



Avantium Investor Relations toolkit

December 2024

IR toolkit | getting up-to-speed with the investment case

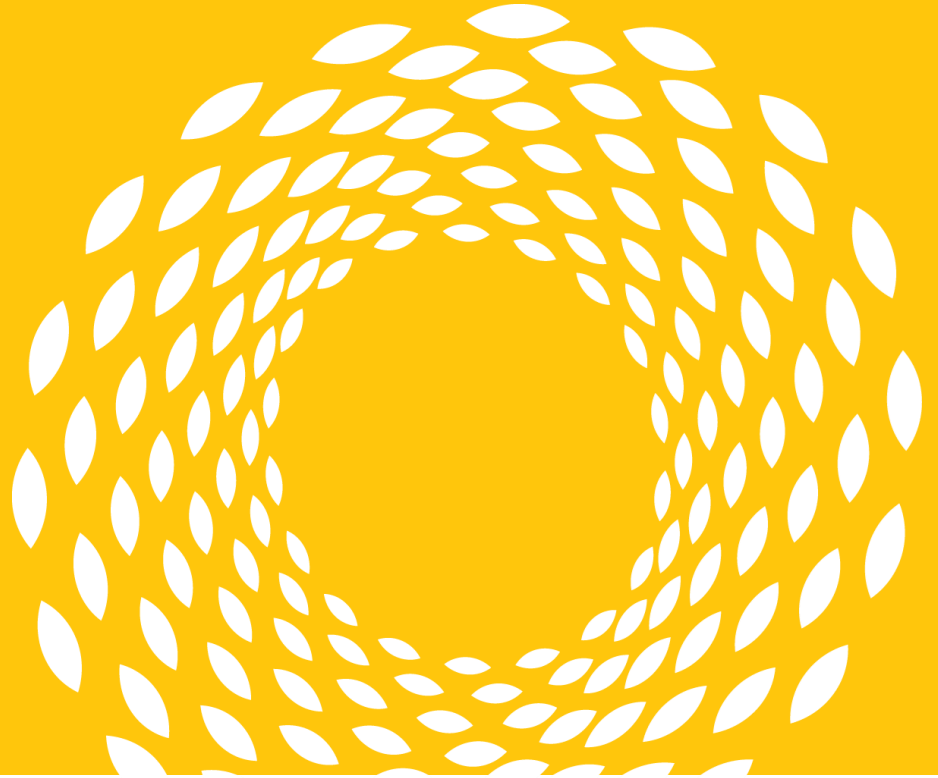
- This IR toolkit provides a collection of previously published slides, data and references to resources in order to get up-to-speed with the Avantium investment case.
- This IR toolkit may be a useful source for both investors that are new to Avantium and investors and shareholders already familiar with Avantium.
- This IR toolkit is periodically being updated.



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1. Key investment highlights, financial reporting and analyst coverage



Avantium key investment highlights

Avantium is a leading renewable chemistry technology developer specialized in bio-based polymers.

Through its core technology YXY®, the company introduces a better and cleaner monomer and polymer, FDCA and PEF (known under the brand name Releaf®), to the market, addressing a €200B+ market (e.g., packaging, fibers, films, molding, etc.).

- World's first FDCA Flagship Plant, including secured offtake agreements
- Scalable asset light licensing model
- Innovative technologies and CO₂ utilization
- Proven R&D Solutions business
- ESG-Centric business strategy

Financial Reporting

Half Year 2024 Results materials:

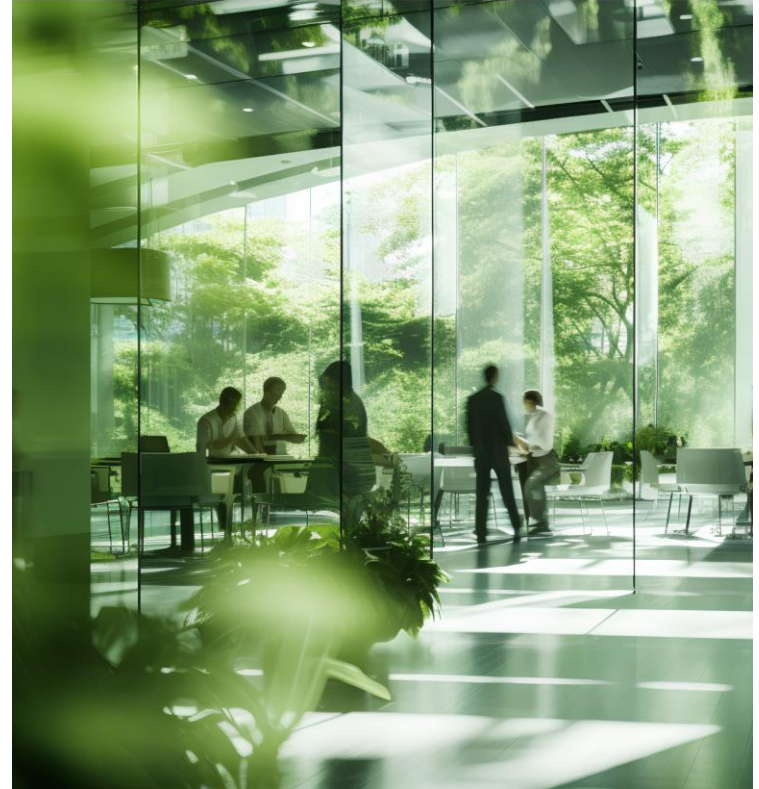
- [Press release](#)
- [Presentation](#)
- [Analyst call transcript](#)

Full Year 2023 Results materials:

- [Press release](#)
- [Presentation](#)
- [Analyst call transcript](#)
- [Annual Report 2023](#)

For more historic financial results information visit:

<https://avantium.com/financial-performance-annual-reports/>

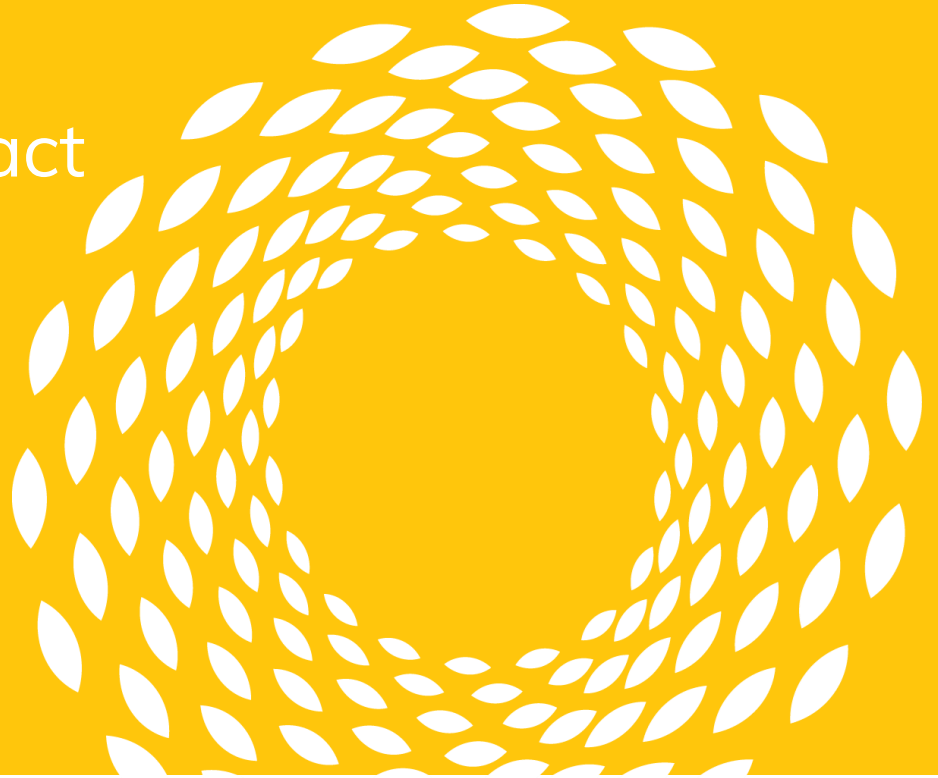


Analyst coverage

Sell-side analysts currently covering Avantium:

Bank	Recommendation	Target Price	Analyst
ABN Amro - Oddo BHF	Neutral	€2.20	Usama Tariq
Berenberg	Buy	€4.60	Andrés Castanos-Mollor
Bryan Garnier	Buy	€4.90	Paul de Froment
DeGroof Petercam	Buy	€3.00	Fernand de Boer
ING	Buy	€9.57	Reg Watson
Kepler Cheuvreux	Hold	€2.05	Patrick Roquas

2. Sustainability, impact and GRI



Understanding the sustainability benefits

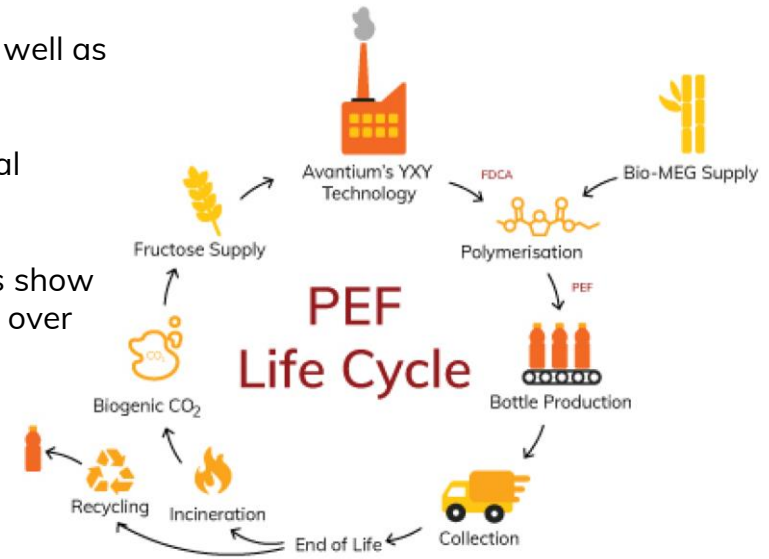
Life Cycle Assessment (LCA) is fundamental to understanding how Avantium's technologies compete with fossil-based alternatives, as well as the potential sustainability benefits of our technologies.

LCA is the most recognised method to quantitatively assess potential environmental impacts of products, services or processes.

Third-party peer-reviewed and ISO-certified Life Cycle Assessments show that Avantium's PEF can enable a 62% reduction in GHG emissions over the life cycle of a 500 ml PET bottle.

- [Releaf® \(PEF\) LCA Applications 500ml bottle \(2023\)](#)
- [PlantMEG LCA \(2022\)](#)
- [PlantMPG™ LCA](#)

For more information visit: <https://avantium.com/products-technologies/lca/>



ESG and GRI

Avantium's [Annual Report](#) follows the Global Reporting Initiative (GRI) Standards, ensuring full transparency and accountability. The report covers:

- General Disclosures: Information on our organizational profile, strategy, ethics, and integrity.
- Material Topics: Our identified significant economic, environmental, and social impacts.
- Economic Performance: Financial implications, market presence, and economic impacts.
- Environmental and Social Impact: Our contributions to sustainability, covering areas such as energy, water, emissions, and social responsibility.

A comprehensive GRI index can be found here:

<https://avantium.com/sustainability/reporting-and-governance/#section-number-5>



ESG ratings



Avantium was awarded a Gold Medal by EcoVadis, after a thorough audit of our performance in four categories: environment, labor and human rights, ethics, and sustainable procurement.

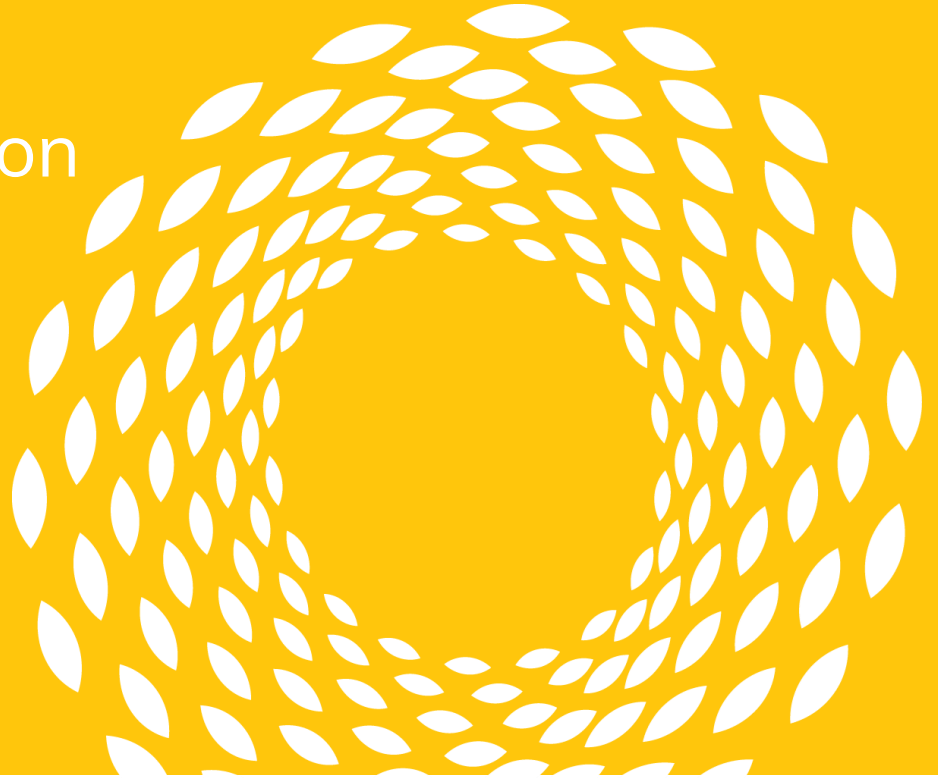


Sustainalytics recognized Avantium as having medium risk for material financial impacts driven by ESG factors.



3. Investor Presentation

Selection of previously published slides



The why

Plastics pollution is a material problem, growing exponentially

Recycling alone is not the solution

Use of renewable circular materials is key



Avantium's products & technologies

CO₂-based Polyesters & Chemicals
Volta Technology converts CO₂ into the eco-friendly polymer PLGA

[link](#)



Releaf® & FDCA
Revolutionize packaging with Releaf® & FDCA

[link](#)



R&D Solutions
Leading provider of advanced catalyst testing units and services

[link](#)

PlantMEG & PlantMPG
Technology to produce MEG from plant-based feedstocks rather than fossil sources

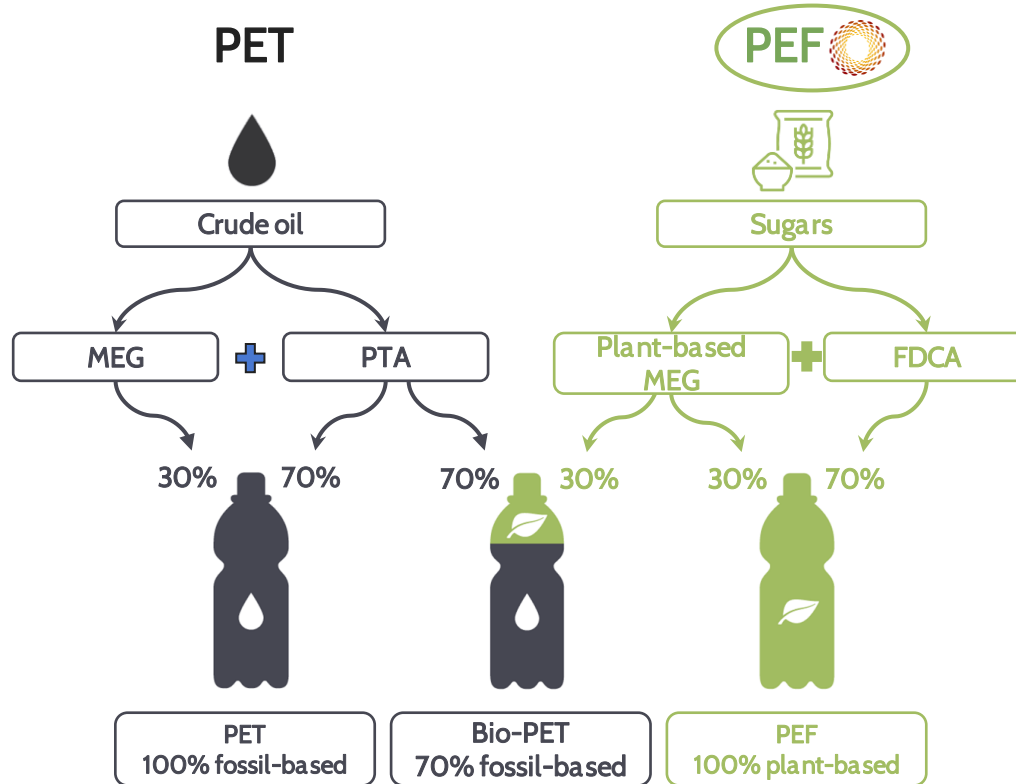
[link](#)



avantium



PEF: made from our focus product FDCA



Compared to PET

PEF is a renewable, circular plant-based polymer material

Low carbon footprint

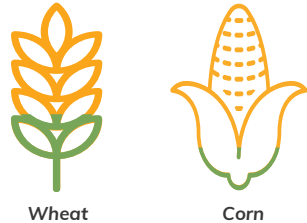
Superior technical properties

Enhanced recyclability

Cost competitive

FDCA – feedstock agnostic, utilising Gen 1 and 2 feedstocks

FDCA Flagship Plant is using Gen 1 feedstock:
starch – an abundant & low value co-product



Starch is part of the low value co-products
Glucose/Fructose from starch








Avantium's FDCA Flagship Plant
Regionally & commercially available
Sugar surplus, no competition with food supply



Current Gen 2 feedstock



Origin Materials licensed facility
Commercially available



Future Gen 2 feedstock options



Avantium's Dawn Technology
Avantium DAWN pilot plant



Textile waste



PEF sustainable and superior alternative for PET

A more sustainable product...



100% bio-based feedstock

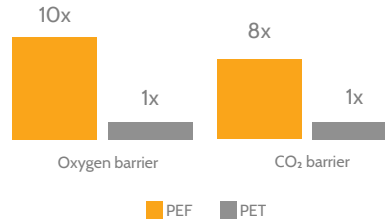


Recyclable



Circular

...with superior properties...



...providing distinctive value proposition

- ✓ Up to 20% weight reduction
- ✓ Longer shelf life leading to food waste reduction
- ✓ Larger range of applications and ability to replace glass, aluminium, etc.
- ✓ Enhanced recyclability as mono-material packaging or by replacing hard-to-recycle polymers (e.g. nylon) in multi-material packaging

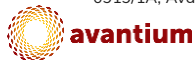
✓ EPBP¹ interim approval on multilayer PET/PEF and monolayer PEF bottles in the PET recycling stream



✓ APR² Critical Guidance Recognition on compatibility with standard PET recycling practices



Sources: Avantium and Nova Institute, PEF – A Sustainable Packaging Material for Bottles - ISO Certified LCA of Avantium's PEF products, 2022; University of Aberdeen, PEF plastic synthesised from industrial carbon dioxide and biowaste, 2020; Journal of Ecological Engineering, Energy Inputs on the Production of Plastic Products, 2022; RECORD, Chemical and physico-chemical recycling of plastic waste, 2022, 177 p, n°21-0919/1A; Avantium, The Journey of Avantium's PEF towards Commercialisation, 2021



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Notes: (1) The European PET Bottle Platform is a voluntary initiative of industry organisations representing waste collectors, plastic recyclers, PET material producers and brand owners; (2) The Association of Plastic Recyclers, non-profit organisation focused exclusively on improving recycling for plastics

PEF can be used in a very broad range of applications

Bottles



**Beer, Juices, Waters,
Soft Drinks**

Competing materials: Glass,
Aluminium, PET, Multi-layer

>50 million ton/year¹



Fibers



**Textile, Upholstery, Car
Tires, Industrial Fibers**

Competing materials: PET, Nylon,
Cotton

>40 million ton/year¹



Films & More



**Food Packaging, Non-Food
Packaging**

Competing materials: Glass,
Aluminium, PET, Multi-layer

>25 million ton/year¹



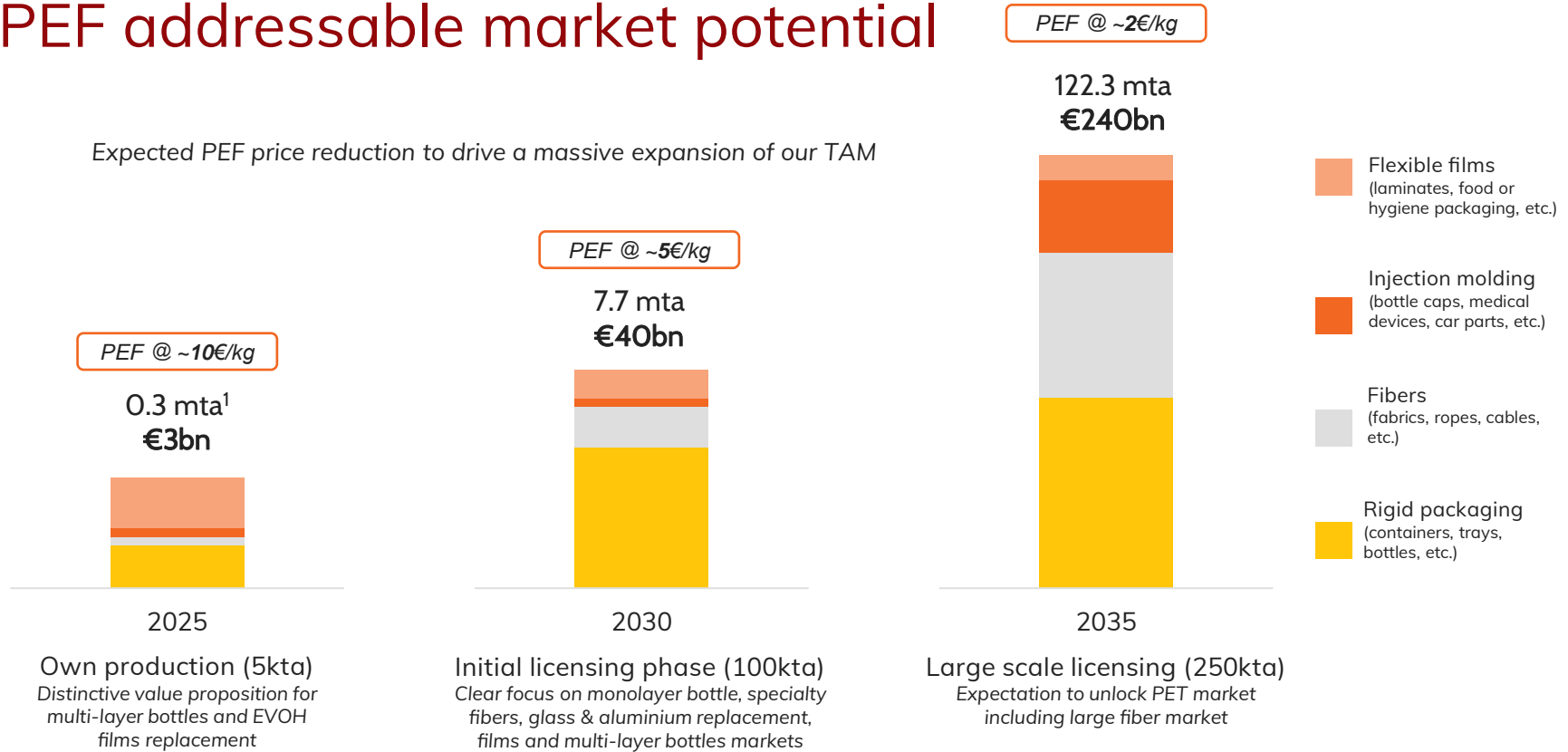
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Notes: (1) estimated volume reflects Total Addressable Market (TAM) in 2035

Sources: Smithers, The future of high barrier packaging films to 2024, 2021; Smithers, The future of global flexible packaging to 2026, 2021; Smithers, The future of rigid plastic packaging to 2026, 2021; Thermoformed Packaging Market to 2025, 2018 ; PCI Wood Mackenzie, Abstract report global Multilayer PET bottles industry to 2024, 2016 ; Allied Market Research

PEF addressable market potential

Expected PEF price reduction to drive a massive expansion of our TAM



PEF is both sustainable and price-competitive at scale

100kta

Competing with aluminium and glass at €5.0/kg PEF



PEF Bottle
33cl – 13.5g
PEF material cost¹
€0.07 = ~7% of end price

Glass Bottle
33cl – 200g
Glass material cost¹
€0.13 = ~13% of end price

Aluminium Can
33cl – 13g
Alu material cost¹
€0.03 = ~4% of end price

250kta

Competing with mono-material PET at €2.5/kg PEF



PEF Bottle
50cl – 17.5g
PEF material cost²
€0.044 = ~3.7% of end price

rPET Bottle
50cl – 22g
rPET material cost²
€0.055 = ~4.6% of end price

PET Bottle
50cl – 22g
PET material cost²
€0.037 = ~3.1% of end price

PEF reducing Global Warming Potential

↓ **88%** vs. glass

↓ **74%** vs. aluminium

↓ **62%** vs. PET



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Notes: (1) a 33cl bottle made with PEF at €5.0/kg sold at €1.00, a 33cl glass bottle sold at €1.00 and a 33cl aluminium can sold at €0.67; (2) Assuming PEF at €2.5/kg, rPET at €2.5/kg and PET at €1.7/kg, and a 50cl sold at €1.20. Sources: enzymatic rPET, Company's estimates; Glass, Food grade rPET & PET prices, BusinessAnalytIQ.com, average Europe & USA Aug.22-Aug.23; Aluminium prices, markets.businessinsider, average Aug.22-Aug.23, NAPCOR, Beverage Container LCA Report 2023, 2023; Nova Institute



A journey of almost two decades...

FDCA Flagship Plant

Laboratory



2006



FDCA Pilot Plant



2011



FID



Dec. 2021



Opening ceremony



Oct. 2024



Start-up



Q4 2024



Continuous operation



2025



The FDCA Flagship Plant

- First-of-a-kind plant
- Enabling sales of FDCA & PEF at commercial scale
- Prove technology at 5kta scale
- Recruited operations team of 70 people
- Next to sales of FDCA & PEF, the plant is built to enable licensing deployment



Key facts regarding the FDCA Flagship Plant



Production capacity

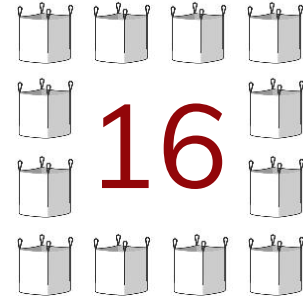
5.000

Ton per year

Operations employees in
FDCA Flagship organization



'Big bags' with FDCA
produced daily¹



Length of piping

26 km

Plot size



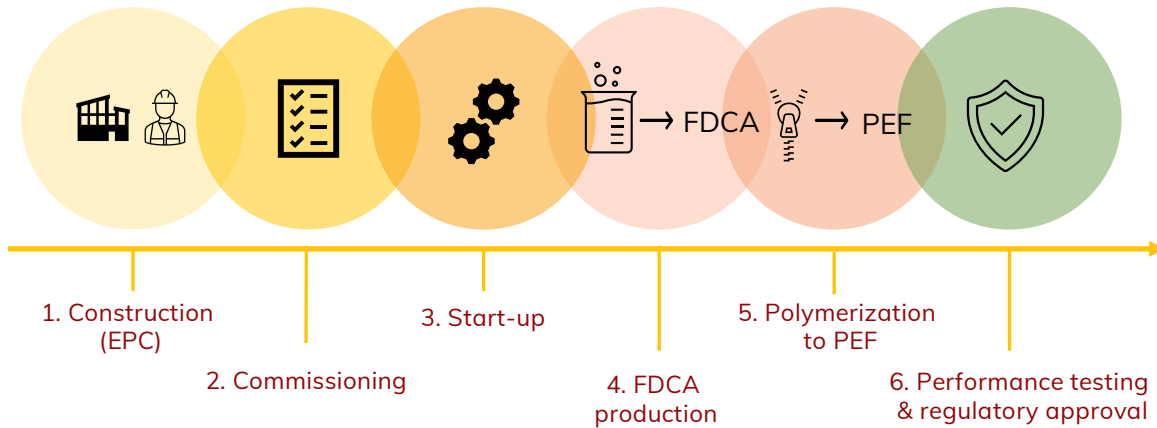
2.5 hectares



Hours worked on site
without accidents

>1,000,000

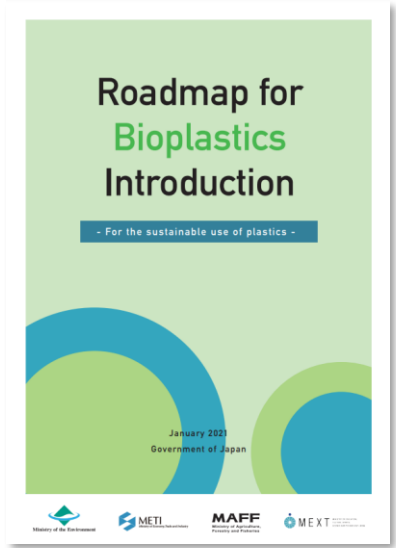
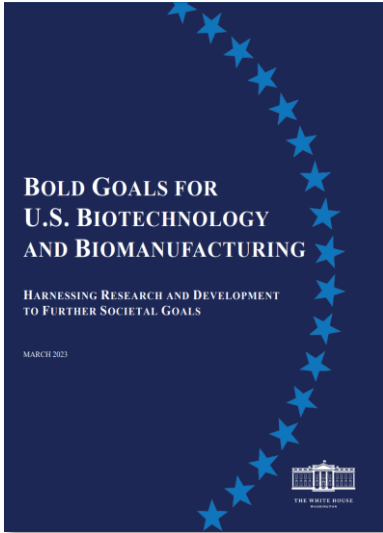
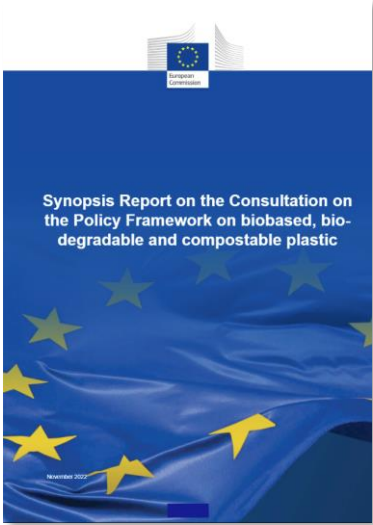
From plant construction to production of FDCA and PEF



FDCA Flagship Plant

- Officially opened on 22 October 2024
- Commissioning and start-up activities underway

Regulatory momentum increasing globally in favor of biobased solutions



Brands under pressure from consumers

**Harvard
Business
Review**

Research: Consumers' Sustainability Demands Are Rising

18 September 2023

Forbes

Consumers Demand Sustainable Products and Shopping Formats

14 March 2022

BCG

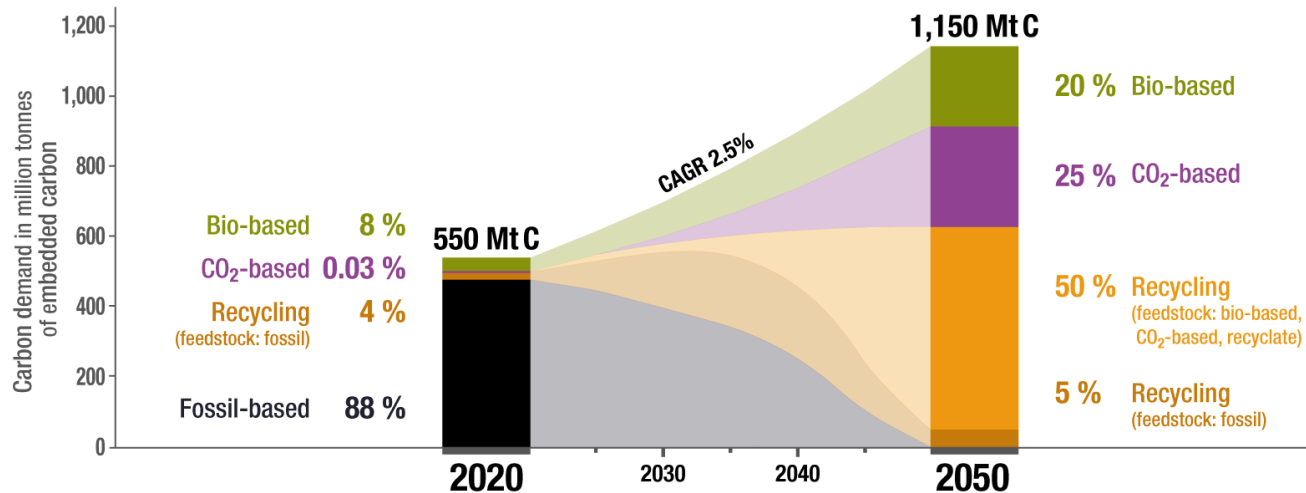
Consumers Are the Key to Taking Green Mainstream

13 September 2022



Promising market outlook for bioplastics

Carbon Embedded in Chemicals and Derived Materials
update nova scenario for a global net-zero chemical industry in 2050



Source: Nova Institute

Commitments from leading brands



Avantium
at the centre of the
eco-system

16

Offtake Agreements

1

Technology License
Agreement

Broad range of applications



Engaging brands and consumers

Lower carbon footprint

Fully recyclable

100% plant-based

releaf
Made by Avantium

**Quench your thirst,
not the planet's future**

The future: from pilot and flagship plant to license plants



Pilot Plant



Flagship Plant



Potential License Plants



4. IR contact

Questions about investing in Avantium?
Please don't hesitate to reach out!



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