals	—	—	—	—	—	—
Transfers	360	176	43	—	(578)	—
Accumulated depreciation on disposals	—	—	—	—	—	—
Impairment charge	—	—	—	—	—	—
Depreciation charge	(2,960)	(1,789)	(90)	(20)	—	(4,859)
Reclassification to asset held for sale -cost	(8,930)	(914)	(50)	(12)	(163)	(10,068)
Reclassification to asset held for sale - accumulated depreciation	6,487	658	21	12	—	7,179
Closing net book amount	**1,885**	**2,382**	**301**	**47**	**159,506**	**164,121**
At 31 December 2023						
Cost	17,540	34,624	3,424	2,192	159,506	217,286
Accumulated depreciation	(15,655)	(32,242)	(3,123)	(2,145)	—	(53,166)
Net book amount	**1,885**	**2,382**	**301**	**47**	**159,506**	**164,121**

The additions in property plant and equipment during 2023 predominantly related to investments made by the Avantium Renewable Polymers segment in the construction of the FDCA Flagship Plant. The Avantium Renewable Chemistries segment invested mainly in safety related upgrades for the pilot plant in Delfzijl and the Avantium R&D Solutions segment invested in leasehold improvements and revenue-generating project machinery. The borrowing cost capitalised includes the interest on leases of the FDCA Flagship Plant, Payment in Kind Interest, Cash interest and Effective interest on the Debt Financing facility, interest on the Fonds Nieuwe Doen Loan and the upfront fee. In 2023, no impairments were recorded. The property, plant and equipment of €164,121,000 are pledged under the Debt Financing facility (refer to note 17).

[1] In the Statement of Cash flows the additions paid in 2023 amounted to €89.3 million. The additions include €3.4 million invoice accruals, €5.0 million contribution in kind (see note 9 for detail on the prepayment), €1.6 million decommissioning provision (see note 19), non-cash borrowing cost as mentioned below of €8.0 million and restatement prior year 0.2 million.
[2] The borrowing cost includes non-cash borrowing costs amounting to €8.0 million and cash borrowing cost paid of €3.6 million

6. Intangible Assets

(In Euro x 1,000)	Development costs	Software	Intellectual Property	License rights	Other	Total
At 1 January 2022						
Cost	2,159	7,199	433	1,326	1,064	12,180
Accumulated amortisation and impairment	(2,159)	(7,199)	—	—	(987)	(10,345)
Net book amount	**—**	**—**	**433**	**1,326**	**77**	**1,835**
Year ended 31 December 2022						
Opening net book amount	—	—	433	1,326	77	1,835
Additions	—	174	—	—	—	174
Amortisation charge	—	(35)	—	—	—	(35)
Closing net book amount	**—**	**216**	**433**	**1,326**	**—**	**1,974**
At 31 December 2022						
Cost	2,159	7,450	433	1,326	987	12,355
Accumulated amortisation and impairment	(2,159)	(7,234)	—	—	(987)	(10,380)
Net book amount	**—**	**216**	**433**	**1,326**	**—**	**1,974**
Year ended 31 December 2023						
Opening net book amount	—	216	433	1,326	—	1,974
Additions	—	298	—	—	151	449
Transfers	—	—	—	—	—	—
Amortization charge	—	(91)	—	—	—	(91)
Reclassification to asset held for sale - cost	—	(33)	—	—	—	(33)
Reclassification to asset held for sale - accumulated depreciation	—	24	—	—	—	24
Closing net book amount	**—**	**413**	**433**	**1,326**	**151**	**2,323**
At 31 December 2023						
Cost	2,159	7,715	433	1,326	1,138	12,771
Accumulated amortisation and impairment	(2,159)	(7,301)	—	—	(987)	(10,448)
Net book amount	**—**	**413**	**433**	**1,326**	**151**	**2,323**

The additions in intangible assets during 2023 predominantly relate to the implementation and maintenance of a new ERP software package for the Company, project that had started in 2022.
The Intellectual Property of €433,000 is pledged under the Debt Financing facility (refer to note 17).

Development Costs

The development costs consist of the development and prototype expenses of the Flowrence® system and are all fully amortised.

Software and Other Intangibles

Software mainly comprises purchased general laboratory and office-related software.
Other intangibles are the in-kind contribution of a shareholder relating to software at the foundation of the group and compensation paid to a third party to exclusively use parts of their technology.

Intellectual Property

Following the Liquid Light acquisition in 2016, the Company records intellectual property (patent portfolio acquired) on its consolidated balance sheet, which will subsequently be lowered with accumulated amortisation the following years, when the technology on which the intellectual property is filed, is ready to deploy commercially. As at 31 December 2023, the recoverable amount of the intellectual property exceeds the carrying amount.

Total of research expenditures recognised as an expense in the consolidated statement of comprehensive income amounted to €1,748,000 (2022: €1,037,000) and mainly constitute of early stage research trials.

License Rights

The license rights consists of the licenses acquired for technologies not owned or developed by the Company.
Included in the license rights is the Eastman license acquired by Avantium Renewable Polymers during 2021. As part of the license agreement, royalty fees will be payable to Eastman. The fees will equal to $20 USD per metric ton of Licensed Products produced from the FDCA Flagship Plant. The commencement of the operations will be in 2024. The foregoing running royalty will be payable by Avantium in cash or in shares of Avantium N.V. (in equivalent value) on a semi-annual basis for the first two years of operation of the FDCA Flagship Plant, after which all such payments will be paid in cash. Avantium may decide how it proposes to settle the royalty fees for the first two years.

7. Leases

This note provides information for leases where the group is a lessee.

Amounts Recognised in the Balance Sheet

The balance sheet shows the following amounts relating to leases:

in Euro x 1,000	31-12-2023	31-12-2022
Properties	8,085	9,893
Motor vehicles	6	52
Reclassification to asset held for sale	(313)	—
Total right-of-use assets	**7,778**	**9,945**

in Euro x 1,000	31-12-2023	31-12-2022
Current lease liabilities	2,139	1,897
Non-current lease liabilities	8,326	10,046
Reclassification to liabilities associated with asset held for sale	(849)	—
Total Lease liabilities	**9,616**	**11,943**

Movement schedule for the lease liability

in Euro x 1,000	2023	2022
Balance at 1 January	**11,943**	**10,703**
New lease contracts	250	1,183
Repayment of lease liabilities	(2,088)	(1,613)
Modifications	360	1,670
Reclassification to liabilities associated with asset held for sale	(849)	—
Balance at 31 December	**9,616**	**11,943**

Additions to the right-of-use assets during the 2023 financial year were €250,413 (2022: €1,183,138). The decrease in the right-of-use assets are due to lower inflationary increases during 2023. .

Amounts Recognised in the Statement of Comprehensive Income

The statement of comprehensive income shows the following amounts relating to leases:

in Euro x 1,000	2023	2022
Properties	2,396	2,323
Motor vehicles	51	64
Total depreciation charge of right-of-use assets	**2,447**	**2,387**

in Euro x 1,000	2023	2022 (restated)
Interest expense included in finance cost	192	223
Total interest charge on lease liabilities	**192**	**223**

The cash flow net of VAT related to principal elements of the lease payments amounted to €2,035 million (2022: €1,947 million).

Some of the lease agreements contain variable lease elements that are linked to the usage of the lease, which is not included in the measurement of the lease liability. The variable lease expense for the year not included in the measurement of the lease liability amounted to €595,000 (2022: €810,000). The short term and low value lease expenses for 2023 amounted to €487,000 (2022: €67,000).

8. Inventories

(In Euro x 1,000)	31-12-2023	31-12-2022
Raw materials	1,153	1,136
Work in progress	215	431
	1,368	**1,567**

The costs of inventories recognised as an expense and included in raw materials and contract costs, amounted to €187,000 (2022: €316,000).

9. Trade and Other Receivables

(In Euro x 1,000)	31-12-2023	31-12-2022 (restated)
Trade receivables	4,243	2,634
Less: Allowance for doubtful debt	(228)	(150)
Social security and other taxes	4,072	997
Prepayments: Non-current	—	15,248
Prepayments: Current (restated)	1,807	2,219
Contract assets	2,509	2,379
Other receivables	2,066	996
Reclassification to asset held for sale	(2,079)	—
Non-current and Current portion	**12,390**	**24,323**

Prepayments include a contribution in kind recognised by Avantium RNP Flagship B.V. on 31 March 2022, which consists of shares in Avantium Renewable Polymers B.V. issued upfront to Worley for services that will be delivered under the construction agreement for the FDCA Flagship plant. The prepayment is released equally over 24 months starting from April 2022. As at 31 December 2023, the remaining balance is €1.2 million (2022: 6.2 million). In 2022, prepayments also include a prepayment of €11.3 million recognised by Avantium N.V. The prepayment relates to the warrants issued, as part of the Debt Financing facility agreement, to the respective banks and an upfront fee paid to the banks of €1.8 million.
The prepayments relating to the warrants and the upfront fee will be capitalised as a borrowing cost to the FDCA Flagship Plant asset at each drawdown of the facility on a pro-rata basis. As at 31 December 2023 the prepaid balance relating to the warrants and the upfront fee is €0 (2022: €10.5 million).

Contract assets relating to systems and services contracts are unbilled revenues, where the Company has recognised revenue to date under the percentage-of completion method, however is not yet in the position to bill these revenues to customers as the invoicing milestone has not yet been reached.

The other receivables comprise primarily of funding to be received in relation to government grants where the Company has already complied with the attached conditions under the specific grant program (€1,728,000) and deposits held at third parties (€338,000).

In 2023, €150,000 (2022: €0) of trade or other receivables was written off; €1,847,000 was past due, of which 88% had been paid before 4 March 2024.

Trade receivables and contract assets are written off where there is no reasonable expectation of recovery. The Company assessed the trade receivables balance as at 31 December 2023, concluding the provision for doubtful debt of €228,000 (2022: €150,000)(see also note 3.1). The carrying amounts of these financial assets are assumed to approximate their fair values.

Impairment provisions for trade receivables are recognised based on the simplified approach within IFRS 9 to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables and contract assets.

Trade receivables of €4,243,000 are pledged under the Debt Financing facility agreement (refer to note 17).

10. Cash and Cash Equivalents

(In Euro x 1,000)	31-12-2023	31-12-2022
Cash at bank and on hand	33,716	58,370
Restricted cash	1,500	6,500
Cash and cash equivalents for cash flow purposes	**35,216**	**64,870**

The carrying amounts of these financial assets are assumed to approximate their fair values. A notional cash pool agreement is in place for all Rabobank accounts where balances are netted on a daily basis. Within the cash pool, there are €0 overdrafts.

The cash and cash equivalents presented in the Consolidated Statement of Financial Position and the Consolidated Statement of Cash Flow include restricted cash of €1.5 million. The €1.5 million relates to a deposit held with Rabobank, which represents an amount equal to the estimated required guarantee capacity for the short term needs of the Company. The Company has a guarantee capacity of €3.0 million. As at 31 December 2023, €1,701,000 of this guarantee capacity has utilised for issued bank guarantees to third parties.
For further information on commitments issued to third parties, refer to note 30.

11. Entity Held for Sale

On 13 December 2023 Avantium announced that the Company is prioritising the commercialization of its FDCA and PEF technology and the acceleration of its licensing strategy. As a result, further investments in the Ray Technology™ to produce the plant-based glycols, plantMEG and plantMPG, have been put on hold and Avantium has initiated a process to secure appropriate strategic equity partners. A dedicated team has been created with the sole target of entering into a transaction in 2024. In parallel, an M&A advisor will be retained to support this process.

As the carrying amount of the disposal group encompassing the Ray Technology™ is to be recovered principally through a transaction in which the Company will lose control over the disposal group and the transaction is considered highly probable, the Company has classified the assets and liabilities of the Ray Technology™ disposal group held for sale. The disposal group has been measured at its carrying amount, as this is considerably lower than the fair value less the cost to sell. The disposal group forms part of the Renewable Chemistries segment.

The major classes of assets and liabilities of the disposal group as at 31 December 2023 are as follows:

(In Euro x 1,000)	**31-12-2023**
Property, plant and equipment	2,889
Intangible assets	10
Right of use asset	313
Trade receivables	450
Other receivables	1,629
Total assets held for sale	**5,291**
Lease liabilities	(849)
Trade and other payables	(228)
Other liabilities	(588)
Total liabilities associated with asset held for sale	**(1,665)**

12. Share Capital and Other Reserves

Avantium N.V. is listed on Euronext Amsterdam and Euronext Brussels.

12.1 Ordinary Shares

On 14 April 2022, Avantium successfully raised €45.0 million by means of a public offering with a priority allocation for its existing shareholders, a retail offering and a private placement. The Company issued 11,250,000 new shares, which represented 36% of the issued share capital. Pricing of the capital increase was fixed at €4.00 per share, a 20% discount versus the previous closing price.

The authorised share capital at 31 December 2023 amounted to €10,000,000 consisting of 100,000,000 ordinary shares, with a nominal value of €0.10 each. The issued share capital at 31 December 2023 comprises 43,230,036 ordinary shares (2022: 42,605,893). In 2023, 609,718 options were exercised by employees, from these option exercises, 609,718 resulted in additional ordinary shares issued. At 31 December 2023, zero (2022: zero) shares were held by the Stichting Administratiekantoor Avantium (the Foundation) and nil employee shares were repurchased. All 43,230,036 shares issued are fully paid and stated at its par value of €0.10 each.

12.2 Other Reserves

The costs of equity settled share-based payments to employees are recognised in the statement of comprehensive income, together with a corresponding increase in equity during the vesting period, taking into account (deferral of) corporate income taxes. The accumulated expense of the share incentive plan recognised in the statement of comprehensive income is shown as part of the equity category 'other reserves' in the consolidated statement of changes in equity.

Additionally, included in the "other reserve " category is the share-based payment for the Eastman license acquired in 2021. The settlement of the share-based payment will be in three equal instalments. The first instalment was made in 2022 at 8 months after the Final Investment Decision. The second instalment was paid in 2023, 24 months after the Final Investment decision. Avantium has the option to settle the outstanding amount in shares or cash.

12.3. Accumulated losses

On 31 March 2022, a direct addition to equity was recognised on the sale of the 22.6% shareholding to the non-controlling interest parties. Refer to note 2.2.2. for the detail on the change in ownership in Avantium Renewable Polymers B.V.

12.4 Currency Translation Difference

The group does not hold a company reporting in any other currency than euros and therefore does not hold a currency translation reserve.

12.5 Treasury Shares

The total value of treasury shares outstanding at 31 December 2023 is €616,000 (2022: €616,000).

13. Non-Controlling Interest

The table summarises the information relating to the Group's subsidiary, Avantium Renewable Polymers B.V., that has a Non-Controlling Interest amounting to 22.64%.

On 31 March 2022, there was a change in ownership of Avantium Renewable Polymers B.V., a subsidiary of Avantium N.V. Worley Nederland B.V. and Bio Plastics Investment Groningen B.V. together have acquired a 22.6% shareholding in Avantium Renewable Polymers B.V., while Avantium continues to hold 77.4% of the equity.

Four prior period misstatements were identified for which the comparative figures for the year ended 31 December 2022 have been restated. The restatements relate to the Avantium Renewable Polymers B.V. segment. Refer to note 2.1.3.

Summarised balance sheet

Avantium Renewable Polymers B.V.

(In Euro x 1,000)	**31-12-2023**	**31-12-2022 (restated)**
Non-current assets	164,304	62,505
Non-current liabilities	(125,673)	(17,336)
Net non-current assets	**38,631**	**45,169**
Current assets	15,265	23,335
Current liabilities	(25,880)	(22,103)
Net current assets/(liabilities)	**(10,615)**	**1,233**
Net total assets/(liabilities)	**28,016**	**46,402**
Accumulated Non-Controlling interest	7,690	10,437

Summarised Statement of Profit or Loss and Comprehensive Income

Avantium Renewable Polymers B.V.

(In Euro x 1,000)	**2023**	**2022 (restated)**
Revenue	5,592	6,056
Other Income	3,673	3,660
Net operating expenses	(18,615)	(14,953)
EBITDA	**(9,350)**	**(5,237)**
Loss for the period	**(12,207)**	**(8,981)**
Loss allocated to Non-Controlling interest	(2,748)	(1,575)

The loss allocated to Non-Controlling interest constitutes to 22.64% of the loss for the period for Avantium Renewable Polymers B.V.

Summarised Statement of Cash Flow

Avantium Renewable Polymers B.V.

(In Euro x 1,000)	**2023**	**2022 (restated)**
Cash flows from operating activities	(19,103)	(7,749)
Cash flows from investing activities	(90,223)	(29,374)
Cash flows from financing activities	101,187	47,930
Net increase in cash and cash equivalents	**(8,139)**	**10,807**

14. Share-based Payment

The group operates share-based compensation plans for its employees, which consists of an Employee Share Option Plan (ESOP) and a Long-term Incentive Plan (LTIP). These plans are classified as equity-settled share-based payment plans.

Long-term Investment Plan (LTIP)

The members of the Management Team are obligated to invest a percentage of their (net) bonus in (depositary receipts for) shares to be delivered by the Company under the LTIP. Each Investment share relates to one share. The cash component of the bonus may, at the discretion of the relevant member of the Management Team, also be invested in Investment shares. The Investment shares are subject to a retention period of five years, during which the investment shares cannot be sold. After the end of the retention period, the Company will match the (depository receipts for) shares granted under the LTIP at a 1:1 ratio, i.e. one Matching share is granted for each Investment share.

The entitlement to receive Matching shares will be reduced as follows in the case of termination: 100% if the termination date is prior to the first anniversary of the date of Award; 66.67% if the termination date is prior to the second anniversary but after the first anniversary of the date of Award; 33.33% if the termination date is prior to the third anniversary but after the second anniversary of the date of Award.

In 2023, 111,091 shares were granted under the Long term Investment Plan (LTIP). These awards consist of 59,194 Investment shares and 51,897 Matching shares. The difference between Investment Shares and Matching Shares is explained by the fact that in view of the resignation date, Investment Shares were granted to Bart Welten without entitlement to Matching Shares (reference is made to the above paragraph).

The movements in outstanding LTIP awards with the Management Board and senior management can be summarised as follows:

Long-term Investment Plan	2023		2022	
	Number of awards	Weighted Average share price at grant date (in Euro)	Number of awards	Weighted Average share price at grant date (in Euro)
Number of awards outstanding 1 January	**313,190**	**3.88**	**175,755**	**4.49**
Number of matching shares forfeited	—	—	(7,737)	2.50
Number of awards granted (including matching shares)	111,091	3.50	145,172	3.07
Number of awards outstanding 31 December	**424,281**	**3.78**	**313,190**	**3.88**

LTIP awards outstanding at the end of the year had the following share price at grant date:

Grant date	Share price at grant date in Euro	Number of awards
1 July 2017	10.50	5,418
16 March 2018	5.36	65,155
21 March 2019	2.64	16,681
14 May 2020	3.59	88,501
18 May 2022	3.07	137,435
10 May 2023	3.50	112,747
At 31 December 2023		**425,937**

The fair value of LTIP awards under the Long-term Investment Plan is determined by the share price at grant date and the weighted average fair value of LTIP awards granted during 2023 was €3.50 per award.

Employee Share Option Plan (ESOP)

On an annual basis and on certain other occasions set out in the plan rules, options under the Employee Share Option Plan (ESOP) may be conditionally granted to eligible employees of the Company. The options will vest yearly over a three-year vesting period. The vested options have an exercise period of five years after vesting, after which the option expires.

In 2023, 425,500 share options were granted. In 2023, 609,718 options were exercised with a weighted-average share price of €3.30 at the date of exercise by the employees.

Further details on the grants in 2023 can be found in the table below.

Grant date	Plan	Number of ESOP options granted	Exercise price in Euro per option
10 May 2023	ESOP	425,500	3.50

The movements in outstanding options with the Management Board, senior management and certain other employees can be summarised as follows:

Share Option	2023		2022	
	Number of options	Weighted Average exercise price (in Euro)	Number of options	Weighted Average exercise price (in Euro)
Number of options outstanding 1 January	**3,081,008**	**2.55**	**2,717,985**	**2.52**
Number of options exercised	(609,718)	3.30	(69,446)	3.57
Number of options forfeited	(23,249)	4.45	(87,531)	4.27
Number of options expired	(218,942)	9.45	—	—
Number of options granted	425,500	3.50	520,000	3.13
Number of options outstanding 31 December	**2,654,599**	**1.94**	**3,081,008**	**2.55**

Share options outstanding at December 31, 2023, amounted to 2,654,599. The exercise prices range from €0.10 to €10.58. The weighted average remaining contractual term for options outstanding at December 31, 2023, was 4.89 years.

Avantium N.V. has issued shares resulting from the exercise of options to the Stichting Administratiekantoor Avantium (the Foundation).

The Foundation has issued depository receipts to members of the Management Board, senior management and certain other employees. The Foundation is a consolidated special purpose entity set up by Avantium N.V. The shares held by the Foundation, however, only represent the voting rights associated with the issued shares and depository receipts representing all economic benefits issued by the Foundation to members of the Management Board, senior management and certain other employees, and consequently the shares held by the Foundation are not considered treasury shares.

The number of options which are exercisable at the end of the period (i.e. vested, but not yet exercised) amounted to 1,239,158.The fair value of options under the equity-settled share-based payment plans is determined using the Black-Scholes valuation model and the weighted average fair value of options granted during 2023 was €1.81 per option (2022: €1.53).

The significant inputs into this model were as follows:

	10 May 2023
Exercise price	€3.50
Volatility	45%
Risk free interest rate	2.32%
Dividend yield	—
Expected life	7.6 years
Early exercise rate	5%

The historical volatility used is based on the volatility of the Company's own shares in combination with the historical volatility of a peer group (five companies in total which are considered to be comparable listed companies), of which the daily stock returns over a period equal to the maturities of each plan related to the valuation dates was used.

During the year, a reclassification was made from other reserves to retained earnings, totalling €615,304, to reflect the effect of exercised and expired options in 2023.

15. Earnings per Share

Earnings per Share

Earnings per share for the years 2023 and 2022 are derived below:

In Euro	31-12-2023	31-12-2022 (restated)
Loss for the period - basic	**(31,402,314)**	**(28,127,137)**
Loss for the period - diluted	**(31,402,314)**	**(28,127,137)**
Weighted average number of ordinary shares -basic	**42,852,733**	**39,390,687**
Number		
Options per end of the year	2,654,599	3,081,008
LTIP awards per end of the year	424,281	313,190
Effect of anti-dilutive securities	**3,078,880**	**3,394,198**
Weighted average number of shares - diluted	**42,852,733**	**39,390,687**
In Euro		
Earnings per share - basic	**(0.73)**	**(0.71)**
Earnings per share - diluted	**(0.73)**	**(0.71)**

Basic earnings per share are calculated by dividing the net result for the period by the weighted average number of ordinary shares. Diluted earnings per share are calculated by dividing the net results for the period on a diluted basis by the weighted average number of shares on a diluted basis. As the Company is in a loss-making position, the options and LTIP awards have an antidilutive impact on the diluted earnings per share, for this reason the options and LTIP awards for the year are not considered in the calculation of diluted earnings per share. On 31 March 2022, Avantium N.V. issued 2.84 million warrants to the consortium of banks as part of the Debt Financing facility for the FDCA Flagship Plant. Refer to note 20. The warrants had an anti-dilution protection for the equity raise that took place in April 2022. As a result, on 14 April 2022, 1.02 million additional warrants were issued to the warrant holders, to compensate for the dilutive effect of the equity offering. There is no further anti-dilution protection applicable to these warrants. The warrants are convertible into the Company's ordinary shares with a 1:1 conversion ratio for an exercise price of €0.10 per share. A warrant holder may elect to exercise the warrant option cash less resulting in the number of warrants being variable. The warrants became exercisable on 30 January 2023, but because Avantium is loss making there is no dilutive impact on the earnings per share. Since 30 January 2023, there have not been any exercises of the warrants.

16. Trade and Other Payables

In Euro x 1,000	31-12-2023	31-12-2022 (restated)
Trade payables	12,133	8,628
Interest payable on borrowings: Current	1,129	89
Social security and other taxes	2,833	776
Holiday pay and holiday days	1,242	1,464
Contract liabilities	7,656	1,623
Deferred government grants	10,014	8,496
Other current liabilities	14,434	10,569
Reclassification of liabilities associated with asset held for sale	(816)	—
	48,625	**31,645**

The other current liabilities comprise primarily of other staff pay related accruals (€2,456,000) (2022: €2,232,000) and accrued expenses (€11,291,000) (2022: 7,645,000). Deferred government grants comprise of advances received in relation to government grants. The carrying amounts of these financial liabilities are assumed to approximate their fair values.

The increase in contract liabilities in 2023 compared to 2022 is mainly related to the contract with Origin Materials. Refer to note 21.

The following table shows how much of the revenue recognised in the current reporting period relates to carried-forward contract liabilities:

In Euro x 1,000	2023	2022
Revenue recognized that was included in the contract liability balance at the beginning of the period		
– Systems contracts	528	287
– Services contracts	(14)	(14)
	514	**273**

17. Borrowings

In Euro x 1,000	Borrowings
Balance as at 1 January 2022	—
Debt Financing facility drawdowns	12,750
Restatement - drawdown	(300)
Effective Interest and Payment in Kind interest	199
Balance as at 31 December 2022 (restated)	**12,649**
Debt Financing facility drawdowns	67,000
Effective Interest and Payment in Kind interest	6,953
Repayment of Debt Financing facility	—
Balance as at 31 December 2023	**86,602**

In Euro x 1,000	31-12-2023	31-12-2022 (restated)
Current Debt Facilities	—	—
Non-current Debt Facilities	86,602	12,649
Total Debt Facilities	**86,602**	**12,649**

A three-year Debt Financing facility of €90.0 million was signed with a consortium of lenders on 31 March 2022. This financing consists of three facilities. Facility A, €30.0 million, which is borrowed by Avantium N.V. and passed through to Avantium Renewable Polymers B.V. as an intercompany loan. Facility B1 and Facility B2, amounting to €45.0 million and €15.0 million, respectively, are borrowed directly by Avantium Renewable Polymers B.V. The interest on the Debt Financing facility consists of three components: cash interest, accrued interest and warrants (refer to note 20). Cash and accrued interest is EURIBOR based. The repayment of the entire loan amount including accrued interest is due on 31 March 2025. The cash interest is paid on a quarterly basis and PIK interest is capitalised on the principal balance of the Debt Financing facility on a quarterly basis. The average effective interest rate on the five drawdowns is 23%

The Debt Financing facility contains customary technical and commercial conditions precedent and a customary security package including amongst others security on: all material assets, IP rights, receivables of Avantium, Avantium Renewable Polymers B.V., the holding entity of the FDCA Flagship Plant, and of several other group companies, the shares in Avantium Renewable Polymers B.V. and these other group entities, the loan(s) of Avantium and Avantium Renewable Polymers B.V. to Avantium RNP Flagship B.V. and the FDCA Flagship Plant itself and the FDCA pilot plant.

During the period ended on 31 December 2023, commitment fees of €0.8 million (2022: €1.5 million) were paid to the banks. During the period ended on 31 December 2023, interest on the loans of €11.3 million (2022: €0.3 million) were capitalized.

The fair value measurement for borrowings are categorized within level 3 of the fair value hierarchy. The fair value is determined based on the discounted cash flow method. For period ended 31 December 2023 the fair value of the loan approximates the carrying amount due to the variable interest rates and the absence of an external credit rating.

In February 2023, an additional loan of €2.5 million was provided by Stichting Fonds Leefbaarheid, Zorg en Energie Groningen (Fonds Nieuwe Doen) to Avantium RNP Flagship Plant B.V. The proceeds from the borrowing were received in February 2023. The interest rate on the loan is 4.75% payable on a monthly basis. The loan has to be repaid in full on 1 February 2026.

During January up to and including September 2023, Avantium complied with the financial and other required covenants as confirmed on a monthly basis to the lenders. Avantium and the lenders negotiated an amendment and restatement of the Senior Facility agreement, including an upsizing of the Facilities and (temporary) amendment of the financial covenants, which amendment and restatement was executed on 19 January 2024. The confirmation regarding compliance with the financial and other required covenants has now continued to take place on a monthly basis in 2024.

Bank Overdrafts

As at 31 December 2023, the group had no overdraft facilities with any bank.

18. Shareholder Loan

On 14 December 2023, Avantium Renewable Polymers B.V. entered into a shareholders loan agreement with Avantium N.V. and the non-controlling shareholders. The non-controlling shareholders have each granted a subordinated shareholder loan to Avantium Renewable Polymers B.V., which was received in cash during 2023. Each subordinated loan will carry interest of 6.5% per annum, paid in arrears upon repayment of the loans. The shareholder loans are convertible into shares of Avantium Renewable Polymers B.V. upon repayment or maturity. This conversion feature met the definition of an equity instrument as this derivative can be settled only by exchange of a fixed number of cash for a fixed number of shares. However, the fair value of such equity conversion option was deemed immaterial hence no amount was recognised in equity.

Additionally, as per the anti-dilution protection agreed in the Shareholders Loan Agreement, the lenders agreed to compensate one of the non-controlling shareholders that did not contribute to the loans to the extent of its shareholding percentage. This compensation to that non-controlling shareholder has been recognised as a financial liability with a corresponding entry in equity. It shall become payable upon repayment of the shareholder loans or conversion into equity.

The total shareholder loan liability can be specified as follows:

In Euro x 1,000	**31-12-2023**
Shareholder loans	6,683
Accrued interest on shareholder loans	22
Shareholder compensation liability	5,879
Accrued interest on shareholder compensation liability	19
Balance as at 31 December	**12,603**

19. Provisions for Other Liabilities and Charges

In Euro x 1,000	**Warranty provision**	**Restructuring provision**	**Decommissioning liability**	**Total**
Balance at 1 January 2022	**196**	**—**	**—**	**196**
Additional provision	79	—	—	**79**
Unused amounts reversed	(27)	—	—	**(27)**
Settlement of provision	—	—	—	**—**
Used during the year	(12)	—	—	**(12)**
At Balance at 31 December 2022	**236**	**—**	**—**	**236**
Balance at 1 January 2023	236	—	—	**236**
Additional provision	87	113	1,581	**1,781**
Unused amounts reversed	(76)	—	—	**(76)**
Used during the year	(37)	—	—	**(37)**
Balance at 31 December 2023	**210**	**113**	**1,581**	**1,904**

Restructuring

On 13 December 2023 the group announced it is prioritising the commercialisation of its FDCA and PEF technology and the acceleration of its licensing strategy. As a result, further investments in Ray Technology™ have been put on hold until appropriate strategic equity partners have been secured. The decision to halt investments in Ray Technology™ will regrettably result in workforce reductions. The group raised a provision for the restructuring cost of €113,000
This provision is current (shorter than one year).

Warranty

The provision for warranty consists of estimated costs for repairs of installed products during the warranty period of one year. This estimate is based on historical experience of broken or repaired units and the costs associated with that.
This provision is current (shorter than one year). Unused amounts are reversed after expiration of the warranty period.

Decommissioning Liability

The decommissioning liability consists of the estimated costs for the FDCA Flagship Plant to restore the leased land at the end of the lease term (expected after 10 years) to the condition agreed in the lease agreement. As at 31 December 2023, the risk free rate of 2.32% was used to discount the estimated cost.

20. Financial Liability

In Euro x 1,000	Financial Liability
Balance as at 1 January 2022	—
Warrants issued	11,250
Fair value remeasurement	2,841
Balance as at 31 December 2022	**14,091**
Warrants issued	—
Fair value remeasurement	(483)
Balance as at 31 December 2023	**13,609**

On 31 March 2022, Avantium N.V. issued 2.84 million warrants to the consortium of banks as part of the €90 million Debt Financing facility package for the FDCA Flagship Plant. The warrants are convertible into the Company's ordinary shares with a 1:1 conversion ratio for an exercise price of €0.10 per share. A warrant holder may elect to exercise the warrant option cash less resulting in the number of warrants being variable. The warrants have an exercise period of up to 6.5 years after the second utilization date, which was on 30 January 2023, meaning the ultimate date of the exercise period is 30 July 2029.

The warrants had an anti-dilution protection for the equity raise that took place in April 2022. As a result, on 14 April 2022, 1.02 million additional warrants were issued to the warrant holders, to compensate for the dilutive effect of the equity offering according to the Debt Financing facility with the lenders. There is no further anti-dilution protection applicable to these warrants.

The warrants will become exercisable when the FDCA Flagship Plant is operational or when other additional conditions included in the warrant Agreement have been met. Such additional conditions include, a change of control, certain joint ventures, permitted acquisitions, disposals and certain other events.

The initial recognition of the warrants amounted to €11.3 million. The warrants are recognised under IFRS 9 Financial Instruments as a Financial Liability. The warrants are measured subsequently at fair value through profit or loss at each reporting date.

The fair value of the warrants on 31 December 2023 is 13.6 million (2022: 14.1 million). The decrease in the share price of €0.13 resulted in the decrease in the fair value of the warrants. The subsequent fair value remeasurement of the warrants resulted in a gain for the year ended 31 December 2023 of €0.5 million (2022: 2.8 million loss), recognised under fair value remeasurement in the Statement of Comprehensive Income. Refer to note 3.1.

Notes to the Consolidated Statement of Profit or Loss and Comprehensive Income

21. Revenues

Reported consolidated revenue from continuing operations increased by 11% from €17.8 million in 2022 to €19.7 million in 2023. All revenue is recognised at a point in time, except for revenues from Systems and Services contracts in R&D solutions, as well as License contracts in Avantium Renewable Polymers are recognised over time. Other revenues are recognised at a point in time.

Upon entering into a License contract with Origin Materials in February 2023, Avantium Renewable Polymers received a first milestone payment of €7.5 million from Origin Materials. Performance obligation one to four will be recognised over time, whereas performance obligation five and six will be recognised at a point in time. Upon entering into the agreements with Origin Materials in February 2023, Avantium Renewable Polymers received the first milestone payment of €7.5 million from Origin Materials. Under IFRS 15, the Company has elected to recognise this license payment, together with the next milestone of €7.5 million payment (which will become due upon the delivery of the PDP to Origin Materials) straight line over the time period between the first milestone payment and the PDP milestone payment. This next milestone of €7.5 million payment is an unconditional right of payment. Managements assessment is that there will be 2.5 years between these two milestones. As a result, Avantium Renewable Polymers has recognised licensing revenue for the period ended 30 September 2023 of €4.6 million relating to performance obligation one and two. To the extent that revenue has not yet been recognised, the consideration received has been recognised as a contract liability (refer to note 16). The full consideration of the contract amounts to €28.5 million. The remaining instalments of €14.0 million will be due at various stages after delivery of the PDP by Avantium Renewable Polymers and constitute variable consideration depending on whether Origin will terminate the contract at any stage. Management assessed this contract and it does not contain a significant financing component.
The agreement consists of six performance obligations:

- A combined package of promises 1 through 4 (the license to the process technology, the bridge, the operating manual and the process design package) and the license to produce downstream products;
- Inspection services;
- Technical support;
- Support services;
- Goods to be delivered under the Conditional Offtake Agreement; and
- Good to be delivered under the Sale and Purchase Agreement

Avantium Renewable Polymers, received a non-refundable payment of €5.0 million for technical due diligence procedures performed by Origin Materials during 2022, which was recognised as revenue for the period ended 31 December 2022.
All revenue reported originates in the Netherlands for both years presented.

The following table depicts the disaggregation of revenue from contracts with customers:

2023 (in Euro x 1,000)	**R&D Solutions services revenue**	**R&D Solutions systems revenue**	**Renewable Chemistry development agreements**	**Renewable Polymers agreements**	**Un-allocated revenue**	**Total**
Segment revenue	3,914	9,633	—	5,592	561	19,700
Revenue from external customers	**3,914**	**9,633**	**—**	**5,592**	**561**	**19,700**
Timing of revenue recognition						
– At a point in time	—	577	—	975	561	2,113
– Over time	3,914	9,057	—	4,617	—	17,588
Total	**3,914**	**9,633**	**—**	**5,592**	**561**	**19,700**

2022 (in Euro x 1,000)	**R&D Solutions services revenue**	**R&D Solutions systems revenue**	**Renewable Chemistry development agreements**	**Renewable Polymers agreements**	**Un-allocated revenue**	**Total**
Segment revenue	2,904	8,397	100	6,056	369	17,826
Revenue from external customers	**2,904**	**8,397**	**100**	**6,056**	**369**	**17,826**
Timing of revenue recognition						
– At a point in time	—	1,095	100	6,056	369	7,620
– Over time	2,904	7,302	—	—	—	10,205
Total	**2,904**	**8,397**	**100**	**6,056**	**369**	**17,826**

As of 31 December 2023, the aggregate amount of the transaction price in R&D Solutions allocated to the remaining performance obligations is €11.2 million and in Avantium Renewable Polymers €9.9 million, totalling €21.1 million (2022: €6.1 million and nil, respectively, totalling €6.1 million) and the group will recognise this revenue as the progress on each contract is completed, which is estimated to occur over the next 1–48 months.

22. Other Income

(In Euro x 1,000)	2023	2022
Grants recognised	5,789	7,626
	5,789	**7,626**

The group recognised total government grants of €5,789,000 (2022: €7,626,000) to contribute to Avantium's development programmes, where efforts are focused on developing a new catalytic process for making plant-based mono-ethylene glycol and for developing an economical viable chemical process to convert ligno-cellulosic biomass into high quality glucose as feedstock for bio-based chemicals. In Avantium Renewable Polymers efforts are focussed on its plant-to-plastics YXY® Technology and on starting-up the FDCA Flagship Plant and to develop a wide range of FDCA and PEF applications.

EU grants attributable to the Volta Technology, enables Avantium to perform R&D work to accelerate the progress on converting CO_2 to higher value chemicals and eventually syngas.

23. Segment Information

Description of the Segments and Principal Activities

In the Company, the Management Team consists of the Chief Executive Officer, Chief Financial Officer, Chief Technology Officer, Group Legal Counsel, and the Managing Directors of Avantium Renewable Chemistries, Avantium R&D Solutions, and Avantium Renewable Polymers. It has identified three separate business segments:

- In October 2022, our Avantium Catalysis business unit launched a new strategy and a new name – Avantium R&D Solutions – marking a decisive shift towards R&D in sustainable chemistry. This decision is not only a response to changing industry demand, but also a means of better aligning this business unit with Avantium's overall strategic direction and purpose: to help transition industry to more sustainable and circular solutions. Avantium R&D Solutions Avantium also provides R&D solutions in the field of sustainable chemistry and is the leading provider of advanced catalyst testing technology and services to accelerate catalyst R&D. With the scalable catalyst testing system, Flowrence®, Avantium R&D Solutions helps customers reach their sustainability, profit and growth targets.
- Avantium Renewable Chemistries develops and commercialises plantMEG™. PlantMEG™ is a plant-based and competitive alternative for fossil-based MEG – an important chemical building block for PET and PEF resin, both of which are used in bottles and packaging; fibres for clothing, furniture and the automotive industry; and solvents and coolants. The common basis, on which each activity rests, is formed by Avantium's unique technological capabilities that have been validated through the execution of millions of experiments, covering a broad range of chemistries, including highly complex and challenging R&D projects. In 2022 the portfolio of programmes under Avantium Renewable Chemistries included Ray Technology™, Volta Technology, and Dawn Technology™. In 2023 the portfolio of programmes were amended. Avantium Renewable Chemistries is still home to Ray Technology™ and is classified as held for sale under IFRS. Volta Technology and Dawn Technology™ are in 2023 disclosed under the unallocated.
- Avantium Renewable Polymers aims to commercialise our YXY® plants-to-plastics Technology. This technology catalytically converts plant-based sugars into FDCA (furandicarboxylic acid) and materials such as the new plant-based packaging material PEF (polyethylene furanoate). PEF is a 100% plant-based, 100% recyclable plastic with superior performance properties compared to today's widely used petroleum-based packaging materials.

Avantium has two employees employed in Japan, all other employees of Avantium are employed in the Netherlands. The average number of full time equivalent employees of the group per business segment and other departments is as follows:

(in full time equivalent employees)	2023	2022
R&D Solutions	58	48
Renewable Chemistries	59	69
Renewable Polymers	81	63
Unallocated	64	46
Total average number of FTE during the year	**262**	**226**

EBITDA

The main KPI of the Company within the profit & loss account is EBITDA. Note that the EBITDA figure excludes Company overheads and shared service activities.

The EBITDA is calculated in the following manner: Profit/loss for the period plus Finance costs-net plus depreciation, amortisation and impairment charge.

The EBITDA figures of the business segments are as follows.

(In Euro x 1,000)	2023	2022 (restated)
R&D Solutions	1,134	2,326
Renewable Chemistries	(7,592)	(3,624)
Renewable Polymers	(9,351)	(5,527)
Total EBITDA of business segments	**(15,809)**	**(6,825)**

Revenues per Segment

(In Euro x 1,000)	2023	2022
R&D Solutions	13,546	11,301
Renewable Chemistries	—	100
Renewable Polymers	5,592	6,056
Unallocated items	562	369
Total segment revenue	**19,700**	**17,826**

Revenue is only generated from external customers and no transactions with other segments have taken place.

Other Income per Segment

(In Euro x 1,000)	2023	2022
R&D Solutions	87	279
Renewable Chemistries	821	3,536
Renewable Polymers	3,673	3,660
Unallocated items	1,209	150
Total segment other income	**5,789**	**7,625**

Reconciliation

(In Euro x 1,000)	2023	2022 (restated)
Total EBITDA of business segments	(15,809)	(6,825)
Amortisation	(90)	(35)
Depreciation of property, plant and equipment	(4,859)	(6,156)
Depreciation of right of use assets	(2,447)	(2,387)
Impairment of property, plant and equipment	0	(435)
Finance costs - net	221	(1,976)
Share based compensation	(1,109)	(1,113)
Rent	(714)	(984)
Fair value remeasurement	483	(2,841)
Company overheads/other	(9,826)	(6,949)
Loss before income tax from continuing operations	**(34,150)**	**(29,702)**

The 'Other' costs category comprises mainly of Company overhead costs.

Depreciation and Amortisation

(In Euro x 1,000)	2023	2022
R&D Solutions	(230)	(368)
Renewable Chemistries	(2,776)	(3,994)
Renewable Polymers	(2,450)	(2,223)
Unallocated items	(1,938)	(1,993)
Total depreciation and amortisation	**(7,394)**	**(8,578)**

24. Expenses by Nature

Net operating expenses in 2023 amounted to €52.9 million (2022 (restated): €41.8 million). The increase is predominantly the result of higher employee benefit expenses and purchase of raw materials.

Employee benefit expenses in 2023 amounted to €28,629,000 (2022: €23,401,000) and includes wages and salaries, social security costs, share options granted to directors and employees, pension costs, and government grants received. The increase is mainly as a result of the planned increase in staffing as the average FTE count during the year increased with approximately 13 FTE year-on-year. Furthermore, there was a substantial increase in temporary staffing and external recruitment services as a result of the scale up of the FDCA Flagship Plant activities.

Raw materials and contract costs in 2023 amounted to €7,064,000 (2022: €3,770,000) and comprises of cost of goods sold, costs of laboratory consumables directly attributable to revenue projects, and other specific costs related to revenues. The increase is mainly the result of increased activities during the year in the R&D Solutions business segment.

Patent, license, legal and advisory costs in 2023 amounted to €4,979,000 (2022 (restated): €5,386,000). The decrease predominantly related to the professional services and bank and advisory fees incurred in 2022 for the Debt Financing facility agreement obtained in relation to the construction of the FDCA Flagship Plant.

Office and housing expenses in 2023 amounted to €3,336,000 (2022: €3,062,000) and comprises of short-term rental agreements, other facility related costs, telephony and other IT related office materials and costs. The increase in office and housing expenses is predominantly related to an increase in short-term leases.

Laboratory expenses in 2023 amounted to €4,329,000 (2022: €3,272,000) and comprises of laboratory consumables, spare parts, maintenance and repair work in the laboratory, and small laboratory projects. The increase in laboratory expenses is mainly the result of the restart of the Ray pilot plant in Delfzijl in the second quarter of 2022.

Other operating expenses in 2023 amounted to €2,628,000 (2022: €1,538,000) and comprises of external development costs, such as trials, and other general costs including Company insurances. The increase is mainly related to the compliance assessments of PEF and FDCA needed for the use as food contact material; and its registration in jurisdictions of interest.

Advertising and representation expenses in 2023 amounted to €1,983,000 (2022: €1,329,000) and comprises of external and internal marketing, communications, and business development efforts, including travel. Wages for internal business development staff is excluded, as this is included under employee benefit expenses. The increase is due to increased marketing and business development activities in Avantium Renewable Polymers, Avantium Renewable Chemistries and Volta.

Depreciation, amortisation and impairment charges decreased to €7,396,000 (2022: €8,578,000). The depreciation of fixed assets decreased in 2023 due to assets being fully depreciated in 2023 or impaired in 2022. The depreciation of right of use assets increased in 2023 and is mainly the result of an increase and/or modification in the lease portfolio of the Company during the year.

25. Employee Benefit Expenses

(In Euro x 1,000)	**2023**	**2022**
Wages and salaries	24,668	22,574
Government grants R&D (WBSO)	(1,453)	(3,791)
Social security costs	3,013	2,405
ESOP expense (note 13)	933	808
LTIP awards expense (note 13)	174	306
Pension costs - defined contribution plans	1,294	1,099
	28,629	**23,401**
Number of full time equivalent employees at the end of the year	**288**	**249**

The average number of FTEs during 2023 was 262 (2022: 226).

In 2023, €1,453,000 (2022: €3,791,000) government grants in the form of WBSO were recognised directly as an offset of employee benefit expenses.

26. Finance Income and Costs

(In Euro x 1,000)	**2023**	**2022 (restated)**
Finance costs:		
Net foreign exchange (gains) loss	(1)	20
Interest current accounts	—	—
Financing component of lease payments	99	223
Interest on borrowings	41	—
Other bank and commitment fees	834	1,547
Effective interest	—	—
Other finance costs	1	198
Finance costs	**973**	**1,988**
Finance income:		
Interest current accounts	(1,194)	(12)
Finance income	**(1,194)**	**(12)**
Finance costs - net	**(221)**	**1,976**

27. Income Tax Expense

The Company forms a tax group with its subsidiaries for corporate income and value added tax purposes (fiscal unity). Under the standard conditions, the members of the tax group are jointly and severally liable for income taxes payable by the group.

The Company does not recognise any deferred tax asset in relation to the losses carried forward as it is not considered probable that there will be sufficient taxable profit against which the unused tax losses can be utilised in the following year(s).

Both fiscal unities have carry-forward losses. The total tax losses carry-forward for the Avantium N.V. fiscal unit as of 31 December 2023 is approximately EUR 177.5 million. The total tax losses carry-forward for the Avantium Renewable Polymers B.V fiscal unity as of 31 December 2023 is approximately EUR 80.0 million. The carry-forward tax losses up to 31 December 2021 (EUR 163.1 million) have been confirmed by the Dutch tax authorities.

No tax charge or tax income were recognized in 2023, since both the Avantium N.V. fiscal unity and the Avantium Renewable Polymers B.V. fiscal unity recorded an estimated net loss (approximately EUR 20.6 million for Avantium N.V. fiscal unity and approximately EUR 18.1 million for the Avantium Renewable Polymers B.V. fiscal unity).

The losses of both fiscal unities are subject to the new tax loss utilization rules which apply as of 1 January 2022. As part of the new rules, an indefinite carry-forward loss set-off will apply as of 1 January 2022 (previously 9 years) whilst the carry-back period will remain one year.

However, tax losses will only be fully available for carry-forward and carry-back set off up to an amount of EUR 1 million of taxable profit per year. In the case of a profit which is higher than EUR 1 million, the amount above EUR 1 million can only be set off up to 50% of that higher taxable profit.

The Company does not use contrived or abnormal tax structures that are intended for tax avoidance. The calculation of the tax charge for 2022 with Tax Authorities are based on the non-restated figures. The calculation for 2023 is not based an an official Tax filing.

(In Euro x 1,000)	2023	2022 (restated)
Consolidated loss before tax	**(34,150)**	**(29,702)**
Tax at applicable tax rate in the Netherlands of 25.8% (2021: 25%)	8,811	7,426
Non-deductable expenses	2,410	748
Subtotal	**11,221**	**8,174**
Derecognition of deferred tax assets	(11,221)	(8,174)
Tax profit as a result from revaluation of certain assets	—	—
Utilisation of previously unrecognised deferred tax assets	—	—
Tax charge	**—**	**—**

The nominal tax rates and amount in 2023 are 19% up to €200.000 and 25.8% over €200.000 (2022 are 15% up to €395.000 and 25.8% over €395.000).

Deferred taxes

(In Euro x 1,000)	2023	2022
Category of temporary differences		
Lease liabilities	2,087	2,566
Decommissioning liabilities	—	—
Total gross deferred tax assets	**2,087**	**2,566**
Offset against deferred tax liabilities	(2,087)	(2,566)
Total net deferred tax assets	**—**	**—**
Right-of-use assets	(2,087)	(2,566)
Property, plant and equipment	—	—
Total gross deferred tax liabilities	**(2,087)**	**(2,566)**
Offset against deferred tax assets	2,087	2,566
Total net deferred tax liabilities	**—**	**—**
Total deferred tax positions (net)	**—**	**—**

Deferred tax assets related to temporary differences have been recognized only to the extent that there are reversing deferred tax liabilities. The Company does not recognise any deferred tax asset in relation to the losses carried forward as it is not considered probable that there will be sufficient taxable profit against which the unused tax losses can be utilised in the following year(s).

28. Dividends

The Company declared no dividends for any of the years presented in these consolidated financial statements.

Other Notes to the Consolidated Financial Statements

29. Contingencies

During 2023, the Company had no contingencies to report.

30. Commitments & Guarantees

Commitments
Purchase commitments for property, plant and equipment aggregated €24,119,000 (2022: €47,519,000)

Guarantees
The Company has a €3.0 million cash-collateralised guarantee facility in place.

This guarantee facility is also disclosed as part of the cash equivalents in note 10, which represents an amount equal to the current guarantees issued to third parties totalling €1,701,000. These guarantees are predominantly issued in relation to payments from customers following a systems deal for which a bank guarantee had to be issued.

31. Related-party Transactions

Related party transactions entered into at arm's length are conducted in a fair and unbiased manner, ensuring equitable terms and conditions comparable to those of transactions with unrelated parties, thereby upholding transparency, integrity, and the best interests of all involved stakeholders.

Identification of Related Parties

Key management is defined as those persons having legal authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of that entity. Our key management comprises the members of the Management Board and the Supervisory Board.

Key Management Changes 2023

On 10 May 2023, the Annual General Meeting appointed Dirk Van Meirvenne and Peter Williams as Supervisory Board member for a term of four years.

The following persons were members of the Supervisory Board on 31 December 2023:
- Edwin Moses, Chairperson
- Nils Björkman
- Michelle Jou
- Margret Kleinsman
- Dirk Van Meirvenne
- Peter Williams

Key Management Remuneration Policy

Avantium does not grant its key management with any personal loans, guarantees or advance payments. For further information on the Remuneration Policy refer to the Remuneration Report.

Key Management Remuneration 2023

The total remuneration paid to members of the Management Board and independent members of the Supervisory Board amounted to €1,258,000 (2022: €970,000) and €442,000 (2022: €353,000) respectively.

The following table provides a breakdown of the remuneration in 2023 of the members of the Management Board:

(In Euro x 1,000) *Management Board*	Salary	Other benefits[3]	Cash bonus	Investment share bonus	Share-based payments	Post-employee benefits	Severance payments	Total Remuneration
T.B. van Aken								
2023	300	28	106	106	134	21	—	695
2022	273	24	82	82	115	20	—	596
B.W. van Schaík								
2023	251	69	63	63	72	14	—	532
2022	—	—	—	—	—	—	—	—
B.J.J.V. Welten								
2023	0	0	—	—	31	0	—	31
2022	240	24	51	—	31	28	—	374
Total - 2023	**551**	**97**	**169**	**169**	**237**	**35**	**—**	**1,258**
Total - 2022	**513**	**48**	**133**	**82**	**146**	**48**	**—**	**970**

[3] Other benefits mainly include contributions to social security plans, benefits in kind such as Company cars, medical expenses and legal expenses.

The following table provides a breakdown of the remuneration in 2023 of the members of the Supervisory Board:

(In Euro x 1,000)	Annual fee[2]		Share-based payments		Travel expenses		Total	
Supervisory Board member	**2023**	**2022**	**2023**	**2022**	**2023**	**2022**	**2023**	**2022**
E. Moses	90	90	65	22	1	—	156	112
M.G. Kleinsman	50	50	—	—	—	—	50	50
M.B.B. Jou	50	55	2	8	3	—	55	63
N. Björkman	55	55	21	22	4	—	80	77
D. Van Meirvenne	29	—	21	—	1	—	51	—
P.S. Williams	29	—	21	—	—	—	50	—
Total Supervisory Board members	**303**	**250**	**130**	**52**	**9**	**—**	**442**	**302**
Former Supervisory Board members								
CA. Arnold	—	14	—	9	—	3	—	26
G.E. Schoolenberg	—	25	—	—	—	—	—	25
Total former Supervisory Board members	**—**	**39**	**—**	**9**	**—**	**3**	**—**	**51**

[2] The membership fee included within the annual fee excludes the fee covering the onboarding period prior to the respective appointments, being equal to the prorated base membership fee (€40,000 on pro rate basis).

32. Proposed Appropriation of Result

In anticipation of the Annual General Meeting’s adoption of the annual accounts, the net loss for the year of €31,402,314 has been added to accumulated losses.

33. Events After the Balance Sheet Date

At an Extraordinary General Meeting of Shareholders on 24 January 2024, shareholders granted approval for the authorisation to the Management Board to issue up to €50 million in ordinary shares in connection with an equity raise, which could be increased by up to €20 million.

On 26 January 2024, Avantium announced the launch of a fully underwritten rights offering. On 9 February 2024, Avantium announced that the Company successfully raised €50.5 million by means of a rights offering, corresponding to the issuance of 27,018,772 new ordinary shares at an issue price per share of €1.87. In light of the high take-up rate by existing shareholders of Avantium, the rump was not sufficient to cover the guaranteed allocation to cornerstone investors. As a result, Avantium placed additional offer shares to cornerstone investors as well as to the pre-committed shareholders for an amount of €9.1 million at the issue price. Furthermore, given the interest in the transaction of both existing shareholders as well as new investors, Avantium decided to use its full authorisation of €70 million. A private placement offering of €10.4 million was completed after close of market on 8 February 2024 in order to accommodate the excess demand from institutional investors. These offer shares were placed at a price of €2.30 per offer share. The price represents a discount of 3.2% to the closing price on 8 February 2024 and a premium of 23.0% to the issue price under the rights offering. In line with the agreed delayed settlement, a cornerstone placement to investor Pieter Kooi, which consisted of 4,010,695 new ordinary shares and reflected an investment in Avantium of €7.5 million, was finalised on 15 March 2024. As of 15 March 2024, Avantium's issued share capital comprises 79,675,789 ordinary shares. The net proceeds of the equity raise are primarily used to remain well capitalised until the FDCA Flagship Plant is commercially operational, in addition to general corporate purposes. It also enables the Company to further enhance its balance sheet and to accelerate its technology licensing strategy.

Company Financial Statements 2023

Company Balance Sheet

As at December 31

The balance sheet has been prepared after appropriation of current year result.

(In Euro x 1,000)	Note	31 December 2023	31 December 2022 (restated)[4]
ASSETS			
Non-current assets			
Financial fixed assets	36	22,779	47,998
Shareholder loan	37	21,470	—
Receivables from group companies	39	94,339	63,174
Right-of-use assets	38	4,034	6,697
Other receivables		—	9,000
Total non-current assets		**142,623**	**126,869**
Current assets			
Other receivables		120	32
Cash and cash equivalents	40	23,471	45,416
Total current assets		**23,591**	**45,448**
Total assets		**166,213**	**172,318**
EQUITY			
Equity attributable to owners of the parent			
Ordinary shares	12	4,321	4,261
Share premium		271,006	270,829
Other reserves	12	6,924	12,785
Accumulated losses		(236,078)	(205,291)
Total equity		**46,173**	**82,584**

(In Euro x 1,000)	Note	31 December 2023	31 December 2022 (restated)[4]
LIABILITIES			
Non-current liabilities			
Borrowings	43	26,774	12,556
Financial liability	44	13,609	14,091
Lease liabilities	38	4,163	6,890
Payables to group companies	41	73,717	52,264
Provisions	42	25	24
Total Non-current liabilities		**118,287**	**85,826**
Current liabilities			
Trade payables		551	263
Lease liabilities	38	1,070	1,014
Other current liabilities		133	2,631
Total current liabilities		**1,754**	**3,908**
Total liabilities		**120,040**	**89,734**
Total equity and liabilities		**166,213**	**172,318**

[4] Refer to note 34.1 for detail on the restatements of the balances as at 31 December 2022

Company Income Statement

For the financial year ended December 31

in Euro x 1,000	Notes	2023	2022 (restated)[5]
Revenues		—	—
Other income		—	—
Total revenues and other income		—	—
Operating expenses			
Employee benefit expenses		(933)	(822)
Office and housing expenses		(5)	(9)
Patent, license, legal and advisory expenses		(210)	(199)
Other operating expenses		(83)	(27)
Depreciation, amortisation and impairment charge		(1,007)	(1,350)
Operating loss		**(2,238)**	**(2,407)**
Fair value measurement		483	(2,841)
Finance costs - net	45	615	(361)
Loss before income tax		**(1,140)**	**(5,610)**
Income tax expense		—	—
Result from subsidiaries		(30,261)	(22,517)
Loss for the period		**(31,402)**	**(28,127)**

[5] Refer to note 34.1 for detail on the restatements of the balances as at 31 December 2022

Notes to the Company Financial Statements

34. General Information

The Company statements are part of the 2023 financial statements of Avantium N.V.

The financial statements of the Company are prepared in accordance with the provision of Part 9, Book 2 of the Dutch Civil Code. For setting the principles for the recognition and measurement of assets and liabilities and determination of the result of its Company financial statements, Avantium N.V. makes use of the option provided in Section 2:362 (8) of the Dutch Civil Code. These principles also include the classification and presentation of financial instruments, being equity instruments or financial liabilities. This means that the principles of the recognition and measurements of assets and liabilities and determination of the result (hereinafter referred to as accounting policies) of the Company financial statements of Avantium N.V. are the same as those applied for the consolidated financial statements under IFRS (refer to note 2). By applying this option, reconciliation is maintained between the group's equity and the Company's equity.

In the Company financial statements, investments in group companies are stated as net asset value, in accordance with the equity method, if the Company effectively exercises influence of significance over the operational and financial activities of these investments. The net asset value is determined on the basis of the accounting principles applied by the Company. In case the net asset value of an investment in a group company is negative, any existing loans to group companies considered as net investment are impaired. A provision for any remaining equity deficit is recognised when an outflow of resources is probable and can be reliably estimated.

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union. Please refer to the notes to the consolidated financial statements for a description of these principles.

34.1 Corrections of Prior Period Misstatements

Four prior period misstatements have been identified for which the comparative figures for the year ended 31 December 2022 have been restated. Refer to note 2.1.3 for the details of the restatements.

1. All borrowing costs were presented in the Consolidated Statement of Income as finance cost or corporate cost. However, the Debt Financing facility agreement and certain lease liabilities were specifically entered into for the construction of the FDCA Flagship Plant, and the FDCA Flagship Plant is a qualifying asset. Avantium has reassessed the requirements for the capitalisation of borrowing costs and concluded that the borrowing costs are both directly attributable and related to the qualifying asset and therefore should be capitalised. The effective interest recognised for the draw down of the first Debt Financing facility was recognised in the Company and not in Avantium Renewable Polymers B.V. Additionally, upfront fees were paid in accordance with the Debt Financing facility agreement. The upfront fee was erroneously recognised as finance expense by Avantium Renewable Polymers B.V., as it related to the Debt Financing facility from which it was expected that these would be drawn in full, in line with the project plan for the construction of the FDCA Flagship Plant. Management concluded that the upfront fee should have been recognised as a prepayment and subsequently amortised as part of the effective interest of the loans drawn from the Debt Financing facility from the point in time when the drawdown was done.

Statement of Financial Position

(In Euro x 1,000)	As previously reported at 31 December 2022	Restatement	31 December2022 (restated)
ASSETS			
Non-current assets			
Financial fixed assets	46,648	1,350	47,998
Receivables from group companies	63,368	(194)	63,174
Total non-current assets	**125,713**	**1,156**	**126,869**
EQUITY			
Equity attributable to owners of the parent			
Accumulated losses	(206,747)	1,456	(205,291)
Total equity	**81,128**	**1,456**	**82,584**
LIABILITIES			
Non-current liabilities			
Borrowings	12,856	(300)	12,556
Total non-current liabilities	**87,139**	**(300)**	**86,839**
Total equity and liabilities	**171,162**	**1,156**	**172,318**

Statement of Profit or Loss

(In Euro x 1,000)	As at 31 December 2022	Restatement	31 December2022 (restated)
Net finance costs	(467)	106	(361)
Loss before income tax	**(5,715)**	**106**	**(5,610)**
Result subsidiaries	(23,868)	1,351	(22,517)
Loss before for the year	**(29,583)**	**1,457**	**(28,127)**

35. Equity Attributable to Equity Holders of the Company

For details of the movements in and components of equity, reference is made to the consolidated statement of changes in equity of the consolidated financial statements and the notes to these.

36. Financial Fixed Assets

The Company directly held interests in the following subsidiaries on 31 December 2023:

- Avantium Technologies B.V., Amsterdam (100%)
- Renewable Technologies B.V., Amsterdam (100%)
- Avantium Support B.V., Amsterdam (100%)
- Avantium Knowledge Centre B.V., Amsterdam (100%)
- Feedstock Technologies B.V., Amsterdam (100%)
- Avantium Renewable Polymers B.V., Amsterdam (77.4%)
- Synvina C.V., Amsterdam (100%)

On 31 March 2022, there was a change in ownership of Avantium Renewable Polymers B.V., a subsidiary of Avantium N.V. Worley Nederland B.V. and Bio Plastics Investment Groningen B.V. together have acquired a 22.6% shareholding in Avantium Renewable Polymers B.V., while Avantium continued to hold 77.4% of the equity. The change in shareholding did not result in Avantium N.V. losing control over the subsidiary, Avantium Renewable Polymers B.V.

At Financial Close on 31 March 2022, Avantium N.V. fulfilled the total committed equity investment into Avantium Renewable Polymers B.V. of €45.0 million.

The movements in financial fixed assets can be summarised as follows:

(In Euro x 1,000)	Financial fixed assets
On 1 January 2022	**3,902**
Share of loss in group companies	(13,468)
Other equity movements in subsidiaries	57,564
On 31 December 2022 (restated)	**47,998**

(In Euro x 1,000)	Financial fixed assets
On January 1, 2023	**47,998**
Share of loss in group companies	(19,340)
Other equity movements in subsidiaries	(5,879)
On December 31, 2023	**22,779**

37. Shareholder Loan

On 14 December 2023, Avantium Renewable Polymers B.V. entered into a shareholders loan agreement with Avantium N.V. and the non-controlling shareholders. The non-controlling shareholders have each granted a subordinated shareholder loan to Avantium Renewable Polymers B.V., which was received in cash during 2023. Each subordinated loan will carry interest of 6.5% per annum, paid in arrears upon repayment of the loans. The shareholder loans are convertible into shares of Avantium Renewable Polymers B.V.. This conversion feature met the definition of an equity instrument as this derivative can be settled only by exchange of a fixed number of cash for a fixed number of shares. However, the fair value of such equity conversion option was deemed immaterial and therefore no amount was recognised in equity.

The total shareholder loan liability can be specified as follows:

In Euro x 1,000)	31-12-2023
Shareholder loan to Avantium Renewable Polymers	21,400
Accrued interest income on shareholder loans	70
Balance as at 31 December	**21,470**

38. Leases

This note provides information for leases where the group is a lessee.

Amounts Recognised in the Balance Sheet

The balance sheet shows the following amounts relating to leases:

in Euro x 1,000	31-12-2023	31-12-2022
Properties	4,034	6,656
Motor vehicles	—	41
Total right-of-use assets	**4,034**	**6,697**

in Euro x 1,000	31-12-2023	31-12-2022
Current lease liabilities	1,070	1,014
Non-current lease liabilities	4,163	6,890
Total Lease liabilities	**5,232**	**7,904**

Movement schedule for the lease liability

in Euro x 1,000	2023	2022
Balance at 1 January	**7,904**	**8,028**
New lease contracts	—	—
Repayment of lease liabilities	(1,016)	(960)
Modifications	(1,655)	837
Balance at 31 December	**5,232**	**7,904**

Additions to the right-of-use assets during the 2023 financial year were €0 (2022: €0). The decrease in the right-of-use assets are due to lower inflationary increases during 2023. .

Amounts Recognised in the Statement of Income

The statement of income shows the following amounts relating to leases:

in Euro x 1,000	2023	2022
Properties	968	1,288
Motor vehicles	39	62
Total depreciation charge of right-of-use assets	**1,007**	**1,350**

in Euro x 1,000	2023	2022 (restated)
Interest expense included in finance cost	113	166
Total interest charge on lease liabilities	**113**	**166**

39. Receivables from Group Companies

(In Euro x 1,000)	2023	2022 (restated)
Group receivables outstanding 1 January	**63,174**	**72,473**
Movements in receivables from group companies	31,165	(9,299)
Group receivables outstanding 31 December	**94,339**	**63,174**

The receivables from group companies are decreased with the negative results. In 2023 the receivables from Avantium Support, Avantium Technologies and Feedstock Technologies were decreased with their negative results for 2023.

The movement in group receivables includes the loan of €30.0 million to Avantium Renewable Polymers B.V. The loan is repayable to Avantium N.V. on 31 March 2025. Refer to note 43 for Borrowings.

At Financial Close on 31 March 2022, Avantium N.V. fulfilled the total committed equity investment into Avantium Renewable Polymers B.V. of €45.0 million. With this also a number of group receivables between the group entities and Avantium Renewable Polymers B.V. were distributed and assigned to Avantium N.V.

40. Cash and Cash equivalents

In Euro x 1,000	31 December 2023	31 December 2022
Cash at bank and on hand	21,971	38,916
Restricted cash	1,500	6,500
Cash and cash equivalents for cash flow purposes	**23,471**	**45,416**

The cash and cash equivalents presented in the Consolidated Statement of Financial Position and the Consolidated Statement of Cash Flow include restricted cash of €1.5 million. The €1.5 million relates to a deposit held with Rabobank, which represents an amount equal to the estimated required guarantee capacity for the short term needs of the Company. As at 31 December 2023, €1,701,000 of this guarantee capacity has utilised for issued bank guarantees to third parties. For further information on commitments issued to third parties.

41. Payables to Group Companies

In Euro x 1,000	2023	2022
Group payables outstanding 1 January	**(52,264)**	**(52,284)**
Movements in payables to group companies	(21,452)	19
Group payables outstanding 31 December	**(73,717)**	**(52,264)**

The fair value of the intercompany amounts in Avantium N.V. to group companies approximates their book values. The payables to group companies has no repayment term.

42. Provisions

Provisions for the year were as follows:

In Euro x 1,000	Provisions
On 1 January 2022	**(1,729)**
Share of loss in group companies	—
Movements in provisions	1,705
December 31, 2022	**(24)**

In Euro x 1,000	Provisions
On January 1, 2023	**(24)**
Share of loss in group companies	—
Movements in provisions	(1)
On December 31, 2023	**(25)**

The provisions for financial fixed assets with a negative net equity as at 31 December 2023 relate to the following:

- Equity deficit of Feedstock Technologies B.V. of €25,000 (2022: €24,000)

43. Borrowings

In Euro x 1,000	Borrowings
Balance as at 1 January 2022	**—**
Debt Financing facilities drawdown	12,750
Restatement - drawdown	(300)
Effective Interest (restated)	106
Repayment of Debt Financing facilities	—
Balance as at 31 December 2022 (restated)	**12,556**
Debt Financing facilities drawdown	12,450
Effective Interest	1,768
Repayment of Debt Financing facilities	—
Balance as at 31 December 2023	**26,774**

In Euro x 1,000	31 December 2023	31 December 2022 (restated)
Current Debt Financing facilities	—	—
Non-current Debt Financing facilities	26,774	12,556
Total Debt Financing facilities	**26,774**	**12,556**

In Euro x 1,000	Less than 1 year	Between 1 and 2 years	Between 2 and 5 year	Over 5 years	Total
Borrowings	—	26,774	—	—	26,774
	—	**26,774**	**—**	**—**	**26,774**

A three-year Debt Financing facility agreement of €90.0 million was signed with a consortium of lenders on 31 March 2022 . This financing consists of three facilities. Facility A, €30.0 million, which is borrowed by Avantium N.V. and passed through to Avantium Renewable Polymers B.V. as an intercompany loan. Facility B1 and Facility B2, amounting to €45.0 million and €15.0 million, respectively, are borrowed directly by Avantium Renewable Polymers BV. The interest on the Debt Financing facility agreement consists of three components: cash interest, accrued interest and warrants (refer to note 44). Cash and accrued interest is EURIBOR based. The repayment of the loan amount is due on 31 March 2025. The cash interest is paid on a quarterly basis and PIK interest is capitalised on the principal balance of the Facility on a quarterly basis starting as of 21 February 2023 for Facility A.

The Debt Financing facility agreement contains customary technical and commercial conditions precedent and a customary security package including amongst others security on: all material assets, IP rights, receivables of Avantium, Avantium Renewable Polymers B.V., the holding entity of the FDCA Flagship Plant, and of several other group companies, the shares in Avantium Renewable Polymers B.V. and these other group entities, the loan(s) of Avantium and Avantium Renewable Polymers B.V. to Avantium RNP Flagship B.V. and the FDCA Flagship Plant itself and the FDCA pilot plant.

For the carrying amounts of the fixed, intangible assets , trade receivables pledged as security for current and non-current borrowings refer to the consolidated financial statements.

On 21 November 2022 the first drawdown of the loan was executed for €15.0 million. On this date, the Debt Financing facility agreement was amended and restated reflecting the current status of the business. On 30 January 2023 the second drawdown of the loan was executed for €15.0 million. The annual effective interest rate on the first drawdown is 14.3% and 15.1% on the second drawdown.

During January up to and including September 2023, Avantium complied with the financial and other required covenants as confirmed on a monthly basis to the lenders. Avantium and the lenders negotiated an amendment and restatement of the Senior Facilities Agreement, including an upsizing of the Facilities and (temporary) amendment of the financial covenants, which amendment and restatement was executed on 19 January 2024. The confirmation regarding compliance with the financial and other required covenants has now continued to take place on a monthly basis in 2024.

On 14 December 2023, Avantium Renewable Polymers entered into a shareholders loan agreement with Avantium N.V. Avantium N.V. has advanced € 21.4 million to Avantium Renewable Polymers. Avantium N.V. will provide the remaining amount under the shareholder loan agreement after the equity raise currently contemplated for Q1 2024. The subordinated loan will receive interest of 6.5% per annum as from the day of receipt of the relevant amounts by Avantium Renewable Polymers. Interest shall accrue daily in arrears and shall be calculated on the basis of actual days elapsed and a 365-day year. The interest shall not be paid out but shall be capitalised. Avantium Renewable Polymers shall repay or settle all outstanding amounts due under the Subordinated Loans including interest or additional compensation accrued in full on 30 June 2025.

44. Financial Liability

In Euro x 1,000	**Financial Liability**
Balance as at 1 January 2022	—
Warrants issued	11,250
Fair value remeasurement	2,841
Balance as at 31 December 2022	**14,091**
Warrants issued	—
Fair value remeasurement	(483)
Balance as at 31 December 2023	**13,609**

in Euro x 1,000	**Less than 1 year**	**Between 1 and 2 years**	**Between 2 and 5 year**	**Over 5 years**	**Total**
Financial Liability	13,609	—	—	—	13,609
	13,609	**—**	**—**	**—**	**13,609**

On 31 March 2022, Avantium N.V. issued 2.84 million warrants to the consortium of banks as part of the €90 million Debt Financing facility for the FDCA Flagship Plant. The warrants are convertible into the Company's ordinary shares with a 1:1 conversion ratio for an exercise price of €0.10 per share. A warrant holder may elect to exercise the warrant option cash less resulting in the number of warrants being variable. The warrants have an exercise period of up to 6.5 years after the second utilization date, which was on 30 January 2023, meaning the ultimate date of the exercise period is 30 July 2029.

The warrants had an anti-dilution protection for the equity raise that took place in April 2022. As a result, on 14 April 2022, 1.02 million additional warrants were issued to the warrant holders, to compensate for the dilutive effect of the equity offering according to the Debt Financing facility agreement with the lenders. There is no further anti-dilution protection applicable to these warrants.

The warrants will become exercisable when the FDCA Flagship Plant is operational or when other additional conditions included in the warrant Agreement have been met. Such additional conditions include, a change of control, certain joint ventures, permitted acquisitions, disposals and certain other events.

The initial recognition of the warrants amounted to €11.3 million. The warrants are recognised under IFRS 9 Financial Instruments as a Financial Liability. The warrants are measured subsequently at fair value through profit or loss at each reporting date.

The fair value of the warrants on 31 December 2023 is 13.6 million (2022: 14.1 million). The decrease in the share price of €0.13 resulted in the increase in the fair value of the warrants. The subsequent fair value remeasurement of the warrants resulted in a gain for the year ended 31 December 2023 of €0.5 million (2022: 2.8 million loss), recognised under fair value remeasurement in the Statement of Income. Refer to note 3.1.

45. Finance Income and Costs

(In Euro x 1,000)	2023	2022 (restated)
Finance costs:		
Net foreign exchange (gains) loss	—	—
Interest current accounts	—	261
Financing component of lease payments	113	166
Interest on borrowings	—	—
Other bank and commitment fees	5	9
Effective interest	—	—
Other finance costs	—	—
Finance costs	**118**	**437**
Finance income:		
Interest on shareholder loans	(70)	—
Interest current accounts	(663)	(75)
Finance income	**(733)**	**(75)**
Finance costs - net	**(615)**	**361**

46. Commitment and Contingencies

The Company is part of a fiscal unity for corporate income taxes. As a consequence, the Company bears joint and several liability for the debts with respect to corporate income taxes. The Company settles corporate income taxes, in principle, based on the results before taxes of the subsidiaries belonging to the fiscal unity.

Avantium has issued joint and several liability for the debts arising out of the legal acts of these subsidiaries, in accordance with Section 403 Part 9, Book 2 of the Dutch Civil Code. Each of these subsidiaries has filed Avantium's 403 declaration with the Dutch trade register:

- Avantium Support B.V.
- Avantium Technologies B.V.
- Avantium Chemicals B.V.

47. Audit Fees

The fees listed below relate to the procedures applied to the Company and its consolidated group entities by PricewaterhouseCoopers Accountants N.V., the Netherlands, the independent external auditor as referred to in section 1(1) of the Dutch Accounting Firms Oversight Act (Dutch acronym: Wta), as well as by other Dutch and foreign-based PricewaterhouseCoopers Accountants N.V. individual partnerships and legal entities, including their tax services and advisory groups:

(In Euro x 1,000)	2023	2022
Audit of the financial statements	364	278
Other audit procedures	—	—
Tax services	—	—
Other non-audit services	101	1
Total	**465**	**279**

The other non-audit services performed during 2023 relate to the comfort letter that was provided by the auditors on the financial statements that were included in the prospectus for the EUR 70 million equity raise that was complete in February 2024.

48. Remuneration of the Management Board and the Supervisory Board

The remuneration of the Supervisory Board amounted to €442,000 (2022: €353,000). The total remuneration paid to or for the benefit of members of the Management Board in 2023 amounted to €1,258,000 (2022: €970,000). For further details, refer to note 31 of the consolidated financial statements.

49. Employee Information

The Company had no employees in 2023 (2022: nil).

Signing

Amsterdam, 25 March 2024

Avantium N.V. (Chamber of Commerce number: 34138918)

Management Board
Tom van Aken, Chief Executive Officer
Boudewijn van Schaïk, Chief Financial Officer

Supervisory Board
Edwin Moses, Chairperson
Nils Bjorkman
Michelle Jou
Margret Kleinsman
Dirk Van Meirvenne
Peter Williams

The financial statements are authorised for issue by the Management Board on 25 March 2024.

T.B. van Aken	B.W. van Schaïk
Chief Executive Officer	Chief Financial Officer

Other Information

Articles of Association Governing Profit Appropriation

According to article 31 of the Company's Articles of Association, the Annual General Meeting determines the appropriation of the Company's net result for the year.

Independent Auditor's Report

To: the General Meeting and the Supervisory Board of Avantium N.V.

Report on the audit of the financial statements 2023

Our opinion

In our opinion:

- the consolidated financial statements of Avantium N.V. together with its subsidiaries ('the Group') give a true and fair view of the financial position of the Group as at 31 December 2023 and of its result and cash flows for the year then ended in accordance with International Financial Reporting Standards as adopted in the European Union ('EU-IFRS') and with Part 9 of Book 2 of the Dutch Civil Code;
- the Company financial statements of Avantium N.V. ('the Company') give a true and fair view of the financial position of the Company as at 31 December 2023 and of its result for the year then ended in accordance with Part 9 of Book 2 of the Dutch Civil Code.

What we have audited

We have audited the accompanying financial statements 2023 of Avantium N.V., Amsterdam. The financial statements comprise the consolidated financial statements of the Group and the Company financial statements.

The consolidated financial statements comprise:

- the consolidated statement of financial position as at 31 December 2023;
- the following statements for 2023: the consolidated statements of profit and loss and income, changes in equity and cash flows; and
- the notes to the financial statements, including material accounting policy information and other explanatory information.

The Company financial statements comprise:

- the Company balance sheet as at 31 December 2023;
- the Company income statement for the year then ended; and
- the notes, comprising a summary of the accounting policies applied and other explanatory information.

The financial reporting framework applied in the preparation of the financial statements is EU-IFRS and the relevant provisions of Part 9 of Book 2 of the Dutch Civil Code for the consolidated financial statements and Part 9 of Book 2 of the Dutch Civil Code for the Company financial statements.

The basis for our opinion

We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing. We have further described our responsibilities under those standards in the section 'Our responsibilities for the audit of the financial statements' of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We are independent of Avantium N.V. in accordance with the European Union Regulation on specific requirements regarding statutory audit of public-interest entities, the 'Wet toezicht accountantsorganisaties' (Wta, Audit firms supervision act), the 'Verordening inzake de onafhankelijkheid van accountants bij assuranceopdrachten' (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA, Dutch Code of Ethics).

Material uncertainty related to going concern

We draw attention to the going concern paragraph in the note 2.1.1 Going concern of the financial statements which indicates that the Company remains dependent on additional external funding and which states that the following elements are fundamental to Avantium's continuity:

- the completion and successful start-up of the FDCA flagship plant for Avantium Renewable Polymers, for which financing was arranged and for which the Financial Close took place in April 2022;
- refinancing or extension of the €105 million Debt Financing facility (plus accrued and capitalised interest) before 31 March 2025; and
- the ongoing funding for Avantium as a group, excluding Avantium Renewable Polymers, which includes further development of Avantium's other technologies

These conditions indicate the existence of a material uncertainty which may cast significant doubt about the Company's ability to continue as a going concern. Our opinion is not modified in respect of this matter.

We refer to section 'Audit approach going concern' for further information on our audit procedures regarding the going concern assumption.

Our audit approach

We designed our audit procedures with respect to the key audit matters, fraud and going concern, and the matters resulting from that, in the context of our audit of the financial statements as a whole and in forming our opinion thereon. The information in support of our opinion, such as our findings and observations related to individual key audit matters, the audit approach fraud risk and the audit approach going concern was addressed in this context, and we do not provide separate opinions or conclusions on these matters.

Overview and context

Avantium N.V. is a chemical technology company, developing and commercialising innovative renewable chemistry solutions. As of 31 December 2023, the company consisted of three business units (Renewable Polymers, Renewable Chemistries and R&D Solutions), which were subject to our audit procedures as set out in the section 'The scope of our group audit'.

The first licencing agreement with Origin Materials to accelerate the mass production of FDCA and PEF, the full drawn of Debt Financing package of €90 million, the shareholder loan by the BPIG consortium and Worley to Renewable Polymers and the decision to stop investing in Ray Technology characterised the financial year 2023. We identified a significant risk in the complexity and significance of the initial accounting analysis of how to account for customer contracts as described in the section 'Key audit matter'.

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we considered where management made important judgements, for example, in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. In these considerations, we paid attention to, amongst others, the assumptions underlying the physical and transition risk related to climate change. In note 4 Critical Accounting Estimates and Judgments of the financial statements, the Company describes the areas of judgement in applying accounting policies and the key sources of estimation uncertainty.

Avantium N.V. assessed the possible effects of climate change and its plans to meet the net zero commitments on its financial position, refer to refer to the sections The World Around Us and Operations of the Management Board Report. We discussed Avantium N.V.'s assessment and governance thereof with the Management Board and evaluated the potential impact on the financial position including underlying assumptions and estimates. Avantium's management has concluded that climate change does not negatively impact the financial position of the company. The expected effects of climate change are not considered a key audit matter for 2023.

Other areas of focus, that were not considered as key audit matter, were project revenue recognition, accounting for share-based payments and proper disclosure of the prior year restatements. As in all of our audits, we also addressed the risk of management override of controls, including evaluating whether there was evidence of bias by the Management Board that may represent a risk of material misstatement due to fraud.

We ensured that the audit team included the appropriate skills and competences which are needed for the audit of a listed chemical technology company. We therefore included experts and specialists in the areas of IT audit, financial instruments and share-based payments in our team.

We ensured that the audit team included the appropriate skills and competences which are needed for the audit of a listed chemical technology company. We therefore included experts and specialists in the areas of IT audit, financial instruments and share-based payments in our team.

Materiality
- Overall materiality: €1,350,000.

Audit scope
- All group components were in scope, being Renewable Polymers, Renewable Chemistries and R&D Solutions business unit. For all components, the group engagement team performed the work.

Key audit matters
The accounting of customer contracts.

Materiality

The scope of our audit was influenced by the application of materiality, which is further explained in the section 'Our responsibilities for the audit of the financial statements'.

Based on our professional judgement we determined certain quantitative thresholds for materiality, including the overall materiality for the financial statements as a whole as set out in the table below. These, together with qualitative considerations, helped us to determine the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and to evaluate the effect of identified misstatements, both individually and in aggregate, on the financial statements as a whole and on our opinion.

Overall group materiality	€1,350,000 (2022: €1,000,000).
Basis for determining materiality	We used our professional judgement to determine overall materiality. As a basis for our judgement, we used 4% of the result before income tax.
Rationale for benchmark applied	We used the result before income tax as the primary benchmark, a generally accepted auditing practice, based on our analysis of the common information needs of the users of the financial statements. On this basis, we believe that the result before income tax is the most relevant metric for the financial performance of the Company.

We also take misstatements and/or possible misstatements into account that, in our judgement, are material for qualitative reasons.

We agreed with the Audit Committee that we would report to them any misstatement identified during our audit above €67,500 (2022: €50,000) as well as misstatements below that amount that, in our view, warranted reporting for qualitative reasons.

The scope of our group audit

Avantium N.V. is the parent company of a group of entities. The financial information of this group is included in the consolidated financial statements of Avantium N.V.

The group engagement team performed the audit work on all components, the group consolidation and financial statement disclosures. By performing these procedures, we have been able to obtain sufficient and appropriate audit evidence on the Group's financial information, as a whole, to provide a basis for our opinion on the financial statements.

Audit approach fraud risks

We identified and assessed the risks of material misstatements of the financial statements due to fraud. During our audit we obtained an understanding of Avantium N.V. and its environment and the components of the internal control system. This included management's risk assessment process, management's process for responding to the risks of fraud and monitoring the internal control system and how the supervisory board exercised oversight, as well as the outcomes. We refer to section Risk and Opportunity Management of the Annual Report where the Management Board reflects on its response to fraud risk.

We evaluated the design and relevant aspects of the internal control system with respect to the risks of material misstatements due to fraud and in particular the fraud risk assessment, as well as the code of conduct, whistleblower procedures, policies around agents and confidant policies, among other things. We evaluated the design and the implementation and, where considered appropriate, tested the operating effectiveness of internal controls designed to mitigate fraud risks.

As part of our process of identifying fraud risks, we evaluated fraud risk factors with respect to financial reporting fraud, misappropriation of assets and bribery and corruption. We evaluated whether these factors indicate that a risk of material misstatement due to fraud is present.

Our evaluation included the following procedures:

- We performed an inquiry of the audit committee as to fraud risks and related party transactions to identify the areas of their concerns in relation to fraud.
- We inquired with the Management Board and other members of management as to whether they have any knowledge of (suspected) fraud, their views on overall fraud risks within the Group and their perspectives on the Group's mitigating controls addressing the risk of fraud.

We identified the following fraud risks and performed the following specific procedures:

Identified fraud risk	Our audit work and bservations
Risk of management override of controls It is generally presumed that management is in a unique position to perpetrate fraud because of the available opportunity to manipulate accounting records and prepare fraudulent financial statements by overriding manual controls, such as those related to journal entries, related party transactions, significant accounting estimates, etc. Accordingly, in our audit we paid attention to the risk of management override of controls, including the risk of potential misstatements as a result of fraud in estimates. This included risks of potential misstatements due to fraud based on an analysis of potential interests of management. In this context we paid specific attention to tendencies in judgements and conclusions with respect to estimates as there could be incentives for and pressure on management to realize results as included in the budget.	We have, to the extent relevant to our audit, evaluated the design of the internal control environment that reduces the risk of breach of internal control. Also, we paid specific attention to user access management in the IT system and performed additional substantive procedures were deemed necessary. We selected journal entries based on risk criteria and conducted specific audit activities for these entries, as part of which we also paid attention to significant transactions outside the normal course of business. We also performed specific audit procedures regarding important management's estimates as it relates to going concern, impairment assessment of property, plant and equipment, revenue recognition. project cost estimates as well as government grants and share-based payments related estimates. In our assessment, we paid specific attention to the inherent risk of bias of the management on estimates. Our audit procedures did not lead to specific indications of fraud or suspicions of fraud with respect to management override of controls.

Identified fraud risk	Our audit work and observations
Risk of fraud in revenue recognition As part of our risk assessment and based on a presumption that there are risks of fraud in revenue recognition, we evaluated which types of revenue transactions or assertions give rise to the risk of fraud in revenue recognition. Avantium Renewable Polymers entered into several contracts with a customer to provide services, licences and goods. Accounting for these contracts is considered complex due to the application of the 5-step model of IFRS 15.	Where relevant to our audit, we assessed the design of the internal control measures related to revenue reporting and in the processes for generating and processing journal entries related to the revenue. We have obtained and validated the underlying contracts. With support of specialists, we reviewed management's position paper on the accounting treatment, and agreed with the presentation and disclosure. We assessed the relevant estimates, recalculated the 2023 revenue and contract liability based on the identified transaction price and reconciled cash receipt to the invoice and bank statement. Our audit procedures did not lead to specific indications of fraud or suspicions of fraud with respect to revenue recognition.

We incorporated an element of unpredictability in our audit and we reviewed lawyer's letters. During the audit, we remained alert to indications of fraud. Furthermore, we considered the outcome of our other audit procedures and evaluated whether any findings were indicative of fraud or non-compliance with laws and regulations.

Audit approach going concern

In the section ‘Going concern’ in note 2.1.1 of the financial statement, management disclosed conditions that indicate the existence of a material uncertainty which may cast significant doubt about the entity’s ability to continue as a going concern.

In order to evaluate the appropriateness of management’s use of the going concern basis of accounting, including management’s expectation that their plans sufficiently address the identified going concern risk[s] and the adequacy of the related disclosures, we with support of restructuring and finance specialists amongst others, performed the following procedures.

- Considered whether management’s going concern assessment includes all relevant information of which we are aware as a result of our audit and inquiring with management regarding management’s most important assumptions underlying its going concern assessment.
- Analysed the financial position per balance sheet date compared to prior year as well as the liquidity scenarios and sensitivity analysis, including the assessment of the progress of the construction of the FDCA Flagship Plant.
- Read minutes of the meetings of shareholders, those charged with governance and relevant committees, as well as agreements reached with the equity partners, banks and other investors for reference to the financial close for the FDCA Flagship Plant of Avantium Renewable Polymers financing package and the capital raise.
- Evaluated the latest available cash flow forecast and sensitivity analysis, corroborated these with management’s budgets, performed look-back procedures, assessed if the cash flow forecast is in line with all relevant information of which we are aware as a result of our audit.
- Analysing whether the current and the required financing has been secured to enable the continuation of the entirety of the entity’s operations, including compliance with relevant covenants and future conditions required from the lenders.
- Assessed the disclosure of the facts and circumstances around the financing of the FDCA Flagship Plant and the funding of the other ongoing operations in the financial statements.
- Evaluated whether the material uncertainty with respect to going concern triggers accounting entries such as impairment of assets.
- Inquired with management as to their knowledge of going-concern risks beyond the period of management’s assessment.

We evaluated whether the going concern risks including management’s plans/actions to address the identified risks and the most significant underlying assumptions have been sufficiently described in the notes to the financial statements. We found the disclosure in section ‘Going Concern’ in note 2.1.1 of the financial statements, where management disclosed conditions that indicate the existence of a material uncertainty which may cast significant doubt about the entity’s ability to continue as a going concern, to be adequate.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in the audit of the financial statements. We have communicated the key audit matters to the supervisory board. The key audit matters are not a comprehensive reflection of all matters identified by our audit and that we discussed. In this section, we described the key audit matters and included a summary of the audit procedures we performed on those matters.

We addressed the key audit matter in the context of our audit of the financial statements as a whole, and in forming our opinion thereon. We do not provide separate opinions on these matters or on specific elements of the financial statements. Any comment or observation we made on the results of our procedures should be read in this context.

In addition to the matter described in the section ‘Material uncertainty related to going concern’ we have determined the matter described below to be the key audit matters to be communicated in our report.

Key audit matter	Our audit work and observations
The accounting for customer contracts **Note 19** In February 2023, Avantium Renewable Polymers entered into several contracts (as follow up on Head of Terms signed in 2022) with a customer which will provide services, licences and goods. Accounting for these contracts is complex and application of the 5-step model of IFRS 15 was undergoing multiple discussion. As a result of entering into their first YXY® Technology license Agreement, Avantium received the first milestone payment of €7.5 million in February 2023. Under the technology license agreement, Avantium will receive the next milestone payment of €7.0 million upon delivery of the Process Design Package to the customer. Management concluded that under IFRS 15, these two payments will be recognised as revenue over time, up to the delivery of the Process Design Package. In 2023, Avantium recognised €4.6 million as revenue. Application of the 5-step model of IFRS 15 on these contracts was assessed and documented in an accounting paper. We focused on this matter because of the significant focus on it by the Management Board throughout the year, complexity of these new accounting treatments to Avantium, considerate impact on the current and upcoming financial statements and business in general.	We have obtained and validated the underlying contracts. With the support of specialists, we reviewed management's position paper on the accounting treatment, and agreed with the presentation and disclosure. We assessed the relevant estimates, recalculated the 2023 revenue and contract liability based on the identified transaction price and reconciled cash receipt to the invoice and bank statement. In respect of the audit procedures performed not material findings were identified. We assessed and corroborated the adequacy and appropriateness of the disclosures made in the consolidated financial statements.

Report on the other information included in the Annual Report

The Annual Report contains other information. This includes all information in the Annual Report in addition to the financial statements and our auditor's report thereon.

Based on the procedures performed as set out below, we conclude that the other information:

- is consistent with the financial statements and does not contain material misstatements; and
- contains all the information regarding the directors' report and the other information that is required by Part 9 of Book 2 and regarding the remuneration report required by the sections 2:135b and 2:145 subsection 2 of the Dutch Civil Code.

We have read the other information. Based on our knowledge and the understanding obtained in our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements.

By performing our procedures, we comply with the requirements of Part 9 of Book 2 and section 2:135b subsection 7 of the Dutch Civil Code and the Dutch Standard 720. The scope of such procedures was substantially less than the scope of those procedures performed in our audit of the financial statements.

The Management Board is responsible for the preparation of the other information, including the directors' report and the other information in accordance with Part 9 of Book 2 of the Dutch Civil Code. The Management Board and the Supervisory Board are responsible for ensuring that the remuneration report is drawn up and published in accordance with sections 2:135b and 2:145 subsection 2 of the Dutch Civil Code.

Report on other legal and regulatory requirements and ESEF

Our appointment

We were appointed as auditors of Avantium N.V. by the Supervisory Board following the passing of a resolution by the shareholders at the Annual General Meeting held on 10 May 2023. Our appointment has been renewed annually by shareholders and now represents a total period of uninterrupted engagement of twenty years.

European Single Electronic Format (ESEF)

Avantium N.V. has prepared the Annual Report in ESEF. The requirements for this are set out in the Delegated Regulation (EU) 2019/815 with regard to regulatory technical standards on the specification of a single electronic reporting format (hereinafter: the RTS on ESEF).

In our opinion, the Annual Report prepared in XHTML format, including the (partially) marked-up consolidated financial statements, as included in the reporting package by Avantium N.V., complies in all material respects with the RTS on ESEF.

The Management Board is responsible for preparing the Annual Report, including the financial statements in accordance with the RTS on ESEF, whereby management combines the various components into a single reporting package.

Our responsibility is to obtain reasonable assurance for our opinion whether the Annual Report in this reporting package complies with the RTS on ESEF.

We performed our examination in accordance with Dutch law, including Dutch Standard 3950N 'Assuranceopdrachten inzake het voldoen aan de criteria voor het opstellen van een digitaal verantwoordingsdocument' (assurance engagements relating to compliance with criteria for digital reporting).

We performed our examination in accordance with Dutch law, including Dutch Standard 3950N 'Assuranceopdrachten inzake het voldoen aan de criteria voor het opstellen van een digitaal verantwoordingsdocument' (assurance engagements relating to compliance with criteria for digital reporting).

Our examination included amongst others:

- Obtaining an understanding of the entity's financial reporting process, including the preparation of the reporting package.
- Identifying and assessing the risks that the annual report does not comply in all material respects with the RTS on ESEF and designing and performing further assurance procedures responsive to those risks to provide a basis for our opinion, including:
  - obtaining the reporting package and performing validations to determine whether the reporting package containing the Inline XBRL instance document and the XBRL extension taxonomy files have been prepared in accordance with the technical specifications as included in the RTS on ESEF.
  - examining the information related to the consolidated financial statements in the reporting package to determine whether all required mark-ups have been applied and whether these are in accordance with the RTS on ESEF.

No prohibited non-audit services

To the best of our knowledge and belief, we have not provided prohibited non-audit services as referred to in article 5(1) of the European Regulation on specific requirements regarding statutory audit of public-interest entities.

Services rendered

The services, in addition to the audit, that we have provided to the Company or its controlled entities, for the period to which our statutory audit relates, are disclosed in note 47 to the financial statements.

Responsibilities for the financial statements and the audit

Responsibilities of the Management Board and the Supervisory Board for the financial statements

The Management Board is responsible for:
- the preparation and fair presentation of the financial statements in accordance with EU-IFRS and Part 9 of Book 2 of the Dutch Civil Code; and for
- such internal control as the management determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern. Based on the financial reporting frameworks mentioned, management should prepare the financial statements using the going-concern basis of accounting unless management either intends to liquidate the Company or to cease operations or has no realistic alternative but to do so. The management board should disclose in the financial statements any event and circumstances that may cast significant doubt on the Company's ability to continue as a going concern.

The Supervisory Board is responsible for overseeing the Company's financial reporting process.

Our responsibilities for the audit of the financial statements

Our responsibility is to plan and perform an audit engagement in a manner that allows us to obtain sufficient and appropriate audit evidence to provide a basis for our opinion. Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error and to issue an auditor's report that includes our opinion. Reasonable assurance is a high but not absolute level of assurance, and is not a guarantee that an audit conducted in accordance with the Dutch Standards on Auditing will always detect a material misstatement when it exists. Misstatements may arise due to fraud or error. They are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

Materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

A more detailed description of our responsibilities is set out in the appendix to our report.

Rotterdam, 25 March 2024

PricewaterhouseCoopers Accountants N.V.

A.F. Westerman RA

Appendix to our auditor's report on the financial statements 2023 of Avantium N.V.

In addition to what is included in our auditor's report, we have further set out in this appendix our responsibilities for the audit of the financial statements and explained what an audit involves.

The auditor's responsibilities for the audit of the financial statements

We have exercised professional judgement and have maintained professional scepticism throughout the audit in accordance with Dutch Standards on Auditing, ethical requirements and independence requirements. Our audit consisted, among other things of the following:

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- Identifying and assessing the risks of material misstatement of the financial statements, whether due to fraud or error, designing and performing audit procedures responsive to those risks , and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the intentional override of internal control.
- Obtaining an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- Evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Concluding on the appropriateness of management's use of the going-concern basis of accounting, and based on the audit evidence obtained, concluding whether a material uncertainty exists related to events and/or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report and are made in the context of our opinion on the financial statements as a whole. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluating the overall presentation, structure and content of the financial statements, including the disclosures, and evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

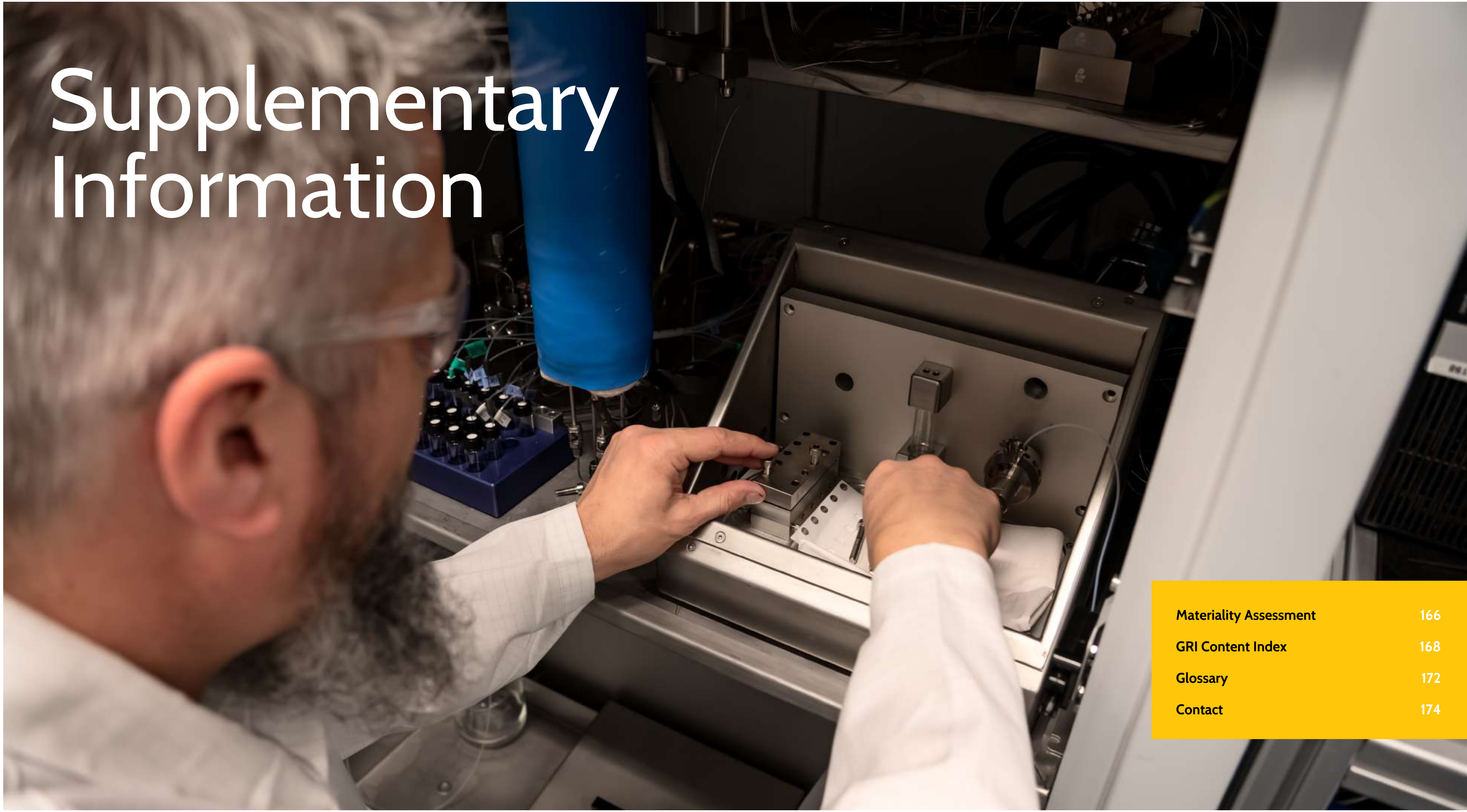
Considering our ultimate responsibility for the opinion on the consolidated financial statements, we are responsible for the direction, supervision and performance of the group audit. In this context, we have determined the nature and extent of the audit procedures for components of the Group to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole. Determining factors are the geographic structure of the Group, the significance and/or risk profile of group entities or activities, the accounting processes and controls, and the industry in which the Group operates. On this basis, we selected group entities for which an audit or review of financial information or specific balances was considered necessary.

We communicate with the supervisory board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit. In this respect, we also issue an additional report to the audit committee in accordance with article 11 of the EU Regulation on specific requirements regarding statutory audit of public-interest entities. The information included in this additional report is consistent with our audit opinion in this auditor's report.

We provide the supervisory board with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related actions taken to eliminate threats or safeguards applied.

From the matters communicated with the Supervisory Board, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Supplementary Information



Materiality Assessment

Avantium worked with an external party to conduct a materiality assessment in 2021. A similar exercise took place in 2022, with both internal and external stakeholders participating and with no significant changes from the 2021 assessment.

Stakeholders were asked to fill in an online survey, using the double materiality principle to rate the importance of topics' impact on Avantium's business and on society and/or the environment. Respondents were divided into two groups: external stakeholders and internal stakeholders.

For external stakeholders, the three highest-rated topics with regard to impact on society and the environment were (i) Greenhouse Gas Emissions of Our Operations, (ii) Sustainable Feedstocks and (iii) Climate Advocacy. The three highest-rated topics with regard to impact on Avantium's business were (i) Talent Attraction & Retention, (ii) Occupational Health & Safety and (iii) Corporate Partnerships.

For internal stakeholders, the three highest-rated topics with regard to impact on society and the environment were (i) Climate Advocacy, (ii) Sustainable Feedstocks and (iii) Circularity. The three highest-rated topics with regard to impact on Avantium's business were (i) Environmental Impact of Our Chemicals & Technologies, (ii) Health & Well-Being and (iii) Talent Attraction & Retention.

Scope

Avantium's sustainability goals and sustainability management are designed to contribute to the UN's Sustainable Development Goals (SDGs). Monitoring and reporting on progress towards these goals is done in line with the GRI

Standards. In the future, Avantium will adopt the European Sustainability Reporting Standards (ESRS) as developed by the European Financial Reporting Advisory Group (EFRAG) and regulated by the Corporate Sustainability Reporting Directive (CSRD).

Definitions of Very-High-Priority Material Topics

Environmental Impact of Our Technologies
Applying Avantium's expertise to improve the efficiency of existing chemical processes and invent new technologies with an improved environmental impact versus fossil-based incumbents.

Greenhouse Gas Emissions of Our Operations
Aligning Avantium's business with a 1.5°C future by reducing carbon emissions in line with the Paris Agreement and working to remove stubborn emissions through credible offsetting.

Circularity
Optimising the recovery, re-use and recycling of our technologies, mitigating Avantium's impact on natural resources.

Sustainable Feedstocks
Using plant-based feedstocks including agricultural crops, residues from agriculture or forestry or waste material that would otherwise be incinerated.

Occupational Health & Safety
Implementing strong safety management practices, as defined by ISO 45001, in our workplaces to safeguard employees' health.

Health & Well-Being
Ensuring employee health and well-being through our culture and programmes focusing on work-related stress, work–life balance and mental health.

Talent Attraction & Retention
Attracting, engaging and retaining a productive and talented workforce through programmes, benefits and development opportunities.

Climate Advocacy
Accelerating the industry transition to fossil free by helping our customers and partners embrace the essential technologies and products of tomorrow.

Stakeholder Engagement
Engaging proactively and continuously with various stakeholders in a two-way dialogue, understanding their priorities and reflecting them in our collaboration, advocacy and ESG strategy.

Corporate Partnerships
Selecting partners who share the same values as us and who want to decouple the industry from its reliance on fossil fuels.

IP & Data Protection
Ensuring the protection, confidentiality and ethical use of company, client, employee and supplier data.

Definitions of High-Priority Material Topics

Diversity & Inclusion
Upholding the highest standards of equality, fairness and respect among employees by ensuring an inclusive and socially mobile culture with zero tolerance for harassment or discrimination.

Hazardous Materials Management
Reducing or eliminating hazardous materials from our processes wherever possible, and focusing on responsible management and disposal when their use is unavoidable.

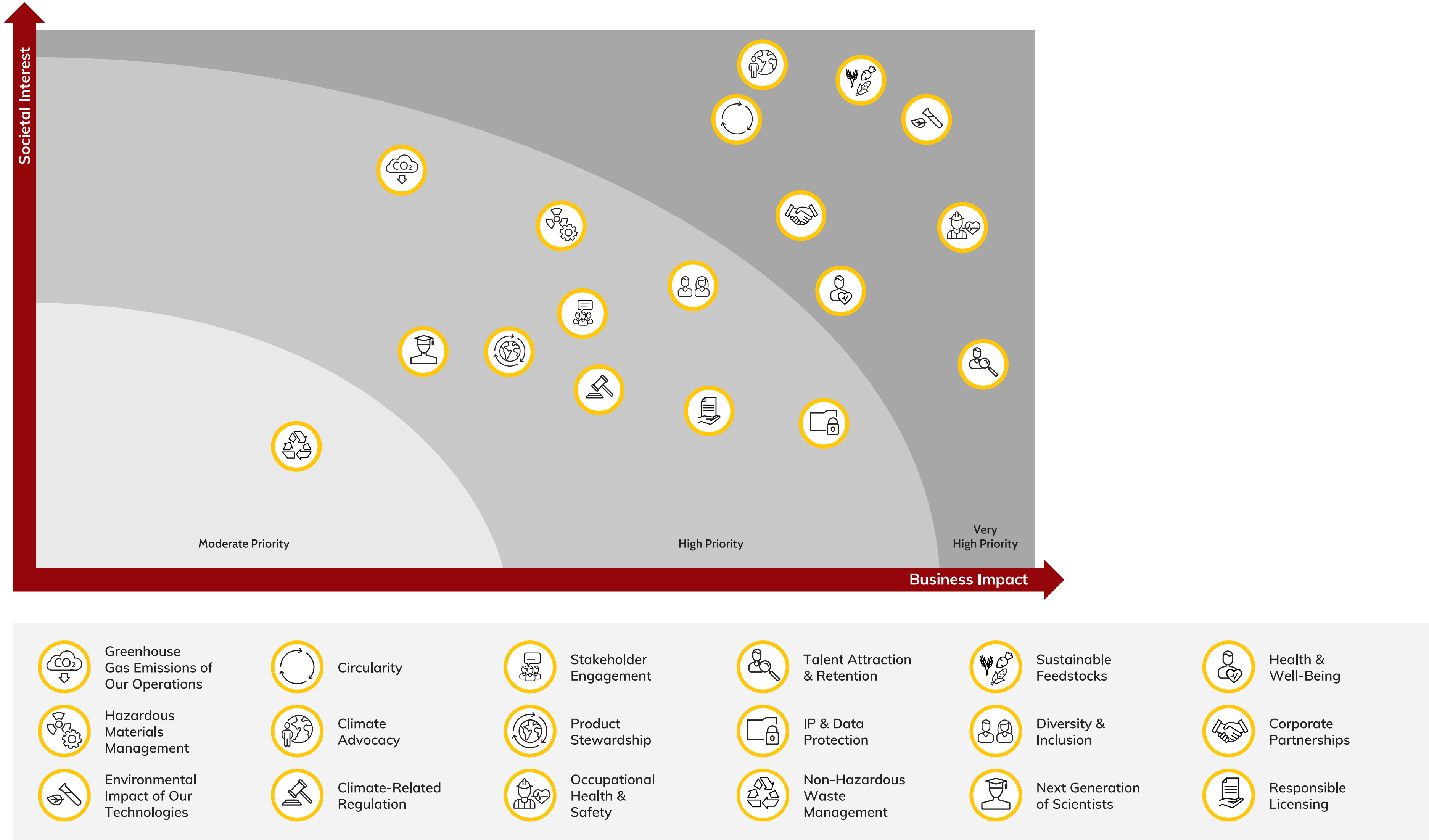
Next Generation of Scientists
Promoting and improving science, technology, engineering and mathematical (STEM) education as a way to raise levels of scientific literacy and equip our society to address climate change.

Climate-Related Regulation
Engaging with laws, regulations and restrictions on climate-related topics, from rapidly changing emissions regulations to taxonomy.

Non-Hazardous Waste Management
Reducing material use through the adoption of responsible consumption practices and ensuring the highest standards of re-use and recycling across our offices and operations.

Product Stewardship
Managing, in a responsible way, the health, safety and environmental aspects of a product throughout its life cycle.

Avantium Materiality Assessment 2023



GRI Content Index

Statement of Use	Avantium N.V. has reported the information cited in this Global Reporting Initiative (GRI) content index for the period 1 January 2023 to 31 December 2023 with reference to the GRI Standards	
	GRI 1: Foundation 2021	
	Disclosure	**Location in Annual Report, corporate website or direct answer**
GRI 2: General Disclosures	2-1 Organizational details	Financial Statements, Note 1 General Information (page 108)
	2-2 Entities included in the organization's sustainability reporting	Financial Statements, Note 2.2.1 Subsidiaries (page 114) The Value We Created in 2023 (page 23) About This Report (page 3)
	2-3 Reporting period, frequency and contact point	About This Report (page 3)
	2-4 Restatements of information	Financial Statements, Note 2.1.3 Corrections of prior period misstatements (page 110)
	2-5 External assurance	About This Report (page 3)
	2-6 Activities, value chain and other business relationships	Who We Are (page 10) How We Create Value (page 15) The World Around Us (page 17) Our Strategy (page 19) Performance by Business (page 24)
	2-7 Employees	Our People (page 41)
	2-8 Workers who are not employees	Our People (page 41)
	2-9 Governance structure and composition	Corporate Governance (page 70)
	2-10 Nomination and selection of the highest governance body	Corporate Governance (page 70) Corporate Website
	2-11 Chair of the highest governance body	Message from the CEO (page 8) Corporate Governance (page 70)
	2-12 Role of the highest governance body in overseeing the management of impacts	Corporate Governance (page 70)
	2-13 Delegation of responsibility for managing impacts	Corporate Governance (page 70)
	2-14 Role of the highest governance body in sustainability reporting	In-Control Statement (page 69)
	2-15 Conflicts of interest	Responsible Business (page 28) Corporate Website
	2-16 Communication of critical concerns	Risk and Opportunity Management (page 57)
	2-17 Collective knowledge of the highest governance body	Corporate Governance (page 70)
	2-18 Evaluation of the performance of the highest governance body	Corporate Governance (page 70)

Statement of Use	Avantium N.V. has reported the information cited in this Global Reporting Initiative (GRI) content index for the period 1 January 2023 to 31 December 2023 with reference to the GRI Standards	
	GRI 1: Foundation 2021	
	Disclosure	**Location in Annual Report, corporate website or direct answer**
	2-19 Remuneration policies	Remuneration Report 2023 (page 84)
	2-20 Process to determine remuneration	Remuneration Report 2023 (page 84) Corporate Governance (page 70)
	2-21 Annual total compensation ratio	Remuneration Report 2023 (page 84)
	2-22 Statement on sustainable development strategy	Message from the CEO (page 8) Our Strategy (page 19)
	2-23 Policy commitments	Our People (page 41) Responsible Business (page 28)
	2-24 Embedding policy commitments	Our People (page 41) Responsible Business (page 28)
	2-25 Process to remediate negative impacts	Risk and Opportunity Management (page 57)
	2-26 Mechanisms for seeking advice and raising concerns about ethics	Corporate Website
	2-27 Compliance with laws and regulations	Corporate Website
	2-28 Membership associations	Advocating for a Fossil-Free Industry (page 46) Stakeholder Engagement (page 48) Corporate Partnerships (page 46)
	2-29 Approach to stakeholder engagement	Stakeholders and Materiality (page 18) Stakeholder Engagement (page 48)
	2-30 Collective bargaining agreements	At Avantium, there are no collective bargaining agreements
GRI 3: Material Topics	3-1 Process to determine material topics	Stakeholders and Materiality (page 18) Stakeholder Engagement (page 48) Avantium Materiality Assessment (page 167)
	3-2 List of material topics	Avantium Materiality Assessment (page 167) References to Sustainability Reporting Frameworks (page 30)
	3-3 Management of material topics	The Value We Created in 2023 (page 23)
GRI 303: Energy	3-3 Management of material topics	Reducing Emissions from Our Operations (page 39)
	302-1 Energy consumption within the organization	Reducing Emissions from Our Operations (page 39)
	302-4 Reduction of energy consumption	Reducing Emissions from Our Operations (page 39)

Statement of Use	Avantium N.V. has reported the information cited in this Global Reporting Initiative (GRI) content index for the period 1 January 2023 to 31 December 2023 with reference to the GRI Standards	
	GRI 1: Foundation 2021	
	Disclosure	**Location in Annual Report, corporate website or direct answer**
GRI 305: Emissions	3-3 Management of material topics	Reducing Emissions from Our Operations (page 39)
	305-1 Direct (Scope 1) GHG emissions	Reducing Emissions from Our Operations (page 39)
	305-2 Energy indirect (Scope 2) GHG emissions	Reducing Emissions from Our Operations (page 39)
	305-3 Other indirect (Scope 3) GHG emissions	Reducing Emissions from Our Operations (page 39)
	305-5 Reduction of GHG emissions	Reducing Emissions from Our Operations (page 39)
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Reducing Emissions from Our Operations (page 39)
GRI 306: Waste	3-3 Management of material topics	Managing Waste from Our Operations (page 38)
	306-1 Waste generation and significant waste-related impacts	Managing Waste from Our Operations (page 38)
	306-2 Management of significant waste-related impacts	Managing Waste from Our Operations (page 38)
	306-3 Waste generated	Managing Waste from Our Operations (page 38)
	306-4 Waste diverted from disposal	Managing Waste from Our Operations (page 38)
	306-5 Waste directed to disposal	Managing Waste from Our Operations (page 38)
GRI 308: Supplier Environmental Assessment	3-3 Management of material topics	Using Sustainable Feedstocks (page 33)
	308-1 New suppliers that were screened using environmental criteria	Using Sustainable Feedstocks (page 33)
GRI 401: Employment	3-3 Management of material topics	Our People (page 41) Becoming a Top-10 Place to Work (page 42)
	401-1 New employee hires and employee turnover	Promoting Diversity, Equality and Inclusion (page 43)
	401-3 Parental leave	Promoting Diversity, Equality and Inclusion (page 43)
GRI 403: Occupational Health and Safety	3-3 Management of material topics	Providing Safe and Healthy Workplaces (page 36) Corporate Website Responsible Business (page 28)
	403-1 Occupational health and safety management system	Providing Safe and Healthy Workplaces (page 36) Corporate Website Responsible Business (page 28)
	403-2 Hazard identification, risk assessment, and incident investigation	Providing Safe and Healthy Workplaces (page 36)
	403-4 Worker participation, consultation, and communication on occupational health and safety	Works Council (page 42) Health and Well-Being (page 42) Providing Safe and Healthy Workplaces (page 36)
	403-5 Worker training on occupational health and safety	Providing Safe and Healthy Workplaces, Safety Culture and Trainings (page 36)
	403-6 Promotion of worker health	Health and Well-Being (page 42)
	403-9 Work-related injuries	Providing Safe and Healthy Workplaces, Accidents and Incidents (page 36)

Statement of Use	**Avantium N.V. has reported the information cited in this Global Reporting Initiative (GRI) content index for the period 1 January 2023 to 31 December 2023 with reference to the GRI Standards**	
	GRI 1: Foundation 2021	

	Disclosure	Location in Annual Report, corporate website or direct answer
GRI 404: Training and Education	3-3 Management of material topics	Becoming a Top-10 Place to Work (page 42)
	404-2 Programs for upgrading employee skills and transition assistance programs	Performance Management and Training (page 42)
	404-3 Percentage of employees receiving regular performance and career development reviews	Performance Management and Training (page 42)
GRI 405: Diversity and Equal Opportunity	3-3 Management of material topics	Promoting Diversity, Equality and Inclusion (page 43)
	405-1 Diversity of governance bodies and employees	Promoting Diversity, Equality and Inclusion (page 43)
	405-2 Ratio of basic salary and remuneration of women to men	Promoting Diversity, Equality and Inclusion (page 43)
GRI 414: Supplier Social Assessment	3-3 Management of material topics	Using Sustainable Feedstocks (page 33)
	414-1 New suppliers that were screened using social criteria	Using Sustainable Feedstocks (page 33)

Glossary

This glossary has been carefully compiled and we believe it to be accurate. Definitions may, however, be based on Avantium's interpretation and the use of terms may differ from the meaning assigned to them elsewhere in the industry or otherwise.

Adsorption
Adsorption is the adhesion of atoms, ions or molecules from a gas, liquid or dissolved solid to a surface.

Bio-Based Economy
A bio-based economy exists when predominantly plant-based materials (i.e., biomass rather than fossil-based raw materials like petroleum) are used as a feedstock for making the chemicals, materials and products we consume.

Bio-Based Plastic
These are plastics derived from man-made polymers that can be made from building blocks that originate from biological (once living) systems. Most of these building blocks (monomers) are derived from sugars. FDCA and PEF are examples of bio-based plastic; however, at Avantium, we prefer to call PEF and FDCA plant-based plastics, in order to prevent confusion with the term bioplastic. A bioplastic is a plastic derived from a biopolymer, such as DNA, insulin, cellulose or starch.

Biomass
Organic feedstock, especially of plant origin. These feedstocks are renewable and originally found in nature in the form of agricultural and forestry products like corn, wheat, sugar beet, sugar cane, rapeseed and woody plants. The residues of these products also contain starch, carbohydrates, fats and proteins.

Biorefinery/Biorefining
A biorefinery is a factory that processes biomass into a range of products with the goal of making the most efficient use of the biomass or raw material. Biorefining aims to use every part of the raw material so that nothing goes to waste, thereby improving efficiencies and environmental impact. Dawn Technology™ is the brand name of Avantium's biorefinery technology, which converts non-food plant-based feedstock into industrial sugars and lignin.

Carbon Dioxide (CO_2)
A greenhouse gas (GHG) that originates as waste from the burning of fossil fuels and the production of electricity, fertilisers, chemicals, steel and cement. It is the biggest contributor to climate change. Electrochemistry has the potential to use CO_2 as a feedstock for the sustainable production of chemicals and materials, and is seen as a game-changer for the chemical industry. The result is that this GHG is sequestered into products that can replace plastics and chemicals that are traditionally produced from fossil feedstock. Avantium's Volta Technology is the leading electrocatalytic platform developing CO_2 utilisation solutions for a circular future.

Catalysis/Catalyst
A catalyst is a substance that enables and accelerates a chemical reaction. Catalysis is the process of using a catalyst in such a reaction.

Catalyst Testing
Catalyst testing is an important practice in the process of developing a new or improved catalyst. Over the years, Avantium R&D Solutions has executed numerous catalyst testing projects in the various phases of a catalyst development trajectory, from discovery and screening to process optimisation and commercial selection.

Circular Economy
A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use and regenerating natural systems. Avantium works to advance new technologies for a more sustainable future. PEF plays a significant role in the circular economy.

Chloromethylfurfural (CMF)
CMF is an intermediate compound for chemicals such as PET and for numerous commodity and specialty chemicals through its derivatives, including FDCA.

CSRD
EU's new Corporate Sustainability Reporting Directive.

Dawn Technology™
Dawn Technology™ is the brand name of Avantium's biorefinery technology, which converts non-food plant-based feedstock into industrial sugars and lignin. These sugars, such as glucose, are an excellent raw material for chemistry and fermentation processes and are used to produce a broad range of products.

First-Generation Feedstock
Carbohydrate-rich plants (e.g., sugar beet, sugar cane, corn and wheat) that can also be used as food or feed or for making plant-based chemicals and materials.

Furandicarboxylic Acid (FDCA)
2.5-FDCA is an intermediate chemical for making PEF.

Flowrence®
Avantium's Flowrence® is an advanced high-throughput platform for high-quality testing of catalysts and adsorbents. This system can be used for a broad range of industrial applications that operate in gas, vapour or trickle phases. The parallel reactor system combines the reproducibility of larger-scale reactors with the advantages of small-scale reactors, such as intrinsic safety, high accuracy, low costs per experiment and, ultimately, faster time-to-market.

Glucose
A sugar consisting of six carbon atoms (C6), glucose is a core building block for a bio-based economy. It serves as a feedstock for the production of a broad range of chemicals and materials produced via chemistry or fermentation processes. The resulting products can be existing and new plant-based chemicals, such as such as plantMEG™ and plantMPG™.

Glycols
A glycol is any of a class of organic compounds belonging to the alcohol family. The term is often applied to the simplest member of the class: MEG, a colourless, oily liquid. Avantium has developed plant-based MEG, a vital ingredient for the production of polyester textiles and film, PET and PEF resins and engine coolants.

Global Reporting Initiative (GRI)
International independent standards for reporting.

Life-Cycle Assessment (LCA)
The compilation and evaluation of the input, output and potential environmental impact of a product system throughout its life cycle. LCAs are fundamental to understanding how Avantium's technologies compete with fossil-based alternatives. LCAs form the bedrock of how we measure our footprint and describe the sustainability benefits of our innovations.

Lignin
In the Dawn Technology™ biorefining process, lignin is the mass remaining after the sugars have been removed from the initial raw material. It is very efficient for energy generation as its energy content is up to 40% higher than the original wood chips used in the process. Energy generation is currently the predominant application for lignin. Additional higher-value applications are being developed, including bio-asphalt.

Management Board and Management Team
The Management Board (consisting of the CEO and the CFO) is Avantium's statutory executive body and is, together with the Management Team (the CEO, CFO, CTO, General Counsel and the Managing Directors of the business units), responsible for the day-to-day management of Avantium.

Mono-Ethylene Glycol (MEG)
MEG is a vital ingredient for the production of polyester textiles and film, PET and PEF resins and engine coolants. End uses for plant-based MEG (plantMEG™) range from clothing and other textiles, to packaging, kitchenware, non-toxic coolants (e.g., antifreeze) and solvents (e.g., paint and coatings). Ray Technology™ is the brand name of Avantium's technology to produce plantMEG™.

Mono-Propylene Glycol (MPG)
MPG is a valuable intermediary and is used in airport operations for the de-icing of aeroplanes, it is also used in unsaturated polyester resins, for example in modern windmill blades, as well as heat transfer fluids. Ray Technology™'s plantMPG™ is a wholly plant-based version of MPG.

Polyethylene Furanoate (PEF)
PEF is a polyester made from MEG and FDCA. PEF produced by Avantium's YXY® Technology is a 100%-plant-based and recyclable polymer that can be used in an enormous range of applications, including bottles, packaging, textiles and film. PEF's barrier and thermal properties are superior to conventional PET. In combination with a significantly reduced carbon footprint, this added functionality gives PEF all the attributes needed in a next-generation polyester.

Polyethylene Terephthalate (PET)
PET is a transparent polyester used for bottles and film. Currently, PET is made from fossil-based MEG and fossil-based terephthalic acid.

Polyesters
Polyesters are polymers formed from a dicarboxylic acid and a diol. Polyesters are very strong and stable and are particularly useful in making fibres for clothing or plastics. Polyesters are most commonly found as either PET or PEF.

Polymers
A polymer is a chemical compound with molecules bonded together in long, repeating chains. The term 'polymer' is commonly used in the plastics and composites industry and is often used as a synonym for 'plastic' or 'resin'.

Ray Technology™
Ray Technology™ is the brand name of Avantium's technology to produce plantMEG™ and plantMPG™.

Renewable Resources
These are agricultural or forestry raw materials used as feedstock for industrial products. The use of renewable resources in industry saves fossil resources and reduces the amount of GHG emissions.

Scope 1 Emissions
Scope 1 covers emissions from sources that an organisation owns or controls directly.

Scope 2 Emissions
Scope 2 covers emissions that a company causes indirectly when the energy it purchases and uses is produced.

Scope 3 Emissions
Scope 3 encompasses emissions that are not produced by the company itself, and are not the result of activities from assets owned or controlled by it, but by those for which it is indirectly responsible, up and down its value chain.

Second-Generation Feedstock
Non-food feedstock resulting from agricultural and forestry waste or residual streams. Dawn Technology™ is the brand name of Avantium's biorefinery technology, which converts non-food plant-based feedstock into industrial sugars and lignin.

Sustainable Development Goals (SDGs)
The United Nations launched its 17 SDGs in 2013.

Throughput
The volume of chemicals a system can process per hour.

Volta Technology
Avantium's Volta Technology, a carbon capture and utilisation (CCU) technology, is the leading electrocatalytic platform developing CO_2 as a feedstock for a circular future.

YXY® Technology
Avantium's YXY® Technology helps to produce a wide range of novel 100%-plant-based materials and products by converting plant-based sugars (fructose) into plant-based chemicals (e.g., for the production of bio-based plastics, such as PEF).

If you have any questions or remarks regarding this report, we invite you to contact us.

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Published on 25 March 2024

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