

Ø DE NORA

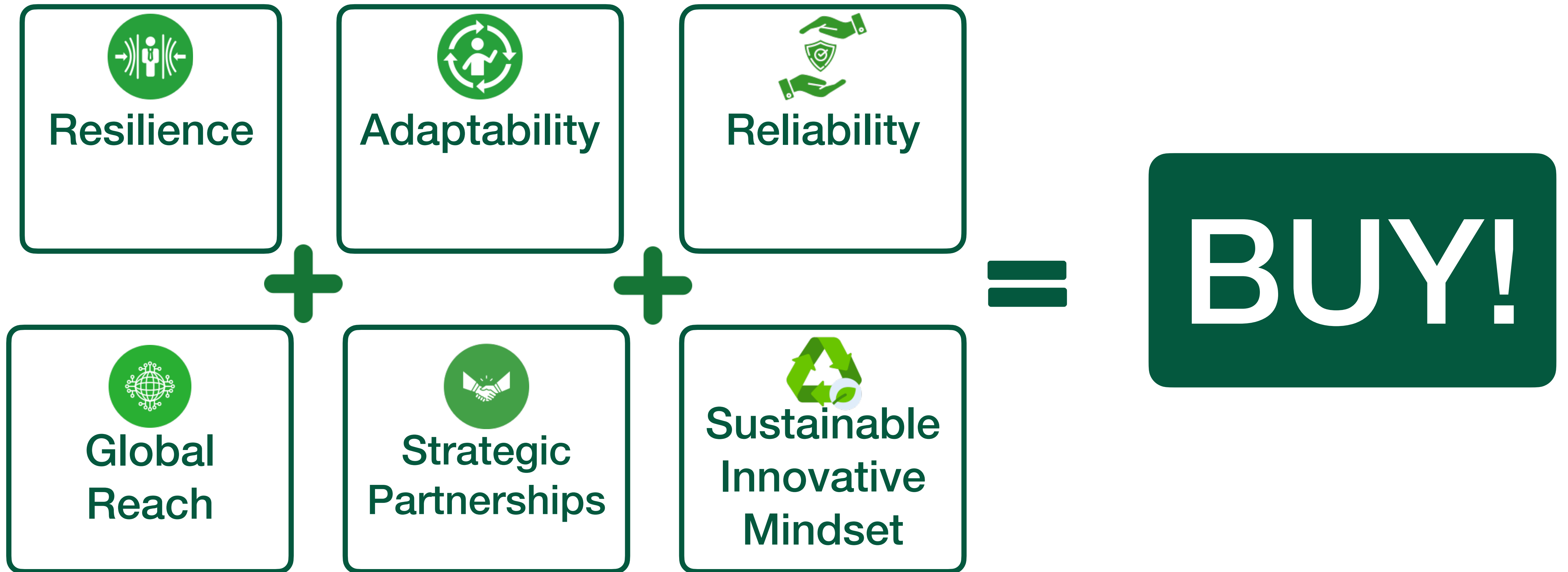
Giada Cacciatore
Emma Di Francesco
Peile Lin
Tiziana Simeoni
Matteo Zangheri



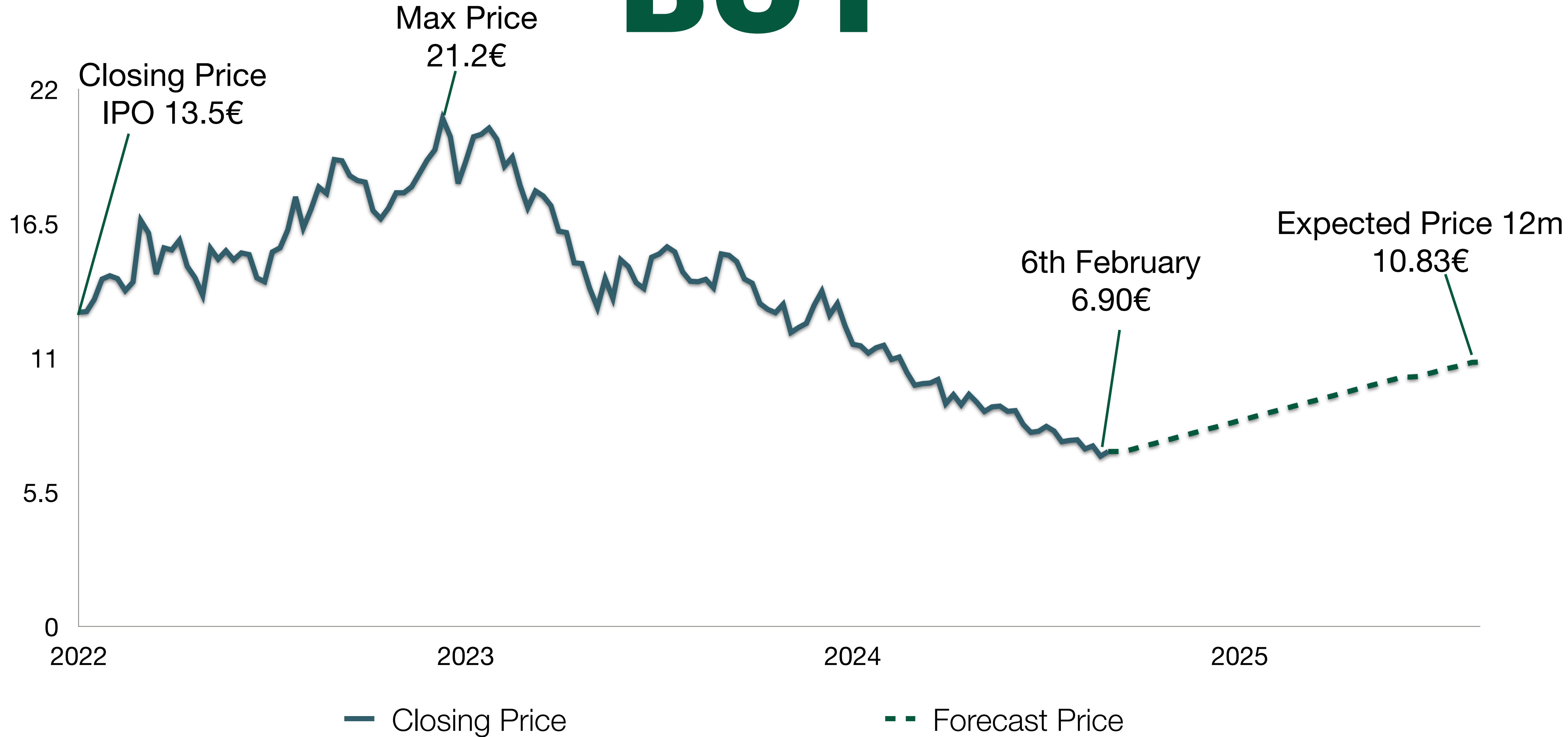
UNIVERSITÀ
DI BOLOGNA

2025 CFA Institute Research Challenge
21st February 2025

Recommendation



BUY





BUSINESS DESCRIPTION

Business segmentation: 3 divisions



Electrode Technologies

Specializes in the design and production of advanced electrodes used in electrolysis processes across various industrial applications.



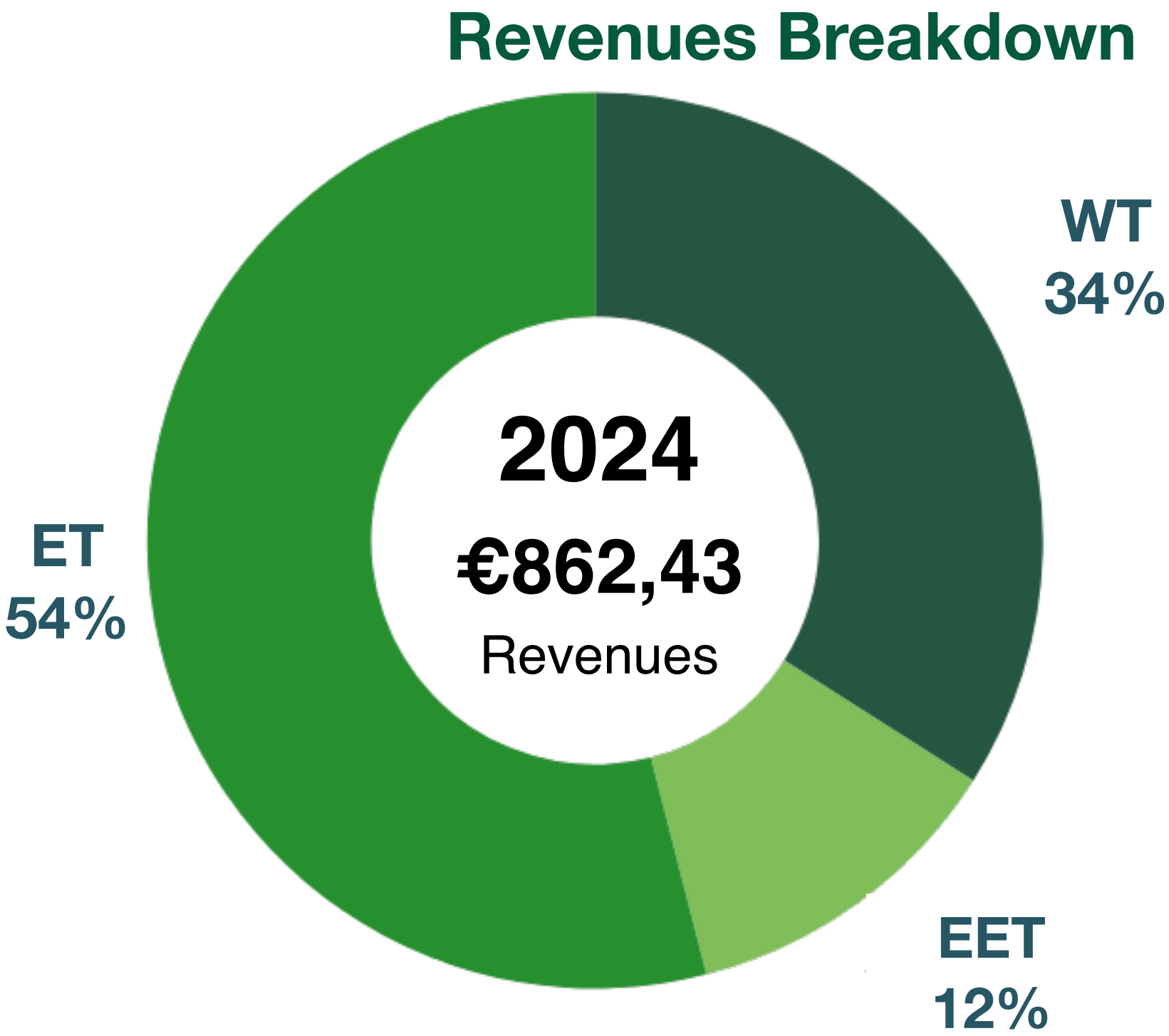
Water Technologies

Provides water treatment and disinfection solutions.



Energy Transition

Focuses on green hydrogen production for decarbonization.



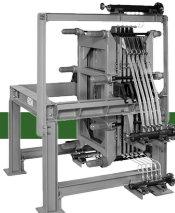
ELECTRODE

**50%
MARKET SHARE**

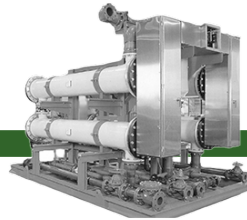
Source: Company Data, Team Assessment



Company Overview



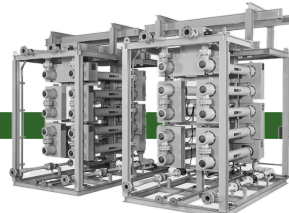
Financial Analysis



Valuation



Investment risks



ESG

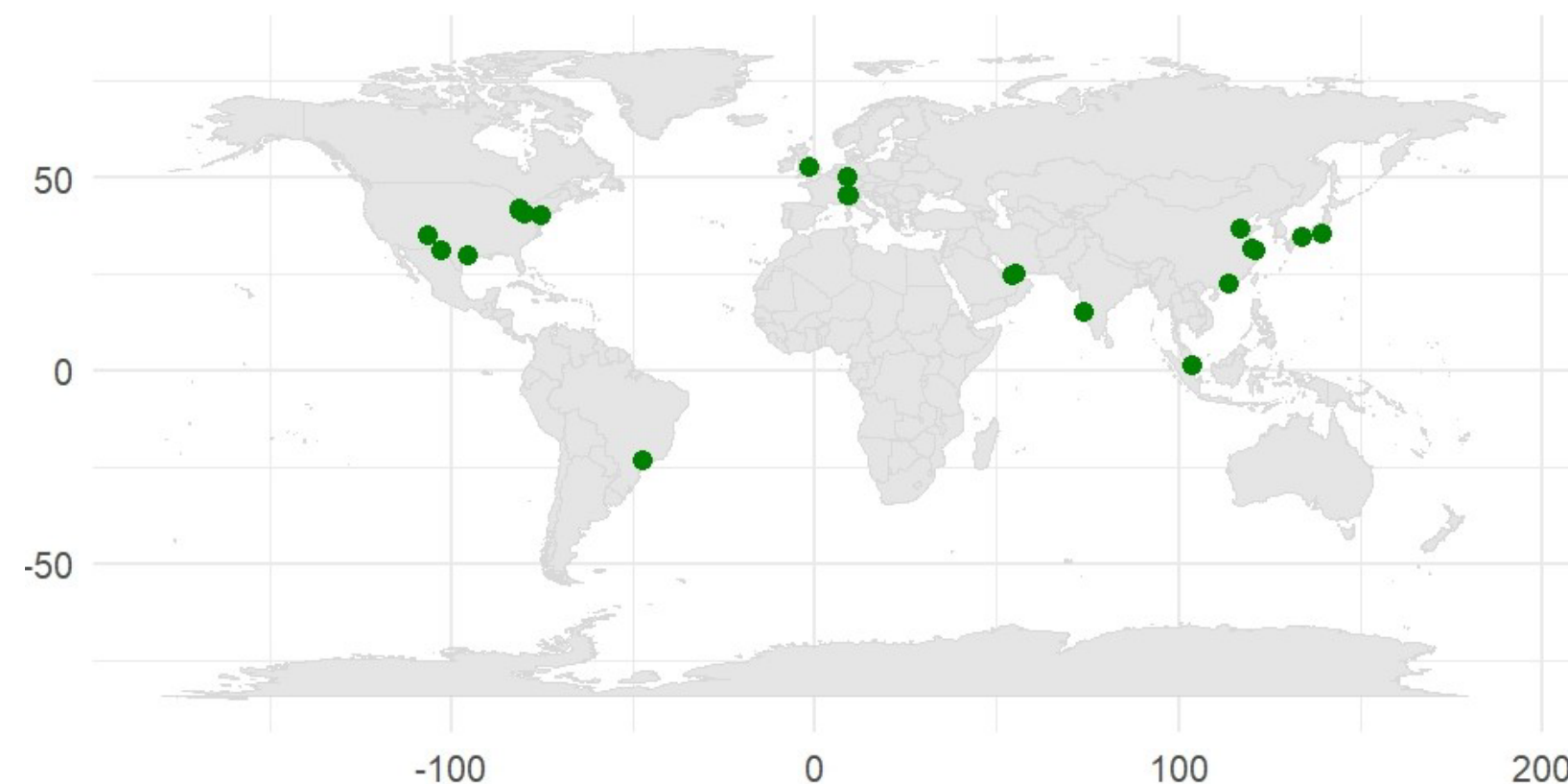
Strengths

Geographical Reach, Patents, and Strategic Partnerships

24 companies

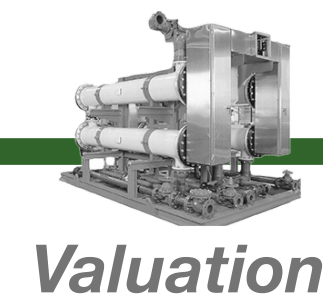
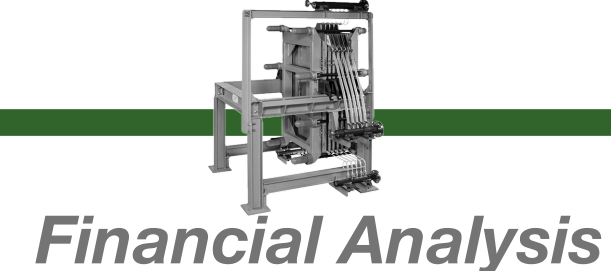
**2,387 registered
patents**

**Key collaborations with
industry leaders**



These strengths position De Nora as a **global leader**, driving innovation and sustainability across its core industries, ensuring continued growth and competitive advantage in the future.

Source: Company Data, Team Assessment





INDUSTRY OVERVIEW

Industry Analysis

Market Growth Drivers

ELECTRODE TECHNOLOGY MARKET



Rising demand in energy, industrial, and environmental sectors



Advancements in electrolytic cell technology



Challenges from the volatility of raw material prices

Source: Team Assessment

WATER TECHNOLOGY MARKET



Growing demand for sustainable water treatment solutions.



Rising need for efficient water management across municipal, industrial, and pool segments.



Regulatory hurdles and complex compliance requirements in different regions

ENERGY TRANSITION MARKET



Rapid growth potential in green hydrogen.



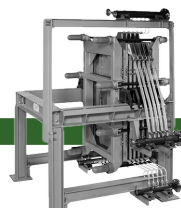
Government incentives (EU Net Zero, U.S. Inflation Reduction Act).



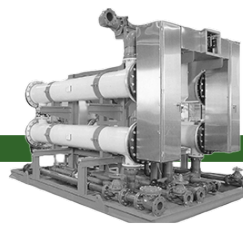
The production cost of green hydrogen remains high and the infrastructures are still underdeveloped



Company Overview



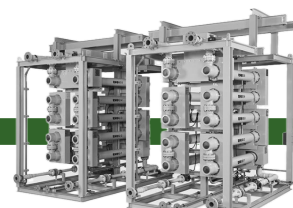
Financial Analysis



Valuation



Investment risks



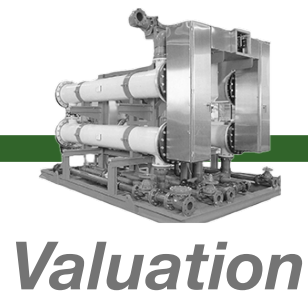
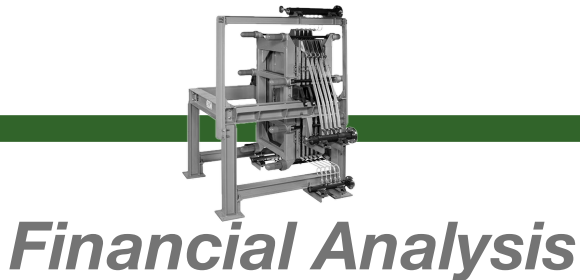
ESG

Competitive Arena

An Overview of De Nora's Key Competitors Across Core Sectors



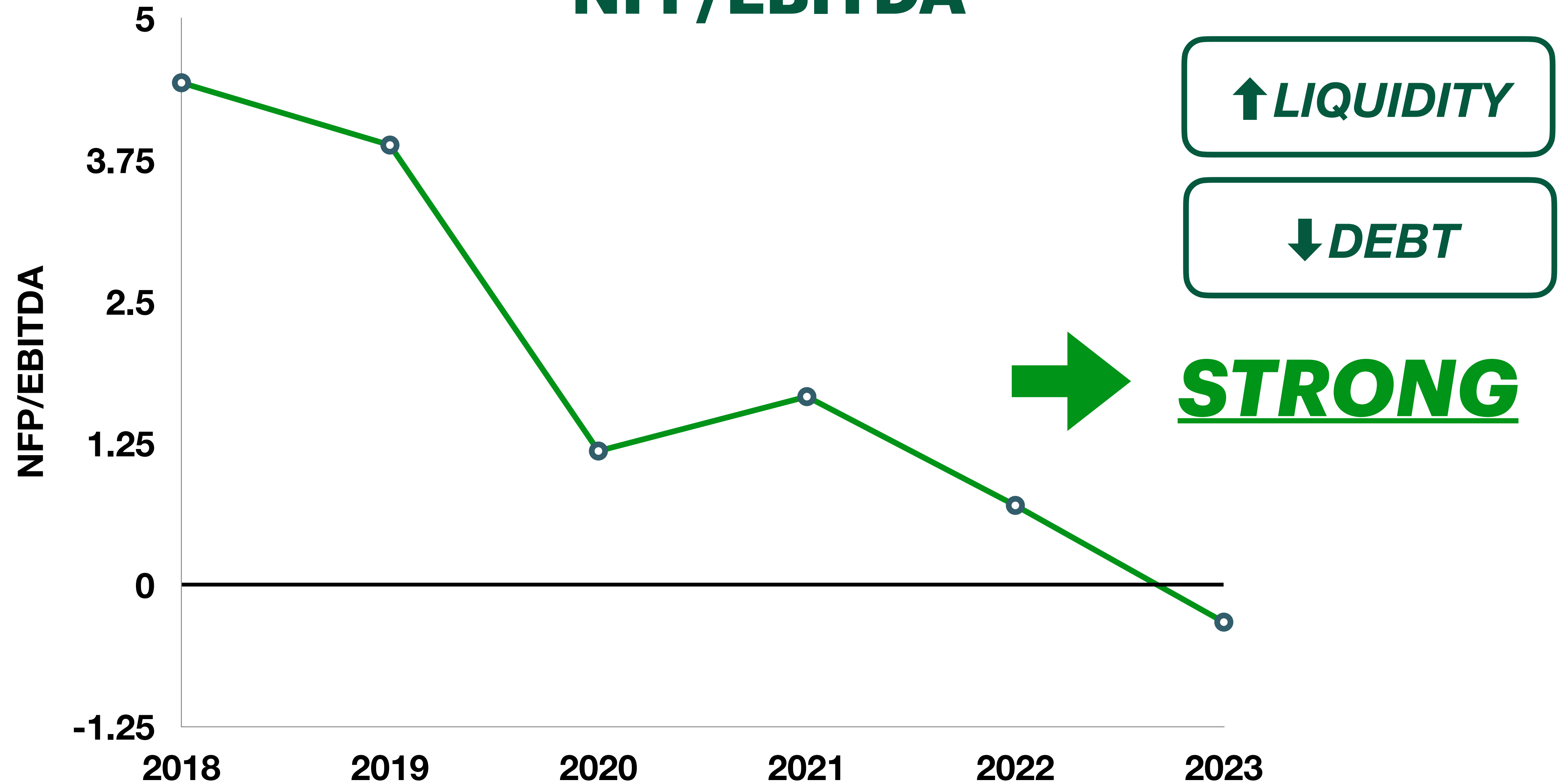
Source: Team Assessment



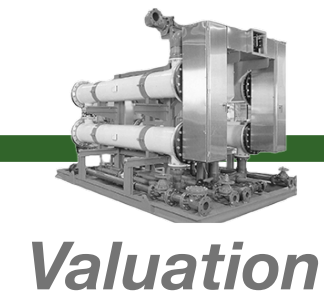
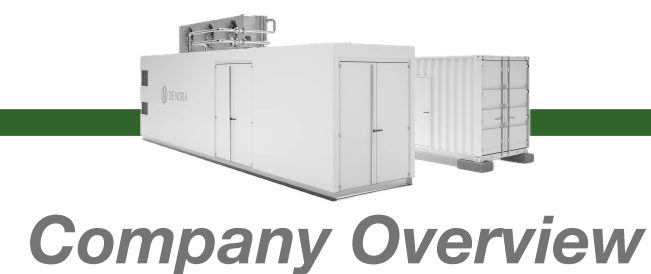


FINANCIAL ANALYSIS

NFP/EBITDA

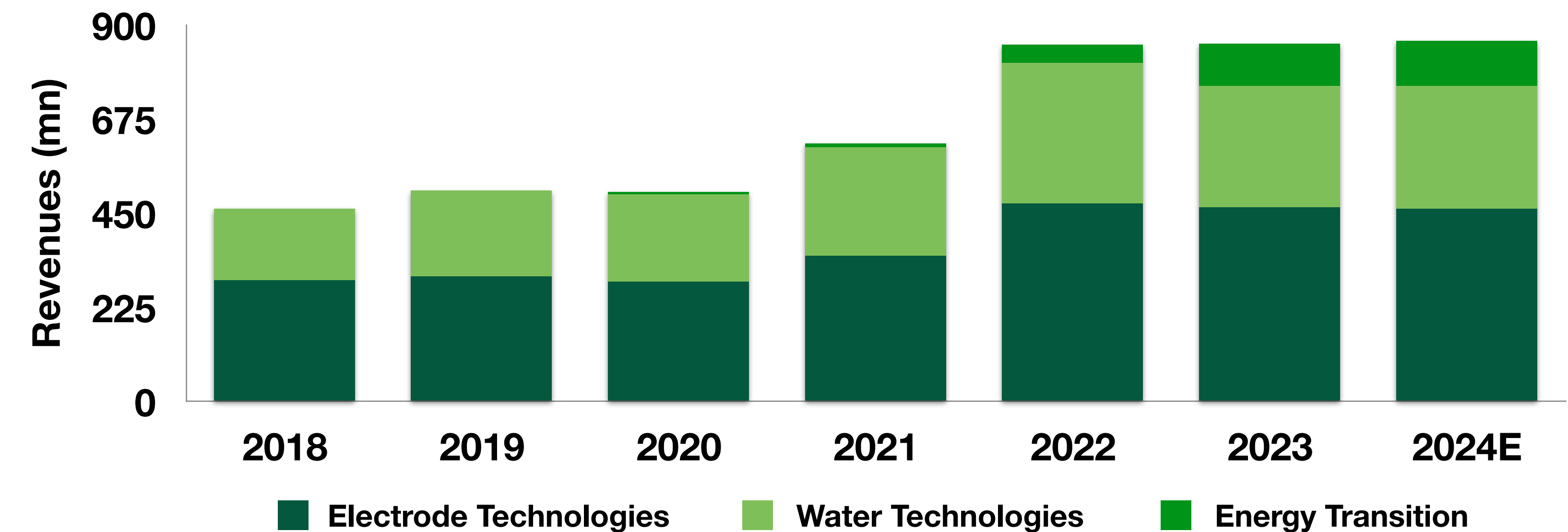


Source: Company Data, Team Assessment

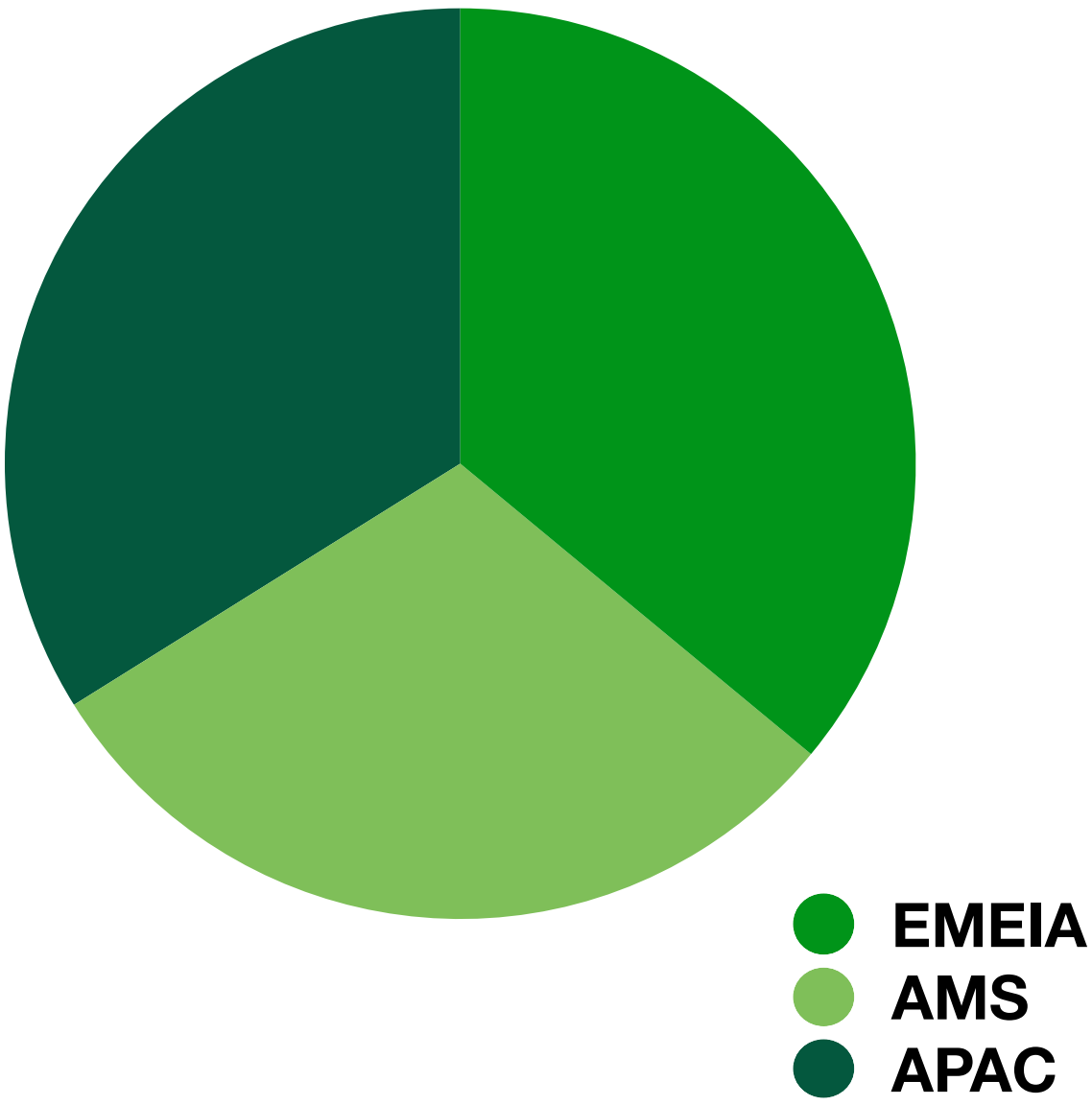


Revenues estimation

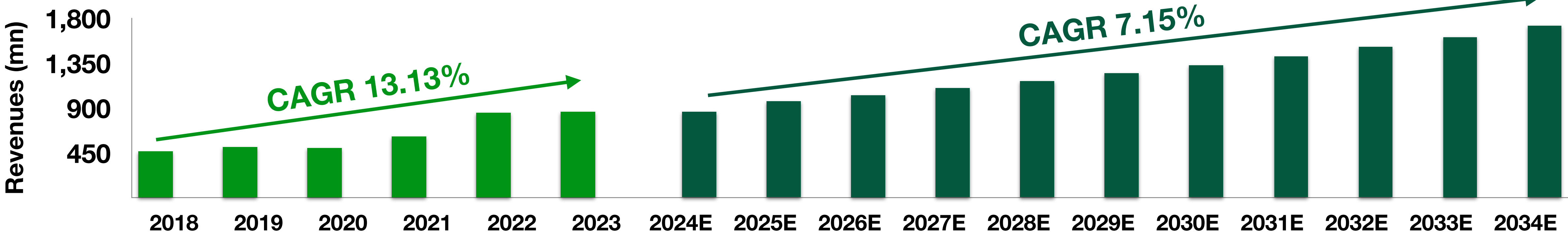
Revenues breakdown by business segment FY18-24E



Revenues breakdown by geography in FY23



Total revenues forecast analysis



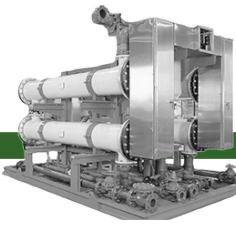
Source: Company Data, Team Assessment, Mediobanca



Company Overview



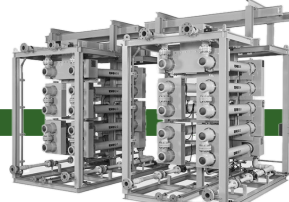
Financial Analysis



Valuation



Investment risks

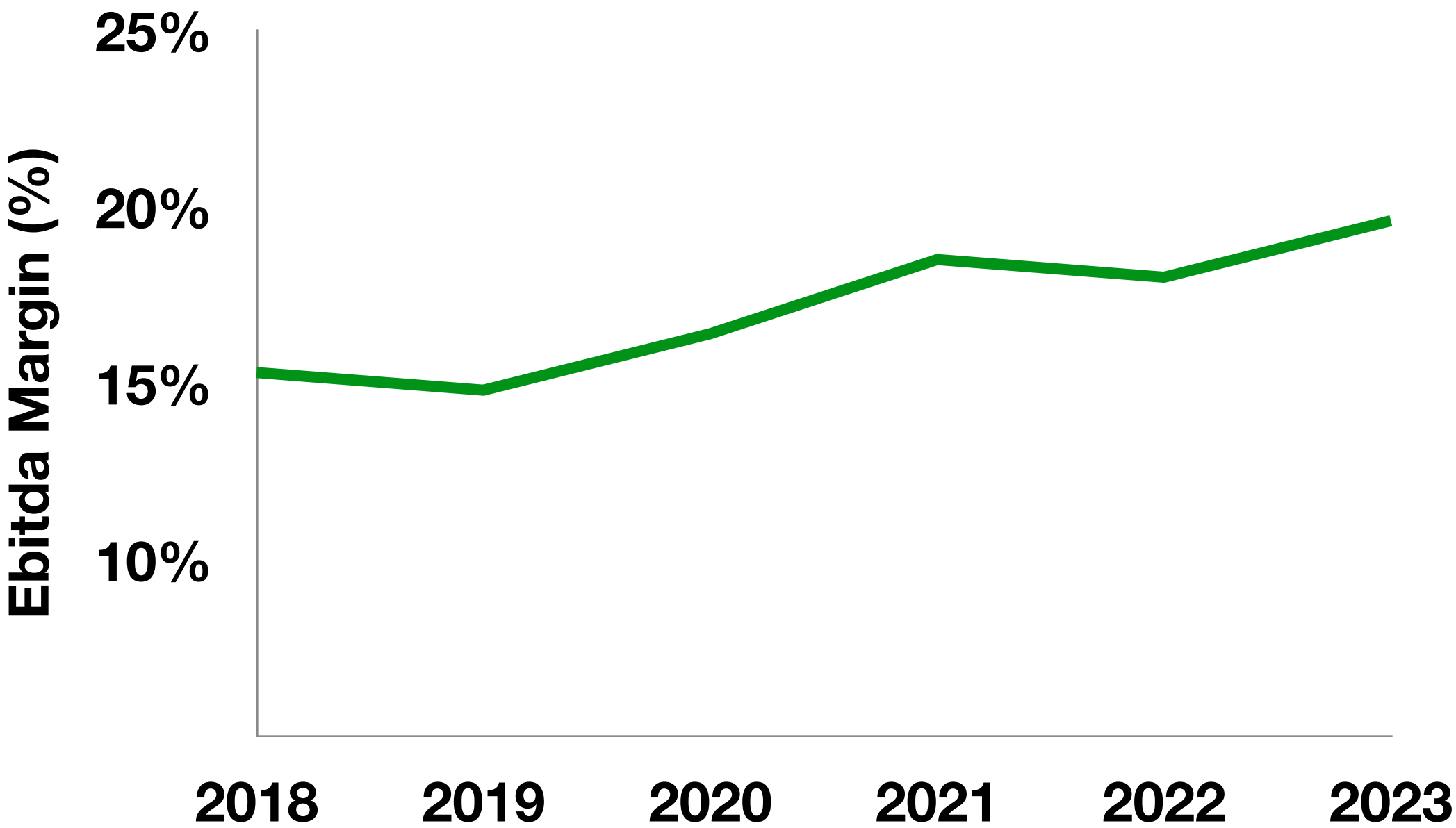


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EBITDA margin

AVERAGE FY18-23 17.10%

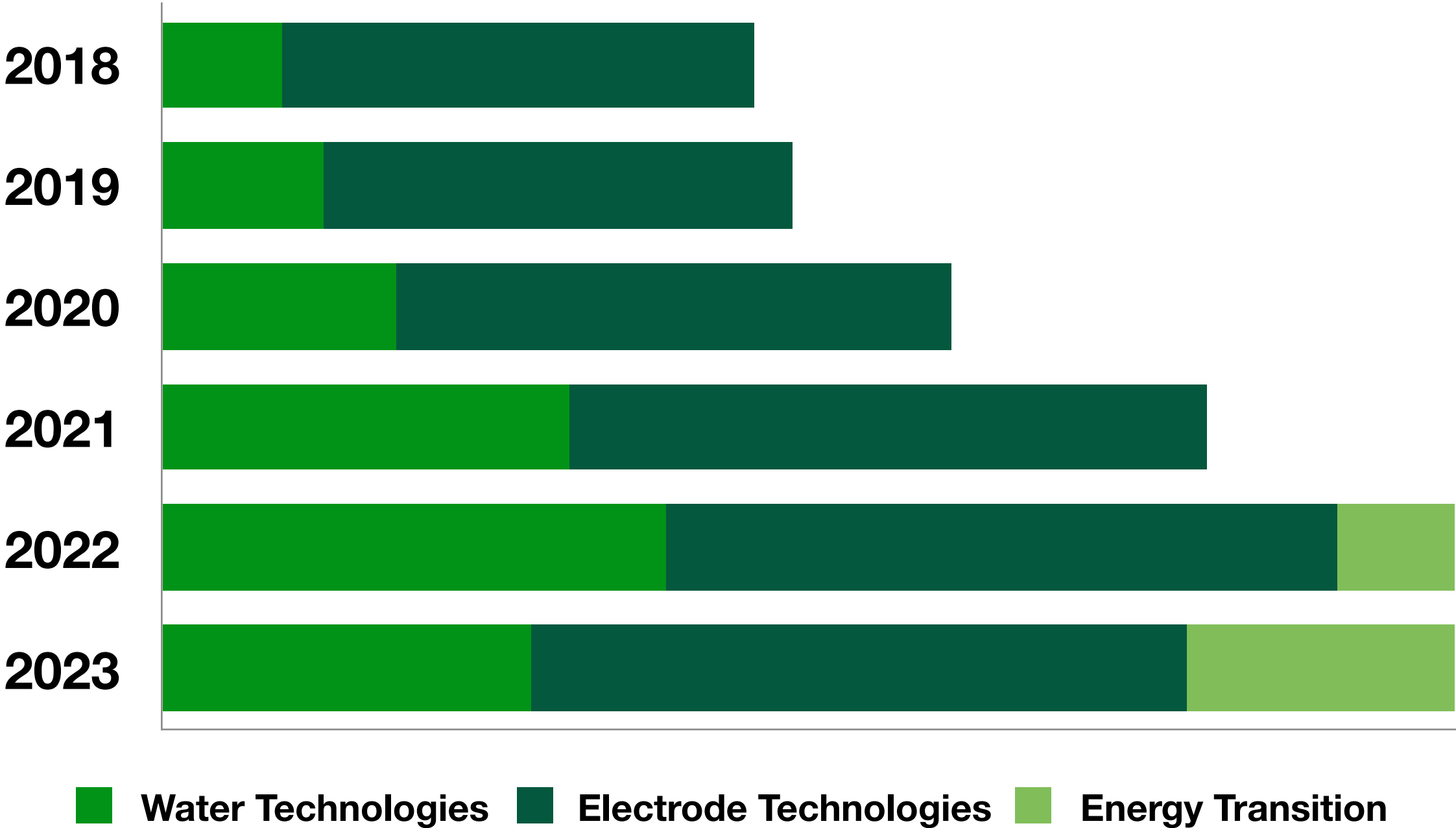
Historical EBITDA margin



Source: Company Data, Team Assessment

Water Technologies
underperformance FY23

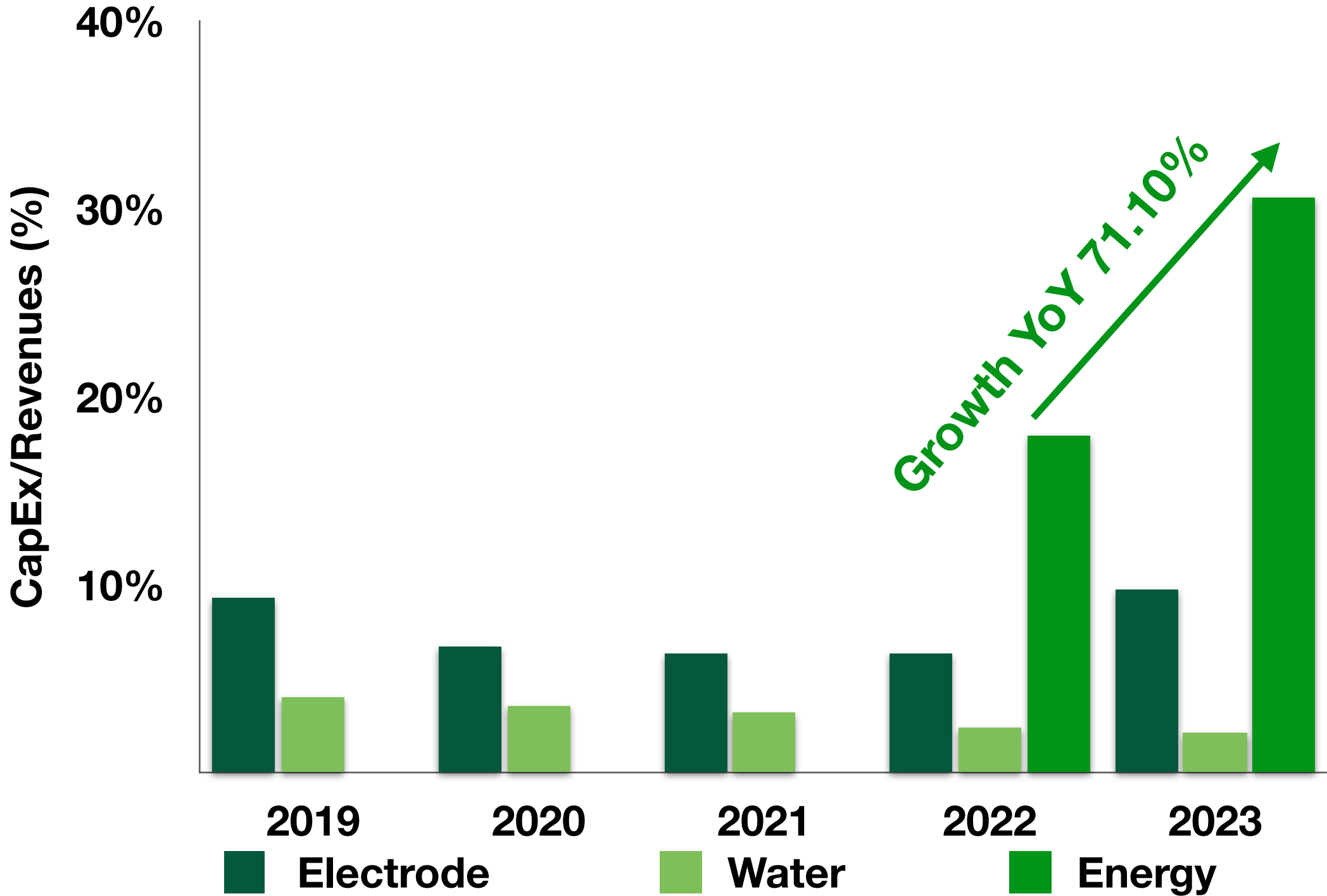
Historical EBITDA margin by business segment



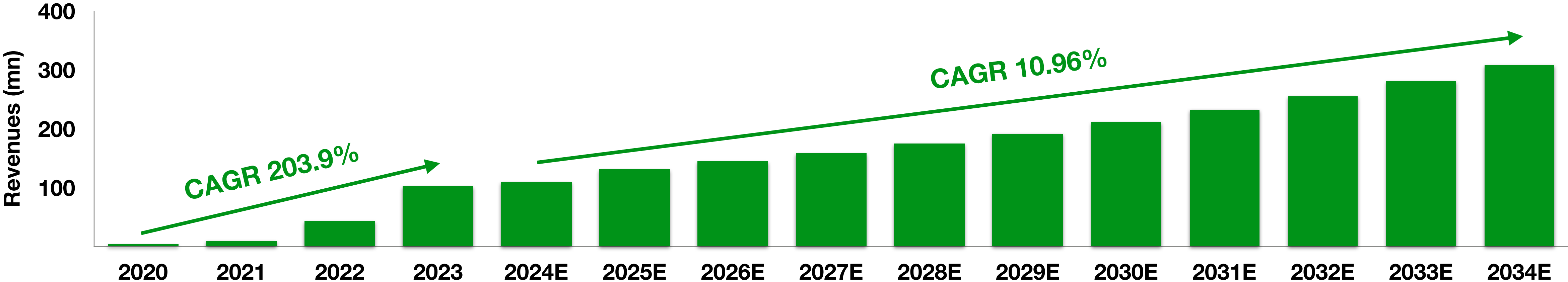
Energy Transition

THE KEY DRIVER

Historical CapEx/Revenues



Historical and forecasting revenues analysis



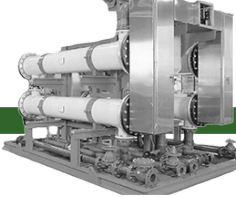
Source: Company Data, Team Assessment, Mediobanca



Company Overview



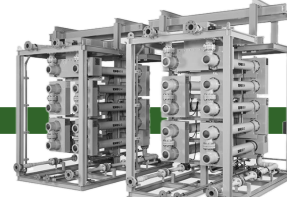
Financial Analysis



Valuation



Investment risks



ESG

VALUATION

Valuation Results

Target Price
€10.83

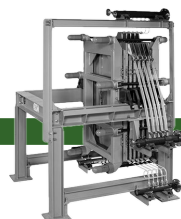
BUY

Enterprise Value
€ 2.28b

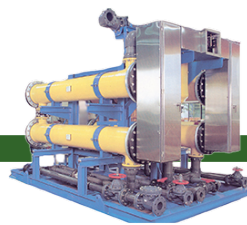
Ke	Kd	Risk Free	Wacc	g	TV Weight	FCFF CAGR 24E-34E
7.22%	6.69%	3.54%	7.20%	1.50%	65.68%	8.14%



Company Overview



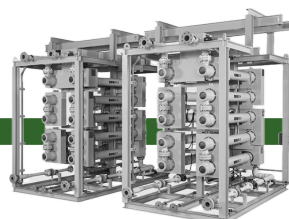
Financial Analysis



Valuation

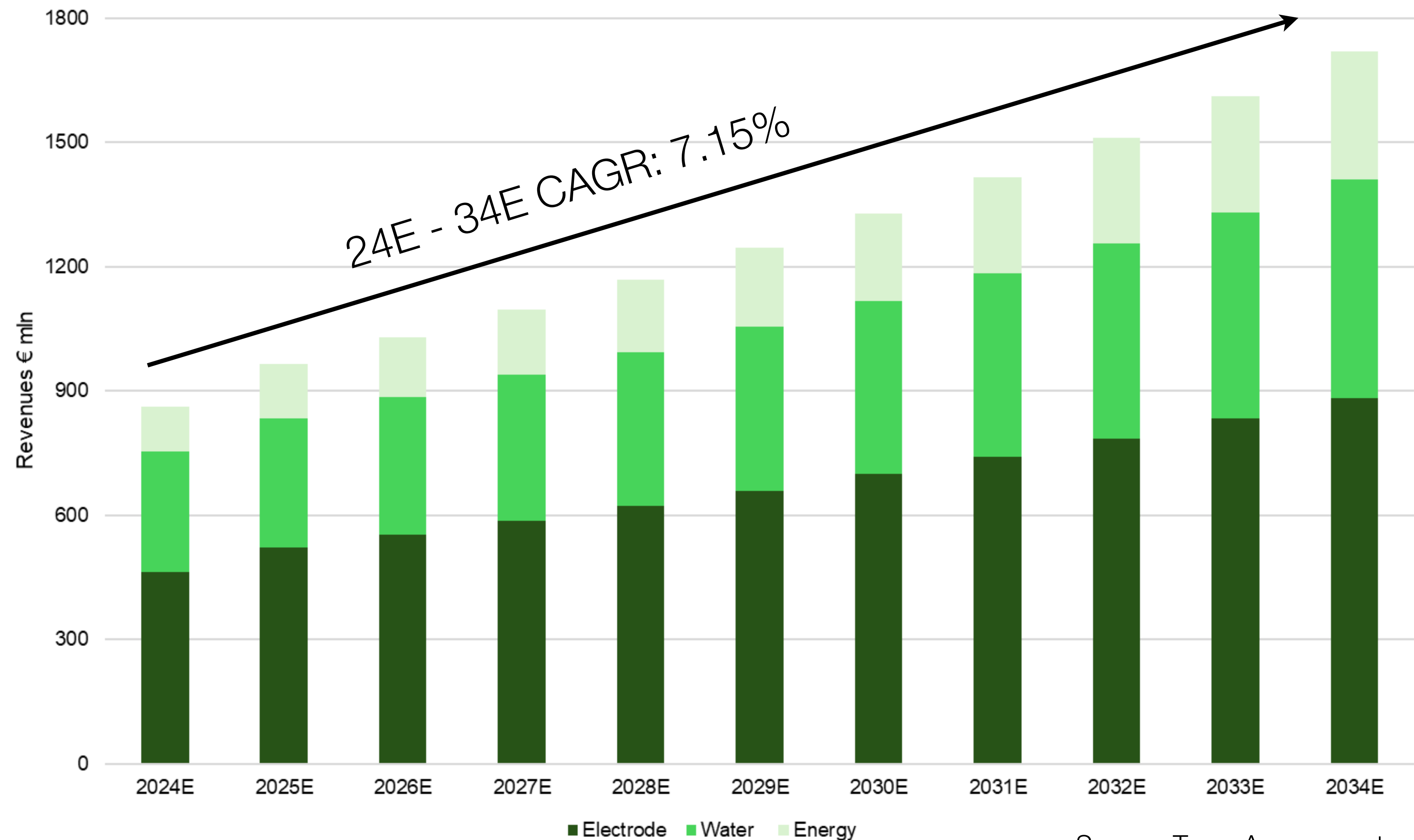


Investment risks



ESG

Discounted Cash Flow Model



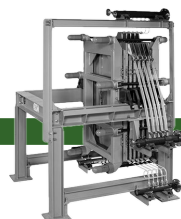
Source: Team Assessment

BASE
€11.88

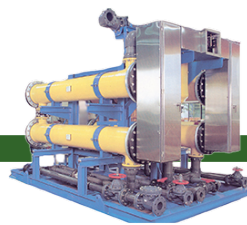
CAGR	
Electrode	6.69%
Water	6.14%
Energy	10.96%



Company Overview



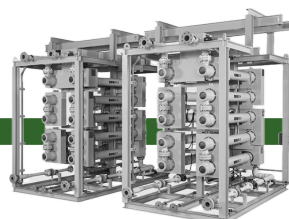
Financial Analysis



Valuation

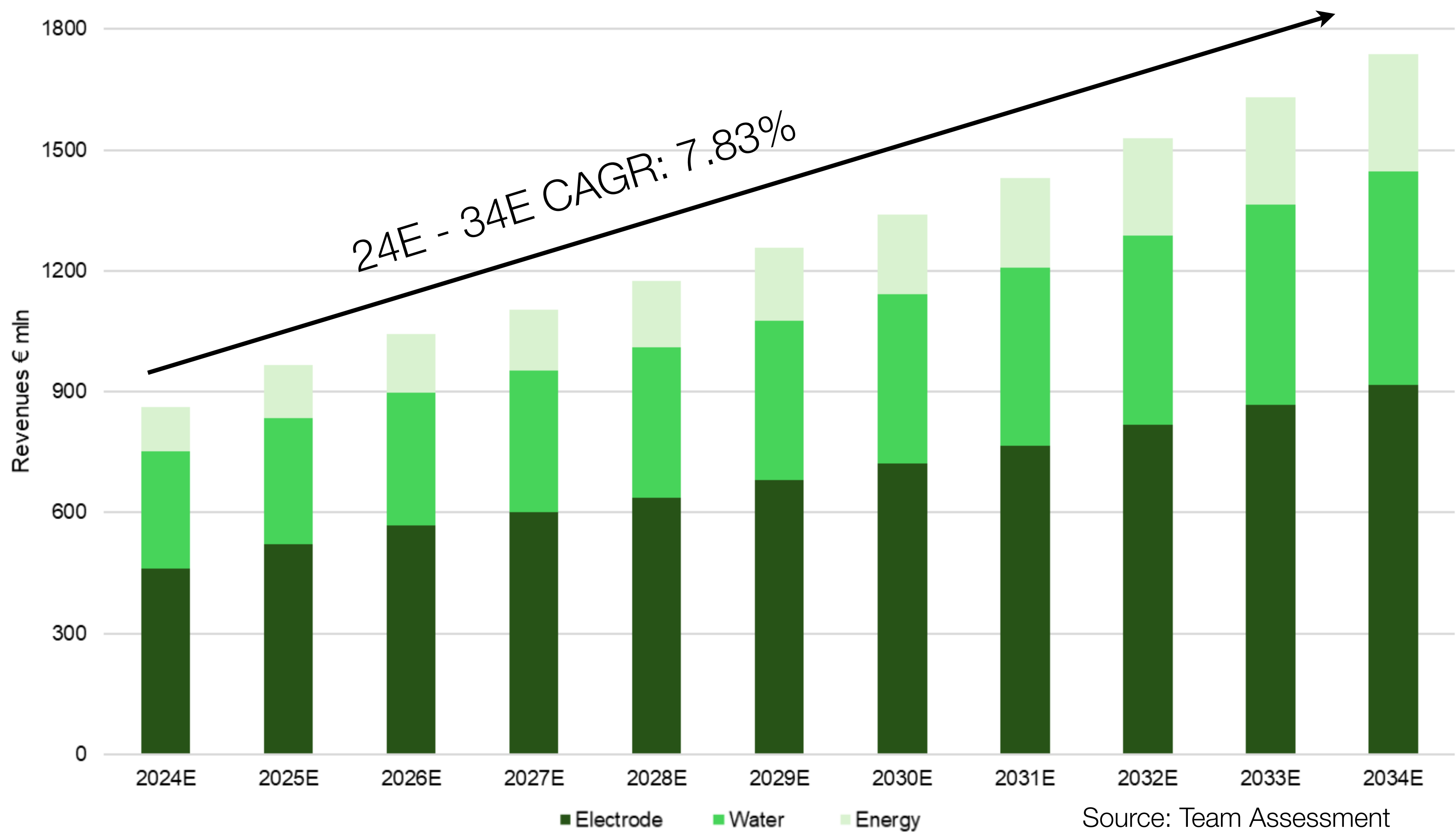


Investment risks



ESG

Discounted Cash Flow Model

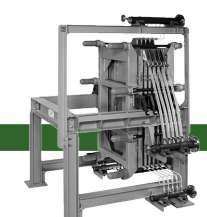


BULL
€15.62

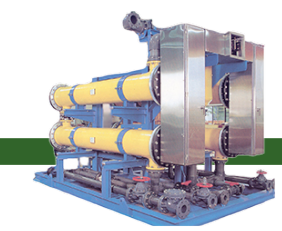
CAGR	
Electrode	7.10%
Water	6.14%
Energy	10.39%



Company Overview



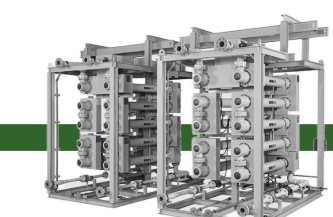
Financial Analysis



Valuation

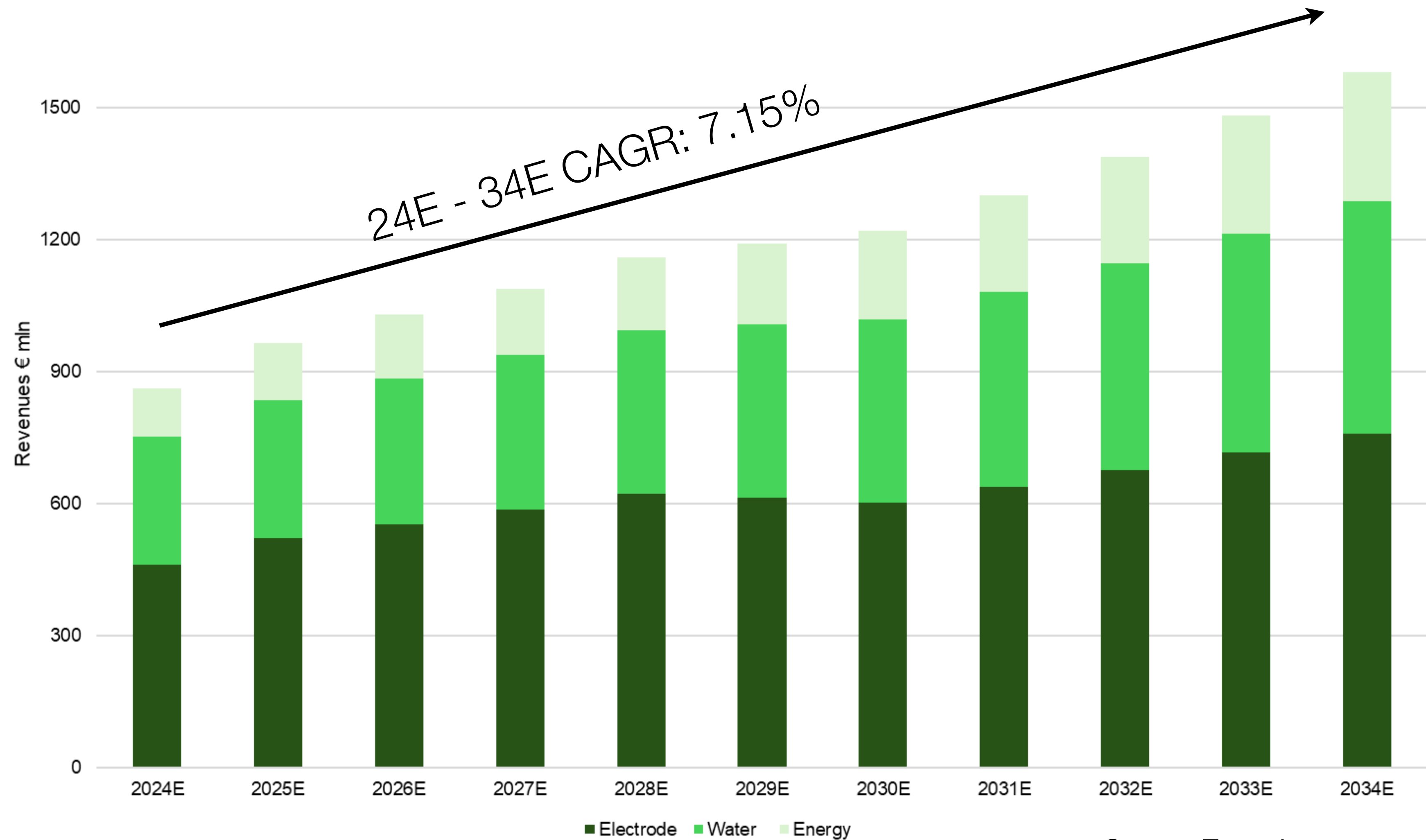


Investment risks



ESG

Discounted Cash Flow Model



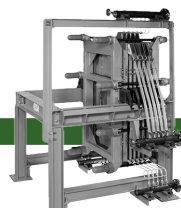
Source: Team Assessment

BEAR
€6.17

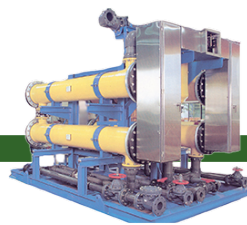
CAGR	
Electrode	5.10%
Water	6.14%
Energy	10.39%



Company Overview



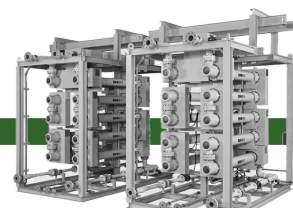
Financial Analysis



Valuation



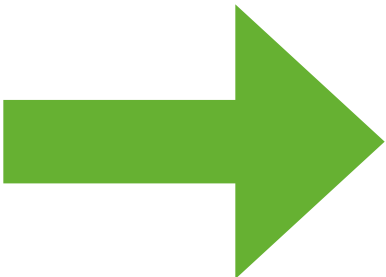
Investment risks



ESG

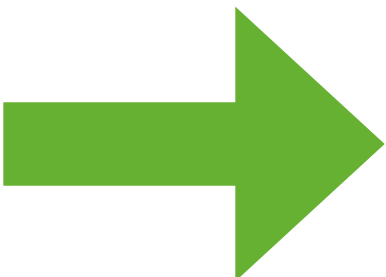
Relative Valuation - SOTP

Electrode
Technologies



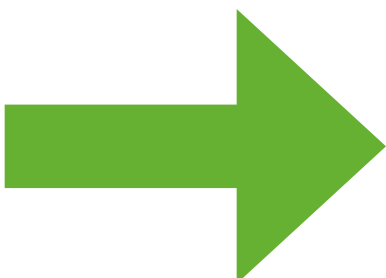
Average 24E
EV/EBITDA
4.42 x

Water
Technologies



Average 24E
EV/EBITDA
19.30 x

Energy
Transition



Average 24E
EV/SALES
1.76 x

Target Price
€ 9.70

29% Upside

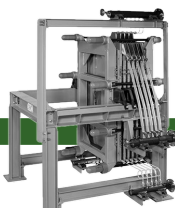


24E EV/EBITDA
10 x

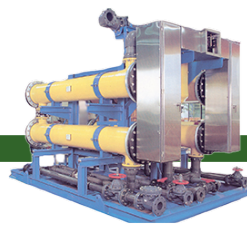
24E EV/SALES
1.73 x



Company Overview



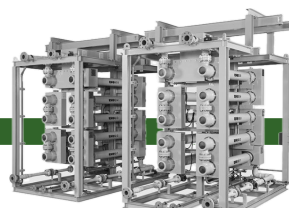
Financial Analysis



Valuation



Investment risks



ESG

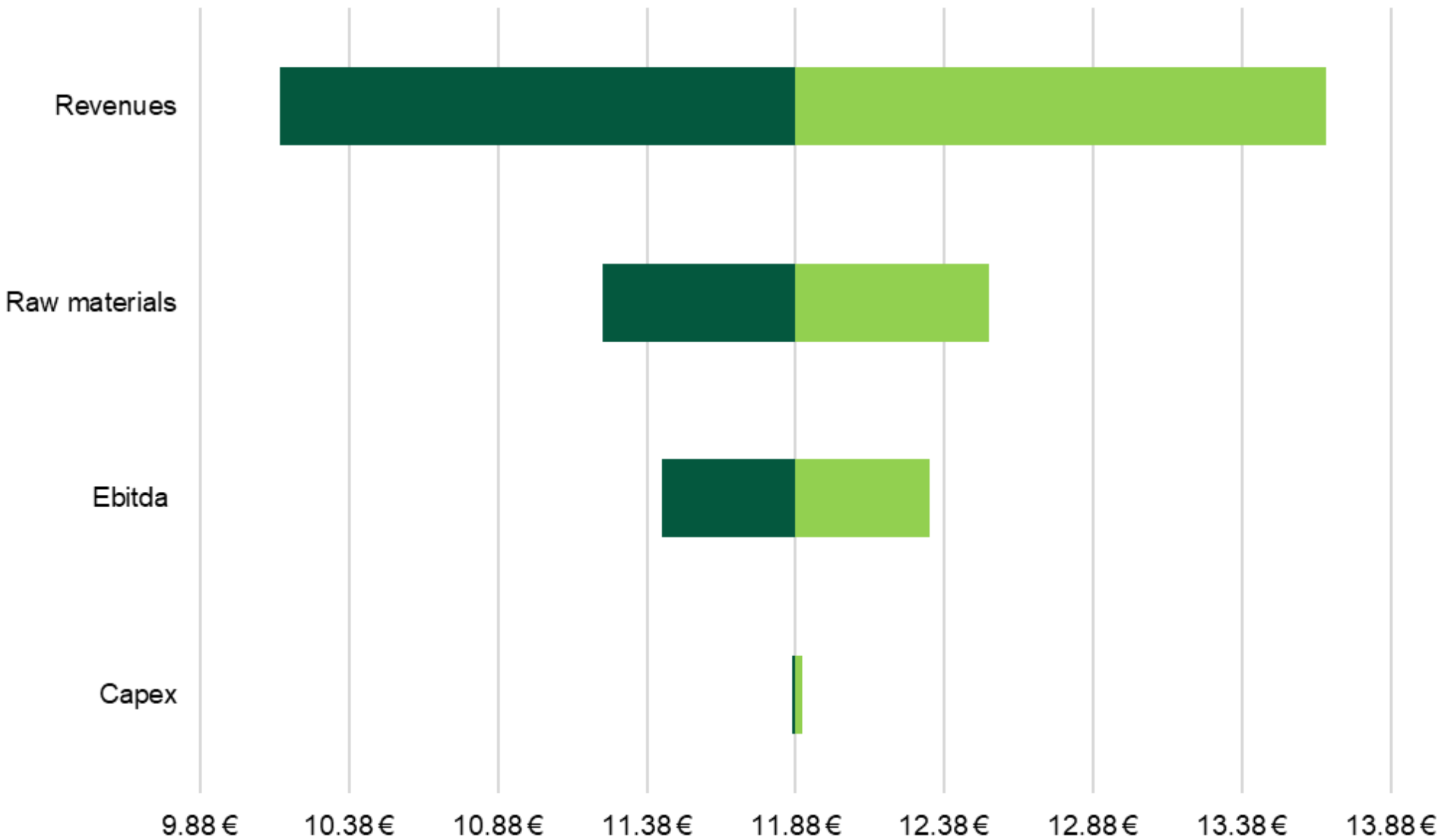
Robustness Analysis

Sensitivity Analysis

wacc/g	1.0%	1.3%	1.5%	1.8%	2.0%
6.2%	11.19	11.40	11.63	11.88	12.17
6.7%	10.83	11.01	11.19	11.40	11.63
7.2%	10.53	10.68	10.83	11.01	11.19
7.7%	10.28	10.40	10.53	10.68	10.83
8.2%	10.06	10.16	10.28	10.40	10.53

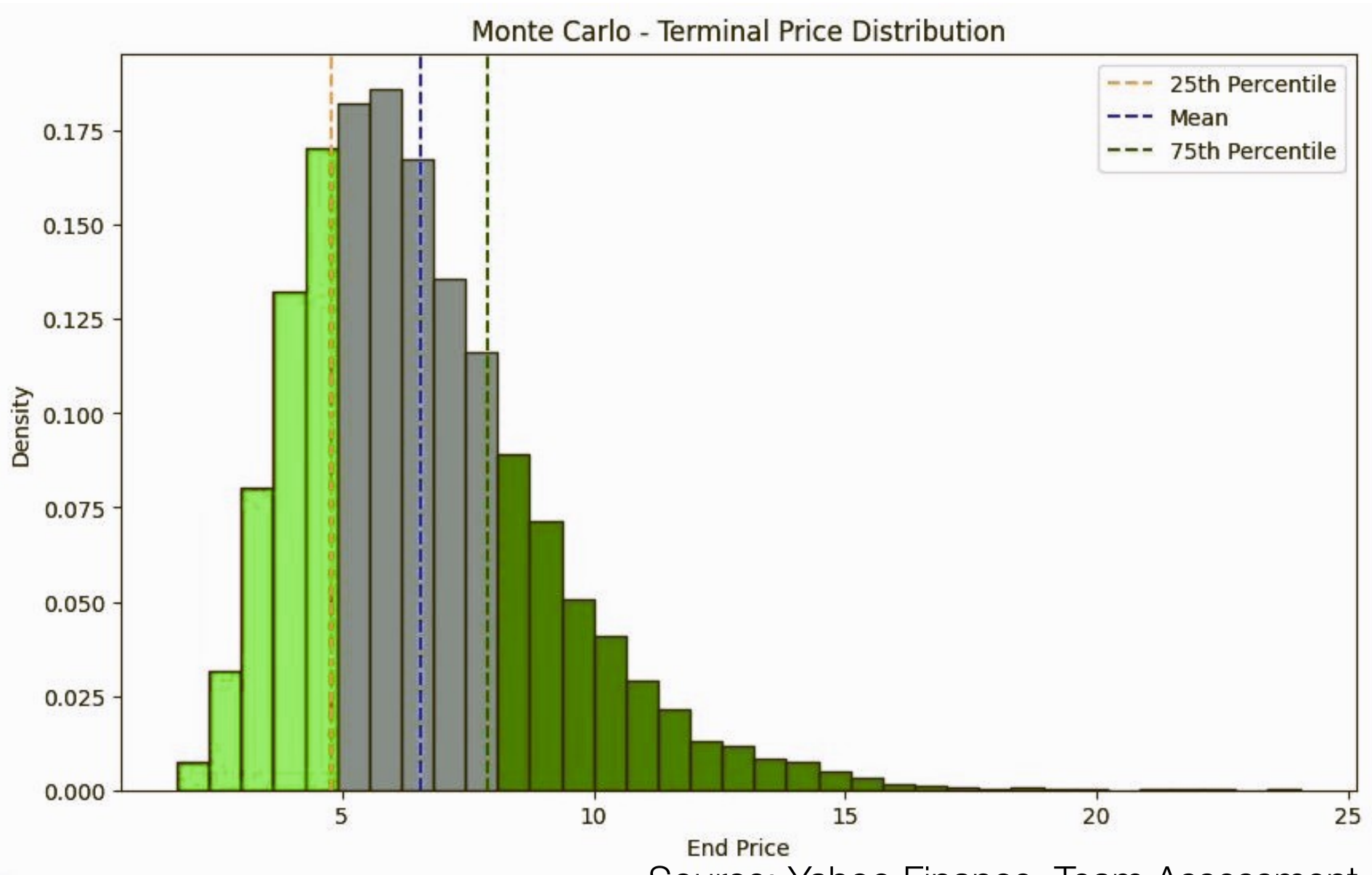
Source: Team Assessment

Tornado Chart



Source: Team Assessment

Monte Carlo Simulation



Source: Yahoo Finance, Team Assessment

Price Summary

Model	Price	Weight
DCF Base	€ 11.88	50%
DCF Bull	€ 15.62	10%
DCF Bear	€ 6.17	15%
Peer Valuation	€ 9.70	25%
TP	€ 10.83	



INVESTMENT RISK

Risk Factors

Supply Chain Breakdown

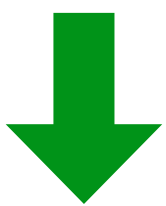
Palladium Platinum
Ruthenium Iridium



Source: Umicore, FRED Economic Data

MITIGANTS

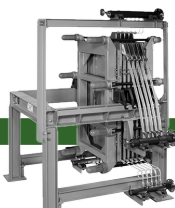
- 1 Long-term relationship with supplier
- 2 Contracts allow correction in price



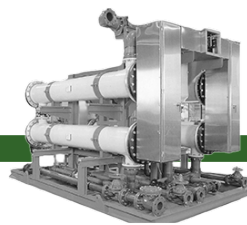
Low level of inventory
STOCK ROTATION INDEX 1.98



Company Overview



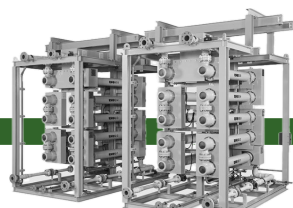
Financial Analysis



Valuation



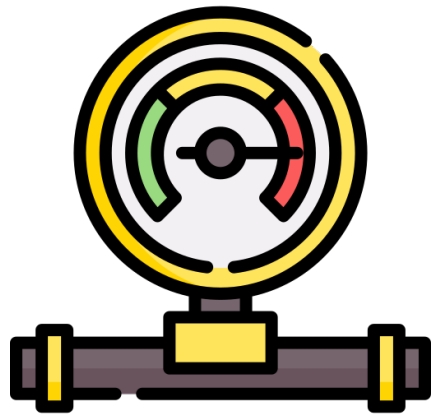
Investment risks



ESG

Risk Factors

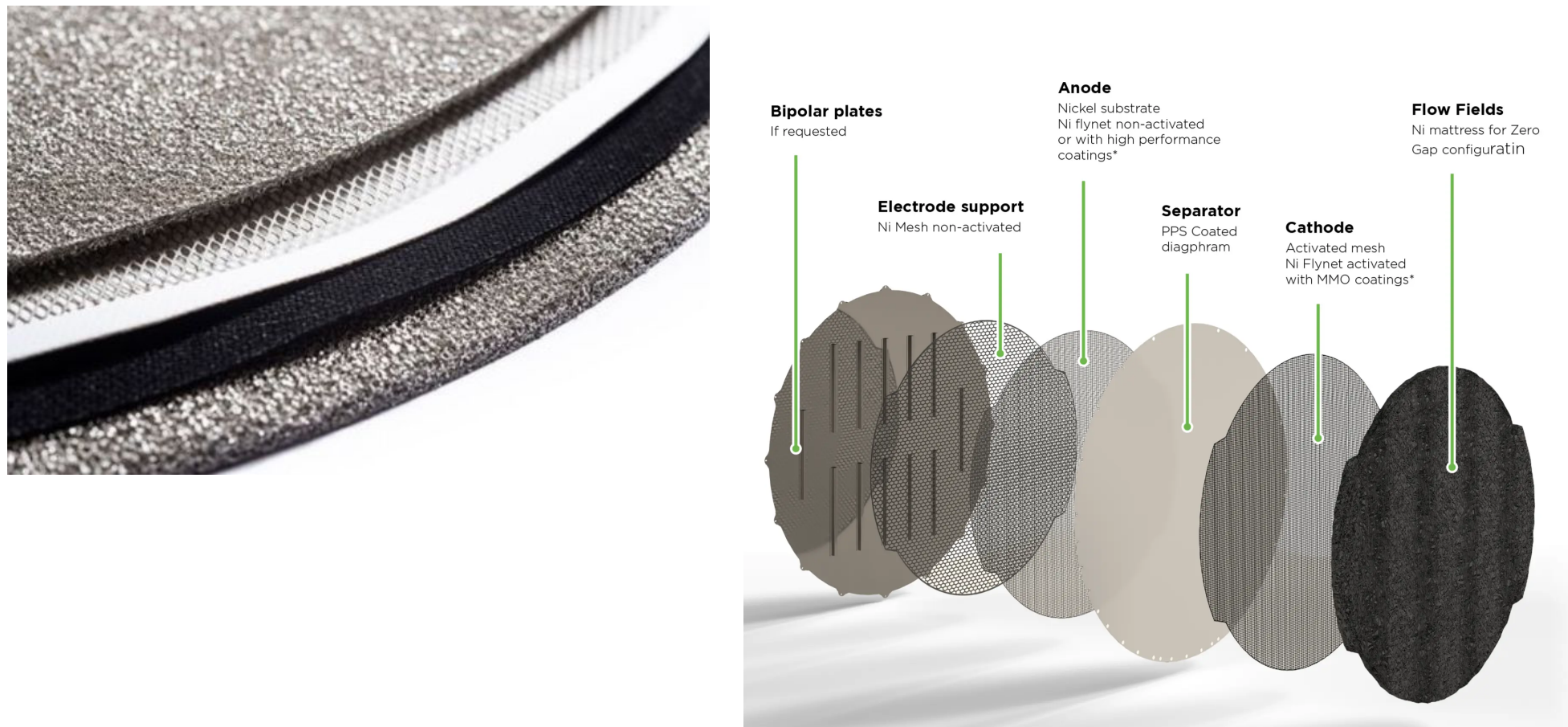
Technological Risk



High pressure on innovation

MITIGANTS

1 Great *ADAPTABILITY* of products



2 Scholarships

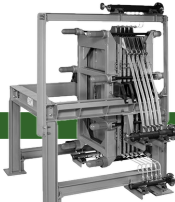


3 Incentives for employees' innovative ideas

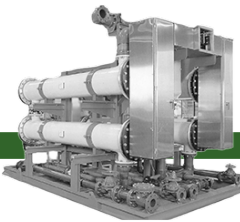
Source: Company Website



Company Overview



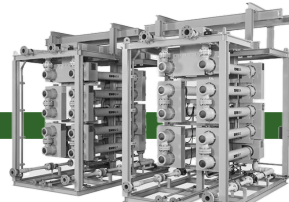
Financial Analysis



Valuation



Investment risks

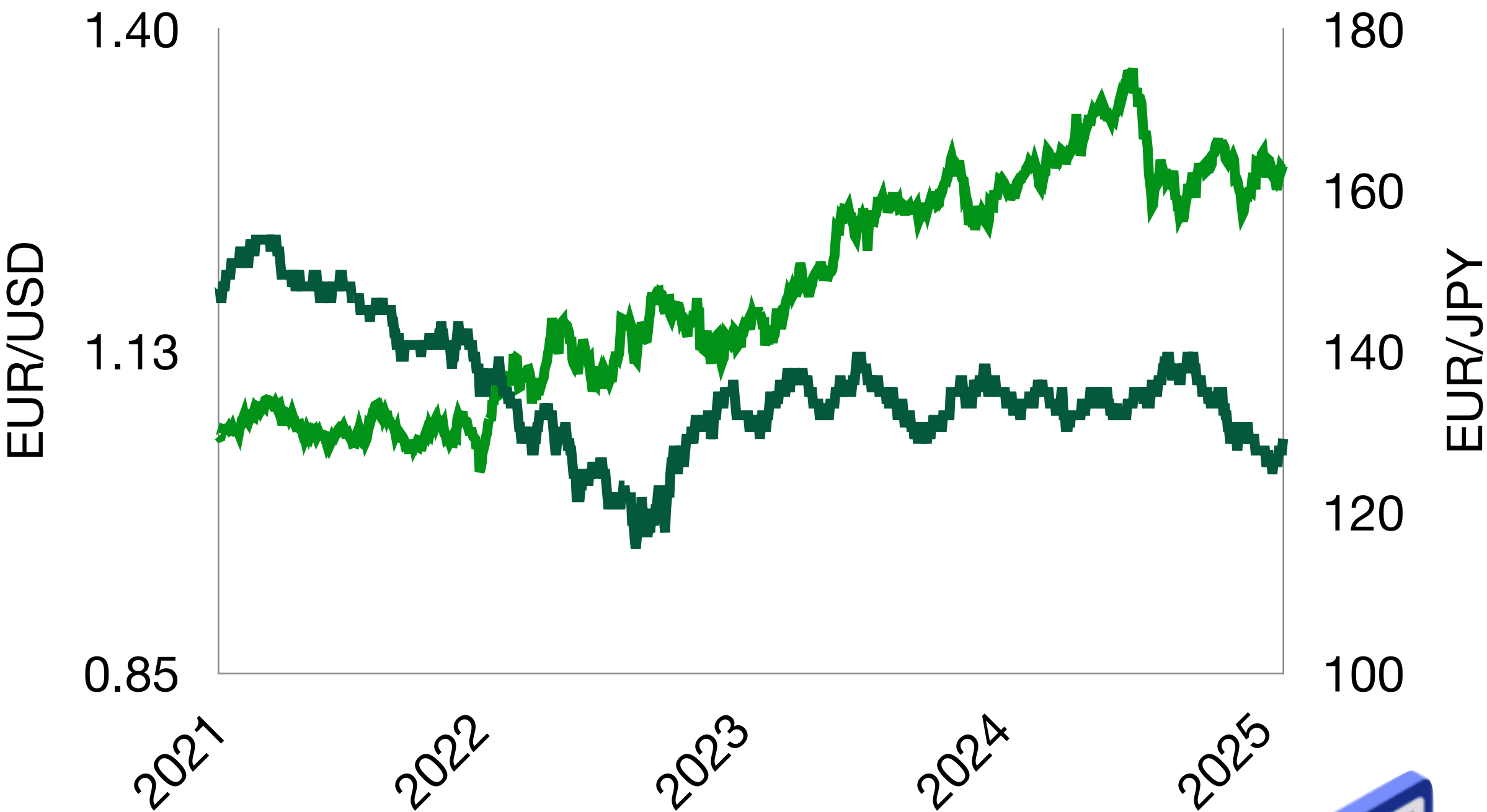


ESG

Risk Factors

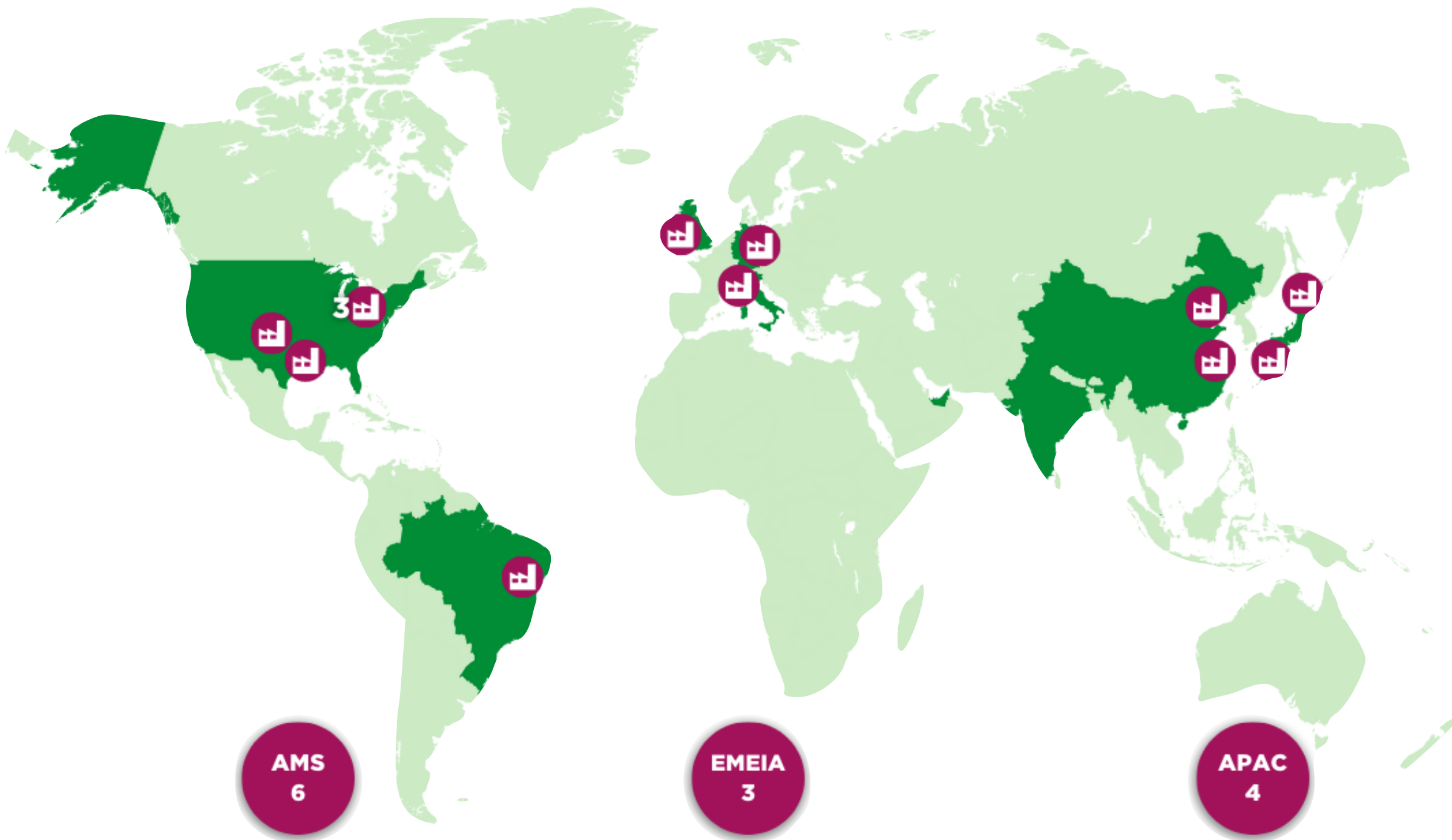
MITIGANTS

Exchange Rate Risk



Source: Statista

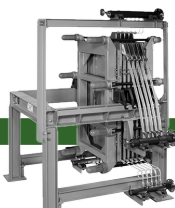
2 Financial Instruments



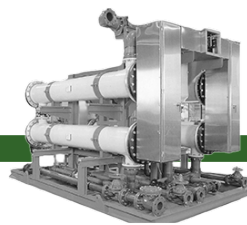
Source: Company Presentation



Company Overview



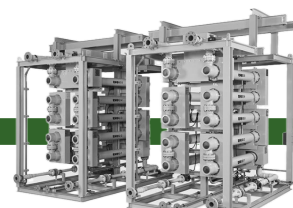
Financial Analysis



Valuation



Investment risks



ESG

Risk Factors

Geopolitical Risk

Climate change: US formally withdraws from Paris agreement

4 November 2020 [Share](#) [Save](#)

Matt McGrath
Environment correspondent



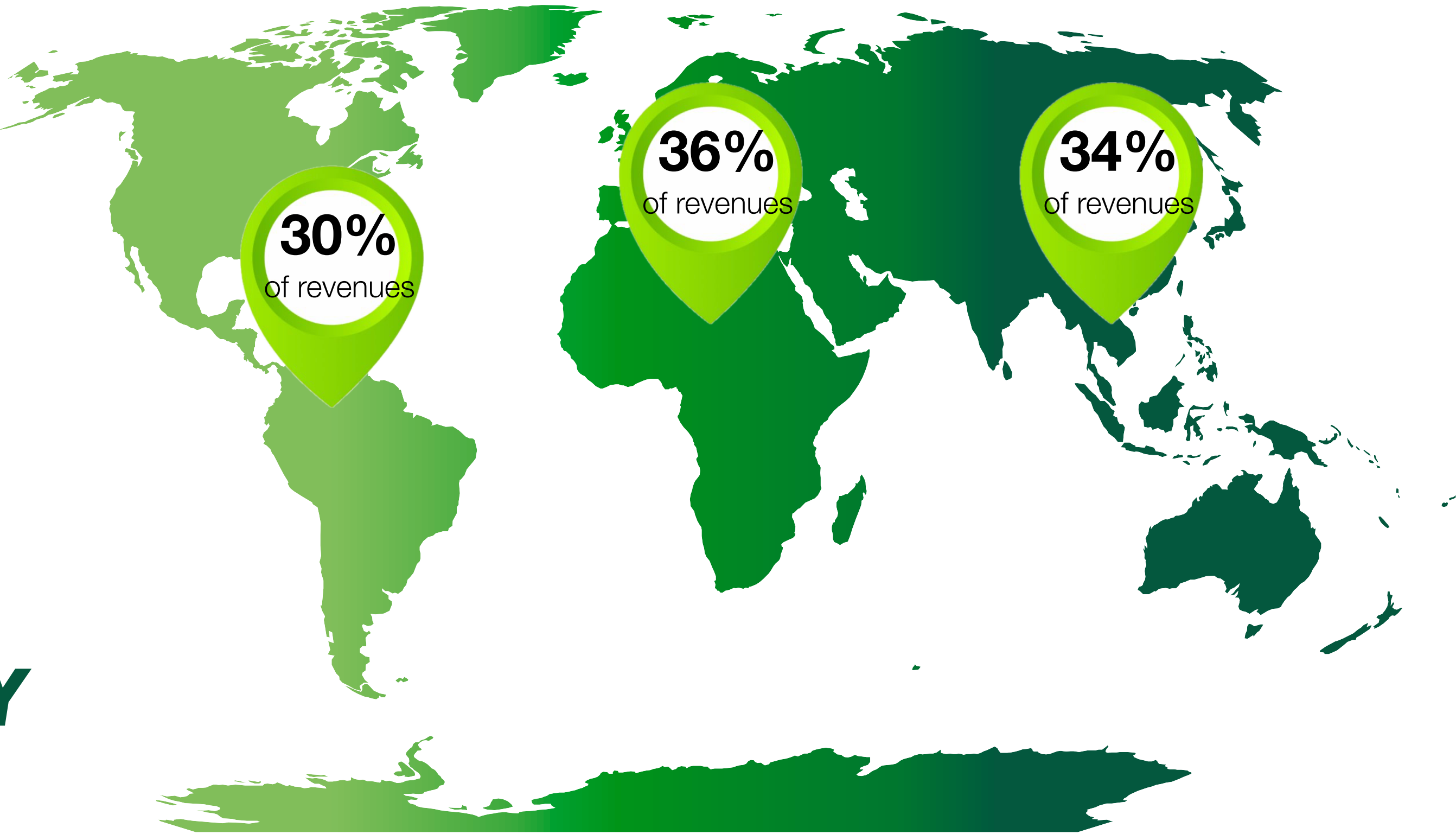

FACT SHEETS

FACT SHEET: PRESIDENT DONALD J. TRUMP IMPOSES TARIFFS ON IMPORTS FROM CANADA, MEXICO AND CHINA

February 1, 2025

INSTABILITY

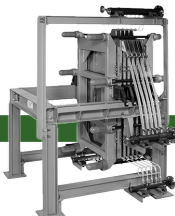
MITIGANTS



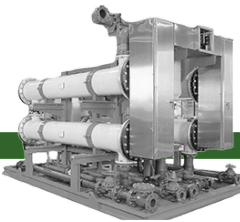
Source: Company Data, Team Assessment



Company Overview



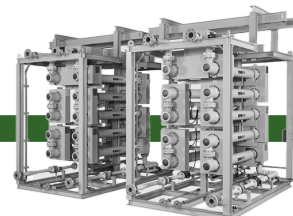
Financial Analysis



Valuation



Investment risks



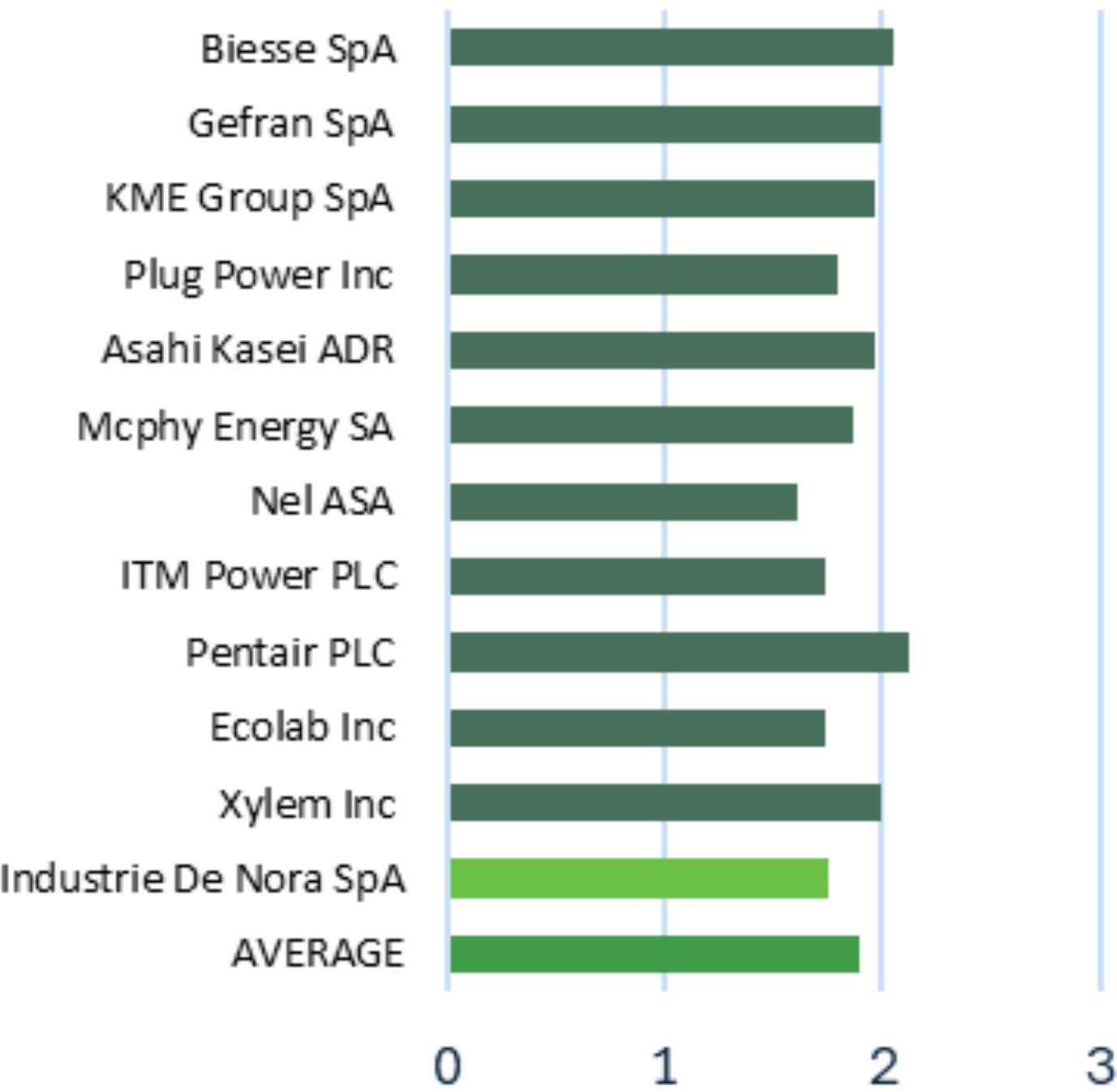
ESG



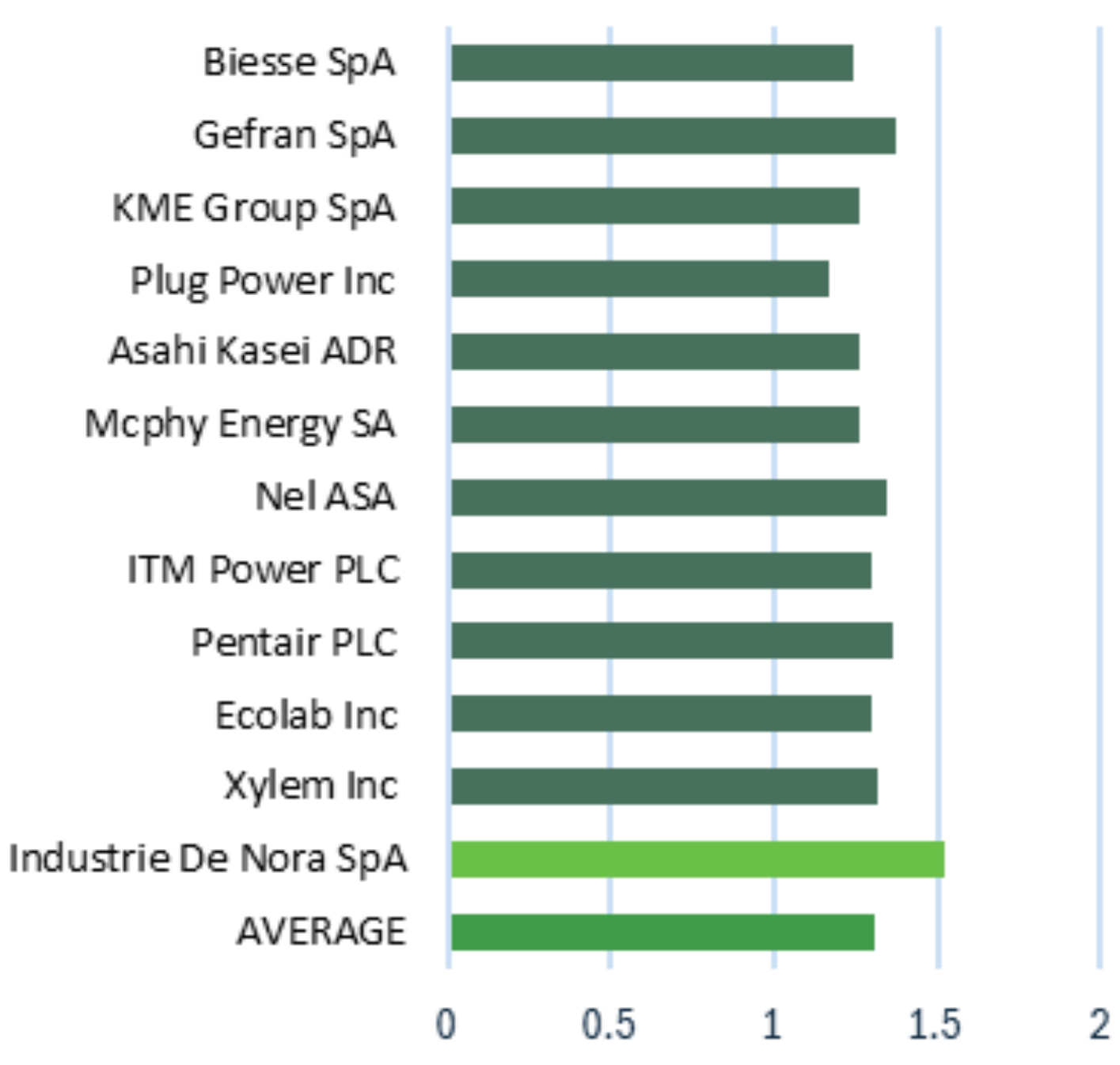
ESG

ESG Proprietary Model: Score Comparison

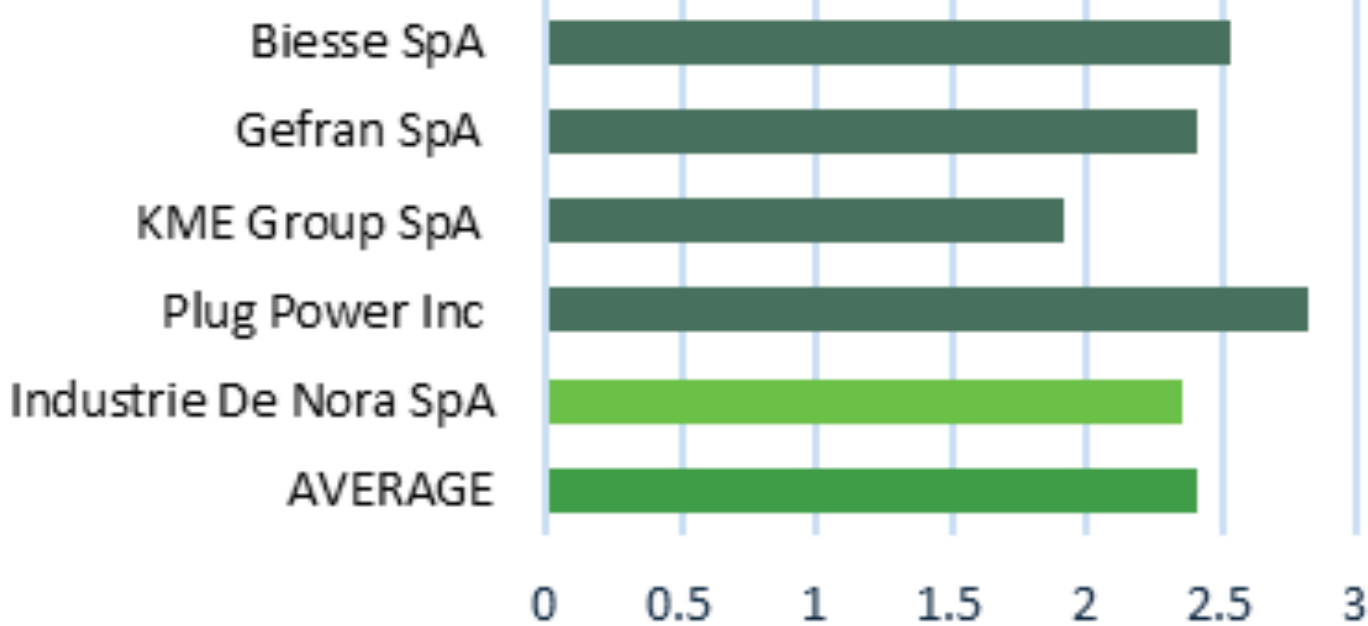
Score Environmental [Below Average]



Score Social [Above Average]



Score Governance [Below Average]





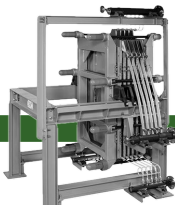
Overall
Score:
A

SCORES	C	CC	CCC	B	BB	BBB	A	AA	AAA
--------	---	----	-----	---	----	-----	---	----	-----

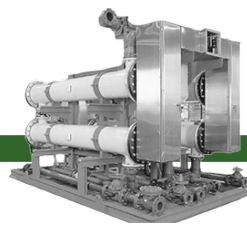
Source: Team Assessment



Company Overview



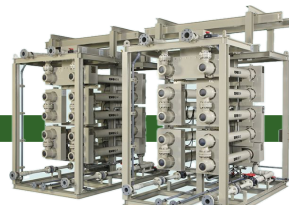
Financial Analysis



Valuation



Investment risks



ESG

Environmental, Social and Governance

E: Below Average

Environmental Products	✓
Toxic Chemicals Reduction	✗
Waste Reduction Initiatives	✓
Water Efficiency Policy	✓
Water Stressed Targets	✗
GHG reduction (Scope 1 &2, location-based) wrt 2022 %	-14.50%
Emission Reduction Target Percentage 50% by 2030	✓
Target 100% Electricity from Renewables by 2030	✓



Source: Team Assessment

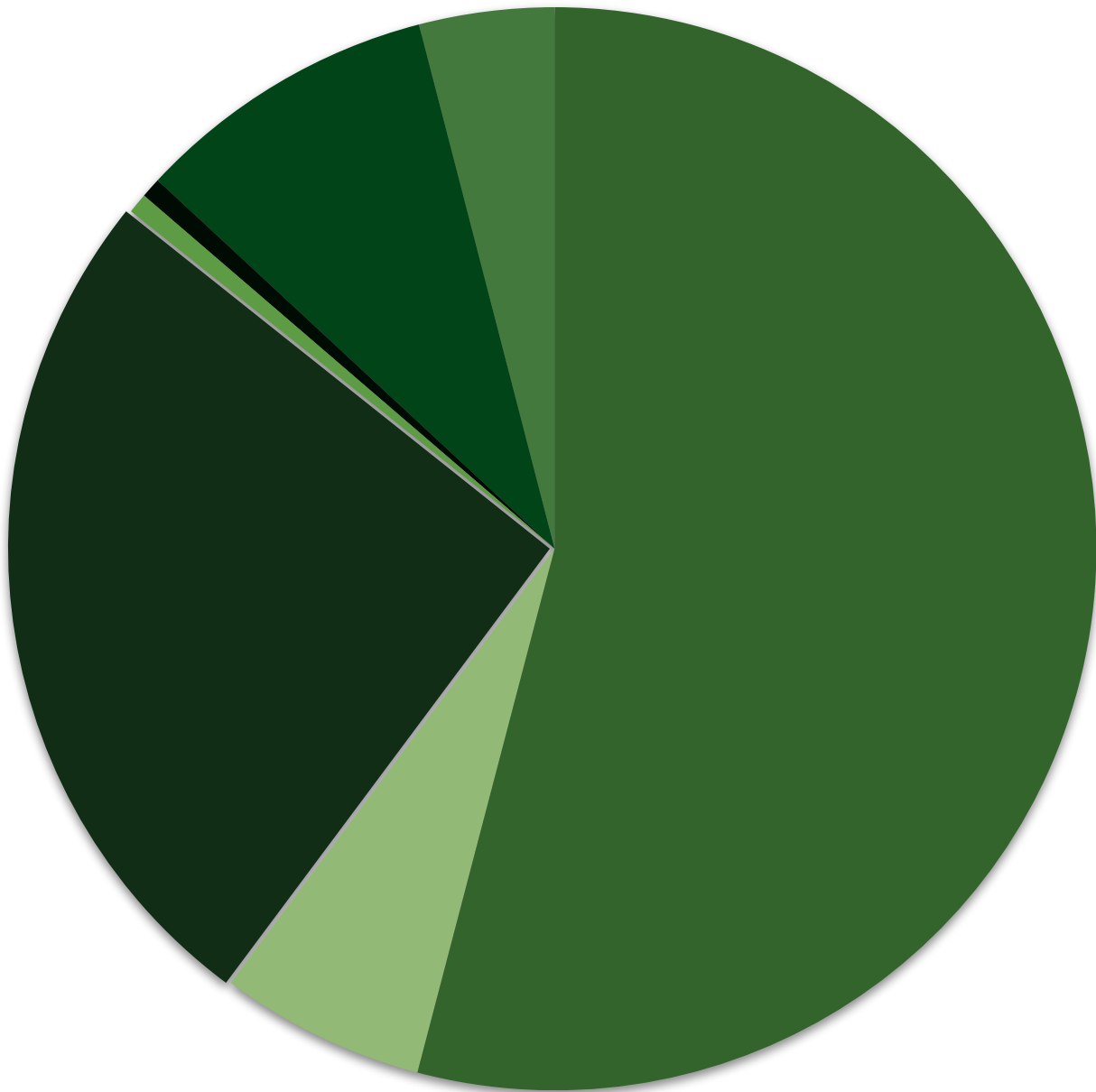
S: Above Average

Health & Safety Policy	✓
Policy Diversity and Opportunity	✓
Community Engagement	✓
Training and Development Policy	✓



G: Below Average

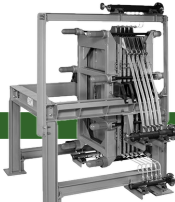
- Presence of Multiple Vote Shares
- Percentage of Voting Rights



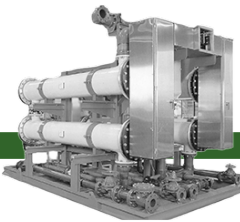
- Federico De Nora S.p.A
- Asset Company 10 S.r.l.
- Treasury shares
- Federico De Nora
- Norfin S.p.A.
- Management
- Institutional/retail investors



Company Overview



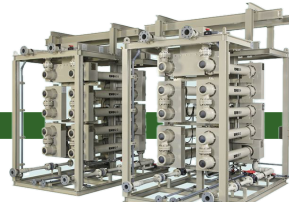
Financial Analysis



Valuation



Investment risks



ESG



ANNEX

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- 1.2 Company Milestones
- 1.3 Geographical Distribution
- 1.4 Customer Segmentation
- 1.5 Product Overview
- 1.6 Business Model
- 1.7 Analysis Business Segments
- 1.8 Cost Structure
- 1.9 Intellectual Property
- 1.10 GigaFactory
- 1.11 Group Structure
- 1.12 M&A Strategy
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- 4.6 Risk Free Vs Market Index
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- 5.4 SOFR Evolution
- 5.5 Inflation Rate Evolution
- 5.6 EU Inflation Rate Evolution
- 5.7 US Inflation Rate Evolution
- 5.8 Corporate Risks
- 5.9 Liquidity Risks

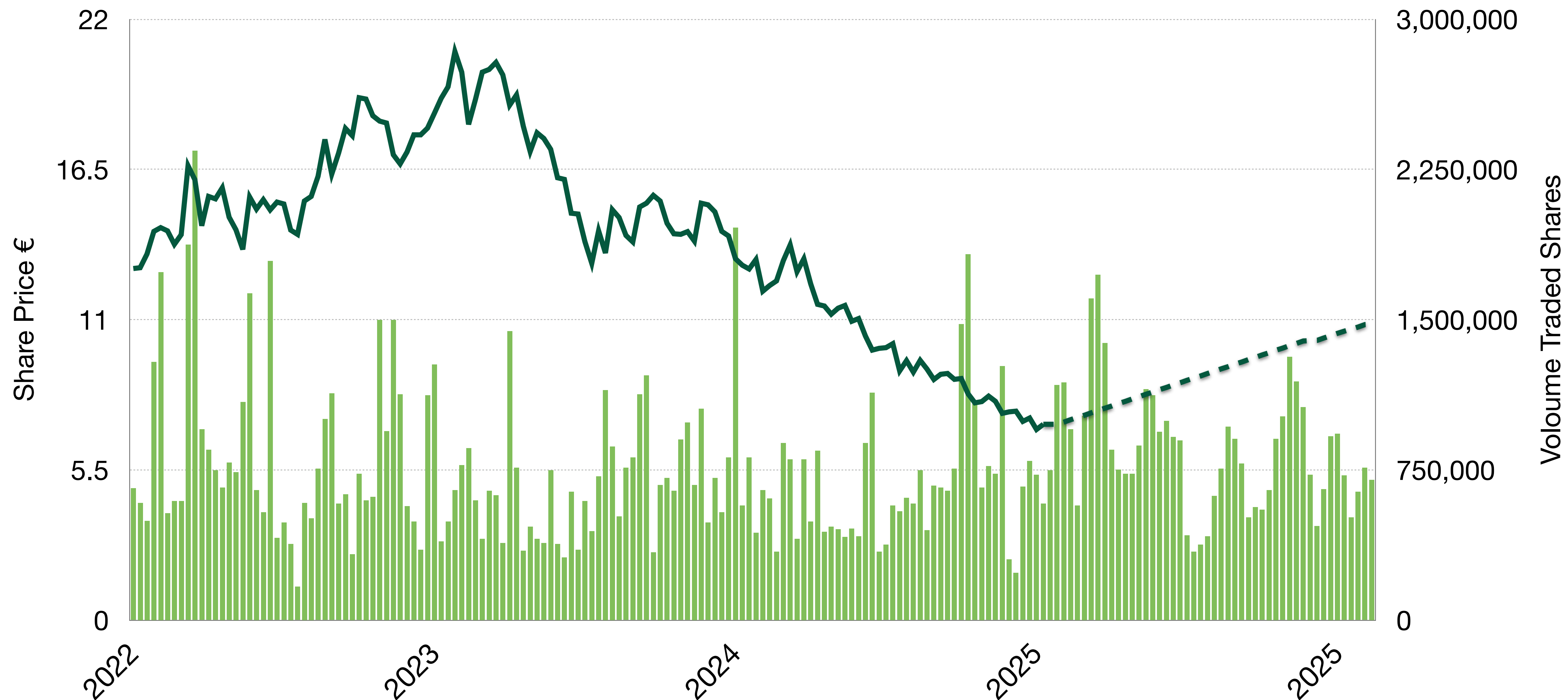
6. ESG

- 6.1 ESG Scorecard
- 6.2 ESG Scoring Procedure
- 6.3 Environmental
- 6.4 Social
- 6.5 Employees by Category and Gender
- 6.6 Governance
- 6.7 Corporate Governance System
- 6.8 Board of Directors
- 6.9 Internal Committees
- 6.10 Shares and Voting Rights

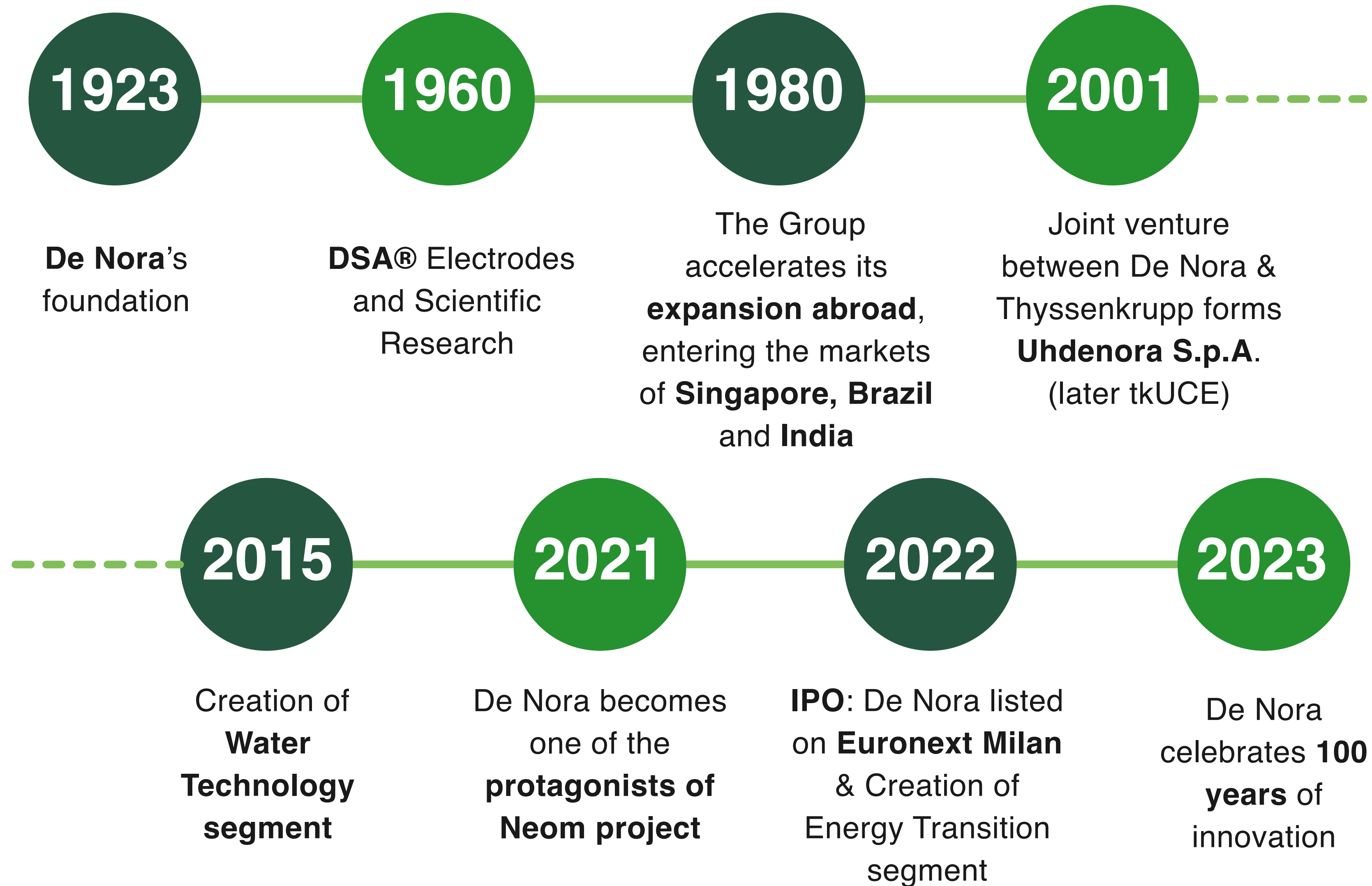


1. BUSINESS DESCRIPTION

1.1 Share Price and Volume Traded



1. 2 De Nora's Milestones



1.3 Geographical Distribution

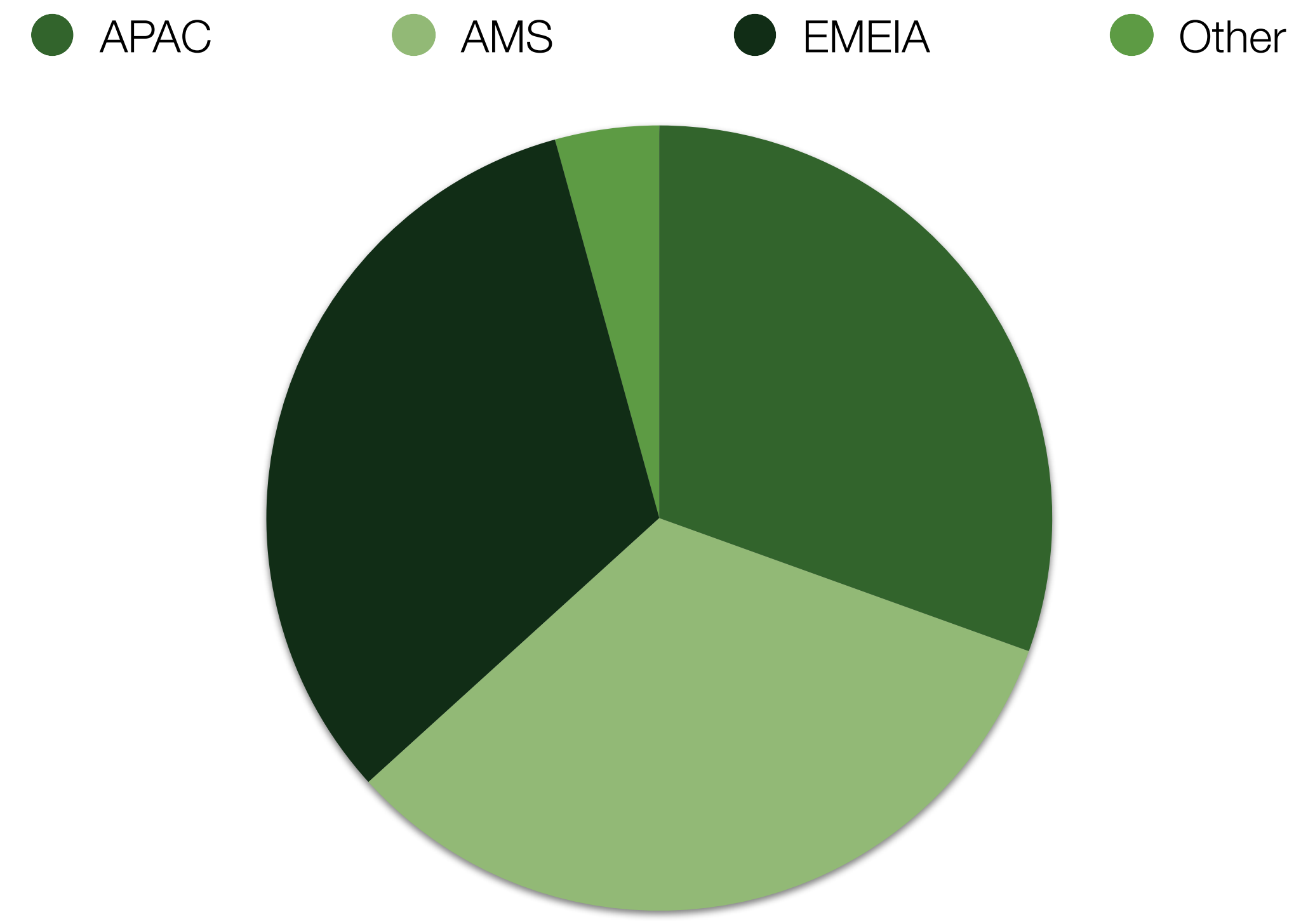
De Nora has a **broad geographical presence**, serving customers worldwide through a well-established network of production sites, R&D centers, and sales offices.

The company generates significant revenues from key regions, with **Europe** being its largest market, driven by strong demand in industrial applications and water treatment solutions.

Asia-Pacific follows closely, benefiting from rapid industrialization and increasing investments in green hydrogen projects.

North America also contributes substantially, particularly in the Energy Transition segment, supported by favorable regulatory incentives.

De Nora’s global footprint allows it to effectively **meet regional demands** while leveraging local partnerships to expand its market reach.



	Revenues
APAC	33,468.69
AMS	35,938.94
EMEIA	35,601.20
Other	4,697.40

Source: Company Data, Team Assessment

1.4 Customer Segmentation

De Nora primarily operates in the **B2B** market. The company's customers are mainly large corporations in sectors such as **chemicals, metallurgy, mining, public utilities, and energy**. The B2B focus allows De Nora to maintain high customer retention rates, as clients face low incentives to switch suppliers due to the specialized nature of its products. However, this also presents challenges in acquiring new clients.

De Nora's **B2C** sales are mainly concentrated in the pools segment, particularly in the American market, where it offers water disinfection systems for residential pools. Despite its established presence, this segment has experienced a **decline** recently, reflecting shifts in consumer demand. As a result, the company continues to emphasize its B2B operations while monitoring B2C market trends.



B2B Model

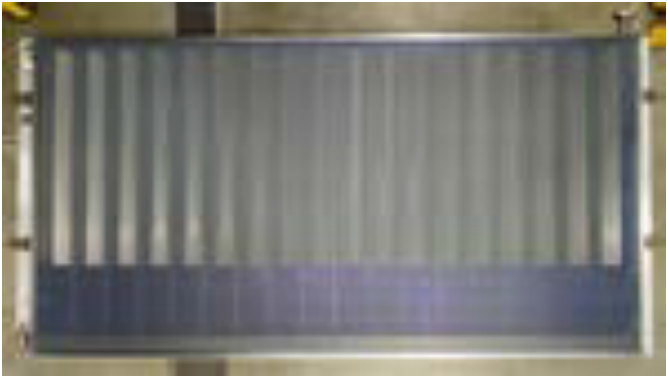
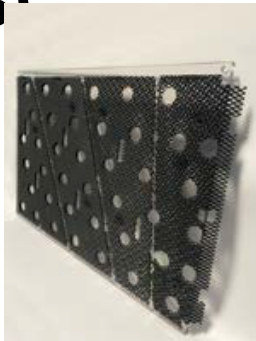
B2C Model

CLIENTS



1.5 Products Overview

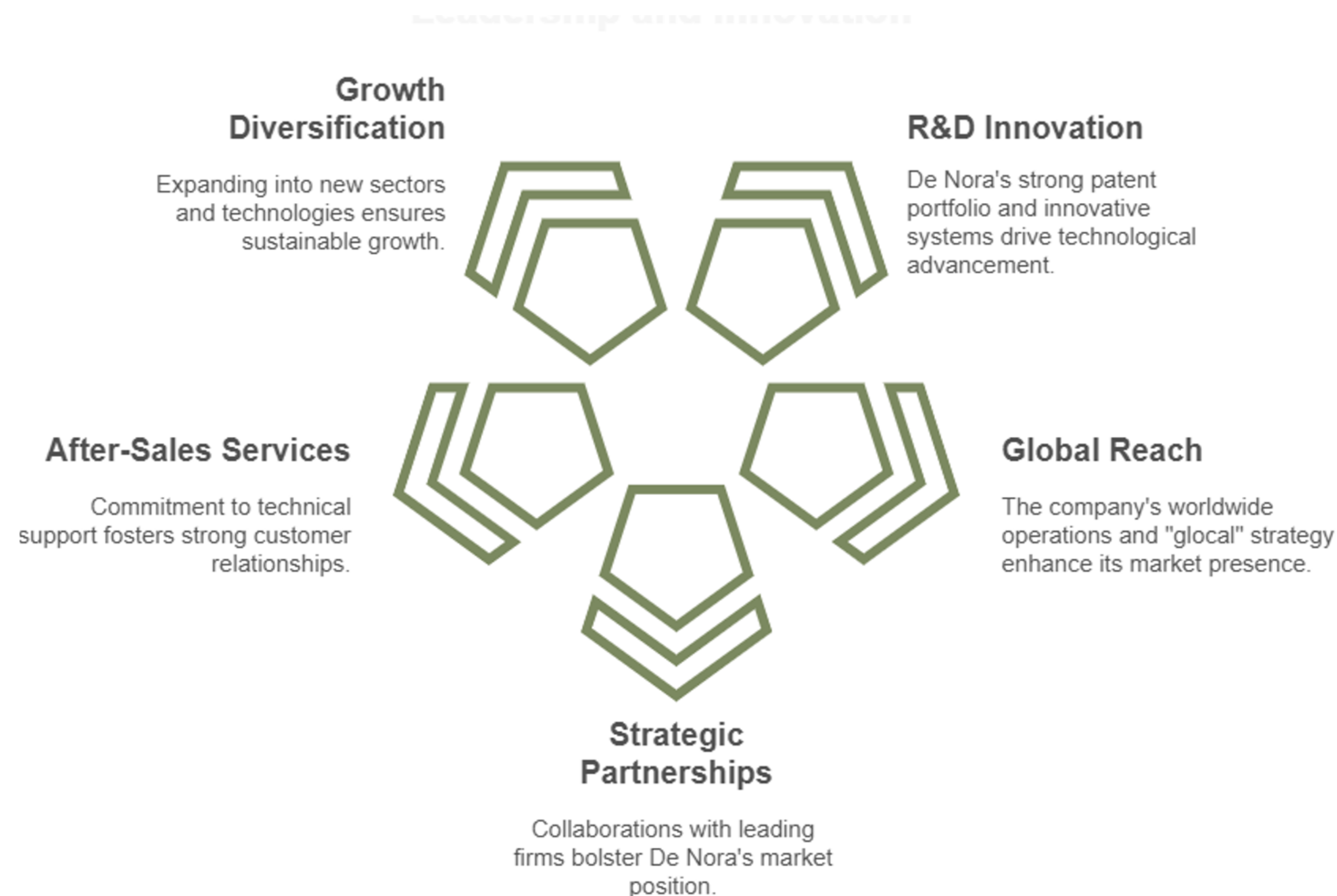
ELECTRODE TECHNOLOGIES

Products	Description
Chlor-Alkali Process 	The chlor-alkali process involves the electrolysis of sodium chloride (NaCl) solutions to produce chlorine and sodium hydroxide (caustic soda), essential chemicals for industry. De Nora provides DSA(R) electrodes made with titanium and nickel, enhanced with a mixed metal oxide catalytic layer for improved efficiency. Their technologies promote electrode circularity by either applying a new catalytic coating to restore performance or recovering noble metals for reuse in new electrode coatings after recycling.
Electrolytic Copper Foil 	De Nora products enhance the production of ultra-thin copper foils for the electronics industry and lithium batteries by utilizing specialized electrodeposition cells and optimizing the electrolytic process. They were the pioneers in developing titanium anodes (DSA®), addressing issues like uneven foil thickness. Their electrodes are also recyclable, allowing for the recovery of titanium and precious metals.
Copper Plating for Printed Circuit Board (PCB) 	De Nora technologies optimize copper coating production for printed circuit boards (PCBs), reducing the use of chemical additives. When the coating is no longer effective, the electrodes can be repurposed to purify wastewater containing metal ions (copper). At the end of their life, the electrodes can undergo a circular process to recover materials.
Electrowinnig 	De Nora’s DSA® electrodes are utilized in nickel electrofiltration. This technology enhances energy efficiency, lowers production costs, and reduces environmental impact by preventing lead contamination in wastewater. Additionally, DSA electrodes can be re-coated at the end of their lifespan, conserving the critical raw materials needed for their production.

ClorTec® Onsite Generation 	It produces low concentration sodium hypochlorite through salt electrolysis, enabling on-site water treatment and avoiding the transport and storage of chemicals. Designed for longevity, the main components—electrodes—are replaceable, supporting raw material circularity, including titanium and precious metals in the coatings.
CECHLO® Onsite Generation 	This technology produces on-site high-concentration sodium hypochlorite (13%) from salt for water treatment, as well as chlorine gas and caustic soda. The most recent solutions provide up to 15% energy and salt savings; it features durable, replaceable electrodes, and promotes circular use of raw materials like titanium, nickel, and precious metals.
SEACLOR® Seawater Electrochlorination 	This technology produces low-concentration (0.8%) sodium hypochlorite on-site by directly electrolysis of seawater, enabling safe and economical water treatment.
Capital Controls® Ozone 	This technology uses ozone, which is a strong cleaning agent for water treatment. It reacts quickly and doesn't need extra chemicals. De Nora's systems are built to tackle various pollutants, like oils and chemicals, and they're designed to be easy to use, last a long time, and save energy. Plus, their special design, the patentedXTL™ dielectric, reduces the need for maintenance.
Capital Controls® UV 	Capital Controls® UV systems treat groundwater, wastewater, and drinking water using basic UV disinfection and Advanced Oxidation Process (AOP) methods.
DE NORA TETRA® 	This variety of filtration products allows De Nora to customize filter design for optimalDe Nora makes a variety of filtration products that can be customized for better performance in different uses. These products are often used by municipalities for seawater pre-treatment in desalination, filtering drinking water sources, and treating wastewater in the final stage.
DSA® DN240 Swimming Pool Electrodes 	DSA® DN240 electrodes are advanced technology used by leading swimming pool equipment manufacturers. They enable efficient chlorine generation by continuously regenerating chlorine from salt (NaCl).

ENERGY TRANSITION	Products	Description
	Electrodes for Hydrogen Evolution 	De Nora's DSA® and NRG® electrodes are top technologies for alkaline electrolyzers, delivering high efficiency in industrial electrochemical processes. They serve as the standard for large-scale green hydrogen projects worldwide, spanning from several megawatts to gigawatts.
	Dragonfly® Electrolyzer 	The Dragonfly® electrolysis system is an electrolyzer for the production of green hydrogen. It comes in modular sizes from 1MW to 7.5MW and is easy to set up, making it suitable for small and medium projects. This system supports a decentralized hydrogen distribution model, reducing the need for extra transport, storage, and distribution infrastructure. Its performance is similar to PEM (Proton Exchange Membrane) technology, but it offers greater reliability and lower maintenance costs due to its alkaline operation.
	GDE's for Fuel Cells 	This is a key component of fuel cells, a device that converts zero-emission hydrogen and other CO2-free chemicals, such as ammonia, into electricity. Fuel cells have a wide range of applications, from transportation to residential, commercial, and large-scale industrial systems.

1.6 Business Model



De Nora's Key Drivers of Growth

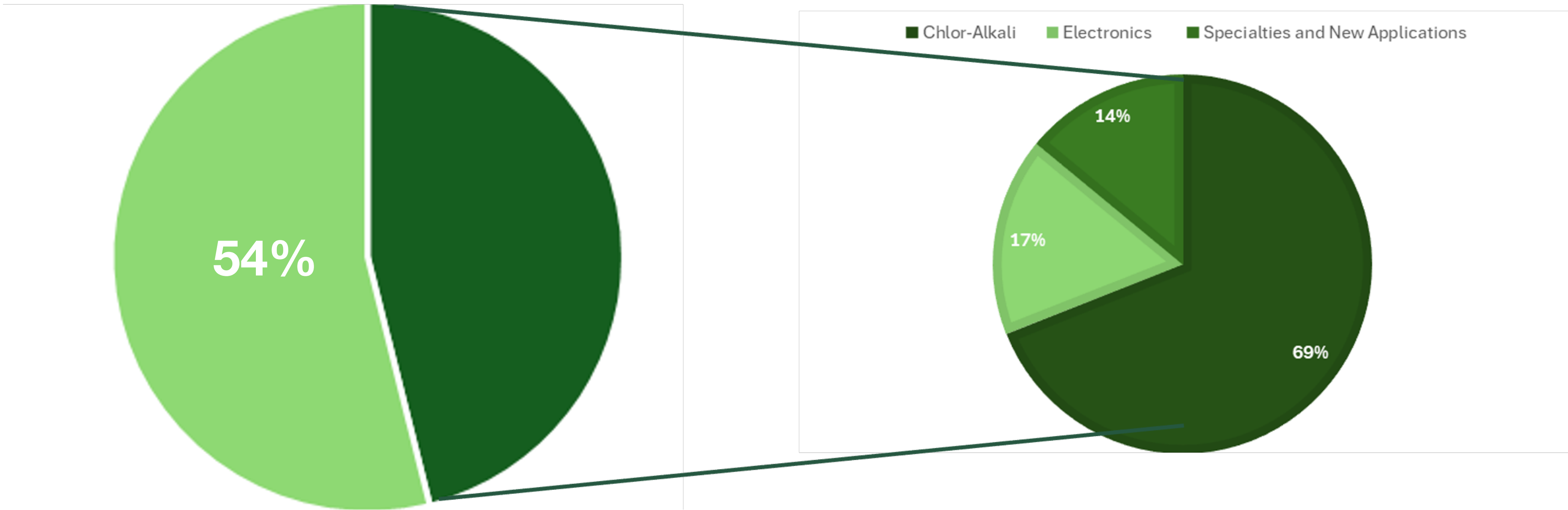
Uniqueness!

Thanks to its **high level of specialization** and the **wide range of advanced technologies**, Industrie De Nora stands out as the only player to operate across such different end markets.

For this reason, it is strategically positioned not only as a direct competitor of some companies, but also as a **technology partner** or **supplier** to many of its own competitors. De Nora mainly benefits from economies of scale thanks to its global size and diversification, which allows it to enjoy lower cost per unit in the market.

1.7 In-depth Analysis of Business Segments

Electrode Technology



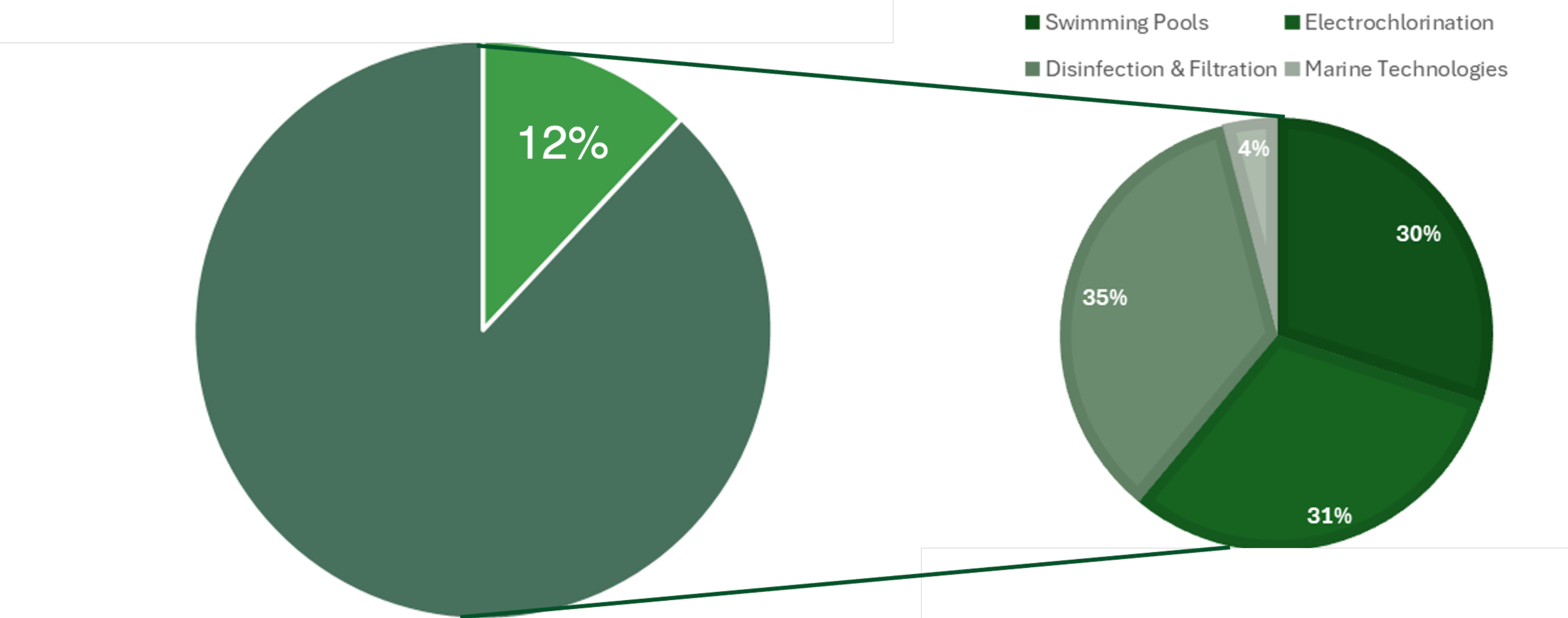
Chlor Alkali (69% of segment revenue and 37.5% of total revenues). Its revenues increased by 0.5% compared to FY22.

Electronics (17% of segment revenues and 9% of total revenues) its revenues decreased by 9.5% compared to 2022. This decline was mainly due to the slowdown in demand in the Asian market after the COVID-19 pandemic.

Specialties & New Applications (14% of segment revenues). This area saw a 3.9% decline in revenues compared to FY22, mainly due to lower demand in Germany and Japan.

1.7 In-depth Analysis of Business Segments

Water Technology



New installations accounted for 74% of the Water Technologies segment's revenue in 2023, showing a slight decrease compared to the previous year.

Revenues from **swimming pools** are entirely included in this category.

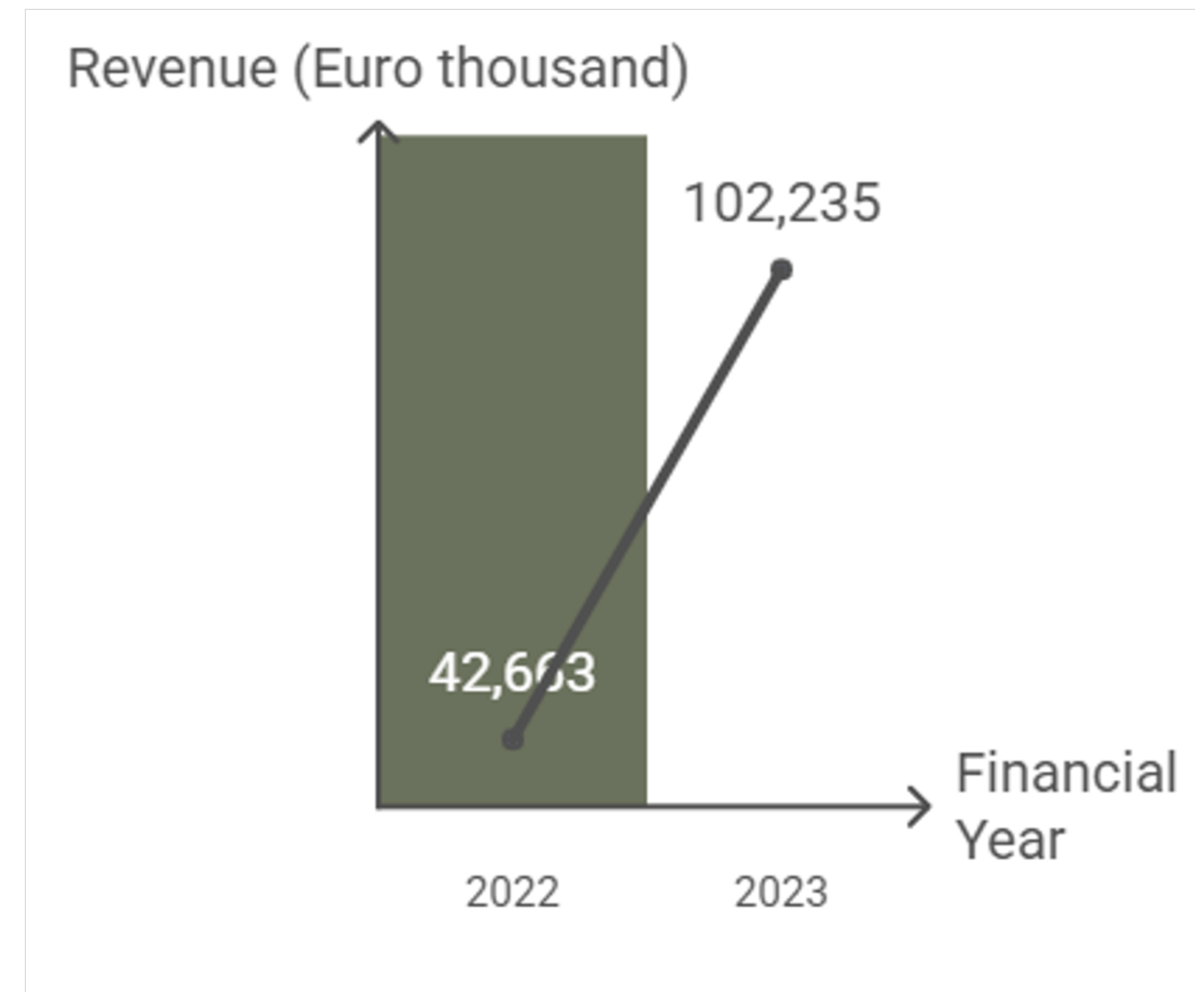
Services, covering the entire product portfolio, contributed 26% of the segment's revenue in 2023.

1.7 In-depth Analysis of Business Segments

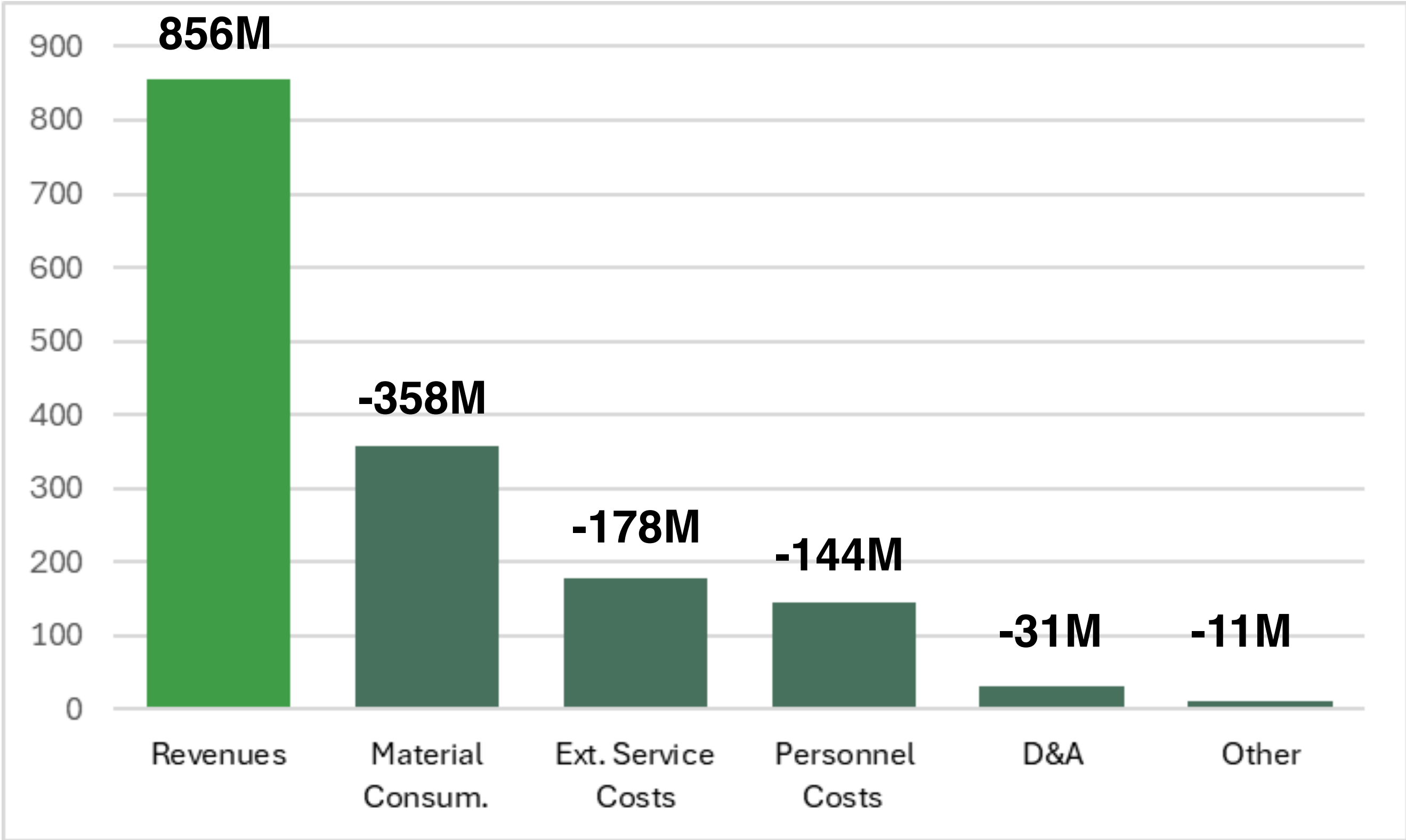
Energy Transition



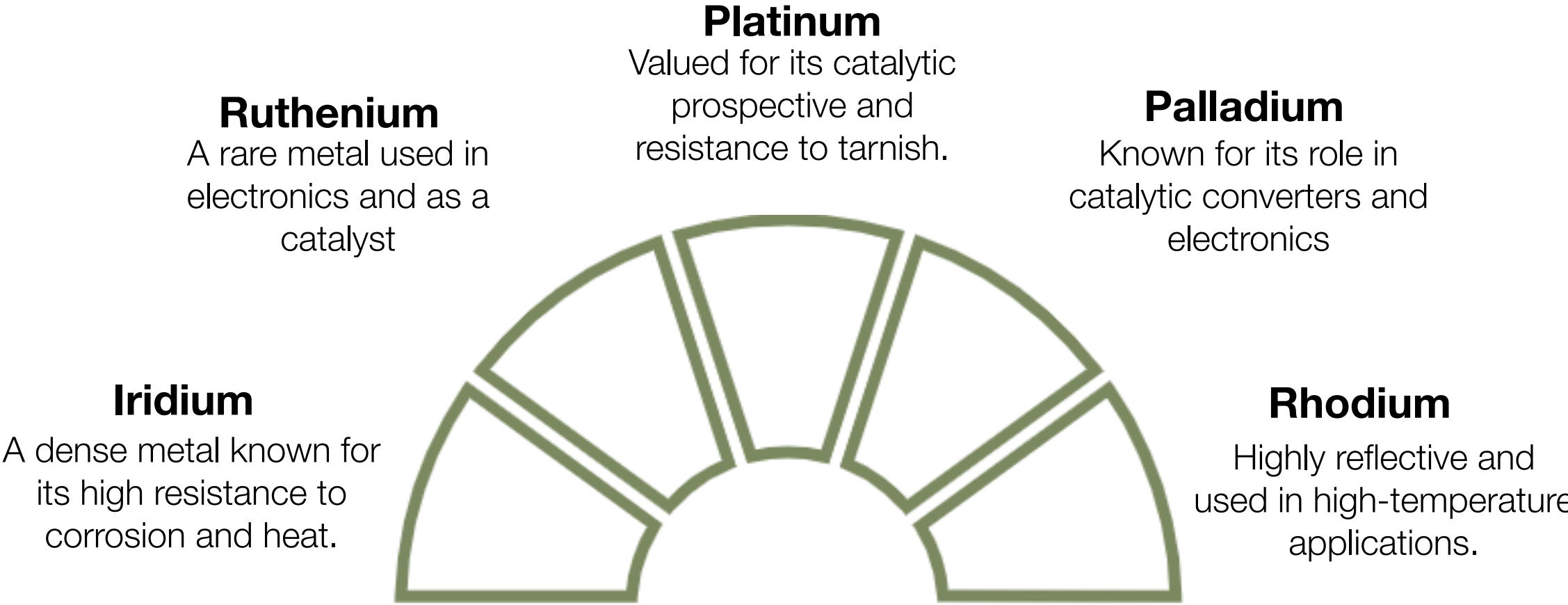
The Energy Transition sector at De Nora has experienced **rapid growth**, with revenues increasing from €3,070 million in 2023 to €4,910 million in 2024, and projected to reach €115,630 million by 2034. This sector focuses on innovation and supporting the energy transition with advanced technical solutions aimed at improving energy efficiency and reducing emissions, thus **contributing to global decarbonization efforts**.



1.8 Cost Structure



De Nora uses coated titanium for corrosion-resistant and highly conductive electrodes, metal oxides like **ruthenium** and **iridium** to enhance electrochemical efficiency and durability, and polymers for chemical-resistant and lightweight water treatment systems.



Material consumption plays a crucial role!

It accounted for 49.56% of the total costs, highlighting its impact on the overall cost structure. It was the most significant cost, equal to 42.2% of turnover (€357,991), and strongly influenced by the prices of raw materials. The prices of these materials are often volatile, making dependency on them risky. De Nora mitigates this risk through long-term supplier partnerships, ensuring more stability in procurement and cost management.

1.9 Intellectual Property

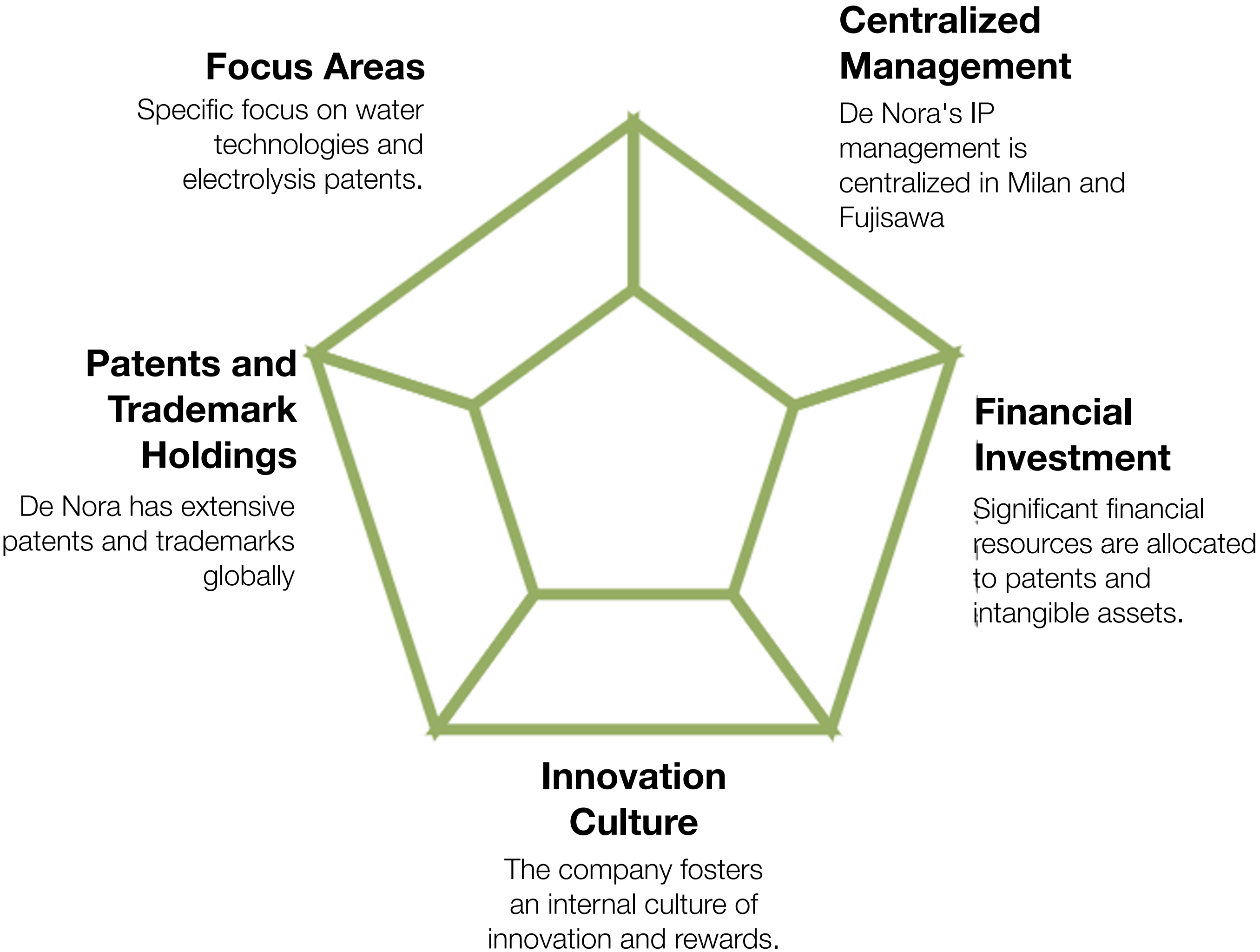
Protecting Innovation Through Patents

De Nora's **patent portfolio** is extensive, with a strategic focus on water electrolysis and emerging technologies. The centralized management in Milan and Fujisawa supports continuous investment and innovation. 522 trademarks globally enhance brand protection. De Nora actively rewards employee innovation, fostering a culture of creativity and competitive advantage.

2387 (Active)

492 (Pending)

17 (New in 2023)



1.10 Gigafactory

Factors influencing the success of De Nora's Gigafactory

A Milestone for Green Hydrogen

The De Nora Gigafactory is a key project for sustainable industry in Italy, focused on producing electrolyzers for green hydrogen. Construction began on June 11, 2024, in Cernusco sul Naviglio, with completion expected between late 2025 and early 2026. This facility will significantly contribute to the energy transition, supporting the goals of the European Green Deal. Additionally, De Nora has already secured orders for electrolyzers with a total capacity of 2 GW, matching the Gigafactory's annual production capacity.



1.10 Gigafactory (cont'd)

Investment & Location:

- €100M investment (partly funded by PNNR) for a Gigafactory in Cernusco sul Naviglio, including €10.495M for industrial area acquisition.

Production & Sustainability:

- Area: 25,000 m² with 2 GW production capacity.
- Powered by photovoltaic panels for green energy.
- Designed to reduce CO₂ emissions using urban vegetation and natural light.
- Sustainable building materials and urban drainage systems.

Economic & Employment Impact:

- Direct employment: 200 internal jobs.
- Indirect employment: 2,000 jobs through Italian suppliers.

Government Support:

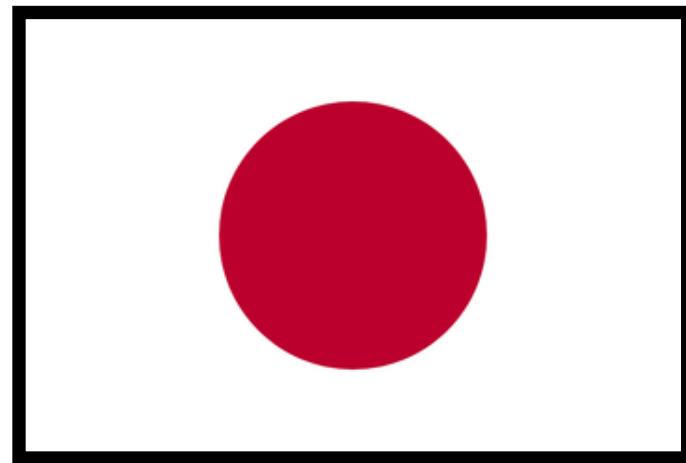
- In Dec 2024, received €32M grant from the Italian Ministry of Enterprises and Made in Italy, alongside previous benefits.

1.11 Group Structure

Understanding De Nora's Organizational Framework of Key Business Divisions



24 operating companies in 10 countries

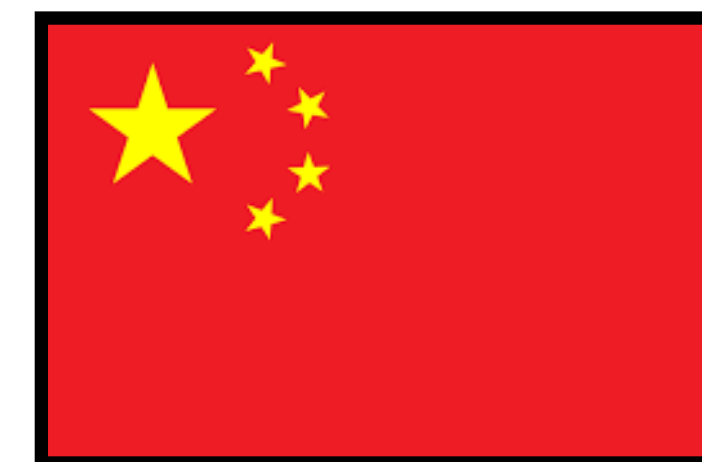


15 manufacturing sites

5 research and development centers



2,000+ employees



1.12 M&A Strategy

Exploring Mergers and Acquisitions to strengthen De Nora's Market Position

Synergies from Acquisitions

1. Cost Efficiency and Operational

Integration: Cost reduction and supply chain optimization through acquisitions.

2. Technological and Product Synergies:

Expanded portfolio and accelerated innovation in sustainable technologies.

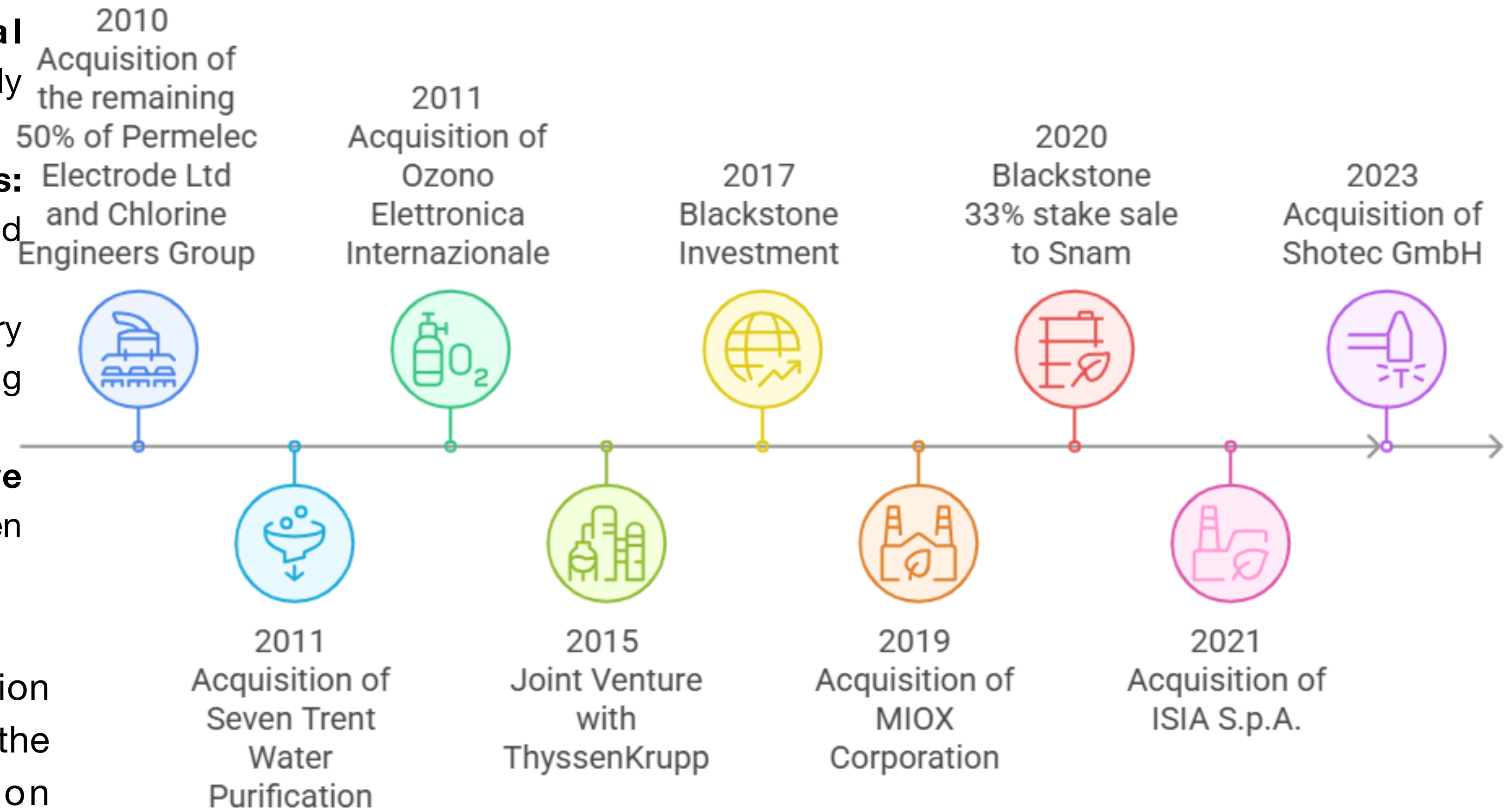
3. Market Expansion and Cross-Selling:

Entry into new markets and cross-selling opportunities across sectors.

4. Strategic Positioning and Competitive

Advantage: Leadership in green hydrogen and strengthened global brand.

In 2025, De Nora signed collaboration agreements with ACWA Power and the Saudi Water Authority, focusing on innovative water treatment technologies and hydrogen production, contributing to Saudi Arabia's sustainable development goals for 2030.



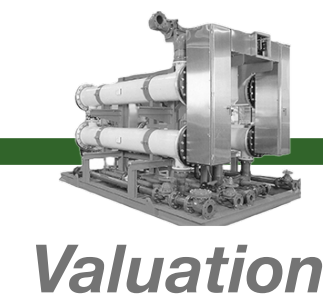
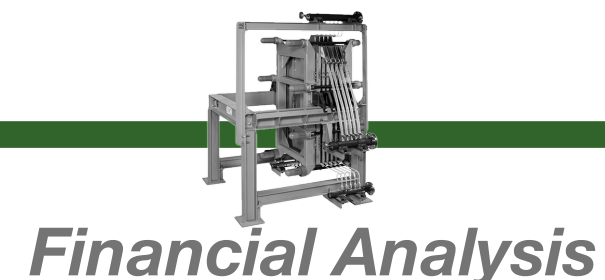
1.13 Partnership



STRATEGIC PARTNERSHIP AT DE NORA

- Long-Term Collaborations: De Nora fosters strong, enduring partnerships with suppliers and customers to ensure mutual growth and continuous innovation.
- High-Quality Suppliers: Focus on selecting suppliers who align with our commitment to top-tier quality, cost-efficiency, and sustainable practices.
- Global Reach: Our partnerships enable us to expand our footprint in key markets worldwide, ensuring access to cutting-edge technologies and meeting diverse customer needs.
- Commitment to Innovation: Together with our partners, De Nora pushes the boundaries of innovation in the fields of water technologies, hydrogen production, and energy transition.

Source: Company Data, Team Assessment



1.14 Swot Analysis

Identifying Strengths, Weaknesses, Opportunities and Threats for De Nora

STRENGTHS



- Leadership in the market for industrial electrodes
- Global presence with activities in multiple countries
- Strong technological innovation
- Focus on sustainable solutions

WEAKNESSES



- Dependence from specific market which could suffer from fluctuations
- High operational costs due to international management
- Reliance on partnerships could slow expansion if one ends

OPPORTUNITIES



- Growth in green hydrogen sector
- Expansion of water treatment technologies sector
- Expertise in advanced chemistry that could be leveraged for innovative materials in the battery and energy storage sector

THREATS



- Strong competition in the electrochemical and sustainable technologies sectors
- Stricter environmental regulations could increase costs
- Increase in the costs of rare metals and other components could reduce profit margins
- Slow adoption or market stagnation for green hydrogen

2. INDUSTRY OVERVIEW

2.1 Porter's Five Forces Analysis

Analyzing Competitive Forces in the Industry

HIGHLIGHTS

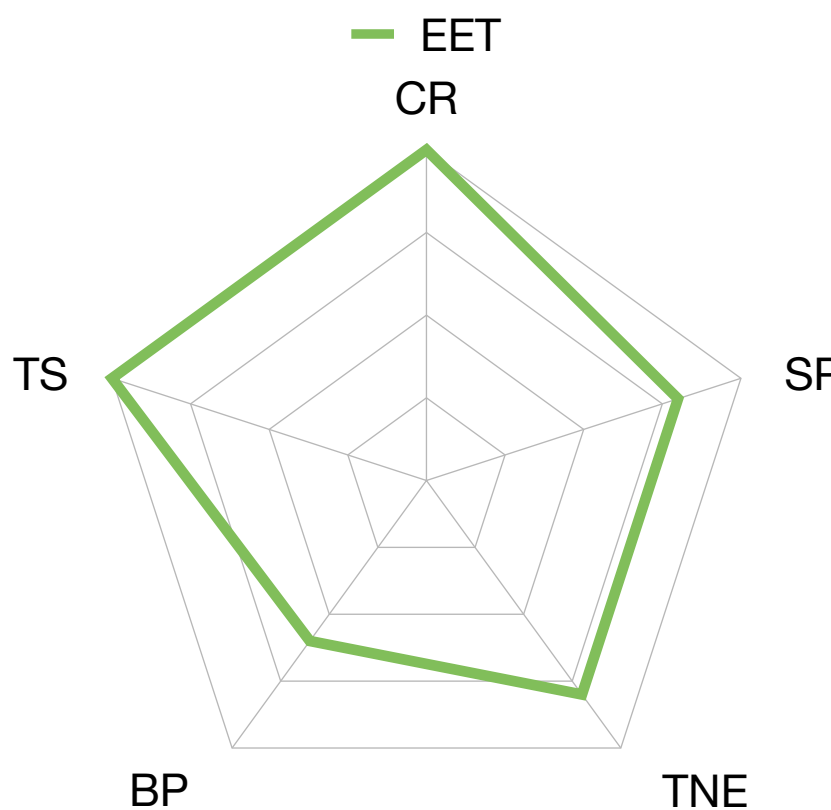
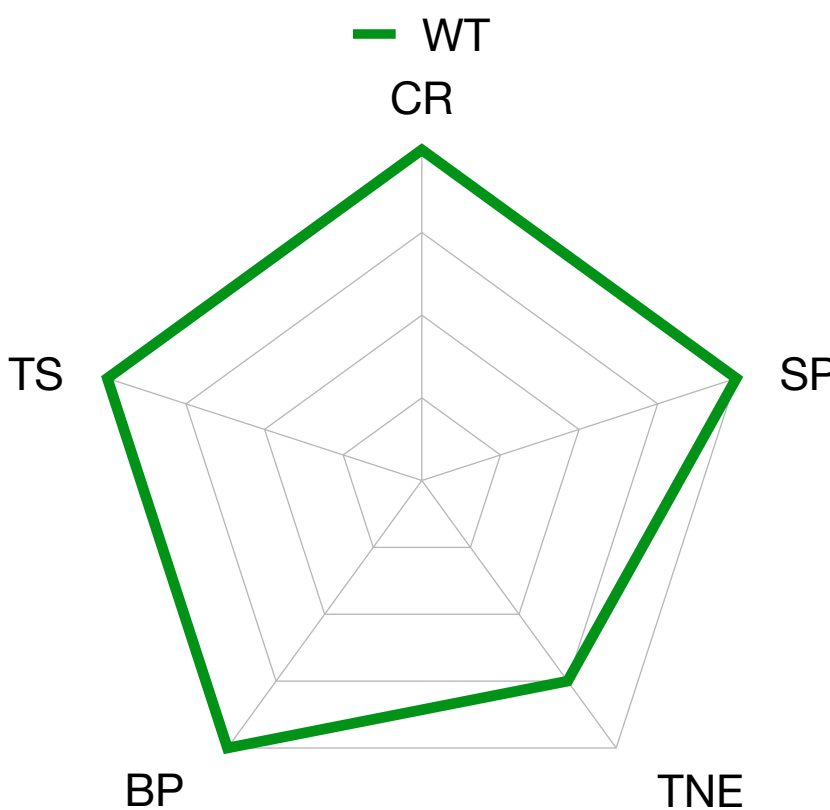
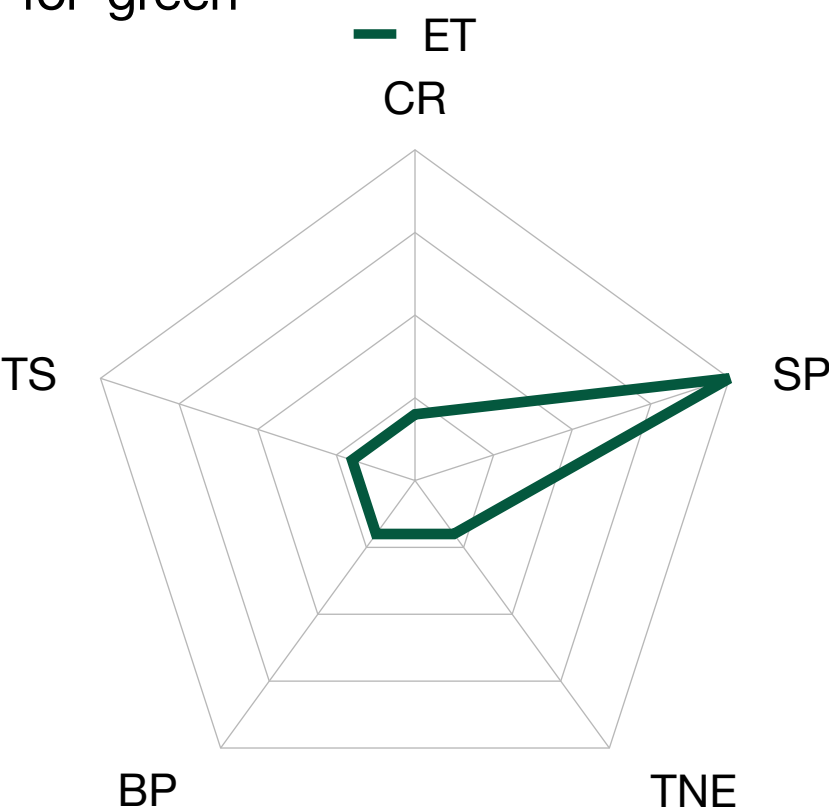
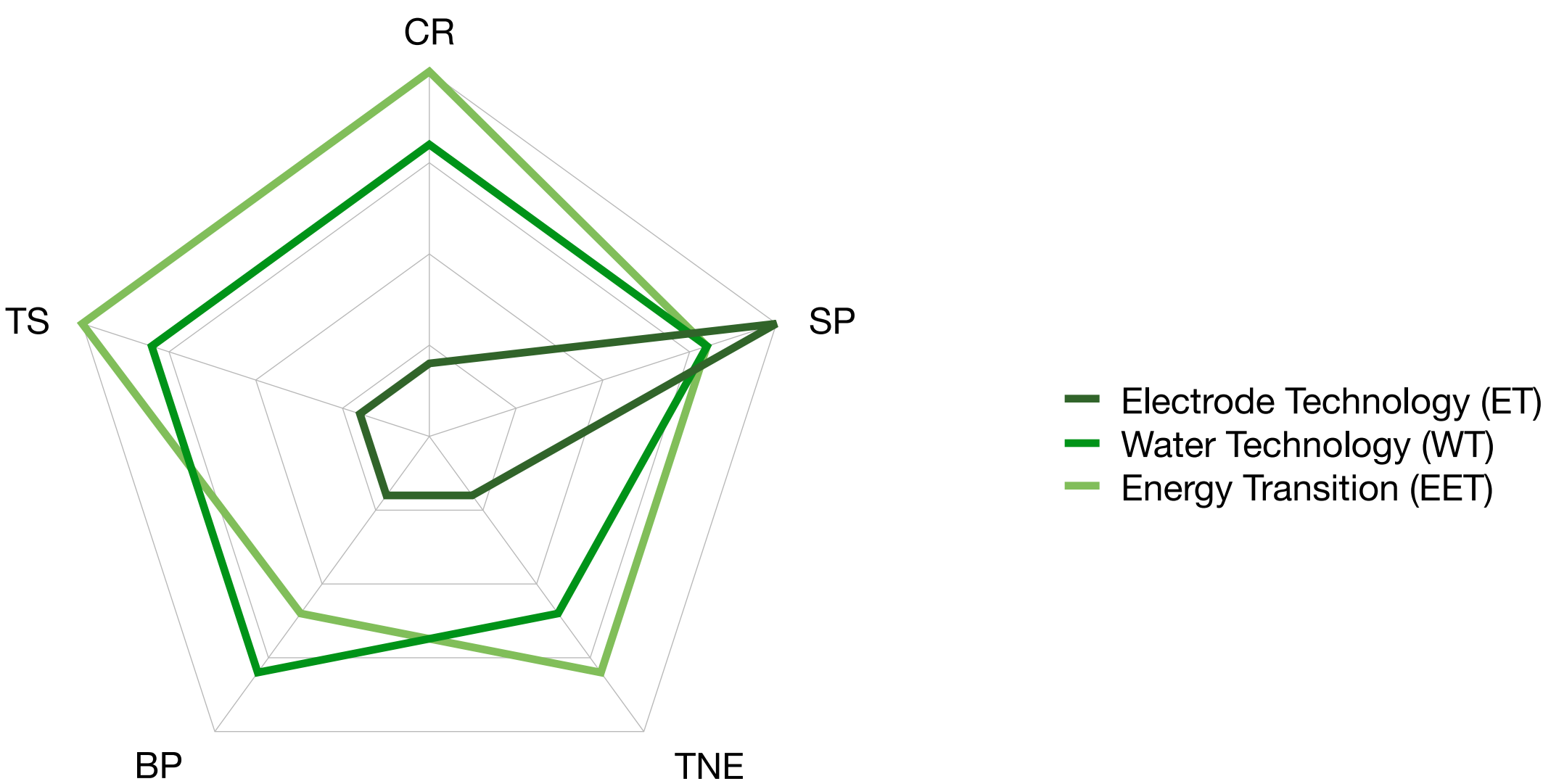
Competitive Rivalry (CR). Less intense in ET due to De Nora's leadership and limited competition, moderate in WT where De Nora is among the top players, and highly intense in EET due to alternative technologies and the high price of green hydrogen.

Supplier Power (SP). De Nora has built strong, long-term relationships with a plethora of suppliers. However, global supply chain disruptions make cost volatility a challenge for all segments.

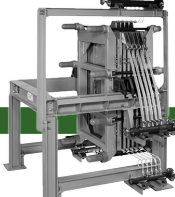
Threat of New Entry (TNE). Mild in the ET due to De Nora established position, technological expertise, and significant investment in R&D. Slightly more in WT where entrance requires expertise and regulatory compliance. Moderate in the ET due to increasing investments.

Buyer Power (BP). Low buyer power thanks to De Nora strong position in ET. Buyers have some leverage in the WT where De Nora faces competition. In EET the intensity is moderate given De Nora's specialized products.

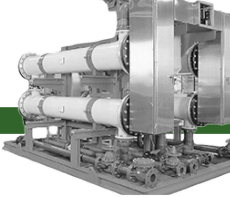
Threat of Substitution (TS). High threat of substitution as alternative technologies for green hydrogen production and energy storage continue to develop in EET.



Company Overview



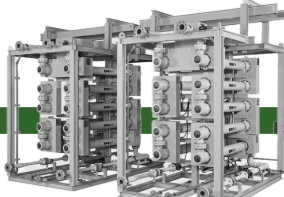
Financial Analysis



Valuation



Investment risks



ESG

2.2 Industry Drivers

Electrode Technology

Segment	Key Drivers
Chlor-Alkali	- Increasing demand for PVC and derived products in construction and disinfectants. - Replacement of first-generation electrolyzers with new, more efficient technologies. - Shift from diaphragm to membrane technology, enhancing productivity and sustainability.
Electronics (Copper Foil and PCB Plating)	- Adoption of 5G driving demand for advanced electronic components. - Growth in electric/hybrid vehicles, requiring high-quality printed circuit boards. - Technological innovation to improve performance and reduce production costs.
Electrowinning (Mining)	- Replacement of lead with titanium anodes, promoting sustainability. - Rising demand for strategic metals such as nickel and cobalt for batteries. - Expansion of aftermarket services to enhance operational efficiency.

...Global Megatrends

- Decarbonization and Energy Efficiency: Pushing for more sustainable production processes.
- Urbanization and Digitalization: Driving demand for advanced electronics and infrastructure materials.

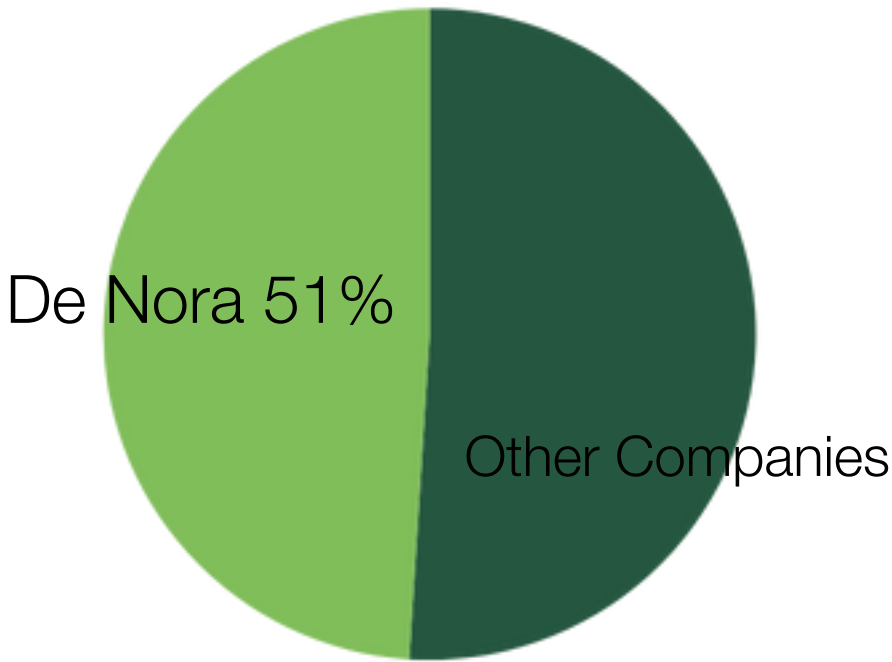
...Expected Growth

- Increasing global demand for electronic materials and components.
- Replacement of obsolete technologies for greater energy efficiency and productivity.

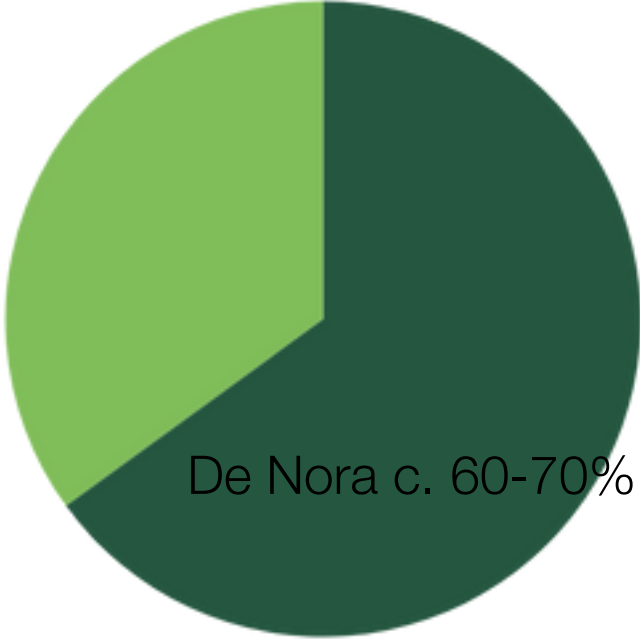


MARKET
SIZE:
1.45 BN

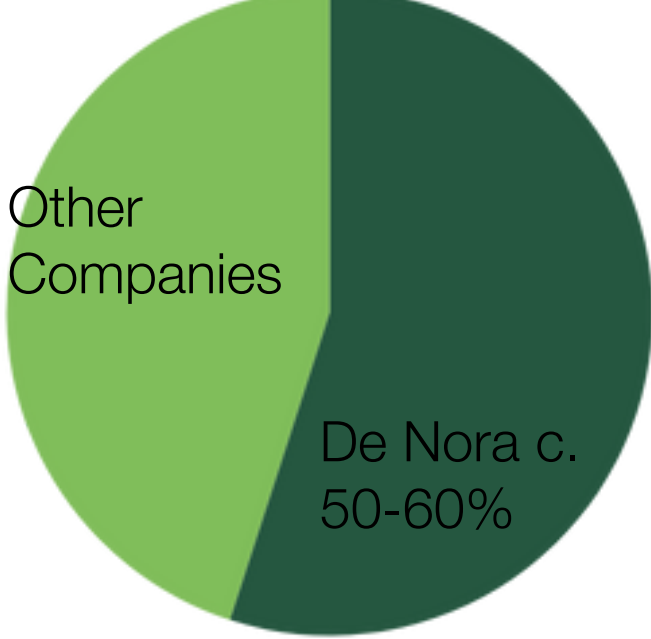
Chlor-Alkali electrodes - Competitive Landscape



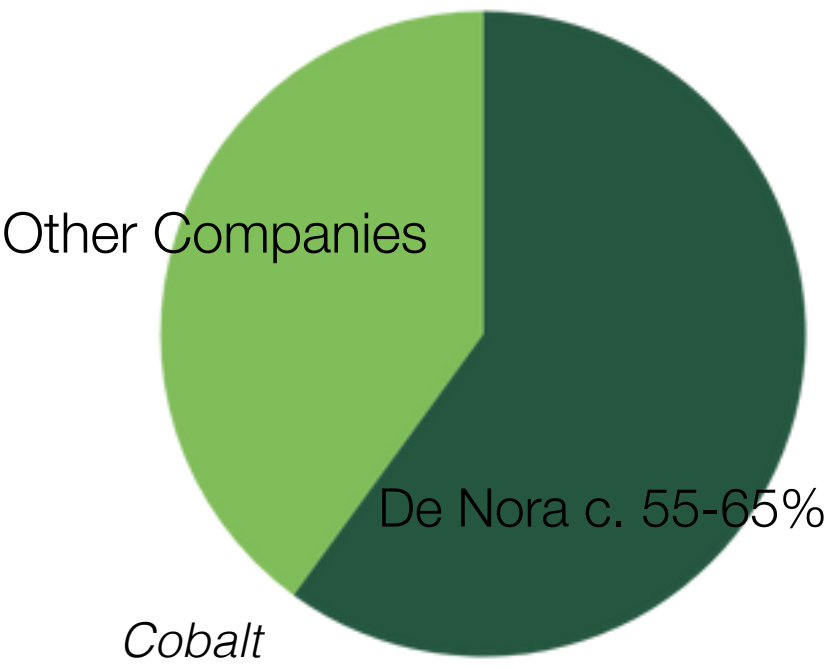
Overview of PCB niche



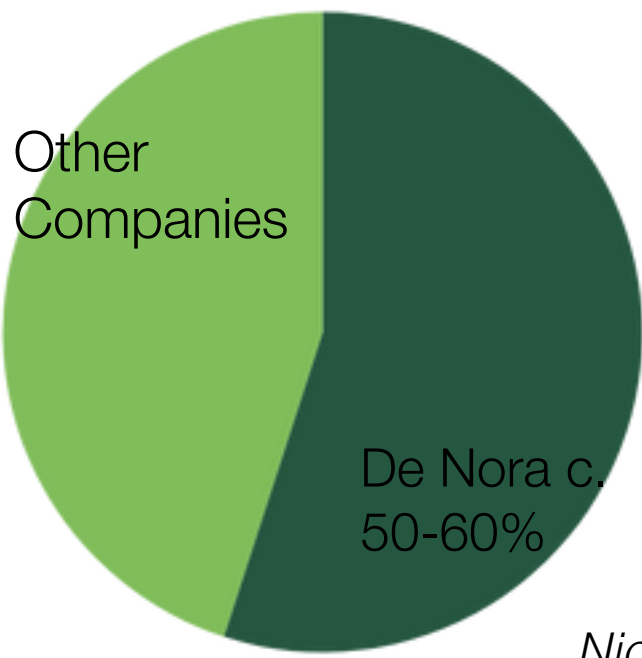
Overview of Copper foil niche



Electrodes for Electrowinning - Competitive Landscape



Cobalt



Nickel

Source: Mediobanca Securities, Market Share by m MT C

2.2 Industry Drivers (cont'd)

Electrode Technology

CLIMATE CHANGE

Carbon footprint reduction, production of high-performance raw materials, and reduction in energy consumption.



URBANIZATION

Increased demand for energy-efficient solutions to meet growing urban needs.



DIGITALIZATION

Rapid growth of 5G infrastructure requiring efficient and high-performance technologies.

2.2 Industry Drivers

Water Technology

Segment	Key Drivers
Pool Technologies	- Increasing demand for salt chlorination in residential and hospitality pools. - Growing construction and "staycation" trends. - Need for maintenance/replacement of salt chlorinators.
Municipal Filtration & Disinfection, Industrial Chlorination	- Expansion of water treatment plants and infrastructure upgrades. - Growing investments in modernization of systems.
Marine Technologies	- Regulatory pressure for ballast water treatment retrofitting. - Shift to efficient sewage treatment systems.

Source: Mediobanca Securities



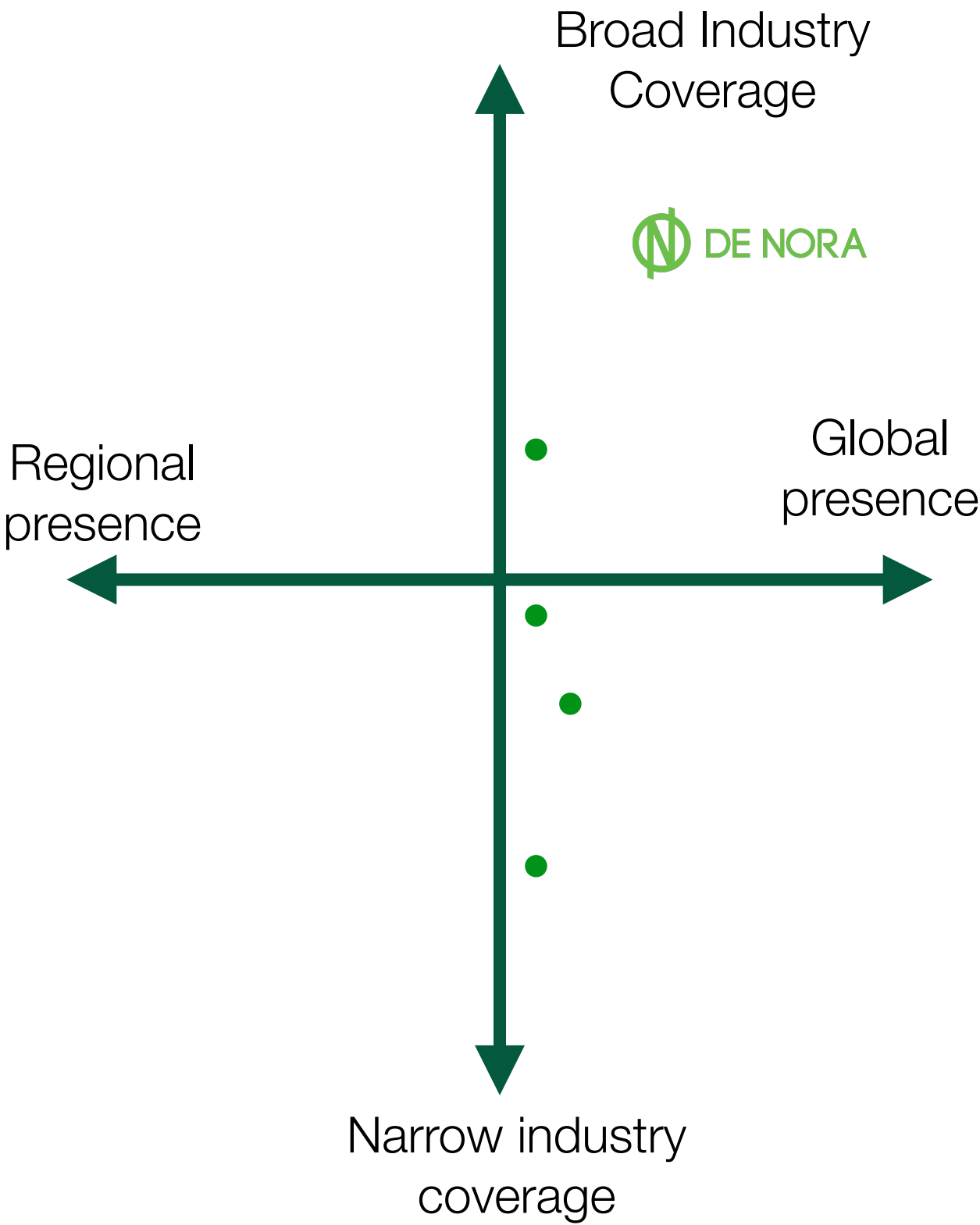
Fast-Growing Trends in Water Technologies

- 1. **Sustainability Tailwinds Growing Concerns on Water Quality:** Increasing regulatory focus (e.g., PFAS contamination).
- 2. **Regulatory Drivers:** Stricter policies in the US, Europe, and Asia-Pacific, boosting demand for water treatment technologies.
- 3. **Technological Innovations De Nora's Edge:** Advanced solutions in electro-chlorination and multi-barrier systems.

2.2 Overview of the group's competitive positioning in key end-markets

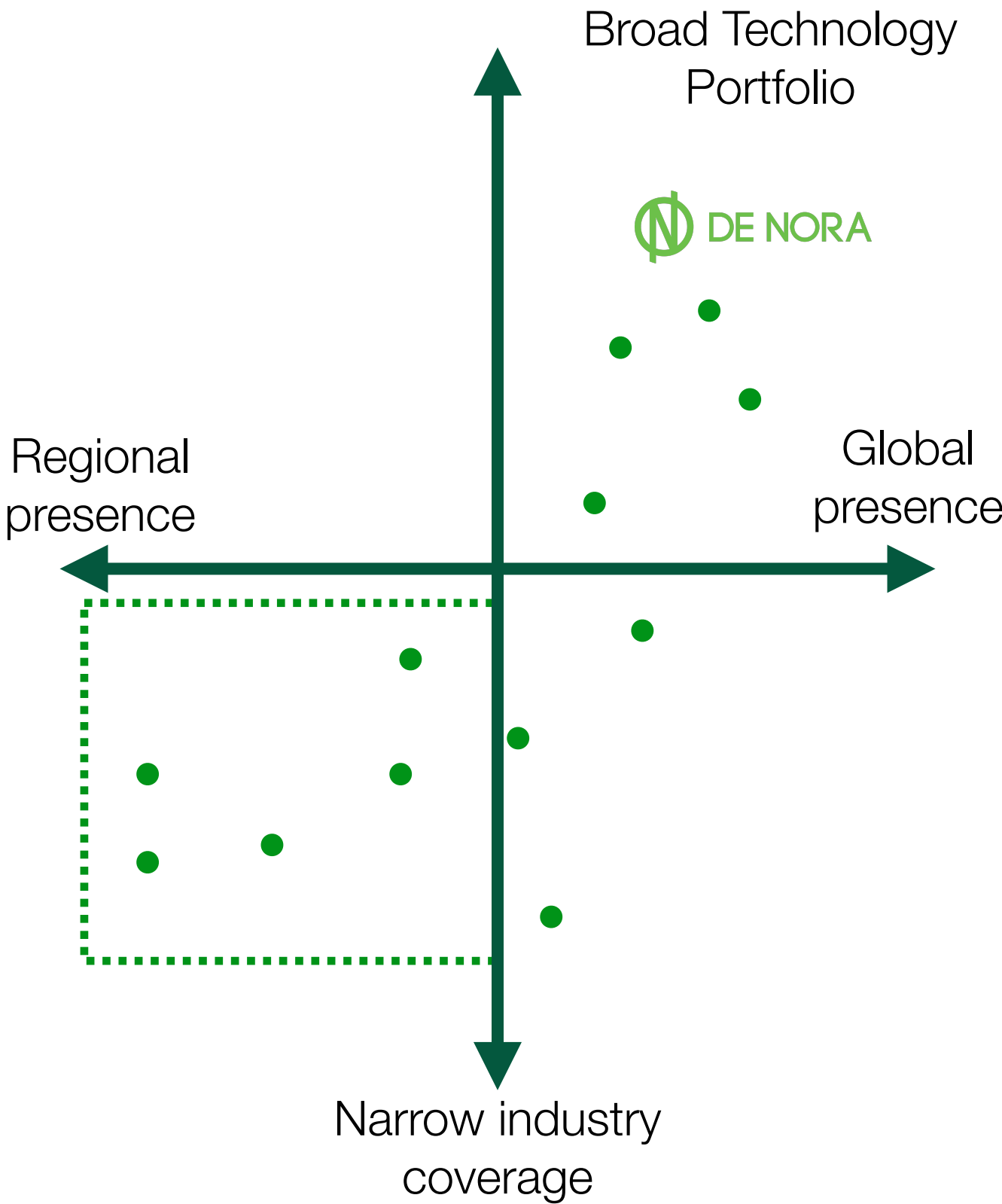
Industrial Chlorination

Industry and geographical competitive positioning



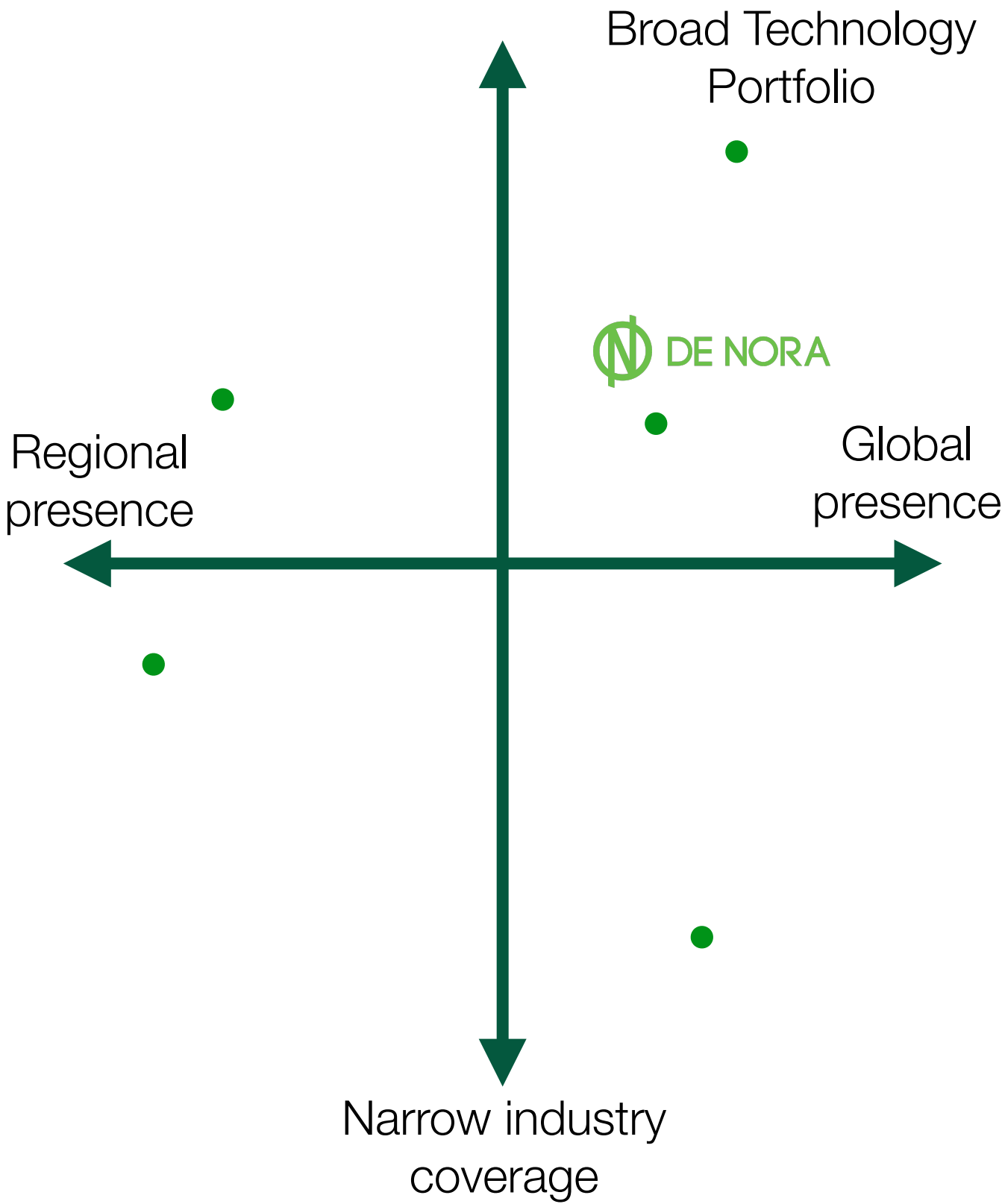
Municipal Disinfection

Technology portfolio and geographical competitive positioning



Municipal Filtration

Technology portfolio and geographical competitive positioning



Source: Mediobanca Securities, team assessment

2.2 Industry Drivers (cont'd)

Water Technology

POPULATION GROWTH

Increased demand for water resources and advanced water treatment solutions.



URBANIZATION

Growing urban areas require enhanced water infrastructures and treatment technologies.



CLIMATE CHANGE

Increased focus on advanced water management solutions to address water scarcity.



STRICT REGULATION

Growing regulatory concerns and demand for more efficient water purification and disinfection technologies.



2.2 Industry Drivers (cont'd)

Similarities Electrode Technologies

CLIMATE CHANGE



Carbon footprint reduction, production of high-performance raw materials, and reduction in energy consumption.

URBANIZATION



Increased demand for energy-efficient solutions to meet growing urban needs.

DIGITALIZATION



Rapid growth of 5G infrastructure requiring efficient and high-performance technologies.

Water Technologies

CLIMATE CHANGE



Increased focus on advanced water management solutions to address water scarcity.

URBANIZATION



Growing urban areas require enhanced water infrastructures and treatment technologies.

STRICT REGULATION



Growing regulatory concerns and demand for more efficient water purification and disinfection technologies.

2.2 Industry Drivers

Energy Transition

MARKET
SIZE:
4.91 BN

Key Drivers	Description
Climate Change and Pollution	Growing urgency to implement green policies to reduce environmental impact. Focus on climate neutrality by 2050 (EU Green Deal).
Renewable Energy and Independence	Hydrogen as the ideal energy vector for storing renewable energy and enabling decarbonization of hard-to-abate sectors. Reducing reliance on fossil fuels.
Regulatory Support	EU Hydrogen Strategy (2020) aims to achieve climate goals. Investments in hydrogen infrastructure: €24bn-€42bn for electrolyzers, €220bn-€340bn for renewable energy.
Geopolitical Tensions	The Russia-Ukraine conflict accelerates the EU's push for energy independence and reduces reliance on natural gas.
Hydrogen Market Growth	Hydrogen demand expected to grow 6x (87 Mton in 2020 to 528 Mton by 2050). Over 500 hydrogen projects announced globally, with doubling of giga-scale projects.
Technology Advancements	Green hydrogen via electrolysis (renewable energy) as the cleanest method. Ramp-up in electrolyser production with a target of 90-100 GW by 2030.

2.3 Competitive Arena

Electrode Technologies



De Nora holds a **leading position** (50% of market share) thanks to its global presence, high-quality electrodes, and strong customer network. Its near-undisputed market position is reinforced by **strategic partnerships** and continuous innovation, allowing it to stay ahead in advanced technologies and sustainable applications.

Water Technologies



De Nora stands out due to its **advanced electrochemical disinfection systems** and focus on in situ chlorine generation, which enhances sustainability by reducing chemical transport and storage. Its strategic partnership with ThyssenKrupp Nucera and specialized industrial solutions further strengthen its **competitive edge**.

Energy Transition



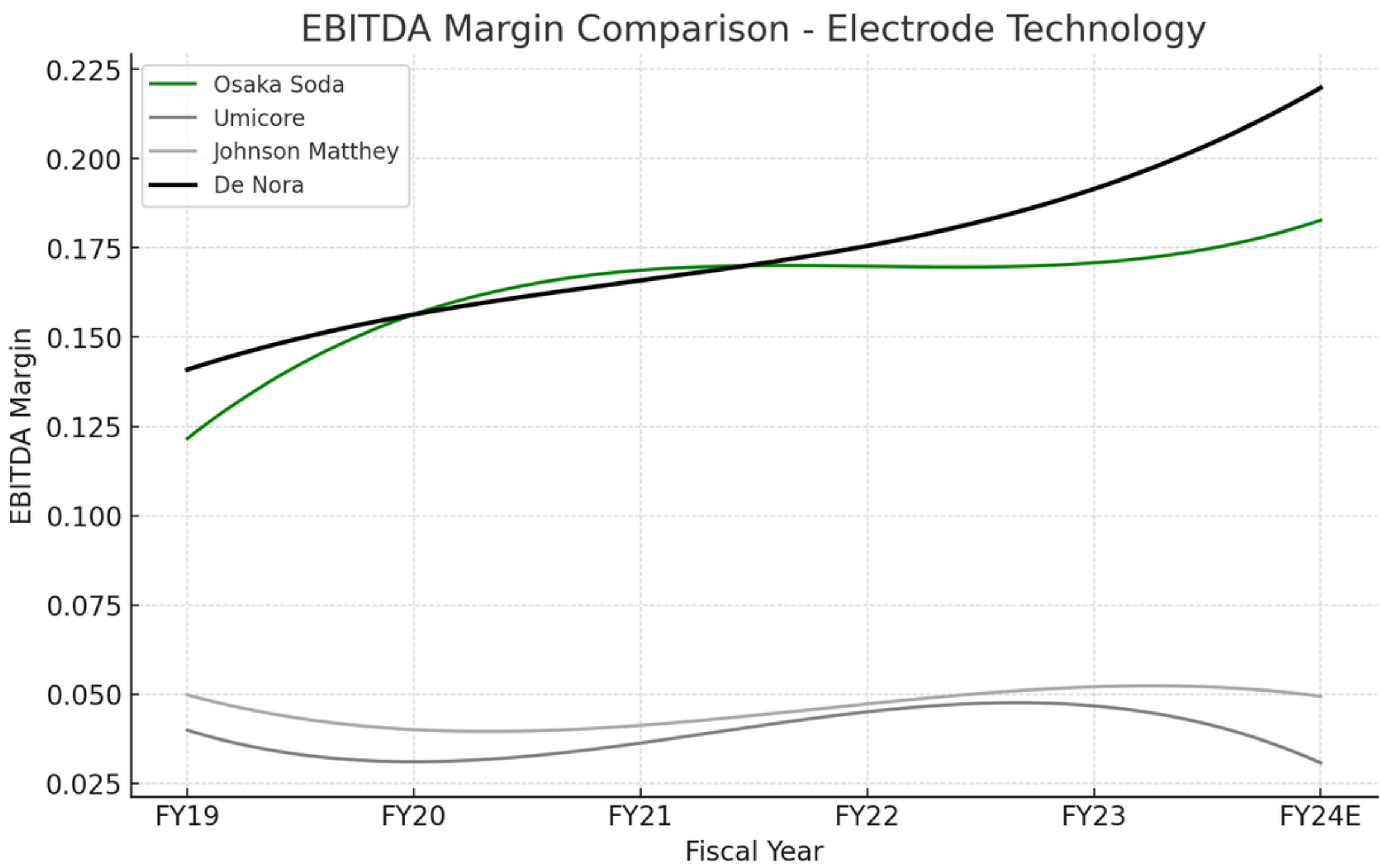
De Nora is a **leader** in green hydrogen electrode manufacturing, supported by its alkaline water electrolysis technology and investments in the gigafactory. Its involvement in major global projects, like Neom, and its **ability to innovate** and manage costs effectively enable it to maintain a strong position in this rapidly growing market.

2.3.1 Competitive Arena

Electrode Technologies

In the Electrode Technology segment, Industrie De Nora shows consistently **higher EBITDA margins** compared to its main competitors. In FY24E, De Nora is projected to achieve an EBITDA margin of 22%, significantly outperforming Osaka Soda (19%), Umicore (3%), and Johnson Matthey (5%). While **Osaka Soda** is the **closest competitor** in terms of margin performance, De Nora maintains a **noticeable lead** throughout the period from FY19 to FY24E. This indicates a stronger operational efficiency and cost management strategy, allowing De Nora to sustain superior profitability. Conversely, Umicore and Johnson Matthey consistently report lower margins, highlighting potential challenges in their cost structures or market positioning.

EBITDAm	FY19	FY20	FY21	FY22	FY23	FY24E
OSAKA SODA co., Ltd	0,13	0,13	0,19	0,18	0,15	0,19
UMICORE SA	0,04	0,03	0,04	0,04	0,05	0,03
JOHNSON MATTHEY Plc	0,05	0,04	0,04	0,05	0,05	0,05
INDUSTRIE DE NORA	0,14	0,16	0,16	0,18	0,19	0,22



Source: Factset, team estimates

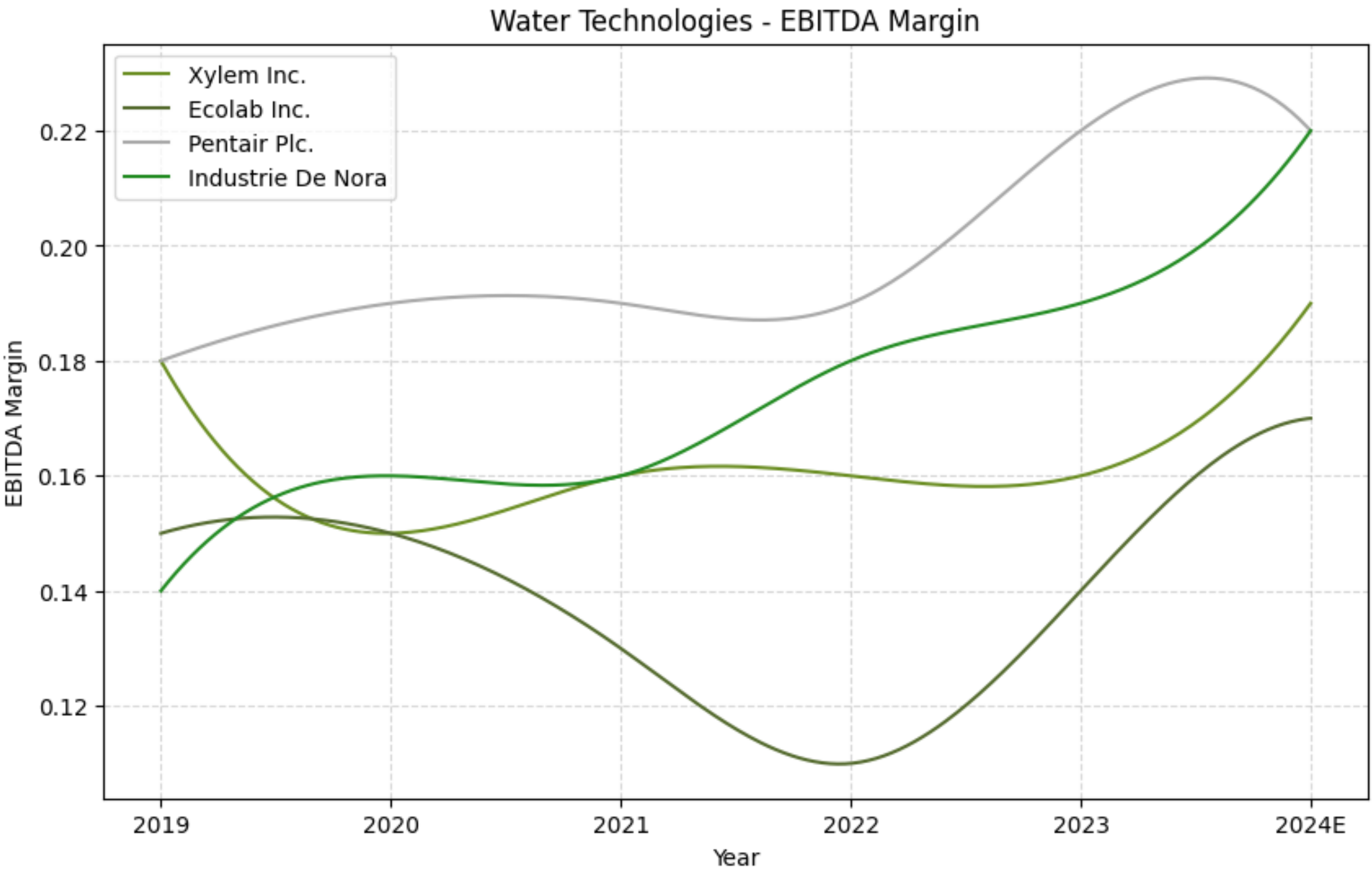
2.3.2 Competitive Arena

Water Technologies

In the Water Technology segment, Industrie De Nora demonstrates **solid growth** in its market position compared to its main competitors. In FY24E, De Nora is expected to reach a value of 0.22, up from 0.14 in 2019, outperforming Xylem Inc. (0.19), Ecolab Inc. (0.17), and matching Pentair Plc. (0.22).

While Pentair Plc. maintains a leading position with stable performance throughout the period, De Nora shows the **most significant upward trend**, reflecting its successful strategic initiatives and market penetration. Conversely, Xylem Inc. and Ecolab Inc. exhibit moderate fluctuations but remain relatively stable, indicating consistent operational performance without significant growth momentum.

EBITDAm	FY19	FY20	FY21	FY22	FY23	FY24E
Xylem Inc.	0,18	0,15	0,16	0,16	0,16	0,19
Ecolab Inc.	0,15	0,15	0,13	0,11	0,14	0,17
Pentair Plc.	0,18	0,19	0,19	0,19	0,22	0,22
Industrie De Nora	0,14	0,16	0,16	0,18	0,19	0,22



Source: Factset, team estimates

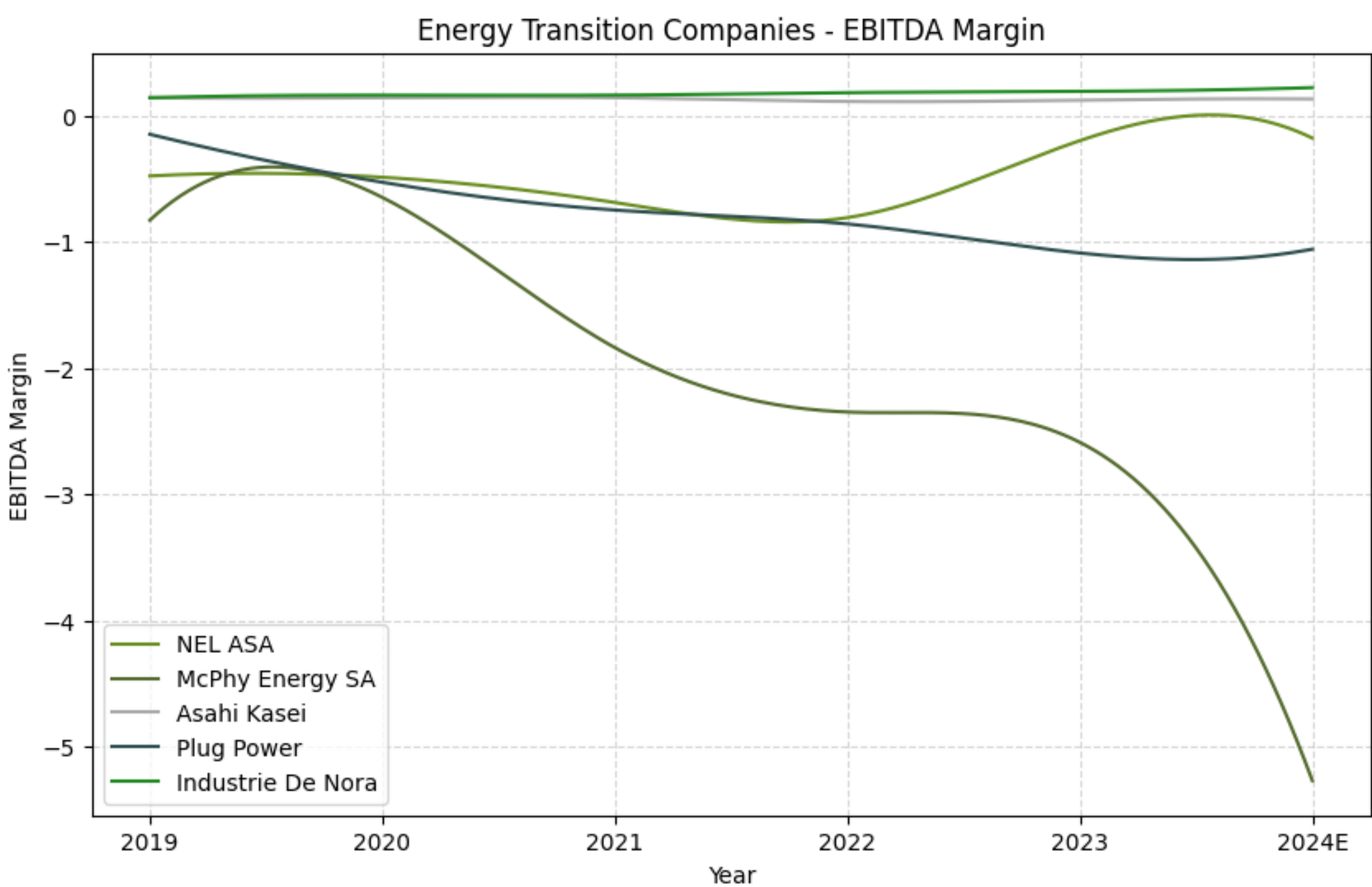
2.3.3 Competitive Arena

Energy Transition

In the Energy Transition segment, Industrie De Nora demonstrates consistently **stronger EBITDA margins** compared to its competitors. In FY24E, De Nora is projected to achieve an EBITDA margin of 22%, outperforming companies like NEL ASA (-0.18%), McPhy Energy SA (-5.27%), Plug Power (-1.06%), and Asahi Kasei (0.13%).

Although **Asahi Kasei** shows a positive margin, De Nora maintains a **significant lead**, particularly in the more recent years. This suggests that De Nora has been able to achieve greater operational efficiency and profitability within the sector. Conversely, NEL ASA, McPhy, and Plug Power consistently report negative margins, reflecting ongoing challenges related to their business models or market conditions.

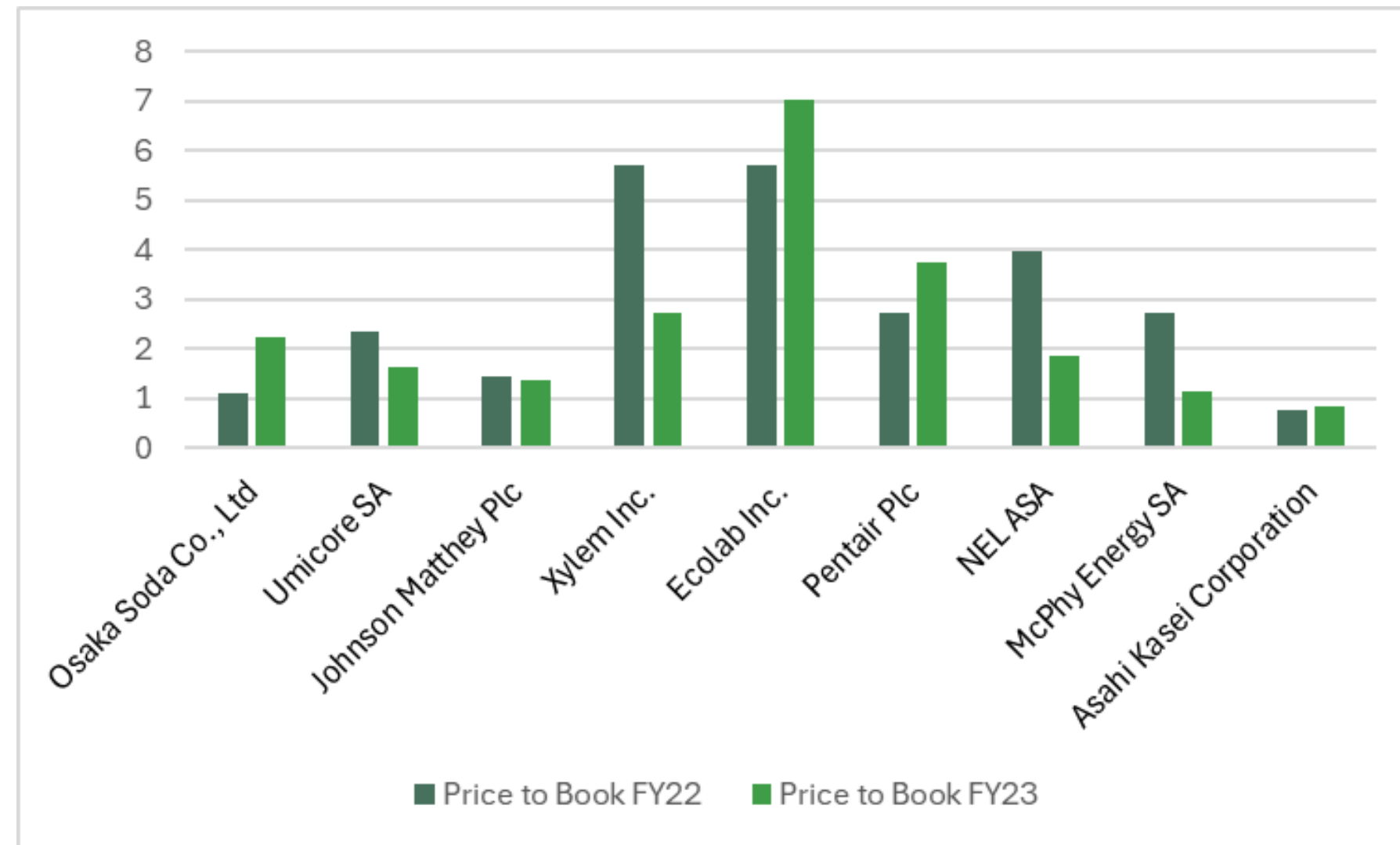
EBITDAm	FY19	FY20	FY21	FY22	FY23	FY24E
NEL ASA	-0,48	-0,49	-0,69	-0,81	-0,2	-0,18
MCPHY ENERGY SA	-0,83	-0,65	-1,84	-2,35	-2,59	-5,27
ASAHI KASEI CORPORATION	0,14	0,14	0,14	0,11	0,12	0,13
INDUSTRIE DE NORA	0,14	0,16	0,16	0,18	0,19	0,22
PLUG POWER Inc	-0,15	-0,53	-0,75	-0,86	-1,09	-1,06



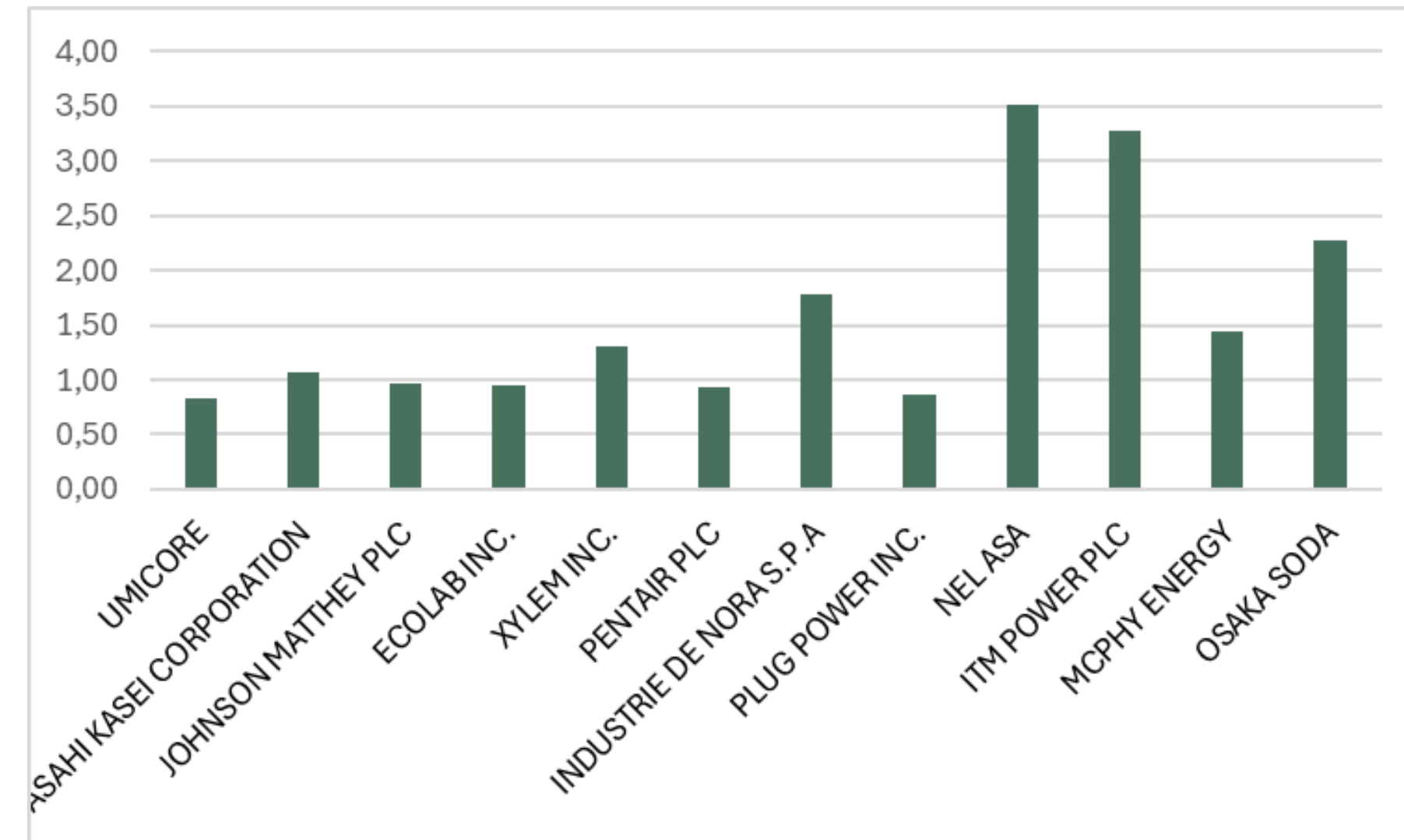
Source: Factset, team estimates

2.4 Financial Comparison

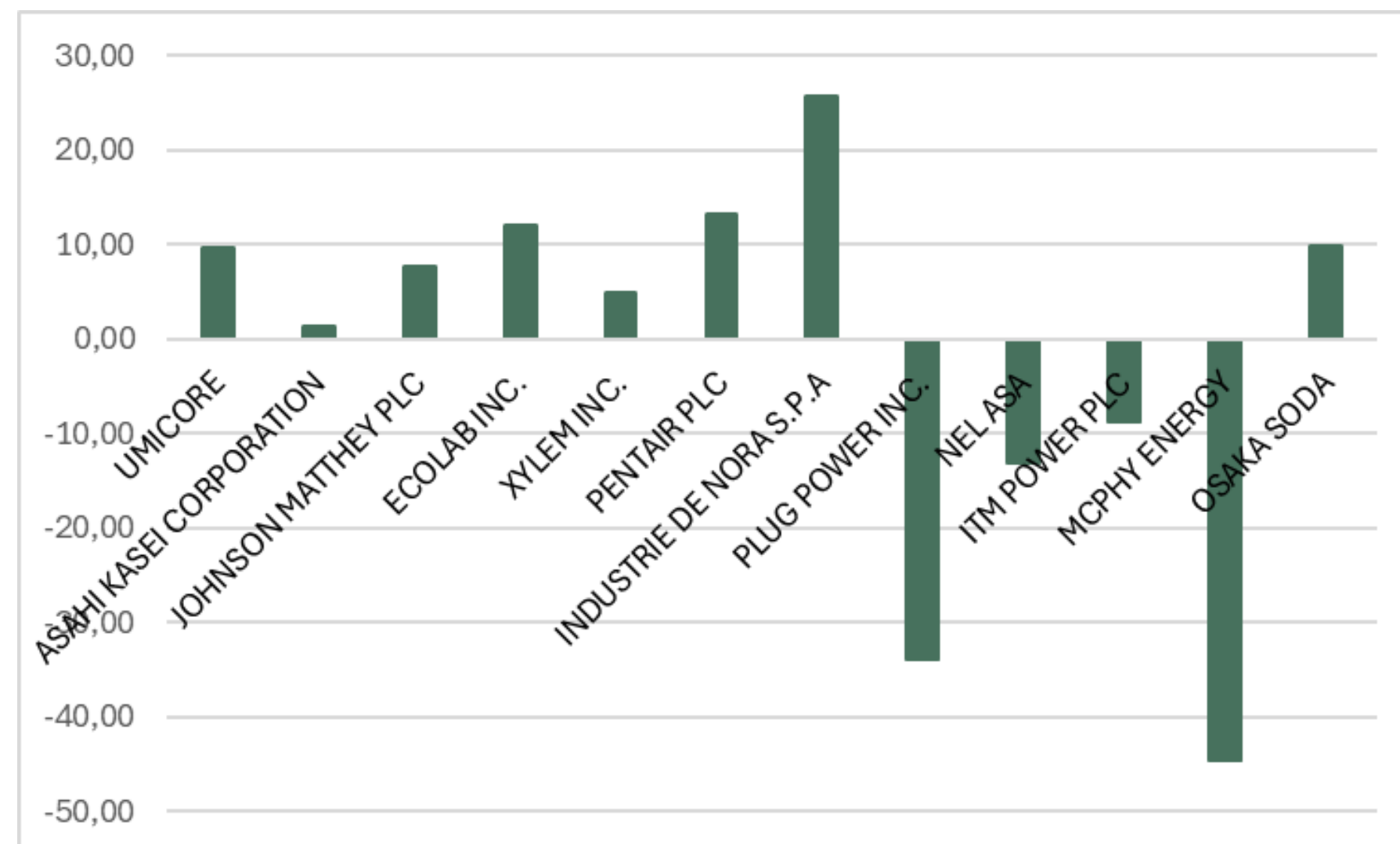
MARKET CAP



CURRENT RATIO



ROCE



PRICE TO BOOK



3. FINANCIAL ANALYSIS

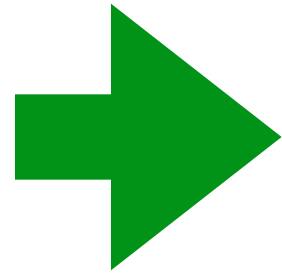
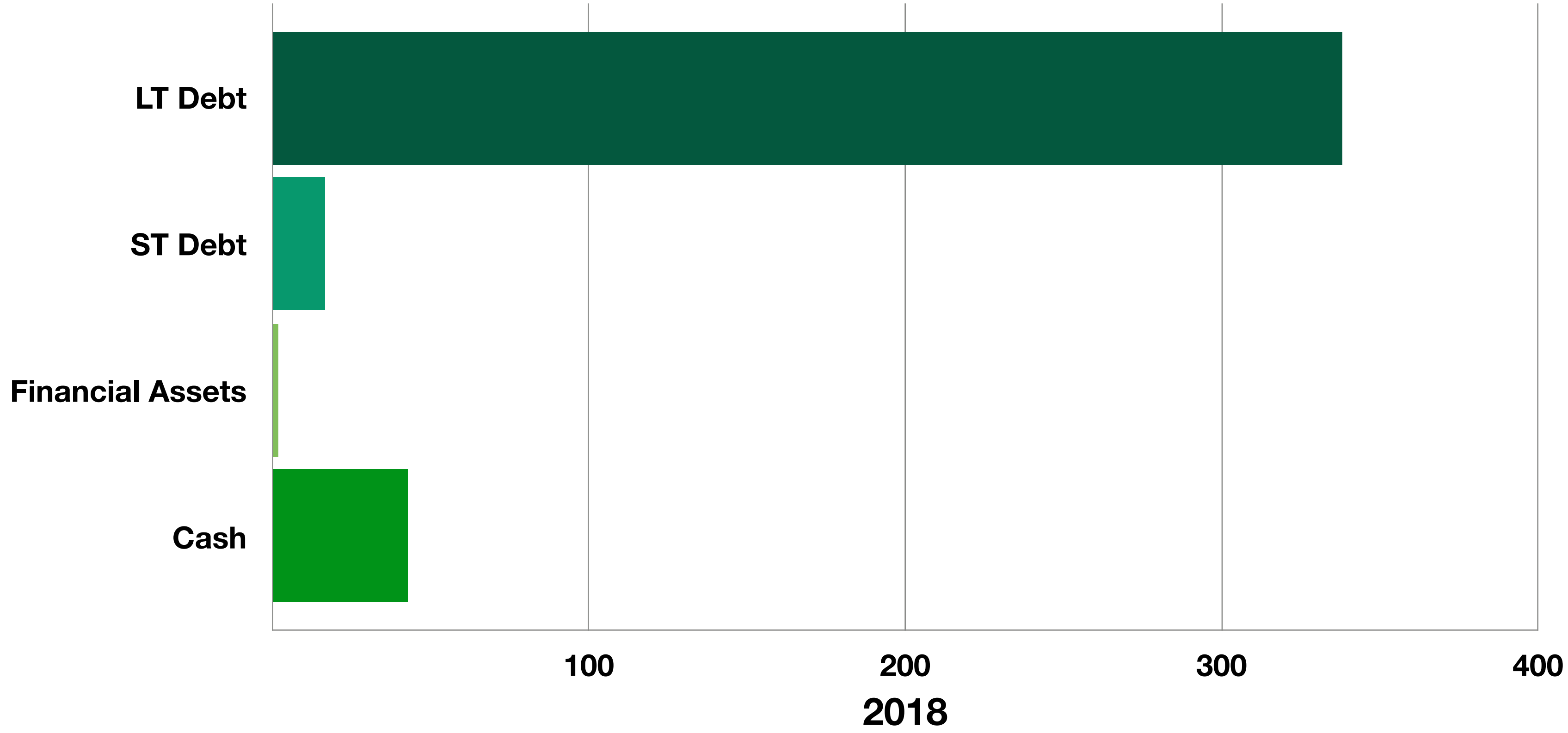
3.1 Debt Structure

DEBT STRUCTURE							
Long term							
Pool Financing	Amount	Currency	Date of Issue	Repayment	Date of repayment	Remaining amount	September 30, 2024
Industrie De Nora S.p.A.	180.000	EUR	May 5, 2022	100	March 31, 2023	80.000	80.000
De Nora Holdings US	90.000	USD	May 5, 2022	50	March 31, 2023	40.000	40.000
Short term							
	Amount	Currency	Maturity Date	Interest Rate	Used amount as of September 2024	Remaining amount as of September 2024	
Sumitomo Mitsui Banking Co loan							
De Nora Permelec Ltd	1400.000	JPY	January 31,2023	0.13%			
Sumitomo Mitsui Trust Bank loan							
De Nora Permelec Ltd	50.000	JPY	January 31, 2023	0.16%			
Mizuho Bank loan							
De Nora Permelec Ltd	1,500.000	JPY					
Total Amount for De Nora Permelec Ltd	2,950.000				2,700.000	250.000	

Net Debt = Total Debt - Liquidity	-68.22
EBITDA	167.535
Net Debt/EBITDA	-0.41

Source: Company Data, Team Assessment

3.2 Financial Position

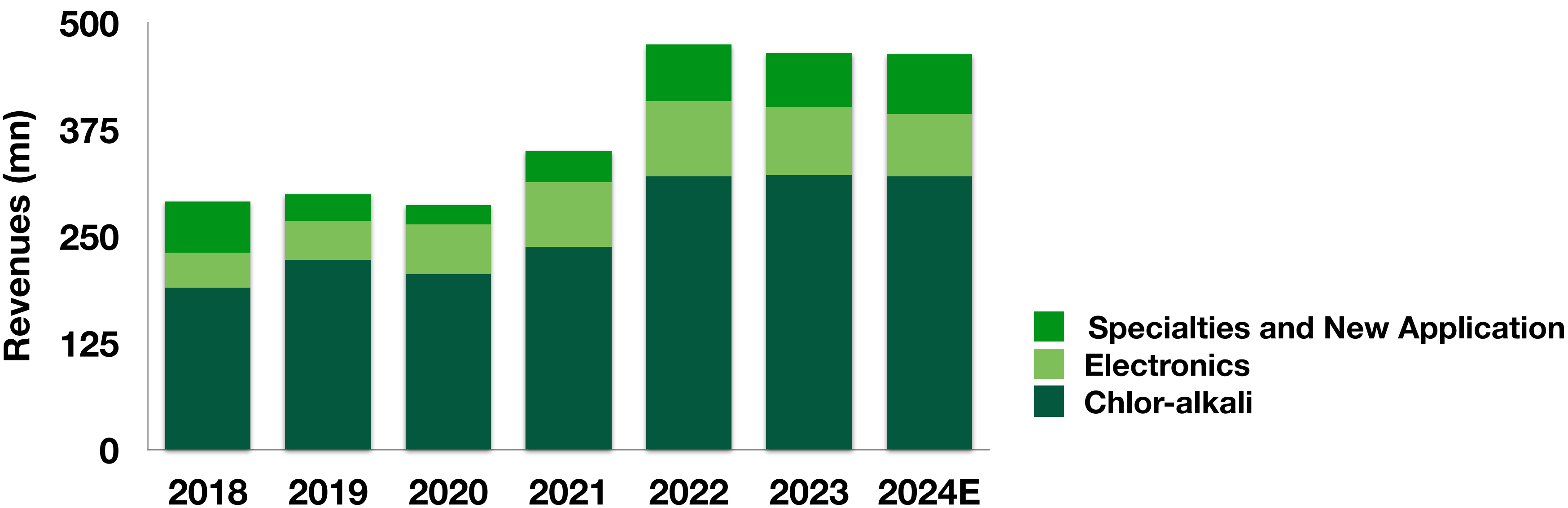


STRONG

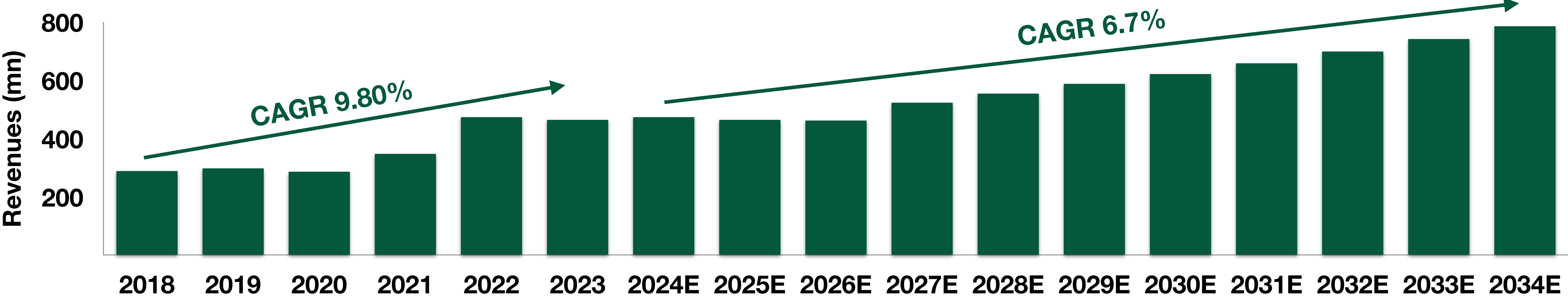
Source: Company Data, Team Assessment

3.3 Revenues: Electrode Technologies

Revenues breakdown by production line

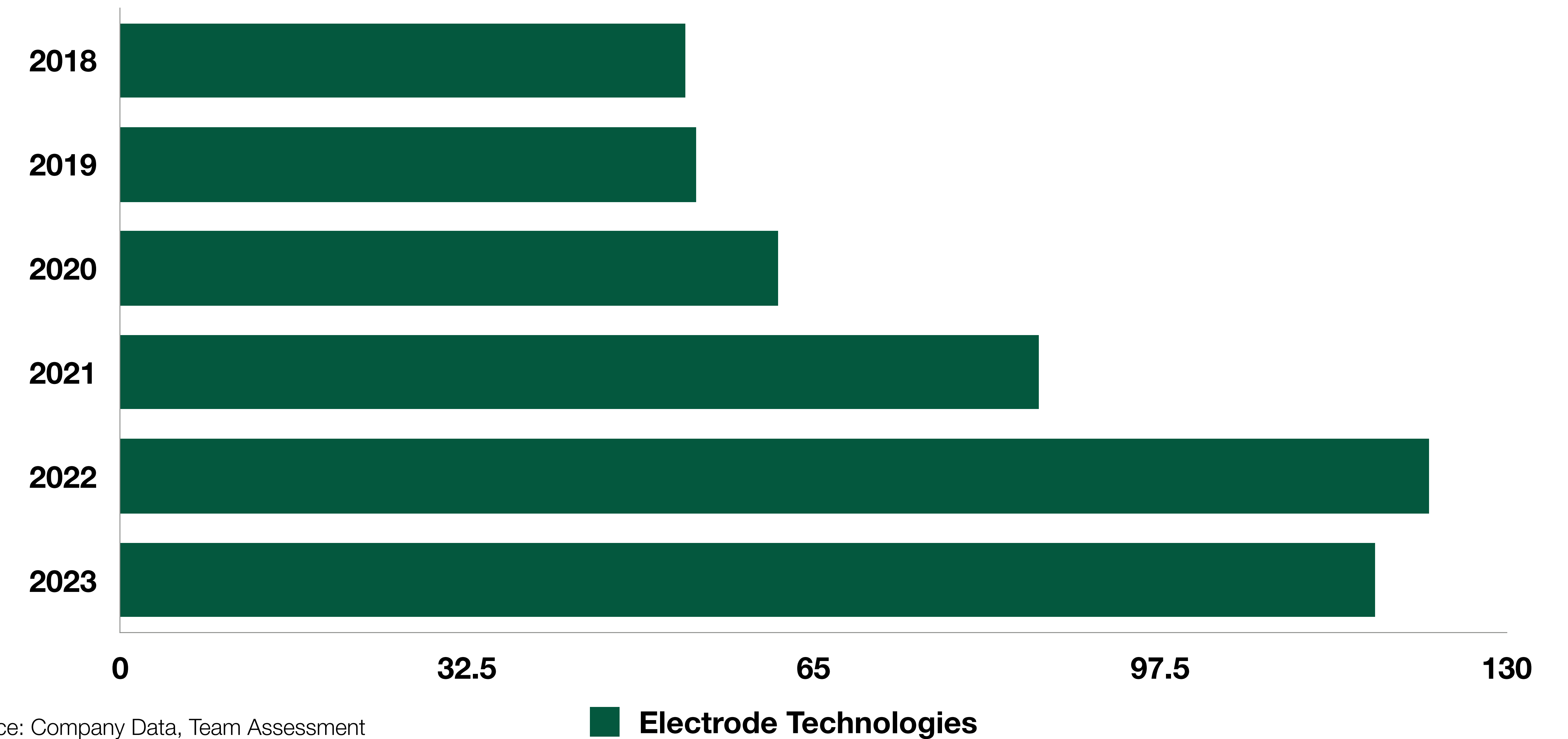


Historical and Forecasting Electrode Technologies revenues analysis

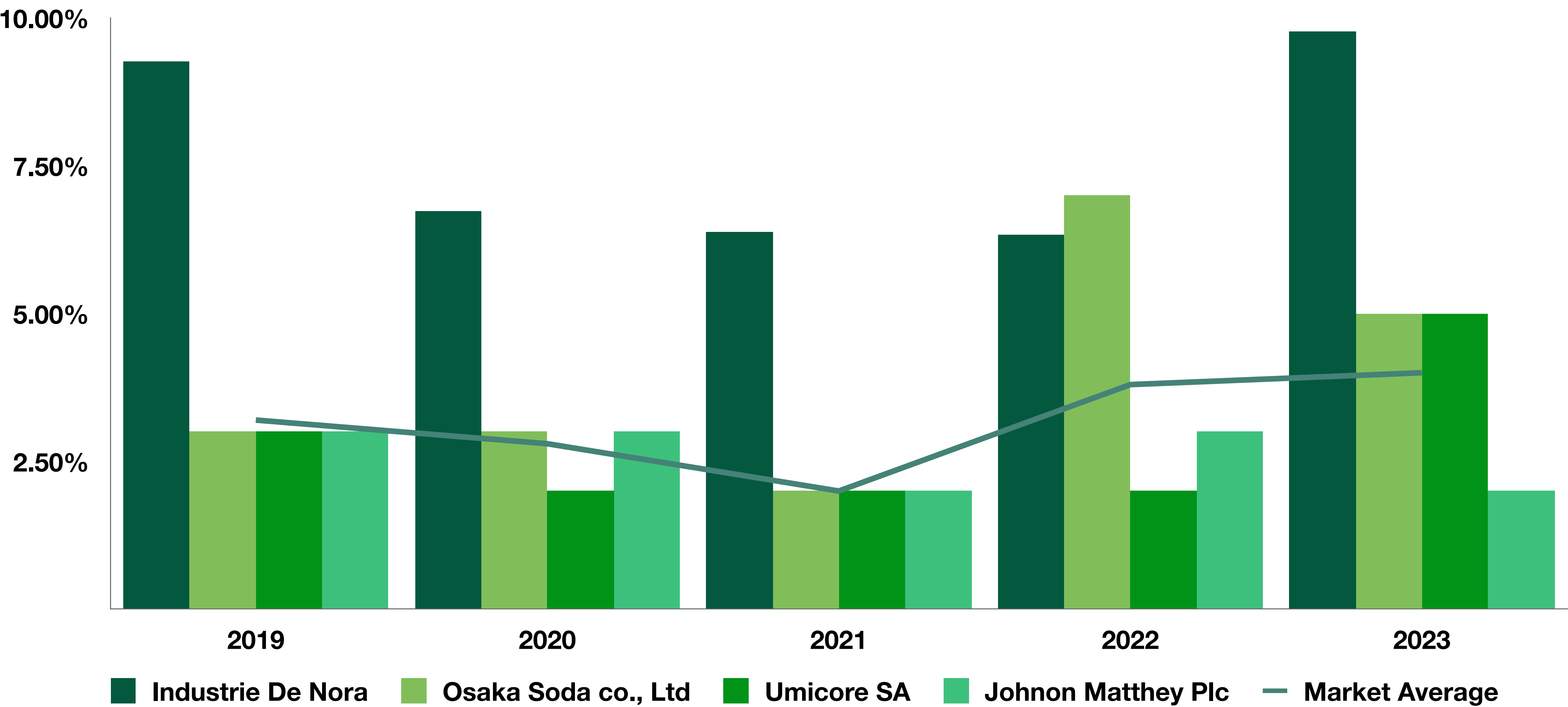


Source: Company Data, Team Assessment, Mediobanca

3.4 EBITDA Electrode Technologies



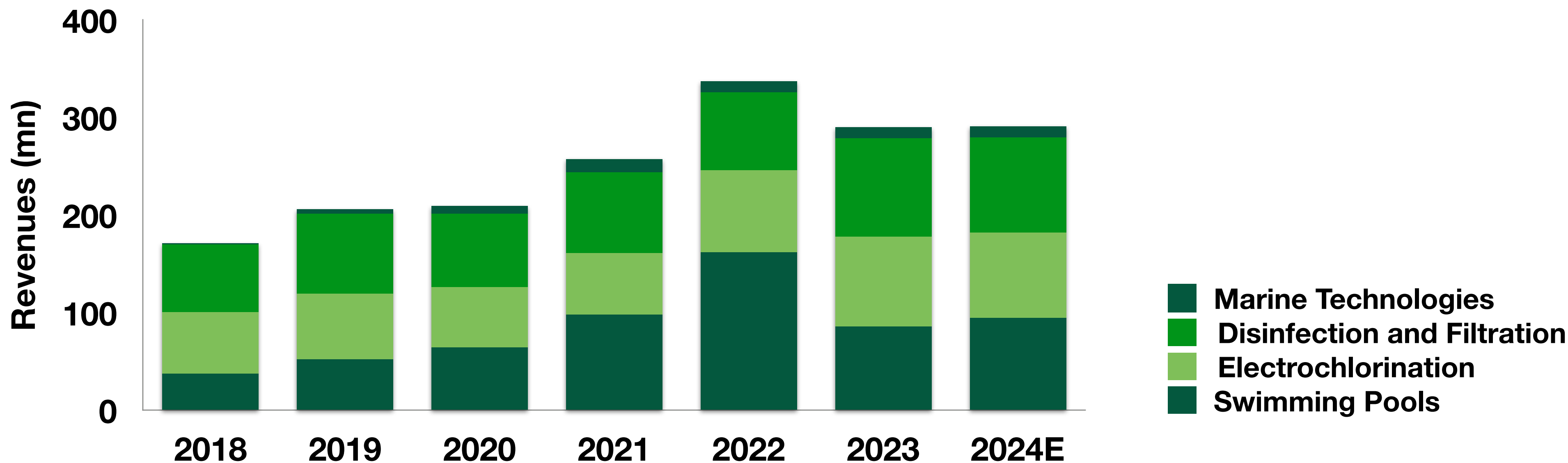
3.5 CapEx/Revenues Electrode Technologies



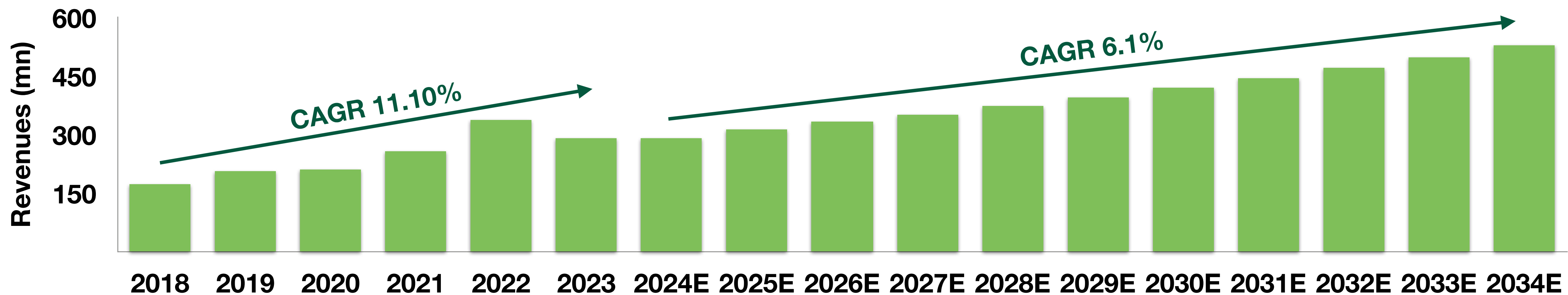
Source: Company Data, Team Assessment

3.6 Revenues: Water Technologies

Revenues breakdown by production line

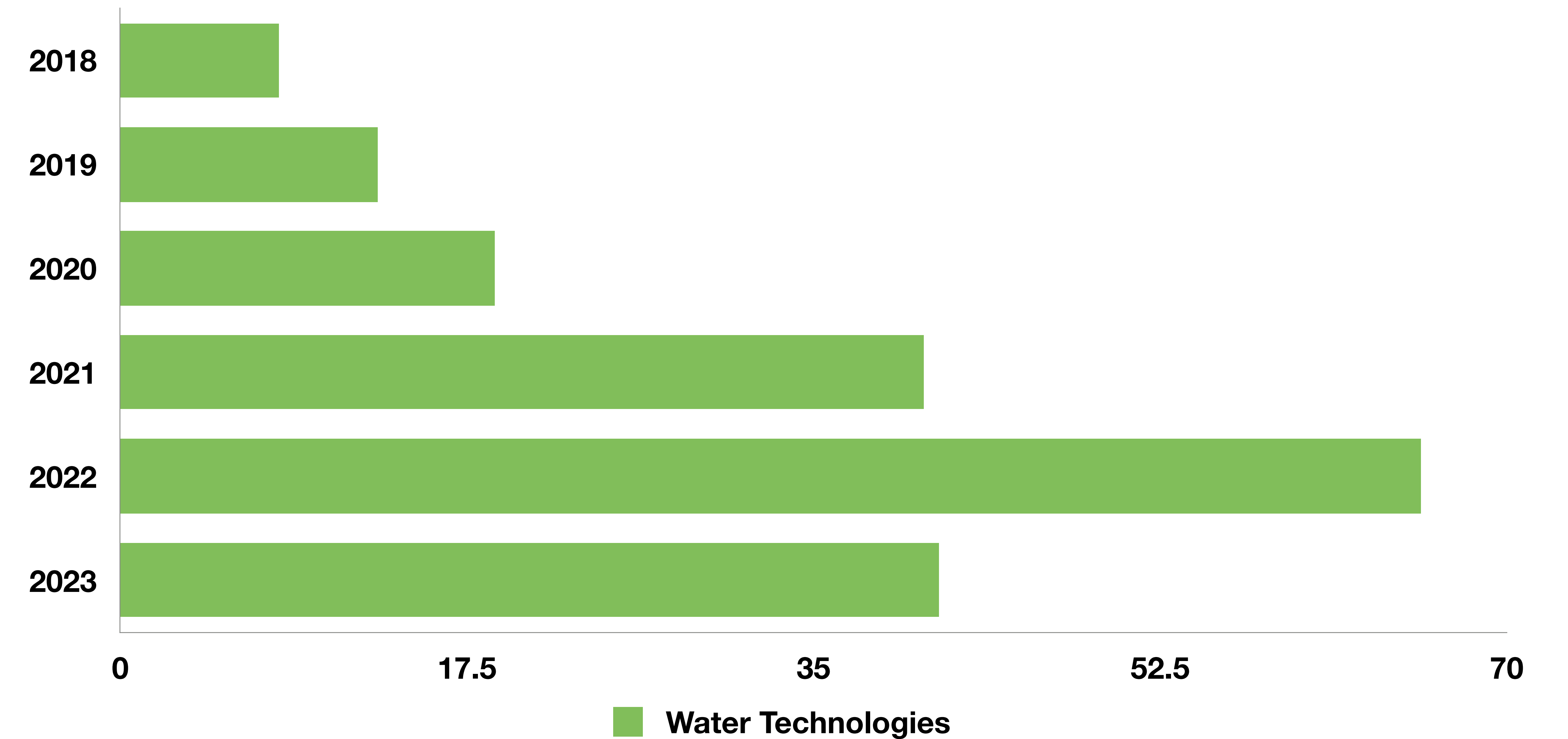


Historical and Forecasting Water Technologies revenues analysis



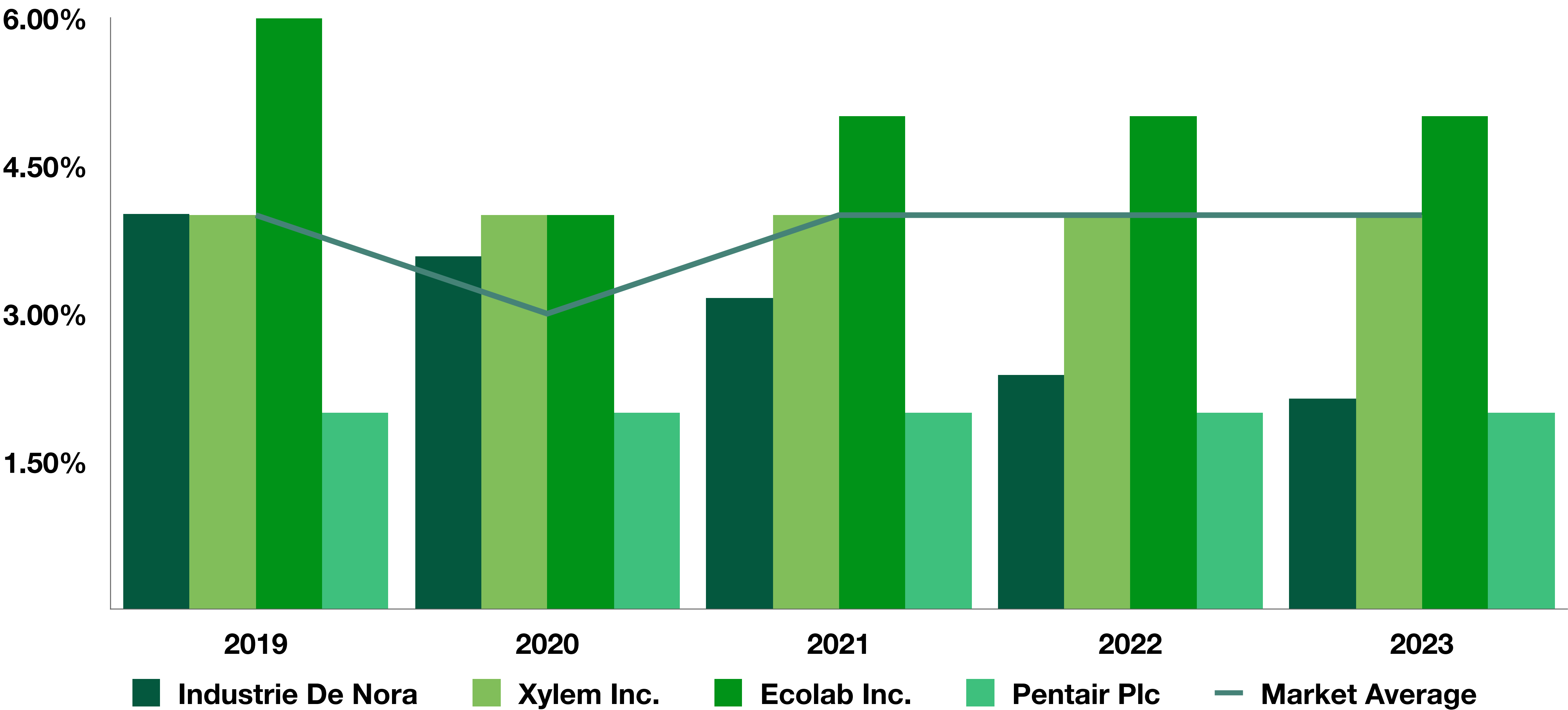
Source: Company Data, Team Assessment, Mediobanca

3.7 EBITDA Water Technologies



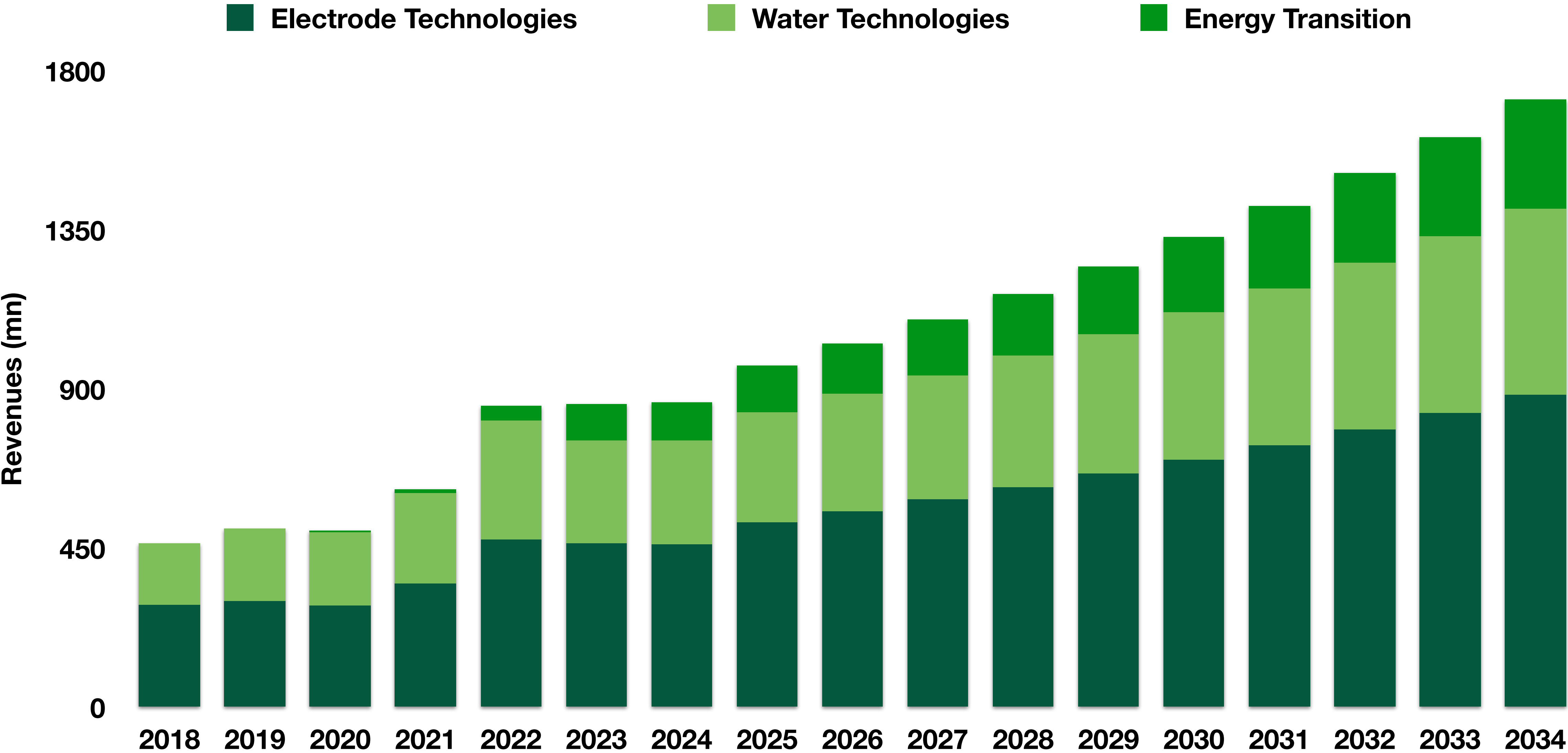
Source: Company Data, Team Assessment

3.8 CapEx/Revenues Water Technologies



Source: Company Data, Team Assessment

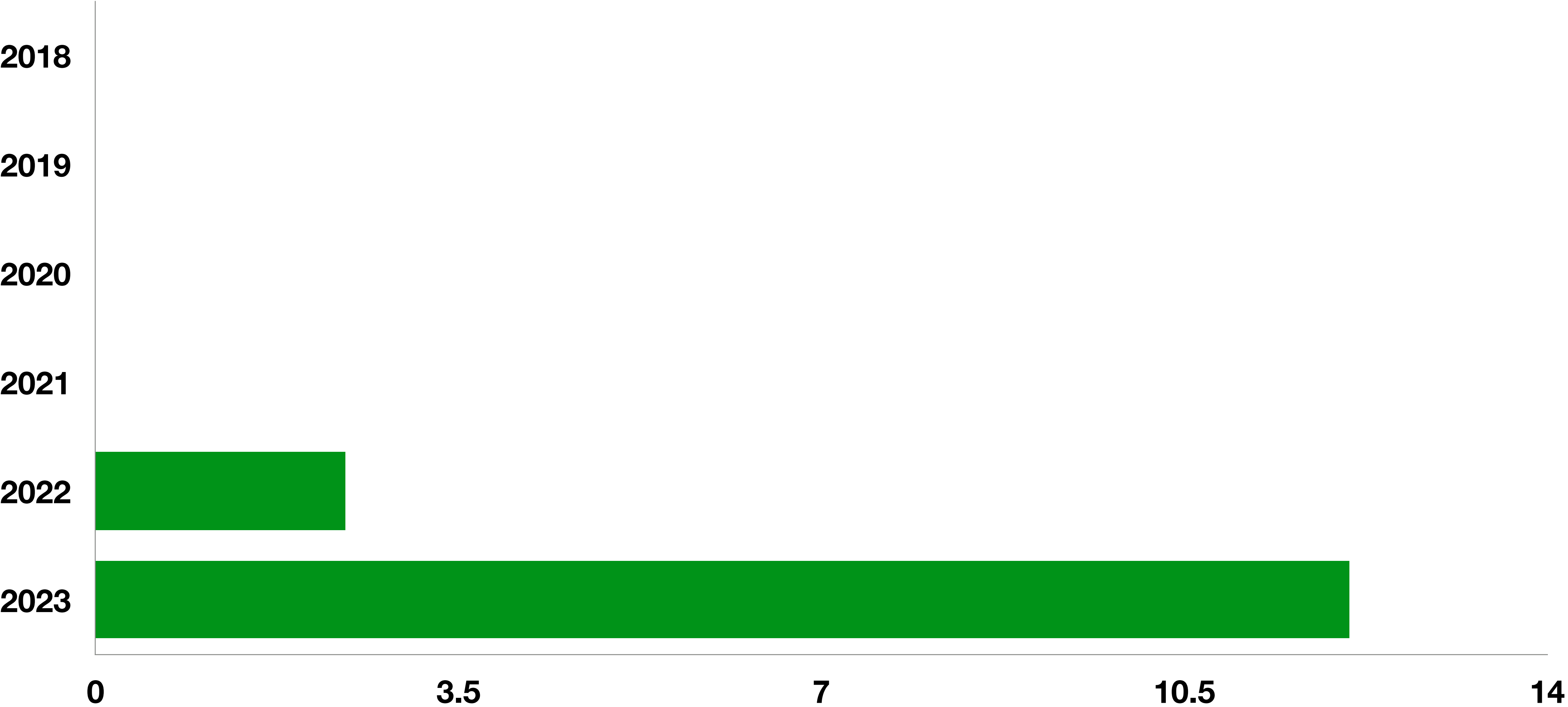
3.9 Revenues breakdown estimation by production line



Source: Company Data, Team Assessment

3.10 EBITDA Energy Transition

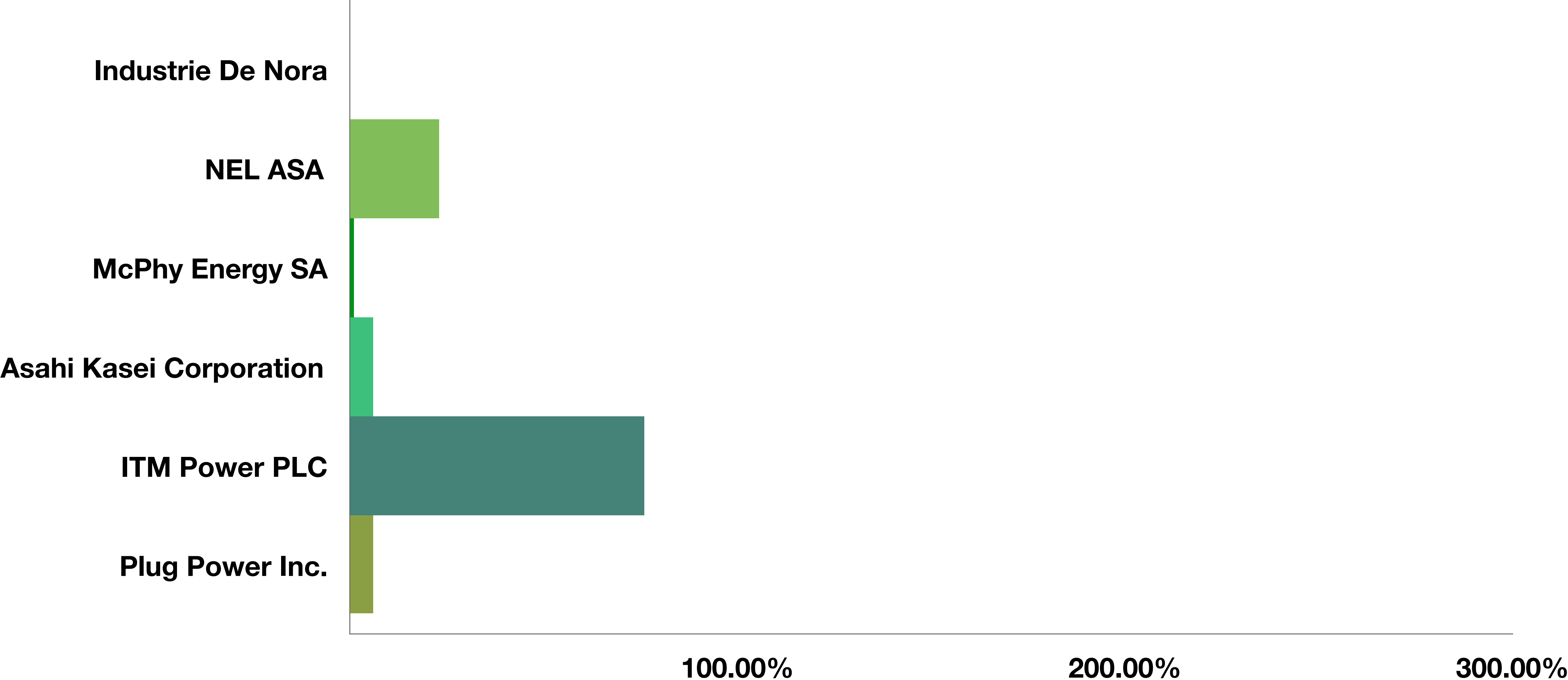
■ Energy Transition



Source: Company Data, Team Assessment

EBITDA (mn)

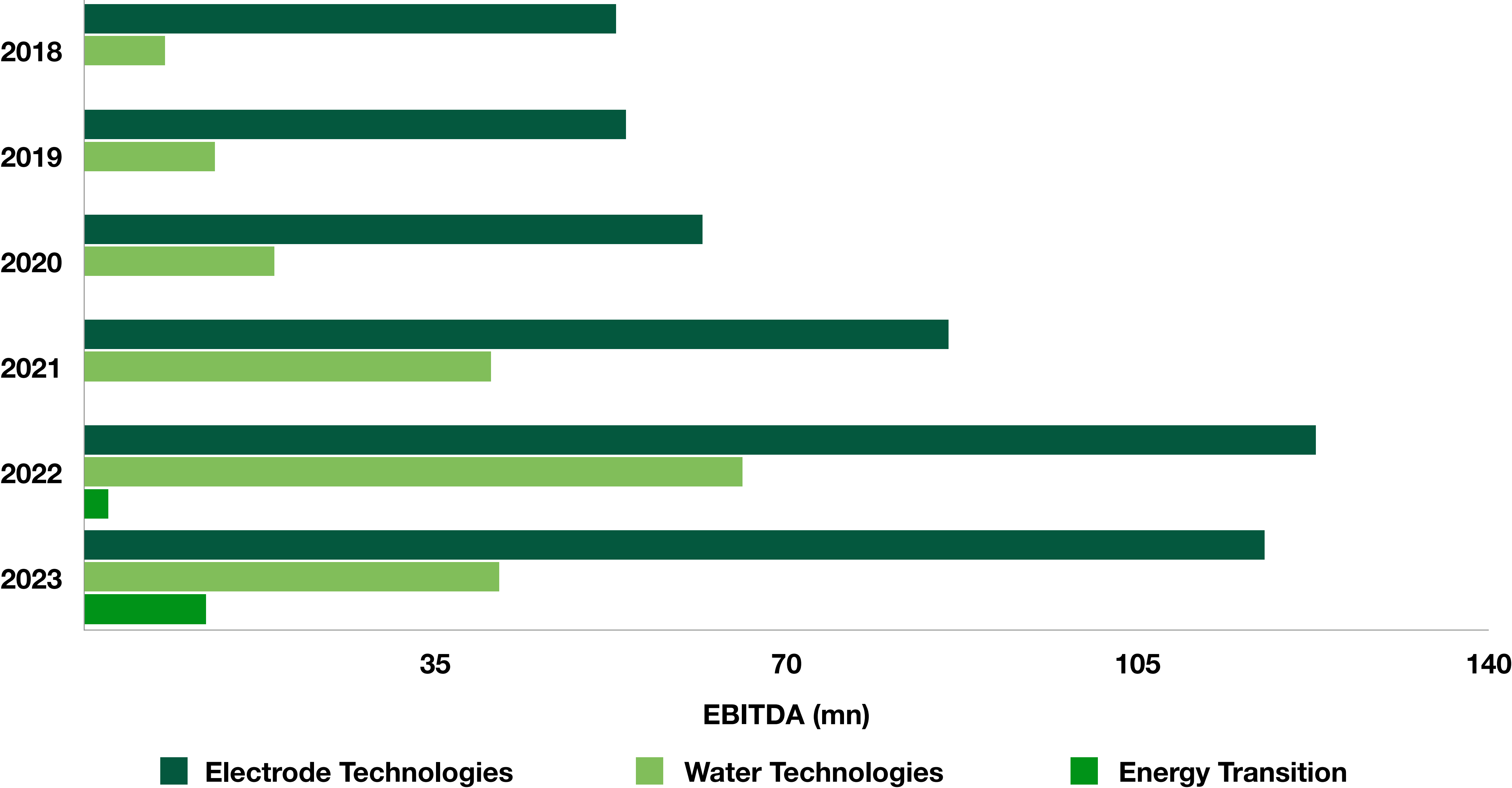
3.11 CapEx/Revenues Energy Transition



Source: Company Data, Team Assessment

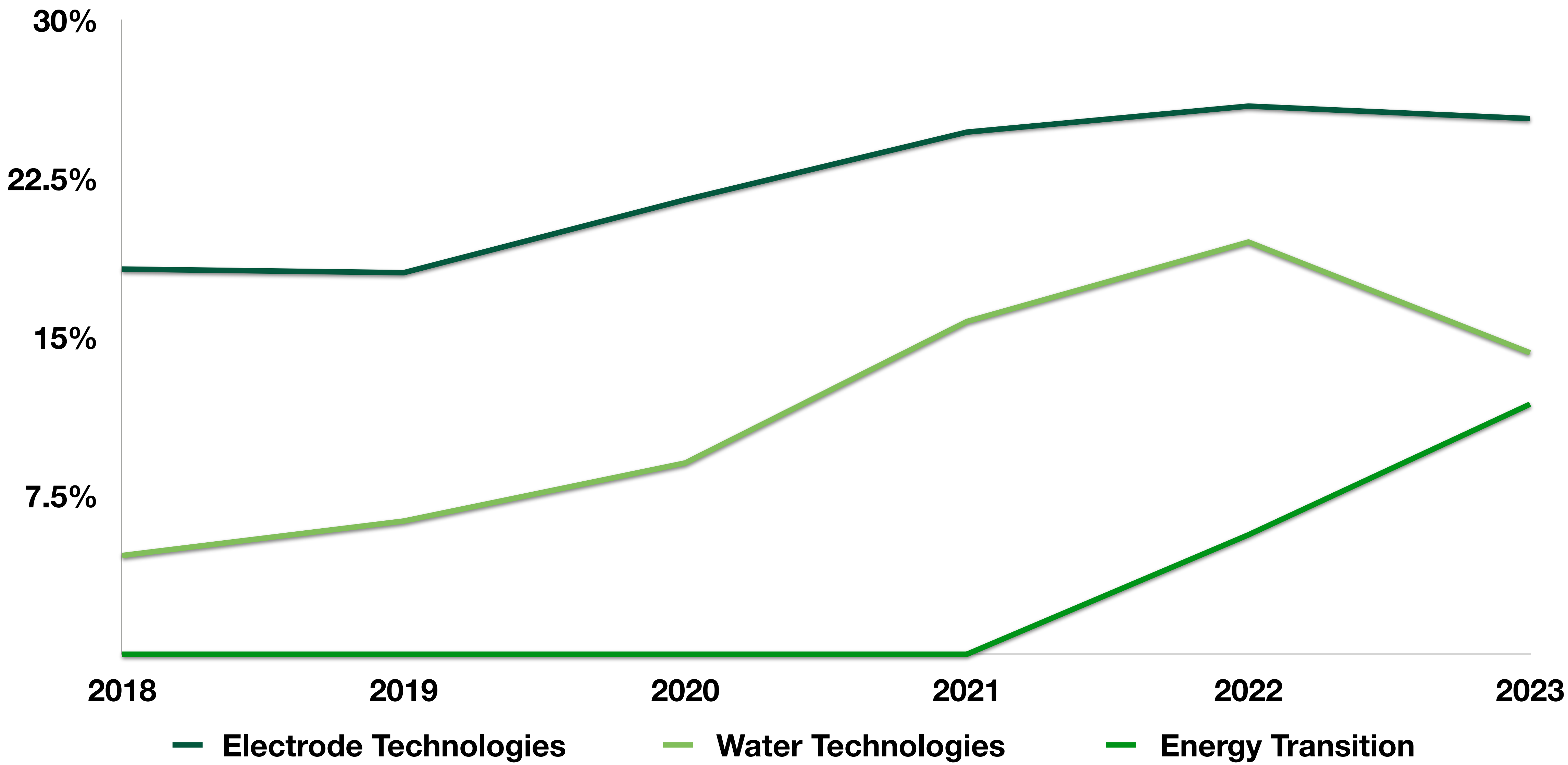
2019

3.12 EBITDA by Segment



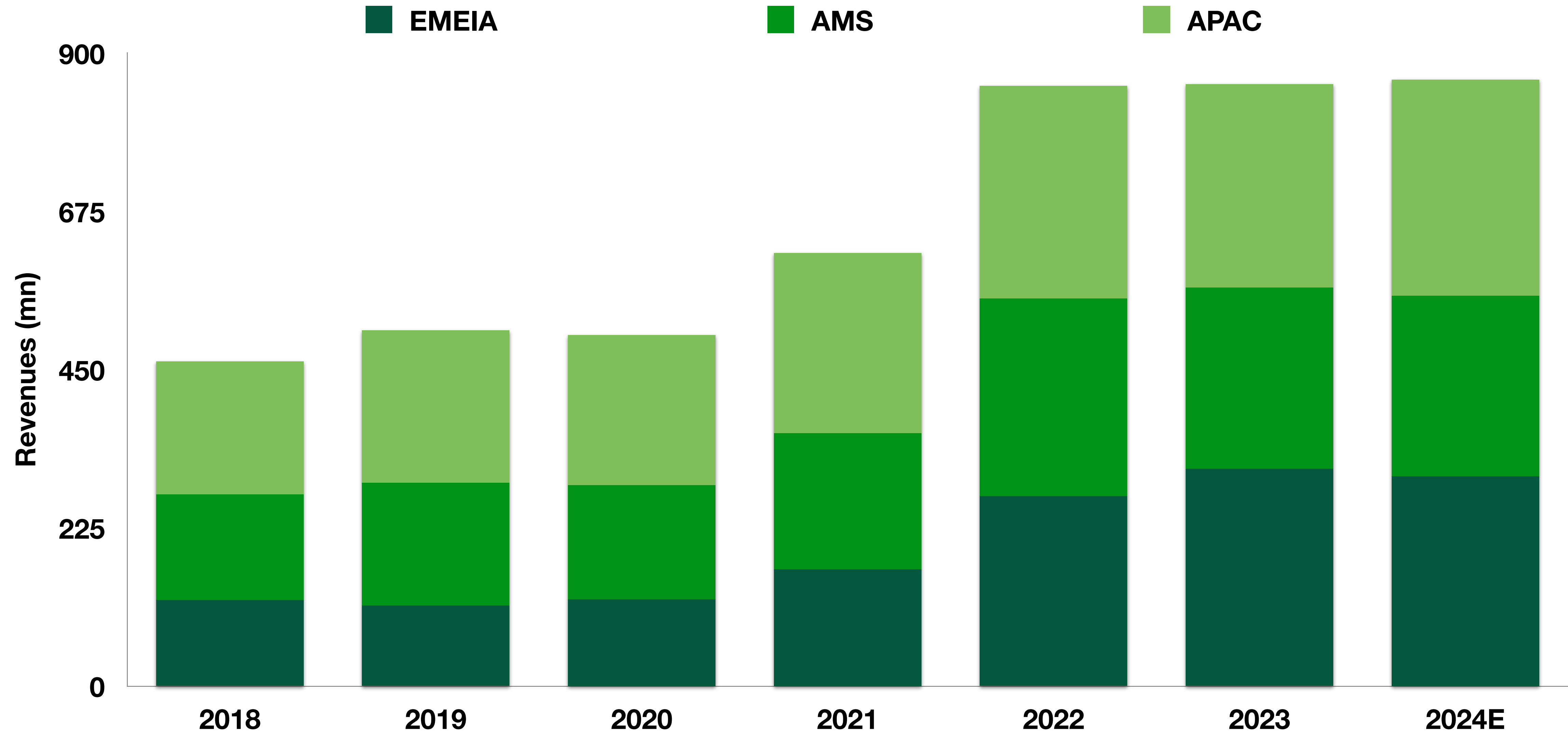
Source: Company Data, Team Assessment

3.13 EBITDA margin by Segment



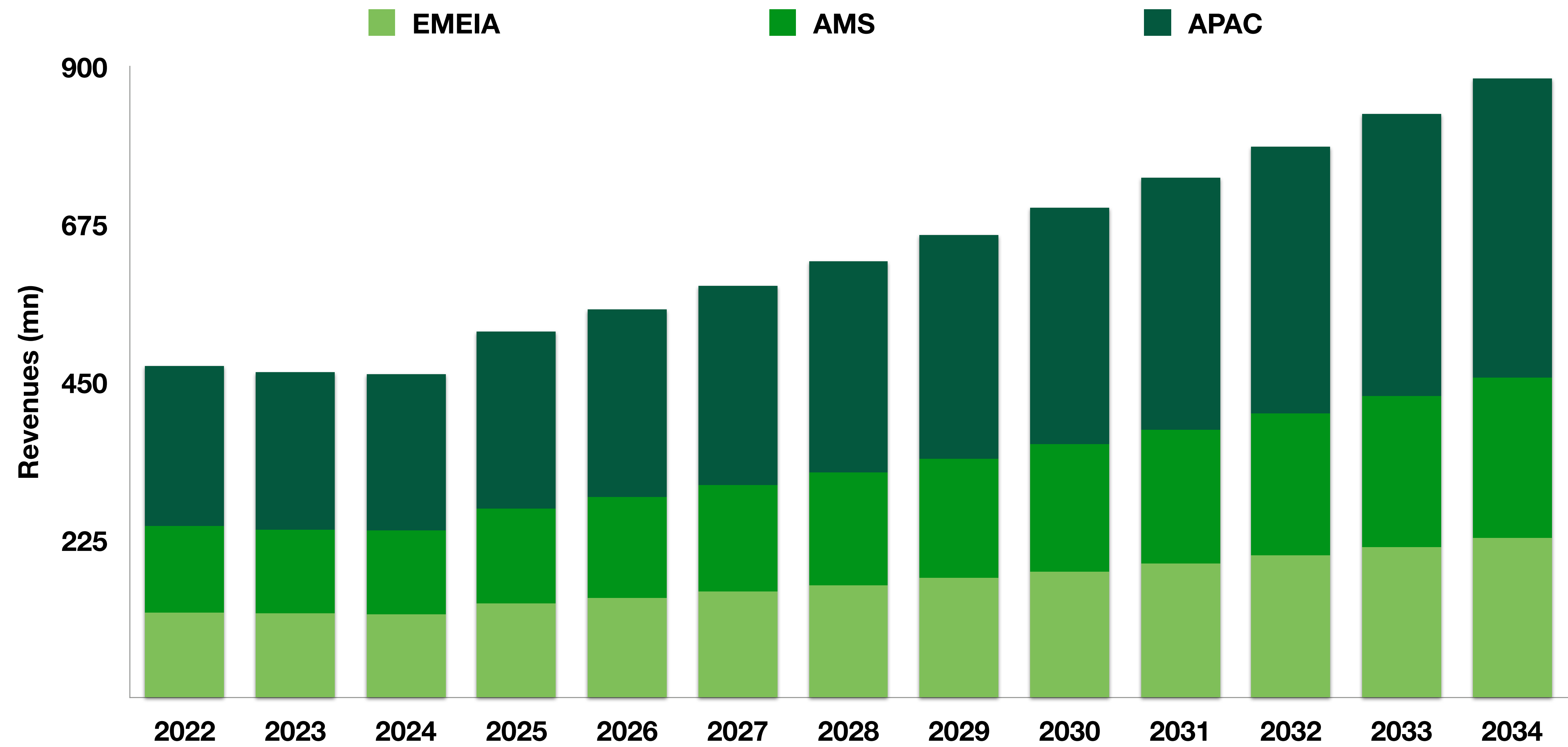
Source: Company Data, Team Assessment

3.14 Revenues breakdown by geography



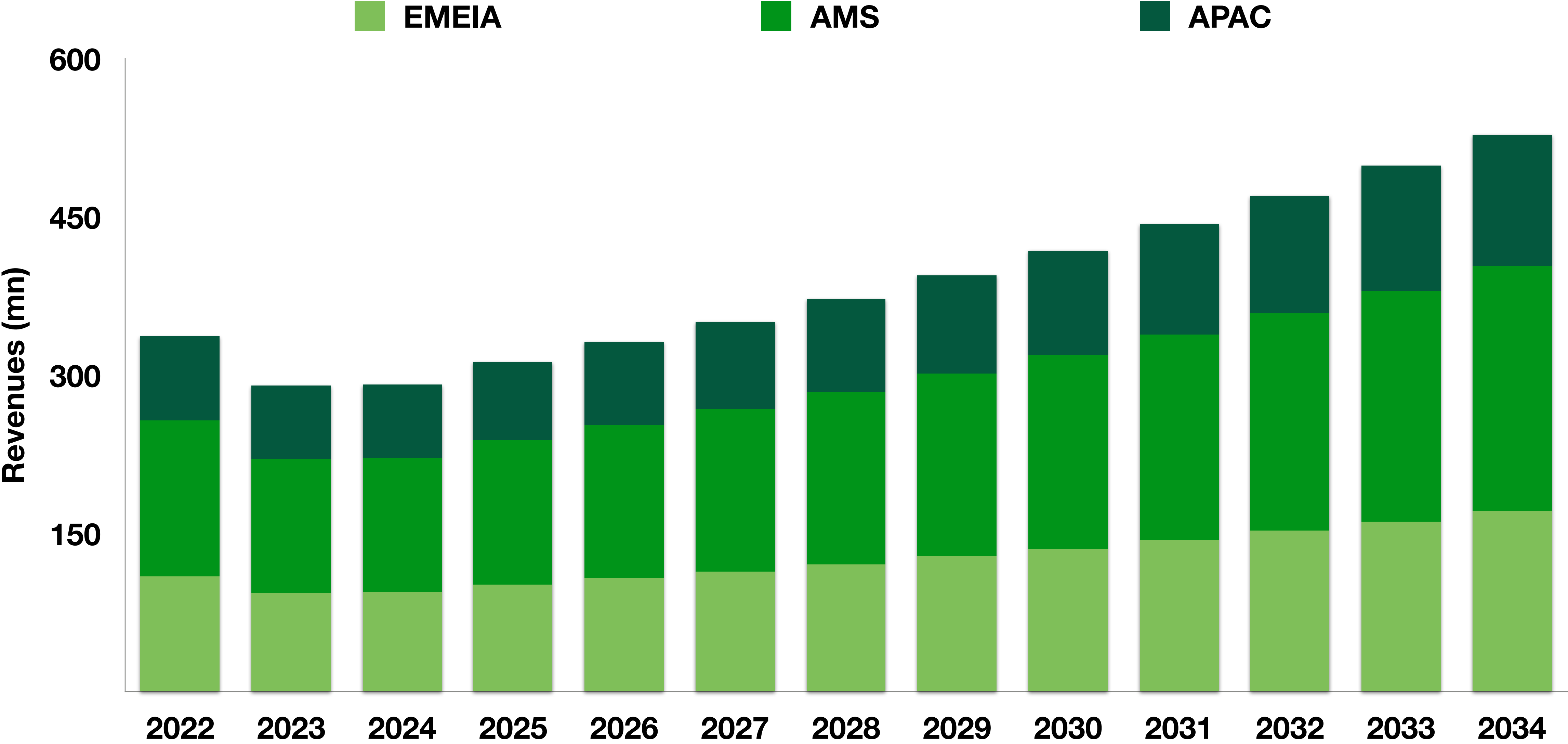
Source: Company Data, Team Assessment

3.15 Electrode Technologies - Revenues breakdown estimation by geography



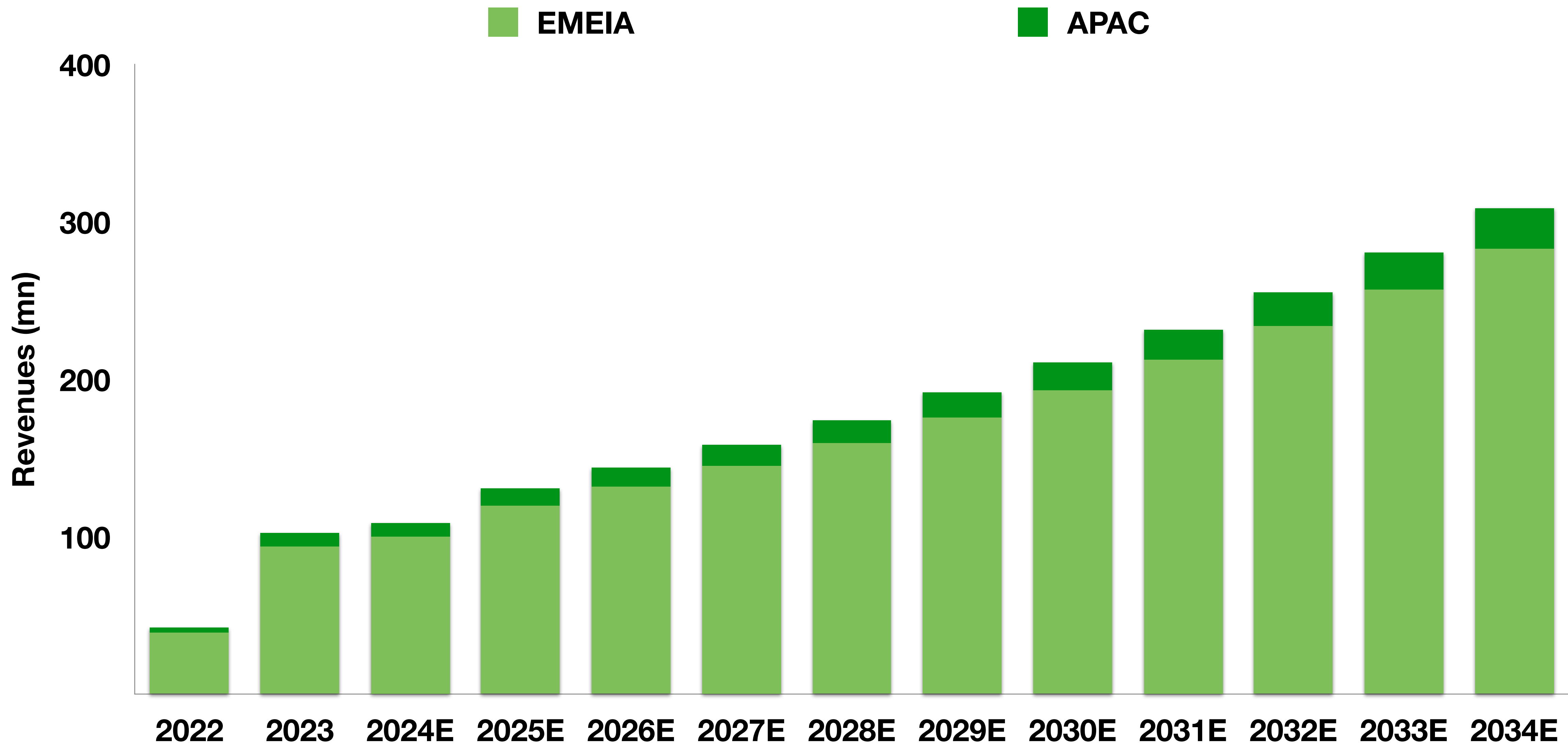
Source: Company Data, Team Assessment

3.16 Water Technologies - Revenues breakdown estimation by geography



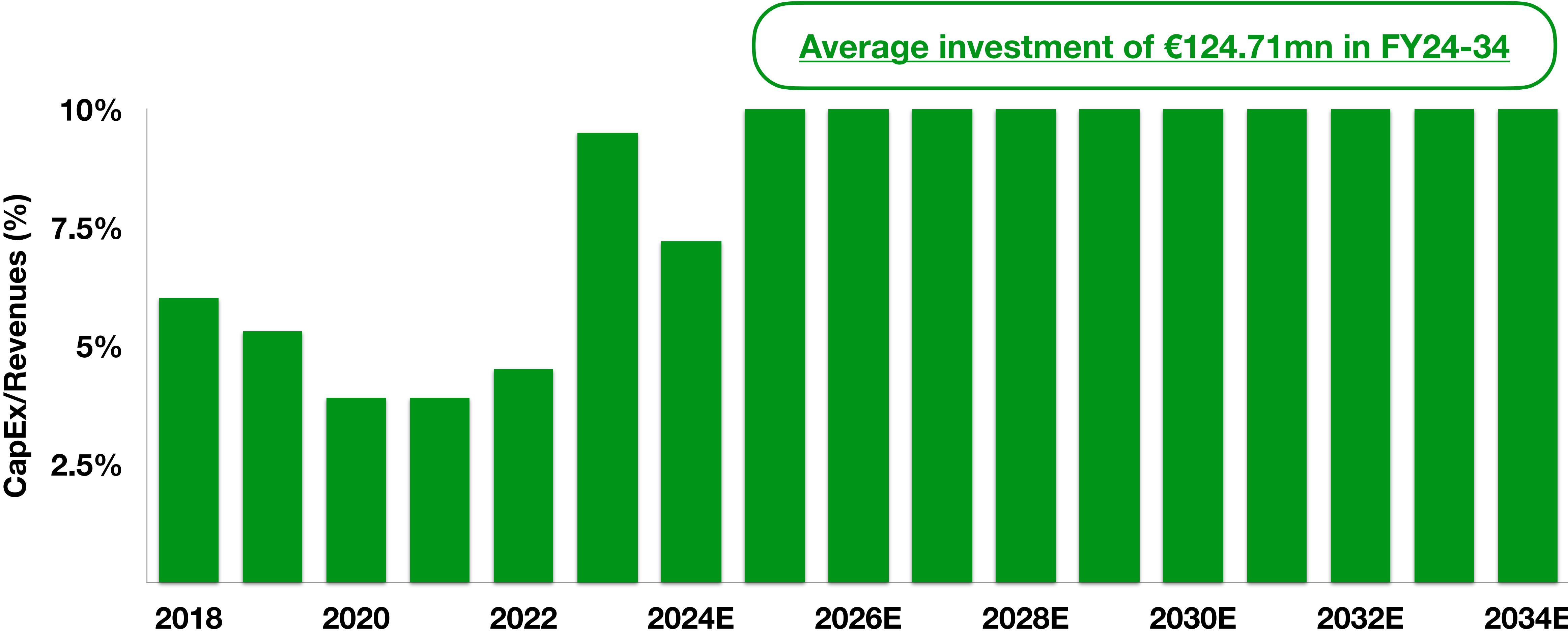
Source: Company Data, Team Assessment

3.17 Energy Transition - Revenues breakdown estimation by geography



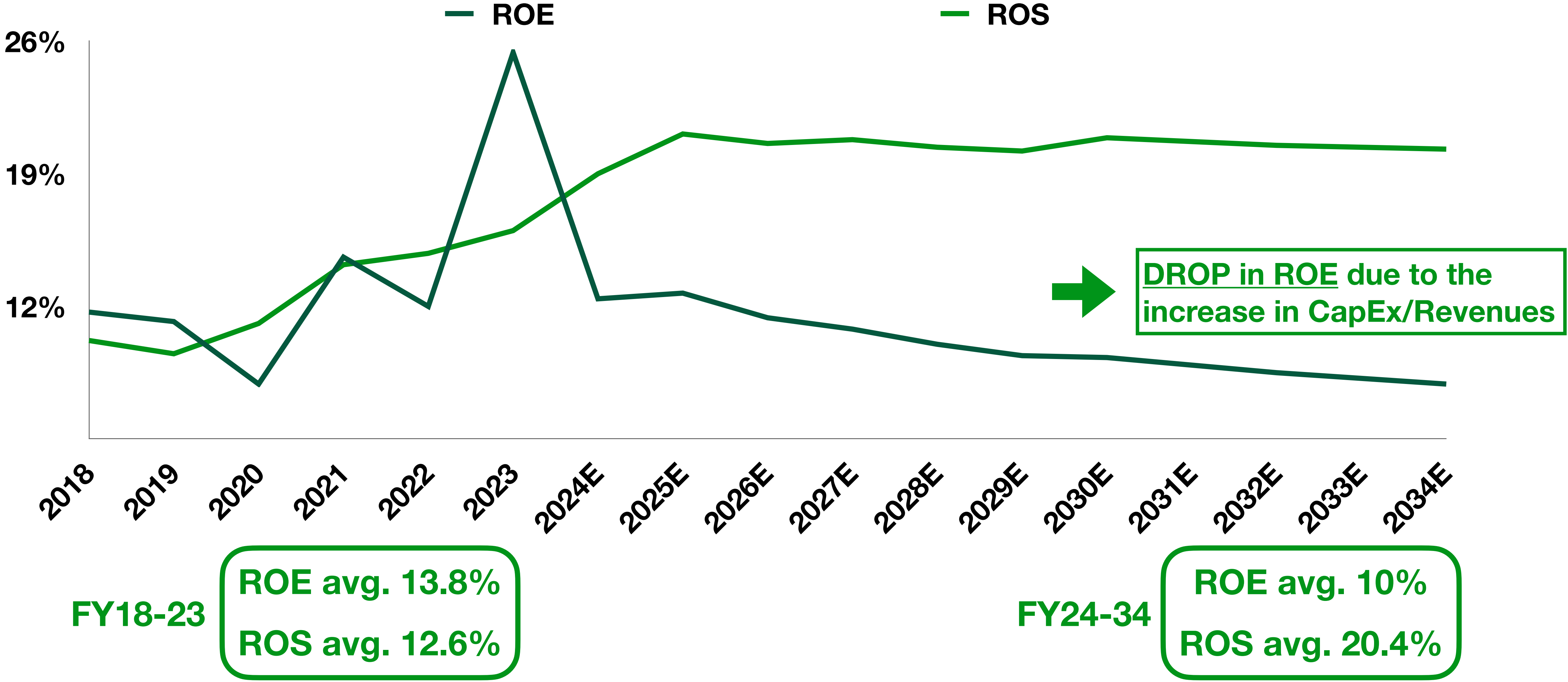
Source: Company Data, Team Assessment

3.18 CapEx/Revenues estimation



Source: Company Data, Team Assessment

3.19 ROE and ROS



Source: Company Data, Team Assessment

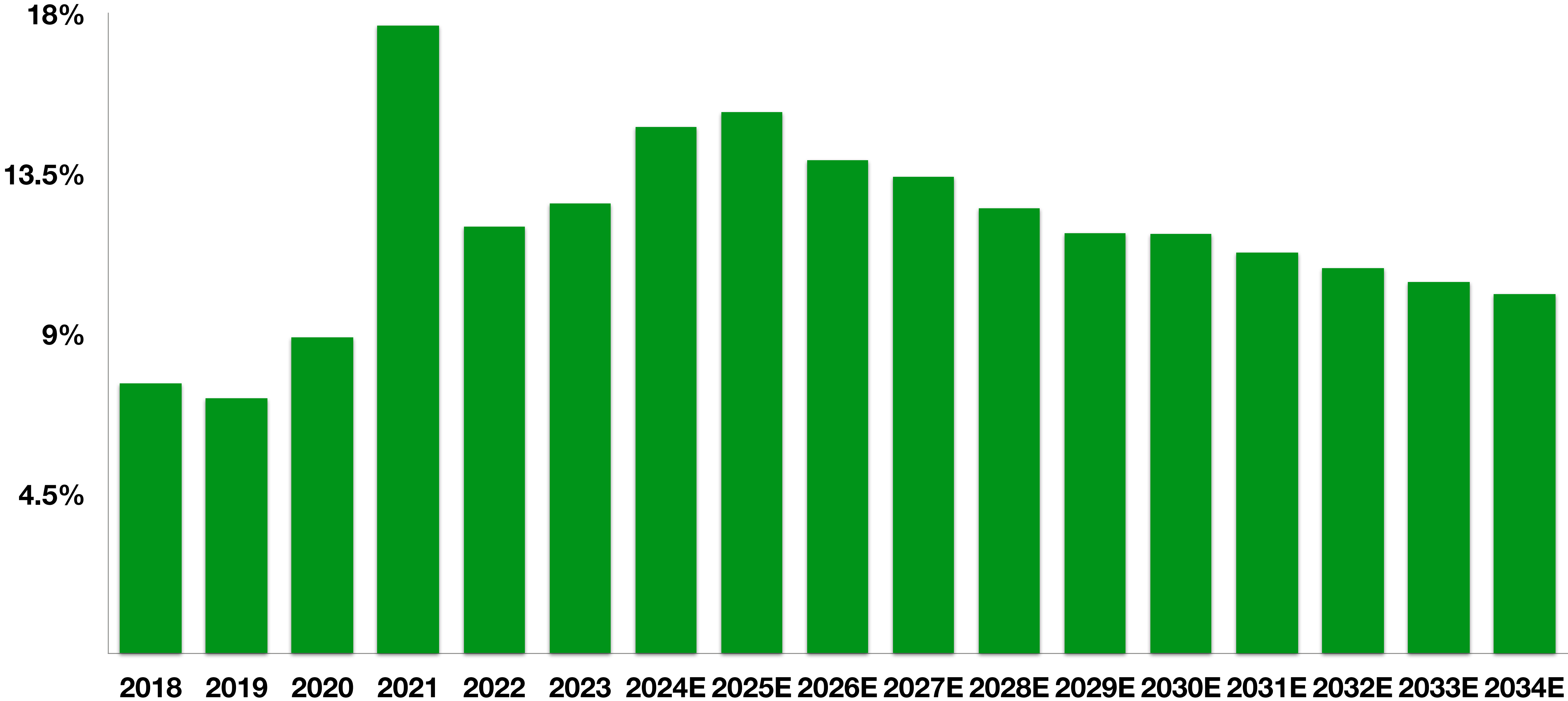
3.20 Indices by Segment

Industrie De Nora					
CapEx/Rev	2019	2020	2021	2022	2023
Electrode	9.27%	6.73%	6.38%	6.33%	9.78%
Water	4.01%	3.58%	3.16%	2.38%	2.14%
Energy	0.00%	0.00%	0.00%	17.91%	30.65%
Market					
Electrode	3.20%	2.82%	2.03%	3.76%	3.95%
Water	4.03%	3.32%	3.55%	3.61%	3.53%
Energy	22.48%	78.24%	82.89%	76.65%	109.62%

Industrie De Nora						
	2018	2019	2020	2021	2022	2023
Asset Turnover	1.28	0.69	0.68	0.74	0.77	0.65
ROCE	7.75%	7.27%	8.98%	16.21%	11.99%	12.65%
CapEx/Revenues	6.00%	5.30%	3.90%	3.90%	4.50%	9.5%
Market						
Asset Turnover	1.25	1.28	1.29	1.27	1.27	1.11
ROCE	4.89%	6.46%	3.93%	6.59%	5.76%	4.82%
CapEx/Revenues	5.38%	5.80%	12.04%	12.25%	12.46%	16.49%

Source: Company Data, Team Assessment

3.21 ROCE

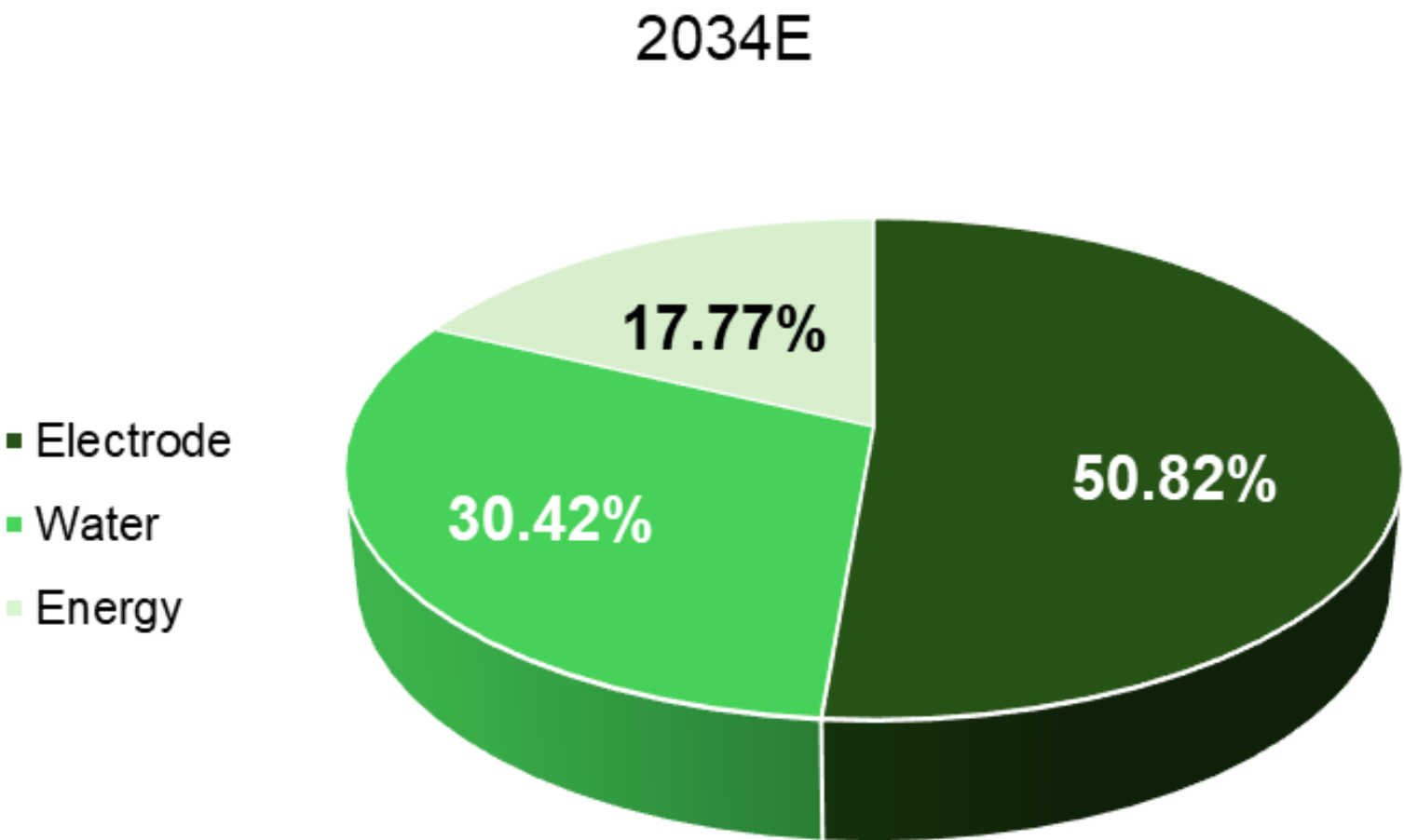
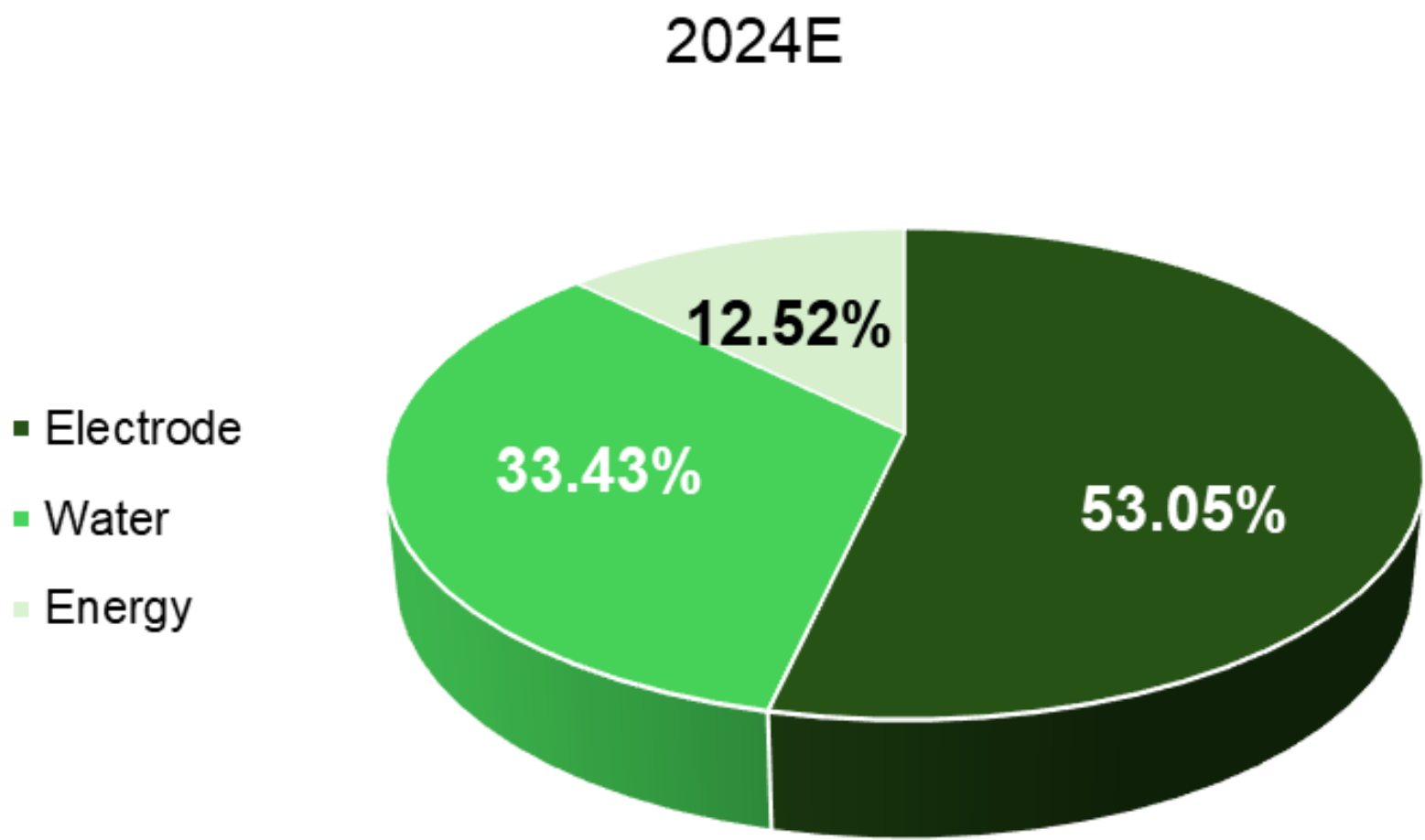


Source: Company Data, Team Assessment

4. VALUATION

4.1 Estimated Revenues

Revenues € mln	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E
Total	871.05	975.74	1039.57	1107.76	1180.62	1258.50	1341.75	1430.78	1525.99	1627.86	1736.87
Growth % Yoy	-0.005%	12.0%	6.5%	6.6%	6.6%	6.6%	6.6%	6.6%	6.7%	6.7%	6.7%
Electrode	462.09	522.46	553.81	587.04	622.26	659.60	699.18	741.13	785.59	832.73	882.69
Growth % Yoy	-0.5%	13.1%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Water	291.20	312.70	331.50	351.40	372.40	394.80	418.50	443.60	470.20	498.40	528.30
Growth % Yoy	0.4%	7.4%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Energy	109.09	130.91	144.00	158.40	174.24	191.66	210.83	231.91	255.10	280.61	308.68
Growth % Yoy	6.7%	20.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%



4.2 DCF Model

1

- 2024E - 2026E
- Revenues increase of 12% primarily driven by Electrode Technologies

2

- 2027E - 2034E
- Revenues growth stabilizes at 6% respecting the average expected growth across all three business segment

3

- 2034E onward
- De Nora is projected to grow at a terminal rate of 1.5%, in line with the global and european GDP growth

Ke	Kd	Risk Free	Wacc	g	TV Weight	FCFF CAGR 24E-34E
7.22%	6.69%	3.54%	7.20%	1.50%	65.68%	8.14%

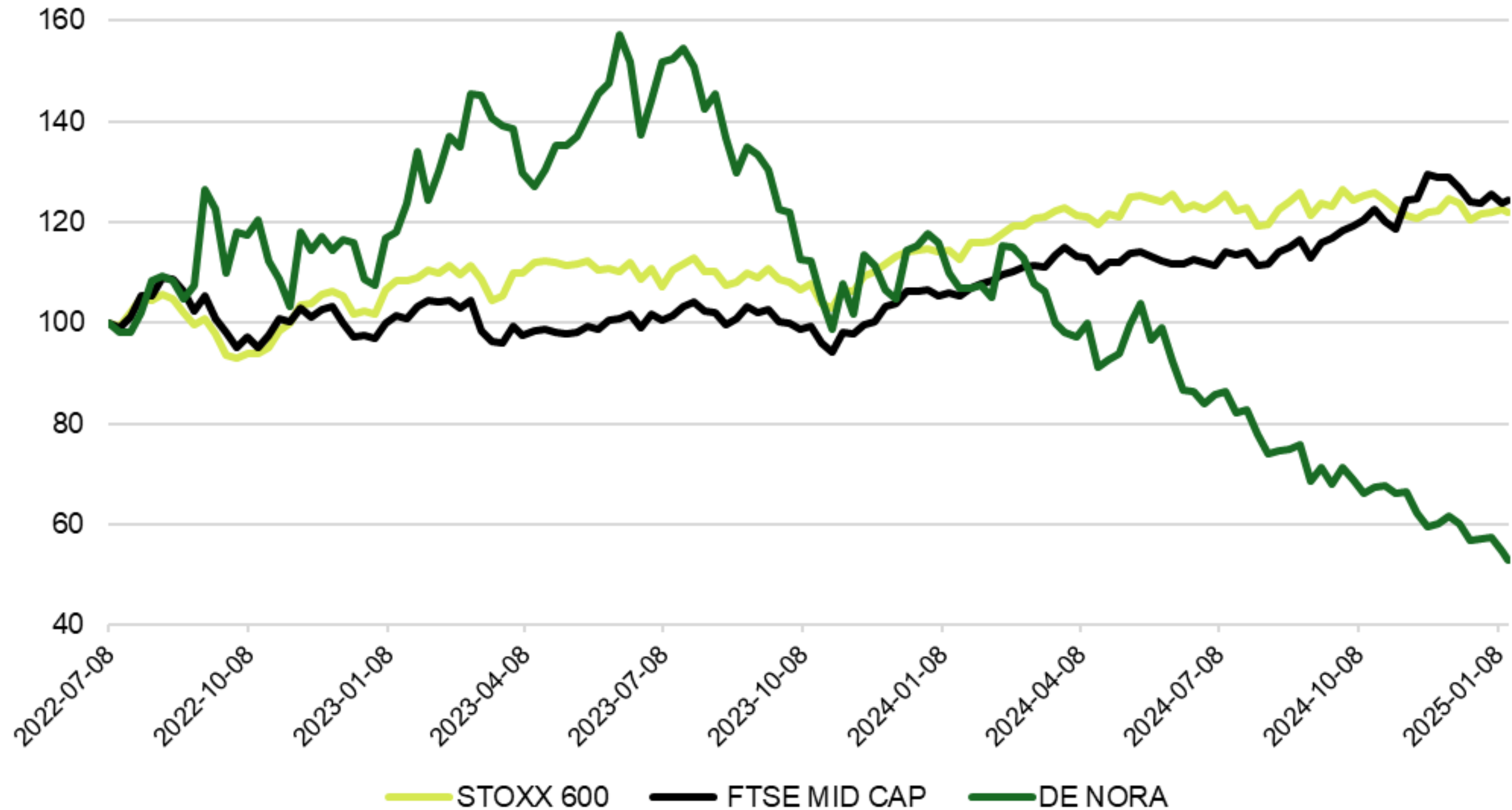
4.2 DCF Model

€ mln	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E
Revenues	862.43	966.07	1029.28	1096.79	1168.94	1246.04	1328.47	1416.61	1510.88	1611.74	1719.67
EBIT	163.51	203.84	212.53	227.74	238.90	251.18	277.94	293.52	310.47	328.85	348.76
Tax rate	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%
Nopat	116.09	144.73	150.90	161.70	169.62	178.34	197.34	208.40	220.43	233.49	247.62
Capex	70.12	120.76	128.66	137.10	146.12	155.76	166.06	177.08	188.86	201.47	214.96
D&A	27.08	30.62	37.26	43.92	50.64	57.45	64.40	71.53	78.87	86.48	94.39
Δ WC	2.45	37.65	12.25	32.70	12.93	4.53	38.43	38.71	27.50	25.25	38.01
FCFF	75.50	92.24	71.75	101.23	87.07	84.56	134.11	141.56	137.95	143.74	165.06
Equity	925.54	1137.74	1320.27	1487.18	1680.81	1882.98	2100.18	2335.13	2583.43	2848.11	3130.54
Debt	131.87	148.28	159.33	166.68	177.45	188.50	199.64	212.16	225.37	239.42	254.57
WACC		6.93%	6.95%	6.97%	6.98%	6.99%	7.00%	7.01%	7.02%	7.03%	7.03%
Present Value		86.85	63.15	83.27	66.92	60.72	89.95	88.68	80.70	78.53	84.21
NPV of TV	1498.28										
Target Price	€ 10.83										

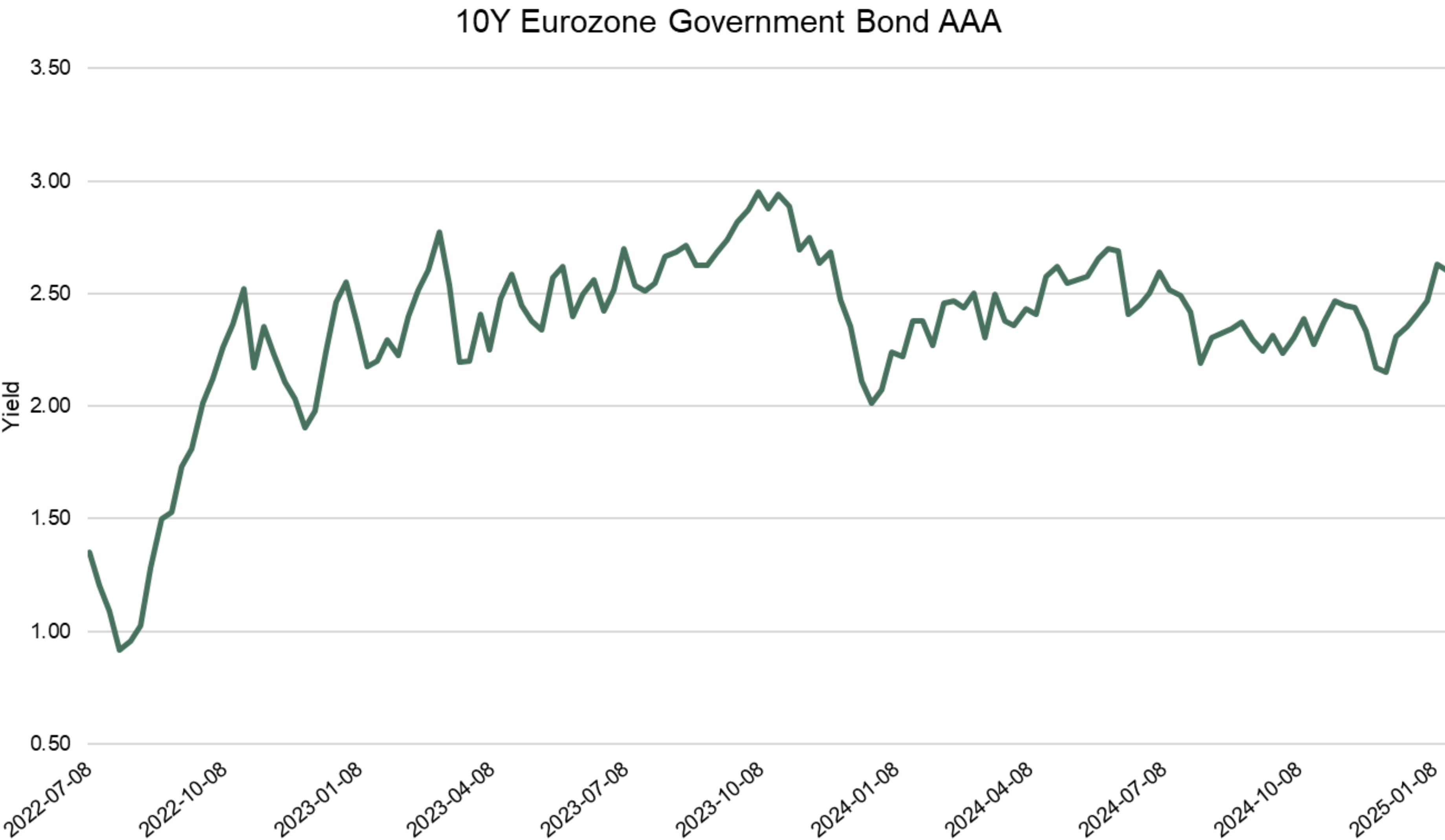
4.3 Wacc Computation

Cost of Equity	7.22%	$Ke = (1 + Rf + \beta m \times ERP + \beta s \times SMB + \beta v \times HML)^{52} - 1$
Risk Free	0.67%	Average weekly return of 10-year government bonds issued by AAA-rated Eurozone countries
Market Premium (ERP)	-0.47%	Average weekly return of Stoxx 600 and FTSE Mid Cap minus Risk Free
Small Minus Big (SMB)	-0.10%	Difference between the average weekly return of FTSE Small Mid Cap and MSCI Europe Large Cap
High Minus Low (HML)	0.004%	Difference between the average weekly return of MSCI Europe Growth and MSCI Europe Value
Beta Market βm	0.92	
Beta Size βs	0.93	Multilinear Regression of weekly DNR returns against ERP, SMB, HML
Beta Value βv	0.52	
Cost of Debt	6.69%	$Kd = Rf + ICR Spread + CRP$
ICR Spread	1.07%	Ebit / Interest Expenses - Damodaran
Country Risk Premium (CRP)	2.07%	Weighted Average CRP, based on geographical revenue - Damodaran
Mean Tax Rate	19%	Based on DNR last two years tax rate
Wacc	7.20%	$Wacc = Ke * E / (D + E) + Kd * D / (D + E) * (1 - \tau c)$

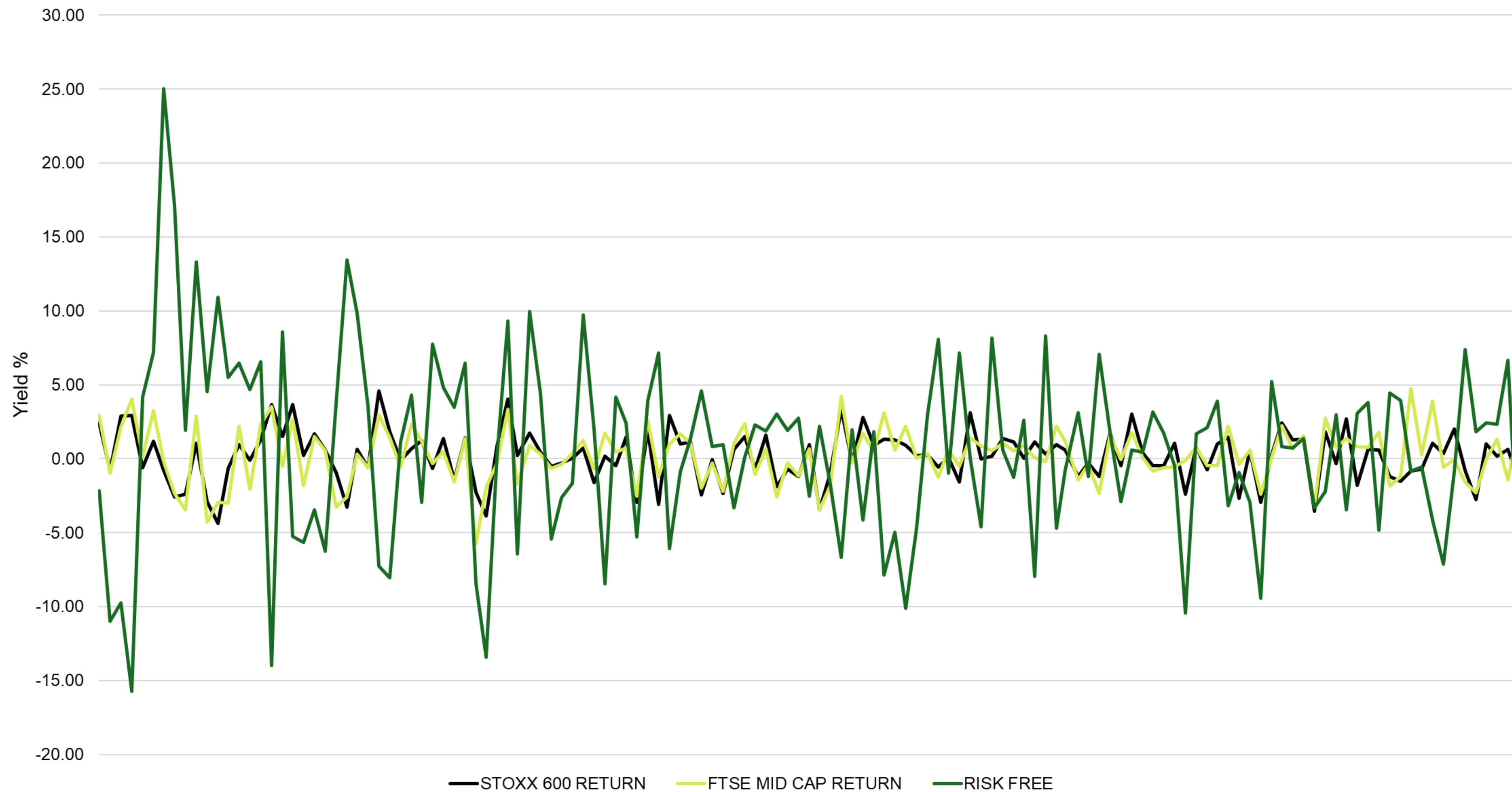
4.4 Stock Evolution



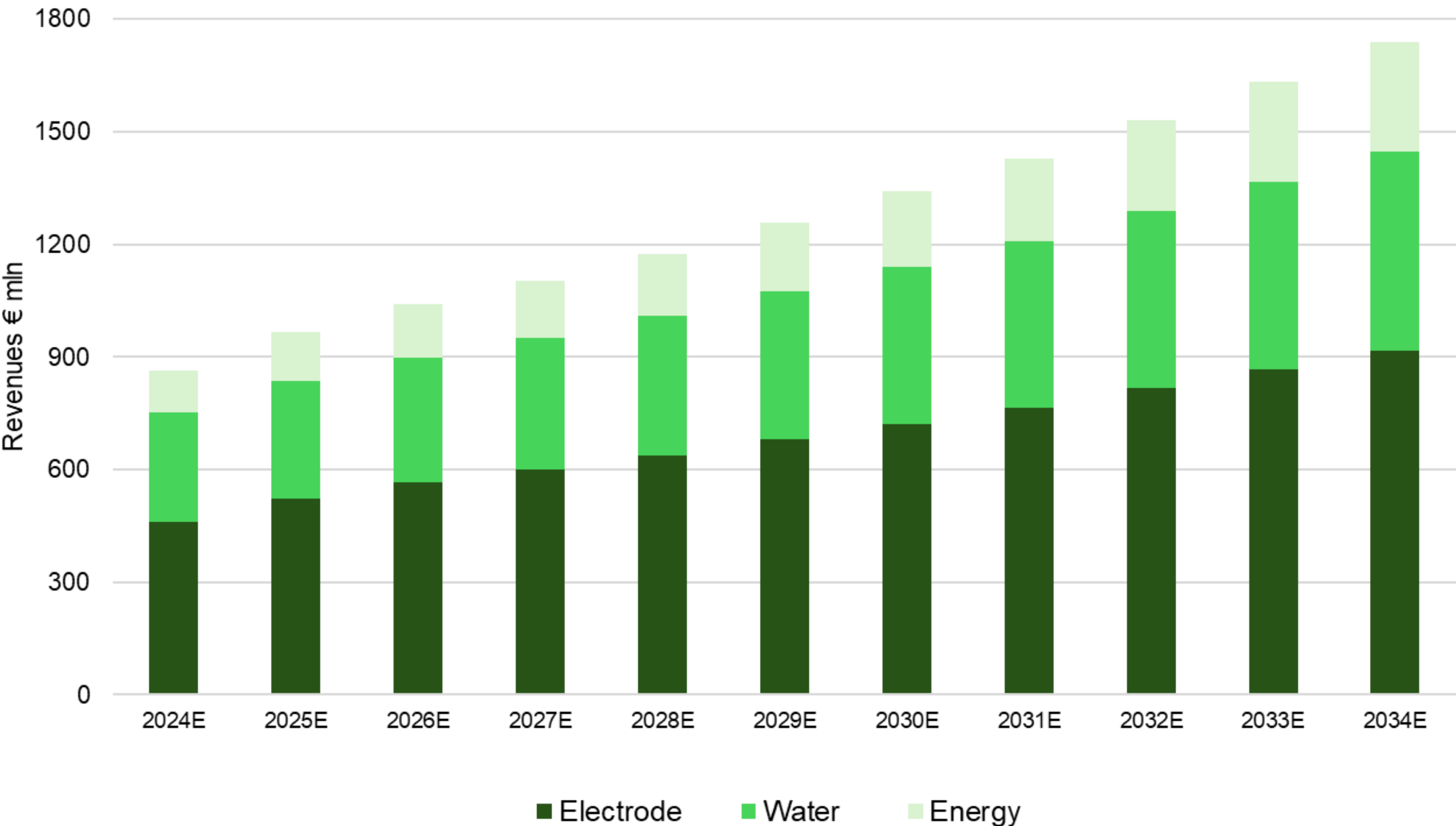
4.5 Risk free rate



4.6 Risk free vs Market Index



4.7 Bull Scenario



FCFF CAGR 24E - 34E: 11.35%

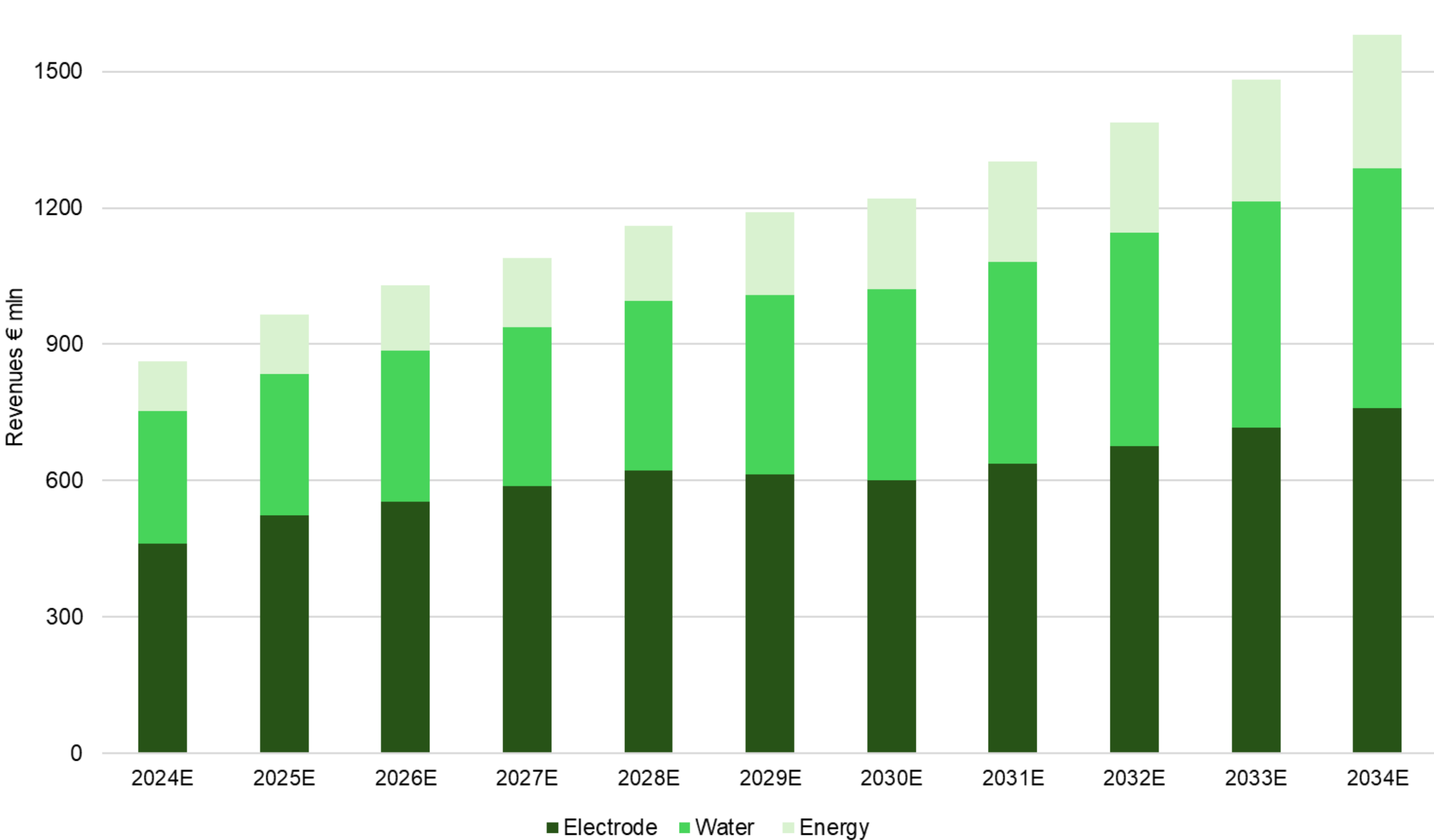
Price: € 15.62

De Nora continues to position itself as a leader in the Electrode Technologies business segment, consistently pushing forward innovation and efficiency

The company plans to expand its Water Technologies segment, focusing on removing emerging contaminants like pharmaceuticals, personal care products, and PFAS, addressing growing environmental challenges globally.

De Nora’s 2026 Gigafactory launch marks a key expansion, driving growth in Energy Transition through M&A and potential global expansion, including a new U.S. Gigafactory, reinforcing its commitment to sustainability.

4.8 Bear Scenario



Price: € 6.17

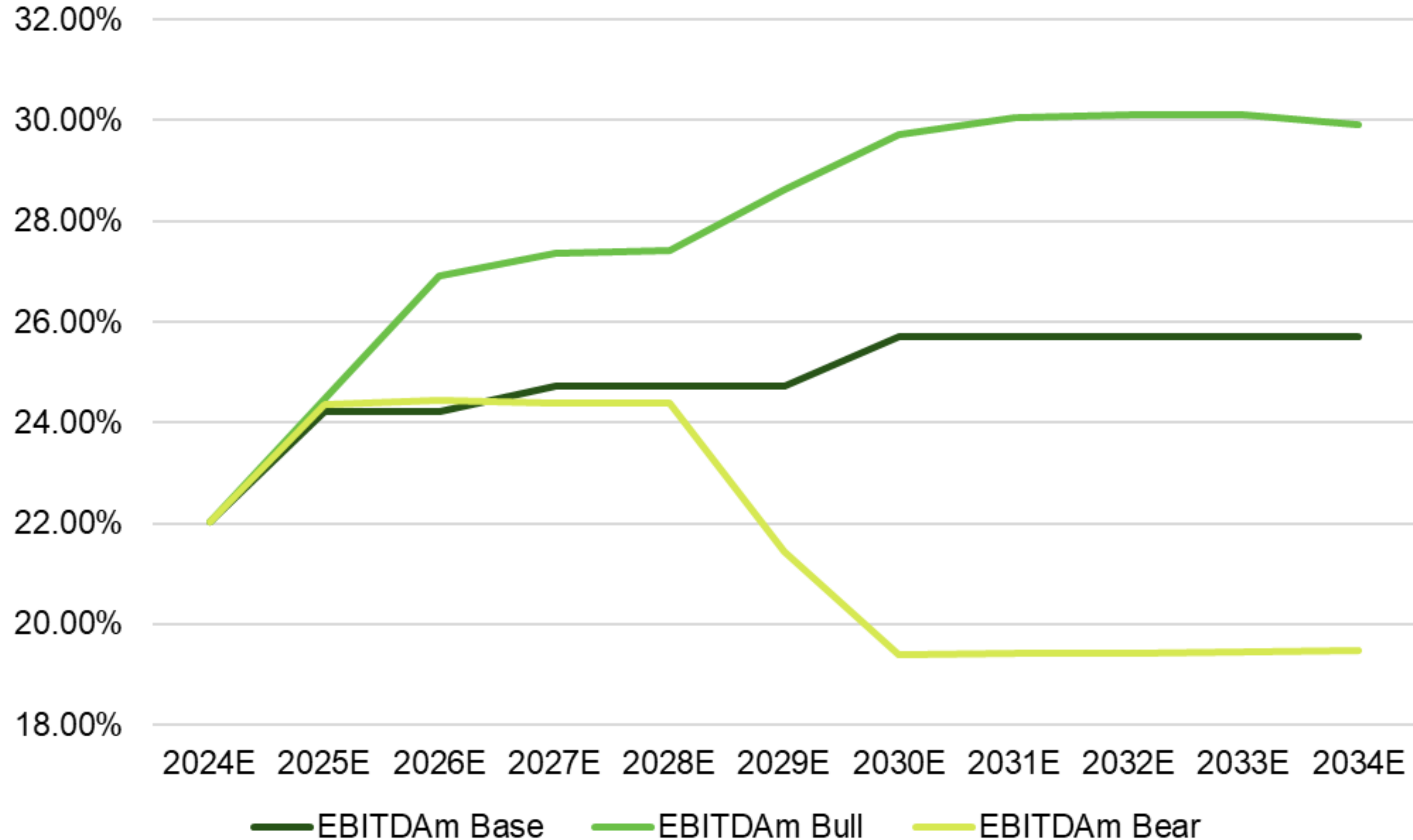
De Nora may experience a decline in the Electrode Technologies segment due to emerging competition from Osaka Soda in Japan, jeopardizing the company's competitive edge.

The Water Technologies segment is currently stagnant and lacks innovation

The potential rollback of supportive policies could remove financial incentives for clients considering investments in green hydrogen

FCFF CAGR 24E - 34E: -0.86%

4.9 EBITDA Margin Evolution



4.10 Relative Valuation

Electrode Technologies (€ mln)				EV / EBITDA		
Companies	Market	Market Cap	EV	FY23	FY24E	FY25E
Osaka Soda co., Ltd	Japan	1,499.50	1,336.21	15.10x	9.40x	7.80x
Umicore SA	Brussel	6,000.00	7,254.99	8.40x	5.00x	5.40x
Johnon Matthey Plc	United Kingdom	3,100.00	4,956.62	6.96x	0.90x	5.20x
Segment Weighted Average				8.93x	4.42x	5.68x
Industrie De Nora				18.96x	10.00x	9.00x

Water Technologies (€ mln)				EV / EBITDA		
Companies	Market	Market Cap	EV	FY23	FY24E	FY25E
Xylem Inc.	United States	25,002.00	28,685.97	25.00x	17.00x	15.40x
Ecolab Inc.	United States	51,225.00	63,170.92	20.90x	20.70x	19.30x
Pentair Plc	United States	10,880.00	13,663.41	15.41x	18.00x	16.30x
Segment Weighted Average				21.39x	19.30x	17.81x
Industrie De Nora				18.96x	10.00x	9.00x

Energy Transition (€ mln)				EV / SALES		
Companies	Market	Market Cap	EV	FY23	FY24E	FY25E
NEL ASA	Norway	1,026.20	712.71	4.99x	1.80x	1.70x
McPhy Energy SA	France	93.94	35.75	1.90x	0.60x	0.30x
Asahi Kasei Corporation	Japan	9,430.00	2,194,108.00	0.79x	0.50x	0.70x
ITM Power PLC	United Kingdom	446.20	114.18	39.48x	1.70x	0.50x
Plug Power Inc.	United States	6,842.00	3,244.53	3.75x	3.50x	2.50x
Segment Weighted Average				3.14x	1.76x	1.44x
Industrie De Nora				3.60x	1.73x	1.50x

24E EV
€ 1.61B

Final Price
€ 9.70

4.10 Relative Valuation

Electrode Technologies	
Company	Business Description
Osaka Soda co. Ltd	Osaka Soda is a Japanese chemical company headquartered in Osaka. The company specializes in the production of electrodes, particularly in the field of electrochemical technologies. Its electrodes are used in industrial applications such as water treatment and electrochemical processes for the production of basic chemicals, including chlorine and caustic soda. Osaka Soda has developed expertise in designing highly efficient and durable electrodes, which are widely applied in electrolysis processes. The revenue from the electrode technologies segment accounts for 38.4% of the company's total revenue. Unlike De Nora, Osaka Soda has a weaker global presence and primarily operates in the Asian market.
Umicore SA	Umicore is a global company headquartered in Brussels, Belgium. Its operations are structured into three main divisions: Catalysis, Energy & Surface Technologies, and Recycling. The key divisions of interest are the first two. Through its Electroplating division (part of Energy & Surface Technologies), Umicore produces electrodes and related materials under the PLATINODE® brand. The company offers: Platinum electrodes (made of titanium or niobium coated with pure platinum, these electrodes are used in applications requiring high purity and corrosion resistance); Mixed metal oxide electrodes (offering an excellent cost-performance ratio, these electrodes are utilized in various electrochemical applications) These electrodes are employed in multiple industrial processes, including chlor-alkali production, electrodeposition, water treatment, hydrogen production, electrowinning, coating applications, and cathodic protection systems, where De Nora is also active. However, De Nora offers a much broader range of electrodes' solutions and technologies . On the other hand, as a global leader in precious metal recycling, Umicore could have direct control over the supply chain of these materials. The Catalysis and Energy & Surface Technologies divisions together account for 81.5% of Umicore's total revenue.
Jonhson Matthey Plc	Johnson Matthey is a British multinational company specializing in sustainable technologies and precious metal chemistry. The company is actively engaged in the production of electrode-related materials and electrochemical technologies. In particular, it develops innovative materials that enhance the performance and efficiency of electrodes for various industrial and energy applications, including: Advanced electrocatalysts; Platinum-based catalysts for PEM and AEM fuel cells, optimized to reduce the use of precious metals; and Catalysts for hydrogen and oxygen generation. Johnson Matthey also holds a leading position in fuel cell development through the production of Membrane Electrode Assemblies (MEAs), Carbon-Supported and Unsupported Electrodes, and High-Temperature Fuel Cell Electrodes. The production of electrode-related technologies accounts for 45.5% of the company's total revenue.

4.10 Relative Valuation

Water Technologies	
Company	Business Description
Xylem Inc.	Xylem is a global leader in water technology, offering a comprehensive range of products and services that span the entire water cycle. The company focuses on developing, producing, and implementing innovative solutions tailored to the water industry. Its operations are structured into three main business segments: Water Infrastructure, Applied Water and Measurement and Control Solutions. Water Infrastructure is focused on ensuring efficient water transport, treatment, and quality testing. This segment supports critical infrastructure needs such as pumping, wastewater processing, and potable water systems. Applied Water addresses practical water applications across commercial, residential, and industrial sectors, including irrigation, climate control, and customized water solutions. Finally, Measurement and Control Solutions develops advanced tools and technologies for smarter water and energy resource management, including analytical instruments for water quality monitoring and process optimization.
Ecolab Inc.	Ecolab is a global leader in water, hygiene, and infection prevention technologies and services. Its operations are structured into four main business units: Global Industrial, Global Institutional & Specialty, Global Healthcare & Life Sciences and Global Energy. Ecolab plays a key role in the water technologies sector, as it builds its business around water treatment and optimization. The Nalco Water division, under Global Industrial, is the company's leading unit, fully dedicated to water management. The other business units integrate water as a core component of their solutions for hygiene, safety, and sustainability. In fact, in Global Institutional & Specialty, Ecolab provides water treatment technologies for HVAC systems (heating and cooling) to prevent corrosion and scaling, whereas in Global Healthcare & Life Sciences, the company supplies ultrapure water treatment and management for laboratories and pharmaceutical processes. Finally, in Global Energy, Ecolab offers process water treatment services for oil and gas extraction sites.
Pentair Plc.	Pentair is a global company specializing in smart and sustainable water solutions, structured into two main operating segments: Consumer Solutions, which focuses on residential and commercial water solutions, including swimming pools and spas, home water treatment, and foodservice applications; Industrial & Flow Technologies, which is specialized in water treatment, movement, and management solutions for industrial, agricultural, and infrastructure applications. This includes water supply, water disposal, water treatment components, industrial applications, and agriculture & irrigation.

4.10 Relative Valuation

Energy Transition

Company	Business Description
Nel ASA	Nel ASA is a specialized company in renewable hydrogen production through advanced electrolysis technologies. It develops and supplies high-quality electrolyzers for green hydrogen production, including alkaline and PEM electrolyzers. The company's operations are structured into two main business segments: Nel Hydrogen Electrolyser, Focused on the design, production, and commercialization of electrolyzers for green hydrogen production, offering both alkaline and PEM electrolyzers; and Nel Hydrogen Fueling, specialized in hydrogen distribution infrastructure, supporting the development of a scalable hydrogen economy.
McPhy Energy SA	McPhy Energy SA is a French company specializing in the design, production, and integration of equipment for green hydrogen. The company operates primarily in two key segments. The first focuses on electrolyzers, offering solutions of various capacities—small, medium, and large—for on-site, on-demand hydrogen production, tailored to meet specific customer needs. The second segment is dedicated to hydrogen refueling stations, providing infrastructure for hydrogen distribution and refueling. McPhy's solutions cater to multiple industries, including industrial applications, mobility, energy, and local communities.
Asahi Kasei Corporation	Asahi Kasei is a Japanese multinational company operating across various industrial sectors on a global scale. Its activities are structured into three business segments: Material, Homes, and Health Care. Within the Material business unit, Asahi Kasei is actively involved in the production of electrolyzers for green hydrogen. The company is expanding its manufacturing capacity for key components, including cell frames, membranes for alkaline electrolyzers, and containerized systems for small-scale green hydrogen production.
ITM Power Plc.	ITM Power Plc is a British company specializing in the production of proton exchange membrane (PEM) electrolyzers for small, medium, and large-scale applications. Positioned as a leader in the PEM electrolyzer sector, the company places strong emphasis on technological innovation and production scalability. Its strategic partnerships and growing pipeline of projects further strengthen its position in the green hydrogen market. ITM Power has established key partnerships, including a joint venture with Linde Engineering, known as ITM Linde Electrolysis GmbH, which focuses on delivering large-scale electrolysis solutions. Additionally, the company has a strategic partnership agreement with Snam, involving a £30 million strategic investment and an initial commitment as a preferred supplier for 100 MW of PEM electrolyzer orders, with deliveries expected between 2024 and 2025.
Plug Power Inc.	Plug Power Inc. is a U.S.-based leader in providing comprehensive hydrogen fuel cell solutions. Its operations are structured into two main divisions. The Fuel Cell Power division focuses on the design of fuel cells to power electric motors, while the Hydrogen division is dedicated to the production of electrolyzers for green hydrogen generation through water electrolysis and the development of hydrogen infrastructure. Plug Power's solutions are applied across various sectors, including E-Mobility, Material Handling, and Stationary Power. The company is also actively expanding its green hydrogen production network, with plans to establish production facilities in both the United States and Europe. Its long-term goal is to achieve a global production capacity of over 1,000 tons per day by 2028.

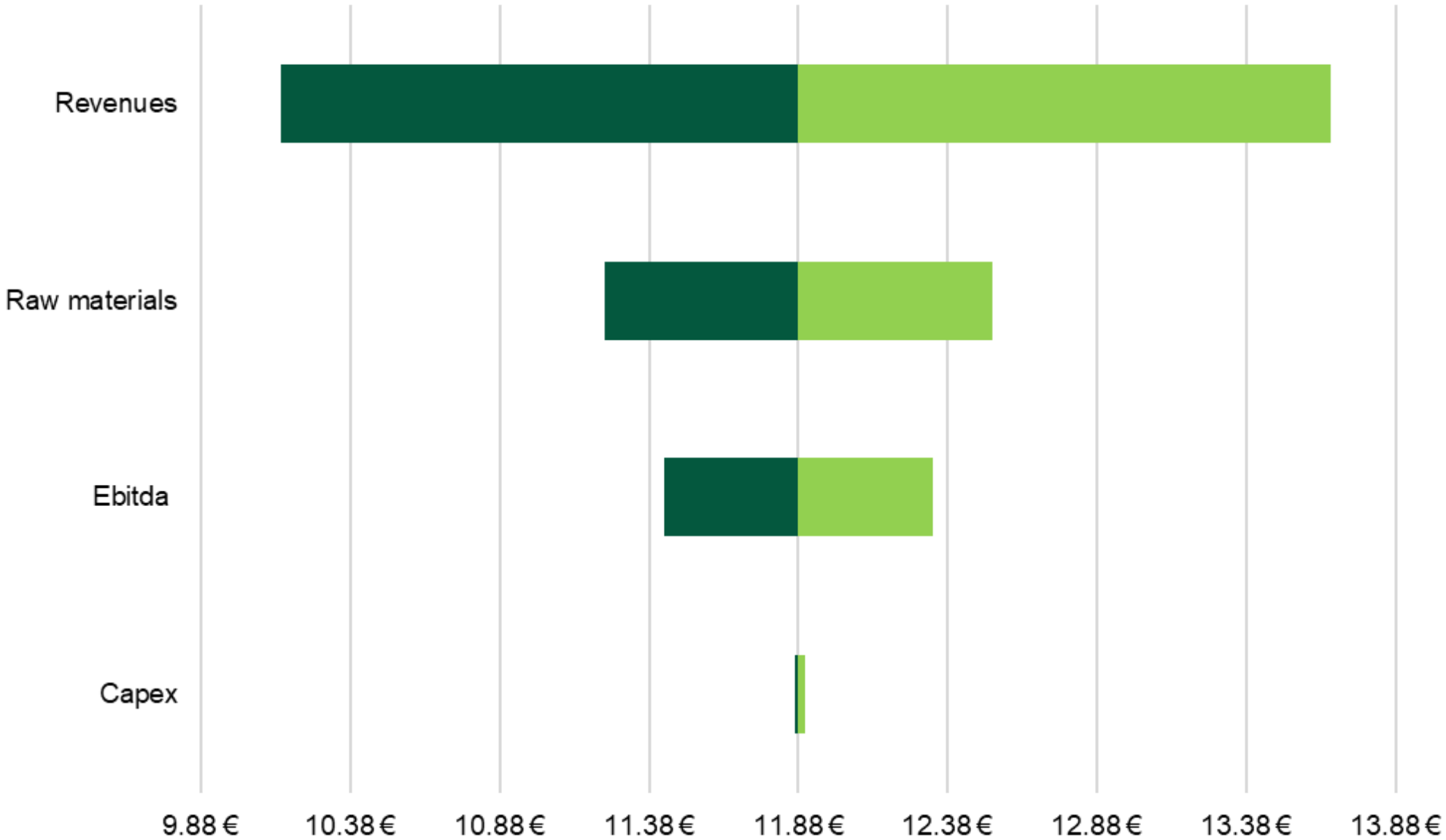
4.11 Robustness Analysis

Sensitivity Analysis

wacc/g	1.0%	1.3%	1.5%	1.8%	2.0%
6.2%	11.19	11.40	11.63	11.88	12.17
6.7%	10.83	11.01	11.19	11.40	11.63
7.2%	10.53	10.68	10.83	11.01	11.19
7.7%	10.28	10.40	10.53	10.68	10.83
8.2%	10.06	10.16	10.28	10.40	10.53

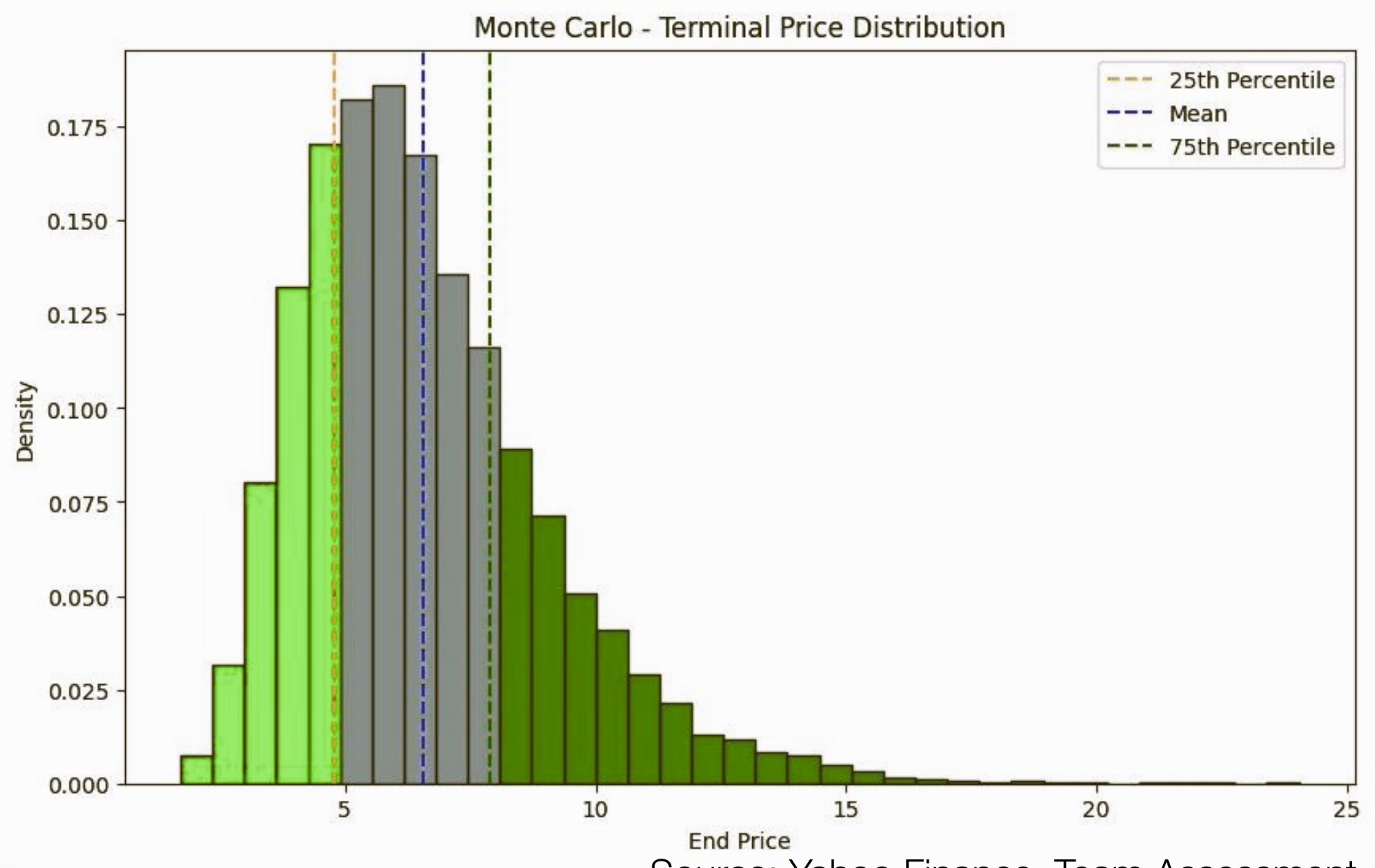
Source: Team Assessment

Tornado Chart



Source: Team Assessment

Monte Carlo Simulation



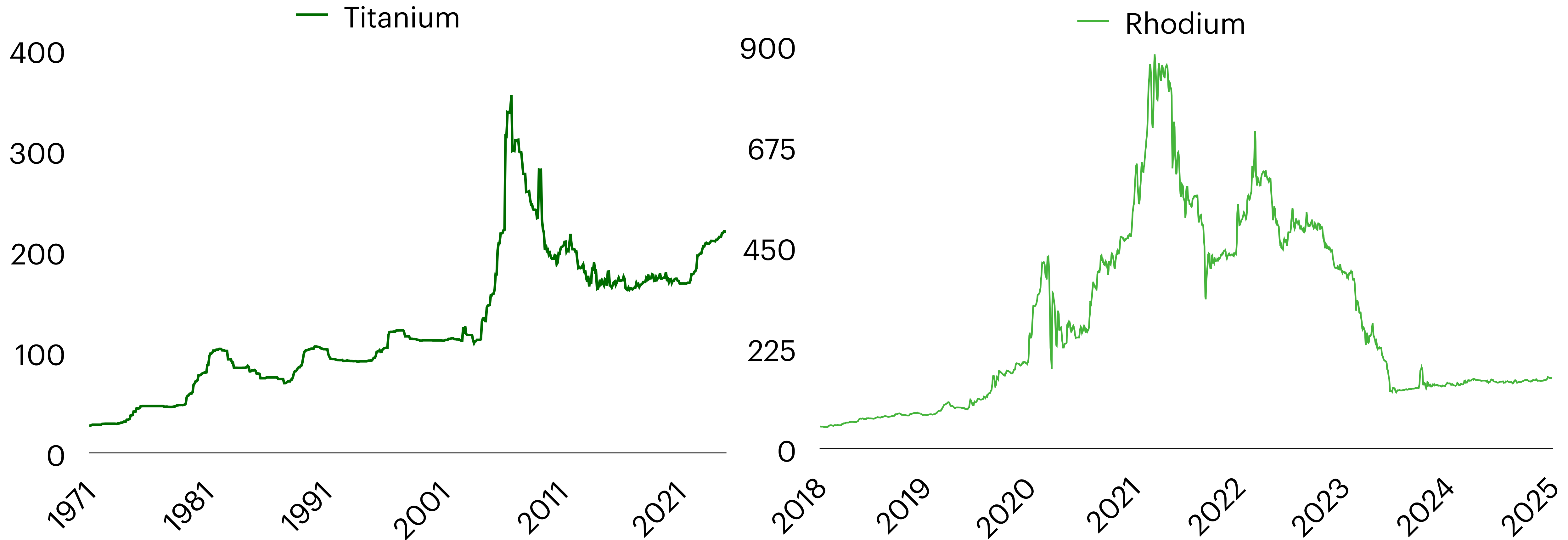
Source: Yahoo Finance, Team Assessment

Price Summary

Model	Price	Weight
DCF Base	€ 11.88	50%
DCF Bull	€ 15.62	10%
DCF Bear	€ 6.17	15%
Peer Valuation	€ 9.70	25%
TP	€ 10.83	

5. INVESTMENT RISK

5.1 Commodities price



Source: Umicore, FRED Economic Data

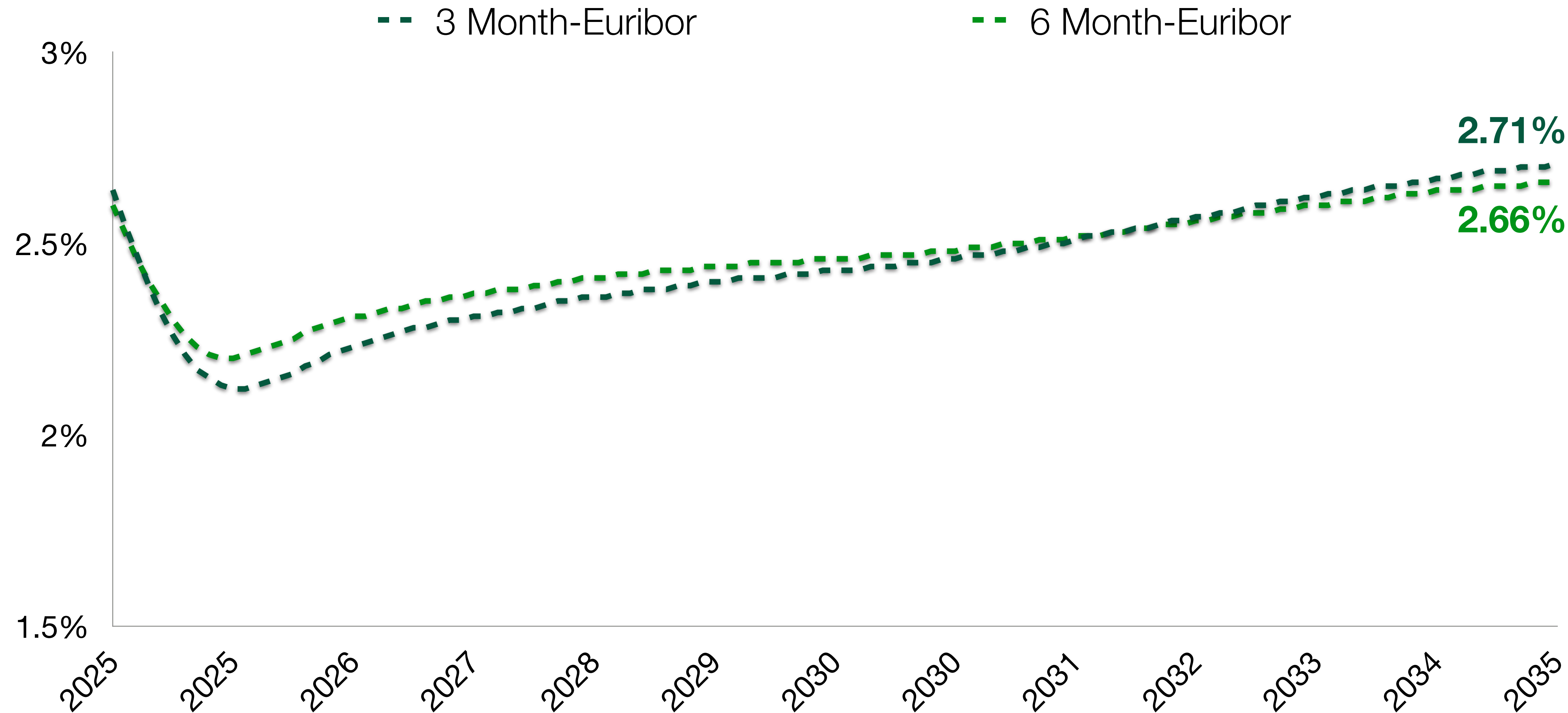
5.2 Market Risks

Risk	Mitigant	Likelihood and Impact
Interest Rate Risk Industrie De Nora faces a low level of debt and an high level of liquidity making the group not vulnearable to changes in interest rates	Mitigants The Group provides for a sensitivity analysis for any risk related to interest rate changes, that saw a decrease in the possible impact from €2.5 mn FY22 to 1.2 mn in FY23. Even sustained by Interest coverage ratio over 10 from FY21.	Likelihood  Impact 
Inflation Risk on Margins Industrie De Nora dependence on raw materials, particularly noble metals, leads the group to being subject to fluctuations in the value of the same. A confirmation being the value of ruthenium that decrease in the last financial year in this case bringing a positive impact on costs. At the same time the solidity of the Group operations bring this impact to be lower than expected. Futhermore, the long term relationship with suppliers and customer make it possible for Industrie De Nora to reduce the effect of the same on margins.	Mitigants The Group has long established relationships with its suppliers redicing the impact of the fluctuations in the price of raw materials as it can be seen by the EBITDA margin not impacted by the changes in raw materials. To this can be added the inclusion in the contract of sale of adjustments in the price according to changes in prices of raw materials stabilizing the impact on margins	Likelihood  Impact 

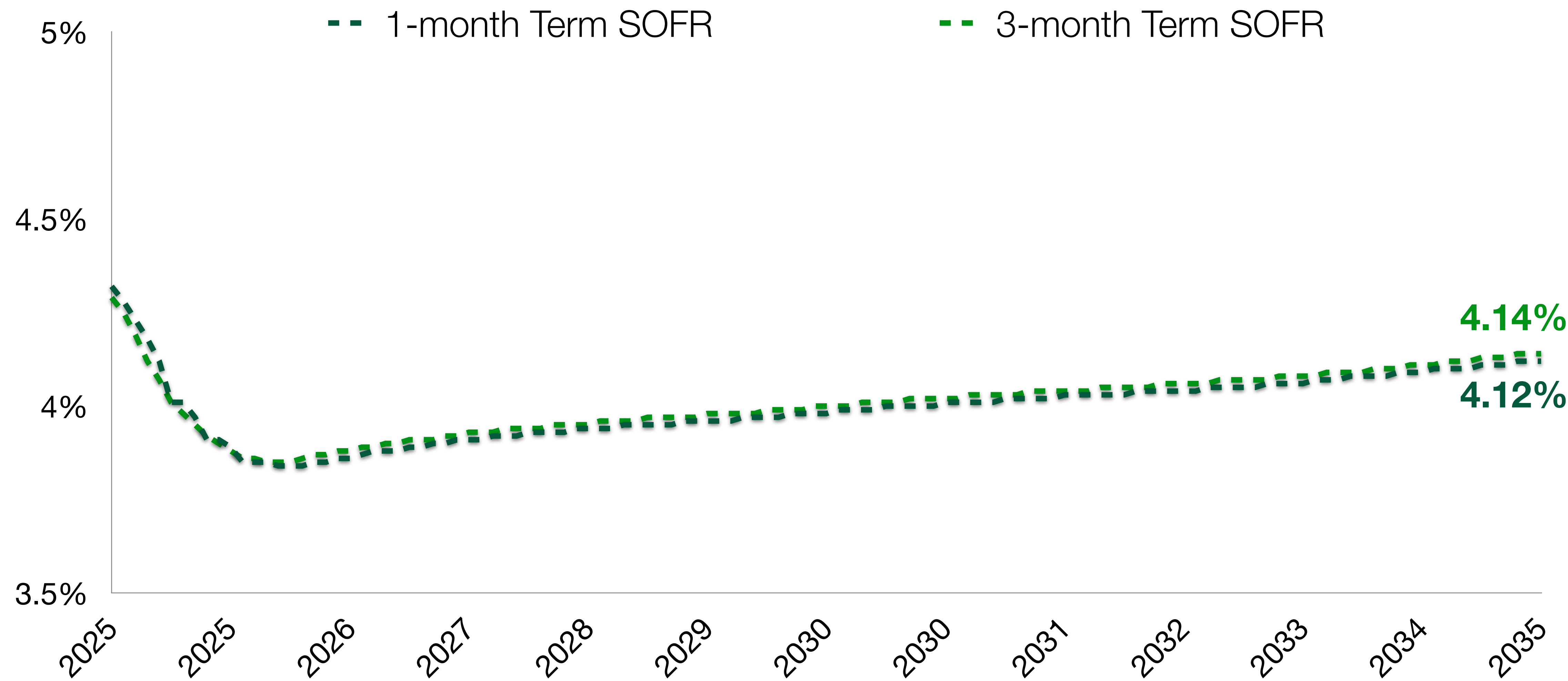
5.2 Market Risks

Risk	Mitigant	Likelihood and Impact
Macroeconomic condition risk Industrie De Nora international and diversified operations lead to an anticyclical business independent from the market. This trend is confirmed by FY23 which showed a positive margin even though the Pools business line saw the destocking of the main customers after the pandemic market normalisation and the lower average sales price linked to the decrease of value in ruthenium.	Mitigants The group operates in three different business segments which as above mentioned leads to an anticyclical business. The Electrode's segments guarantees even high adaptability to customer requests, and therefore responding to various market needs.	Likelihood  Impact 
Severe regulation and increasing costs for patents Industrie De Nora has 2 dedicated Intellectual Property Departments one in Fujisawa (Japan) and Milan (Italy) concerned with the deposit, maintenance and preservation of patents. The Group implemented and finalised in 2023 its own "Strategy on Patents" to manage decisions linked to the lifecycle of patents and to guarantee sustainable and targeted innovations.	Mitigants The group enjoying the two departments mentioned above allows to maintain a strategy of continuous innovation and guarantee the protection of intellectual property	Likelihood  Impact 

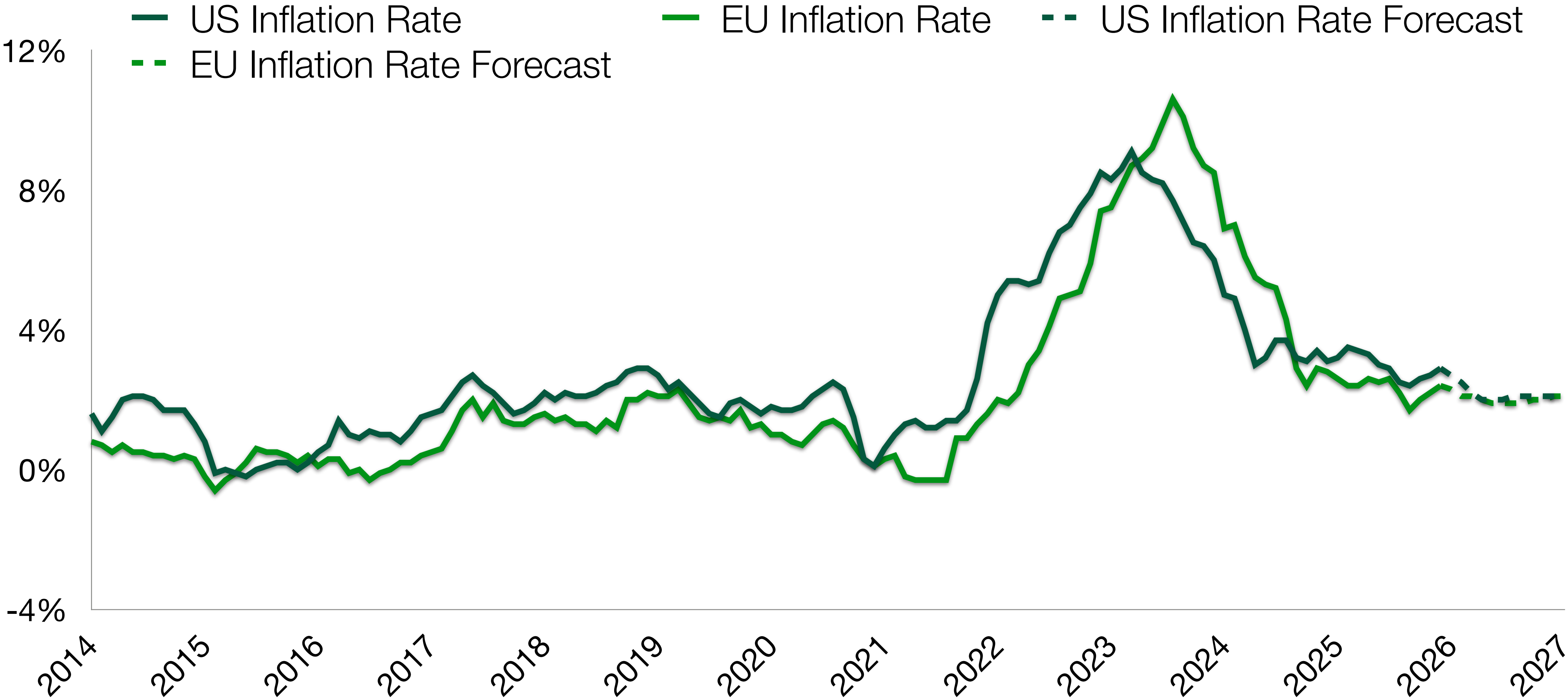
5.3 Euribor Evolution



5.4 SOFR Evolution

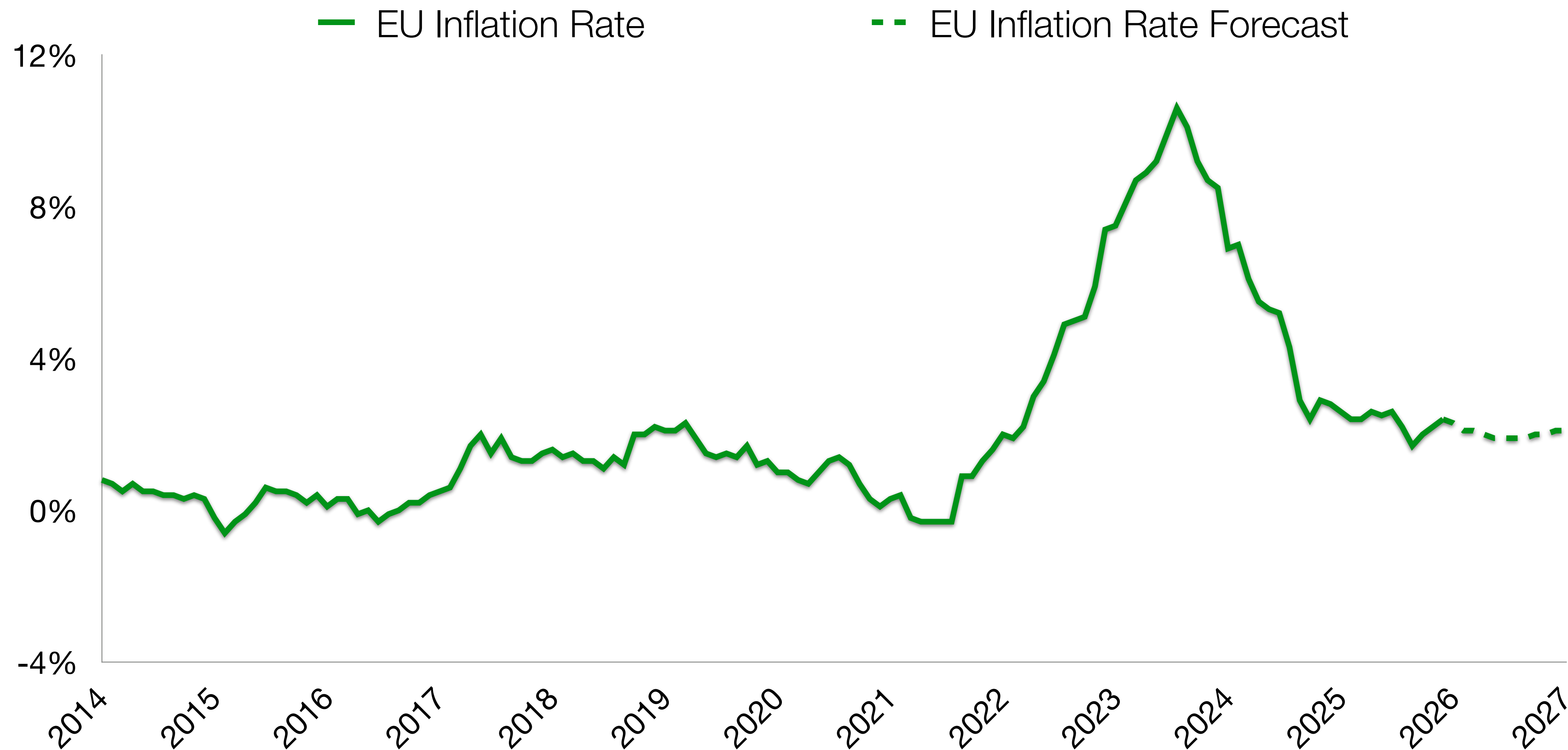


5.5 Inflation Rate Evolution

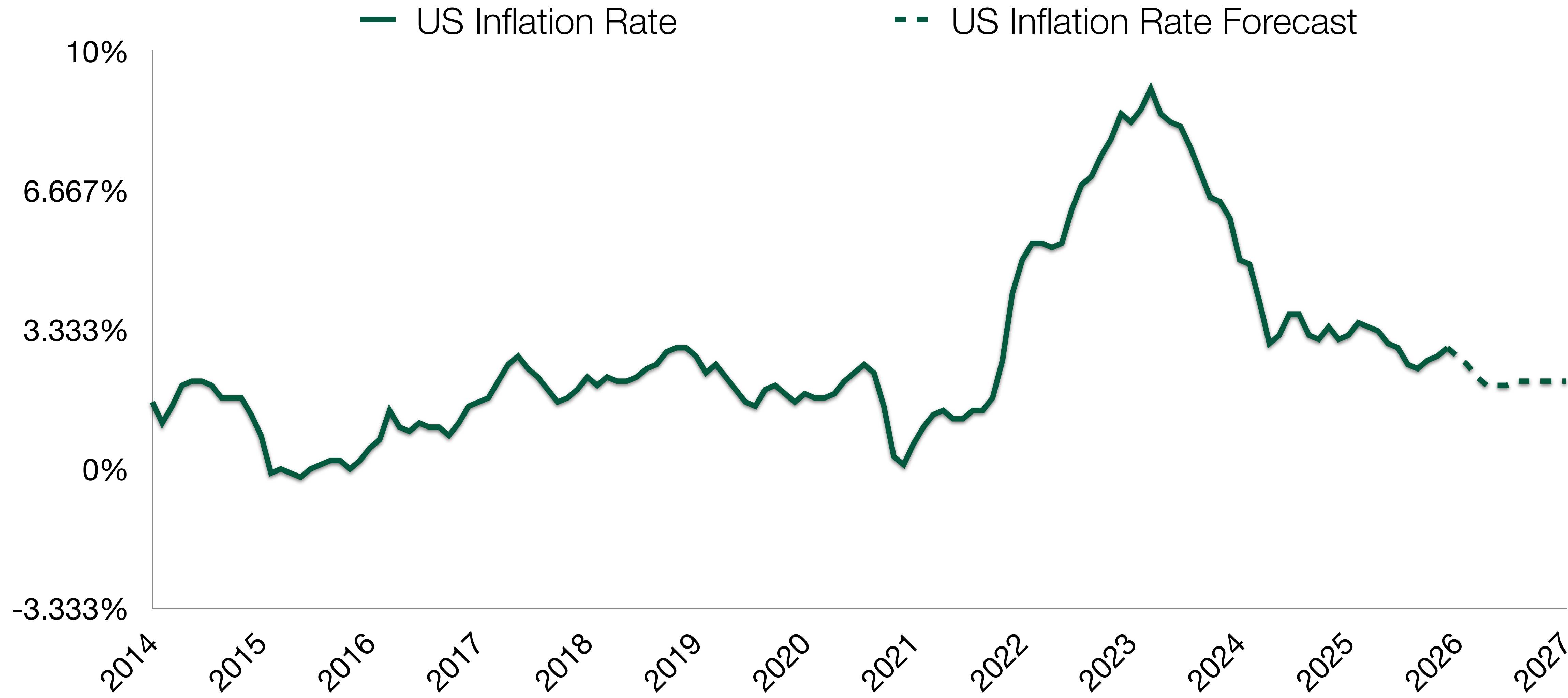


Source: Eurostat; U.S. BUREAU OF LABOR STATISTICS; ECB

5.6 EU Inflation Rate Evolution



5.7 US Inflation Rate Evolution



Source: U.S. BUREAU OF LABOR STATISTICS

5.8 Corporate risks

Risk	Mitigant	Likelihood and Impact
M&A execution risk Engaging in new M&A activities, while possible due to high liquidity, carries the risk of negatively impacting the financial structure if acquisitions do not align with strategic needs.	Mitigant The available liquidity allows for external growth, but the Group should focus on acquiring only companies that match their strategic needs to avoid unnecessary financial burden.	Likelihood  Impact 
Employee turnover risk Industrie De Nora enjoys a low employee turnover risk because its employees stay with the company for many years, developing a high level of expertise. Losing experienced employees would negatively impact the Group's operations due to its high dependence on R&D.	Mitigants The Group enjoys a remarkable reputation as one of the best workplaces, having been certified in 2024. De Nora renewed its Great Place to Work® certification in Italy for the second consecutive year, affirming that it fosters an environment where employees can work with pride, passion, and dedication. This is evident in the company's low turnover rate.	Likelihood  Impact 

5.8 Corporate risks

Risk	Mitigant	Likelihood and Impact
Loss of key figure risk Industrie De Nora is characterised by a concentrated ownership mainly in the hands of Federico De Nora who holds 53.13% of voting rights and 44.05% of the shares. The departure of key figures in the board is very unlikely evidenced by the presence of the same non-indipendent figures in the board in the different years such as Paolo Dellachà	Mitigants The concentrated owenrship in the hands of the family reduces the possibility of this shock, related also to the long-term vision that the concentrated owenrship allows for. Moreover, the BoD includes individuals with an historical and solid background in the company, having contributed to its growth. This results in a high involvement of the directors	Likelihood  Impact 
Client destocking risk Industrie De Nora has been subject to client destocking in the FY23 linked to the Pools business line as a consequence of the normalization of the market after the pandemic. This risk poses relevant threats also for the future regarding the Water Technology segment due to the rarity of noble metals and their localisation mainly in countries subject to tense geopolitical situations such as war and political tensions.	Mitigant Industrie De Nora enjoys long term relationship with its customers bringing to partnership and product co-development. Futhermore the importance that the Group places on being near to the customer to provide them with maintenance ensures a stable and solid relationship with existing customers	Likelihood  Impact 

5.8 Corporate risks

Risk	Mitigant	Likelihood and Impact
Competition risk Industrie De Nora is the undistiputed leader on the market of Electrode not seing any competitor with the same technology. The main competitors in fact are represented mostly by distributors which are best associated as SNAM competitors rather than the Group's ones. The high expertise in the different segments and the longtime activity bring the Group to be difficult to reach at least in the short term	Mitigants The Group continous momentum toward innovation allows it to be far ahead of competition and monitor evolutions in the market to anticipate competitors' move and predict unsatisfied needs	Likelihood  Impact 
Reputational risk Industrie De Nora thanks to its expertise in the segments and the adaptability of its products thanks to the operations make it possible to produce tailor made solution that can be previously tested by a piloting (product in smaller scale) that gives the chance to the customer to the test the product and check the results it produces before having the actual one. This allows the Group to adapt the product to specific needs and test for any potential defect in the functioning	Mitigants The piloting allows the company to answer any problem before providing for the real product allowing the Group to keep a solid and reliable image to its customers. To this can be added the wide spread network of maintanance services that Industrie De Nora offers to its customer to keep their products active	Likelihood  Impact 

5.9 Liquidity risks

Risk	Mitigant	Likelihood and Impact
Liquidity risk Industrie De Nora enjoys a very solid financial position, facing a negative Net Financial Position, keeping in line with the covenants stipulated with the loan in US and in Italy. Futhermore, the liquidity available made possible the repayment of part of the loans at the end of the first quarter of 2023. The great amount of liquidity available makes it possible for the Group to seize any growth opportunity internallyand externally, and even stipulate new loans agreements thanks to the margin it is able to produce	Mitigants Industrie De Nora enjoys a very solid financial structure with excess of liquidity, leaving space for the Group to stipulate a new loan agreement if necessary. This reduces the risk of lacking liquid assets	Likelihood  Impact 
Credit Risk Industrie De Nora payment terms require the payment within 30 calendar days from date of invoice, this determines a credit risk in the average due to the delay between the delivery of the product and the payment itself. This is highly associated to a business that sells on order, but at the same time the risk is reduced if the contract of sale envisages advances, progress payments, or milestone payments.	Mitigants The Group provides in its sales contract for letters of credit as payment that provide for safe payments as it removes the risk in case of insolvency of the buyer. Adding to this there are progress payments that allow the company to get part of the price as the product goes on production	Likelihood  Impact 

6. ESG

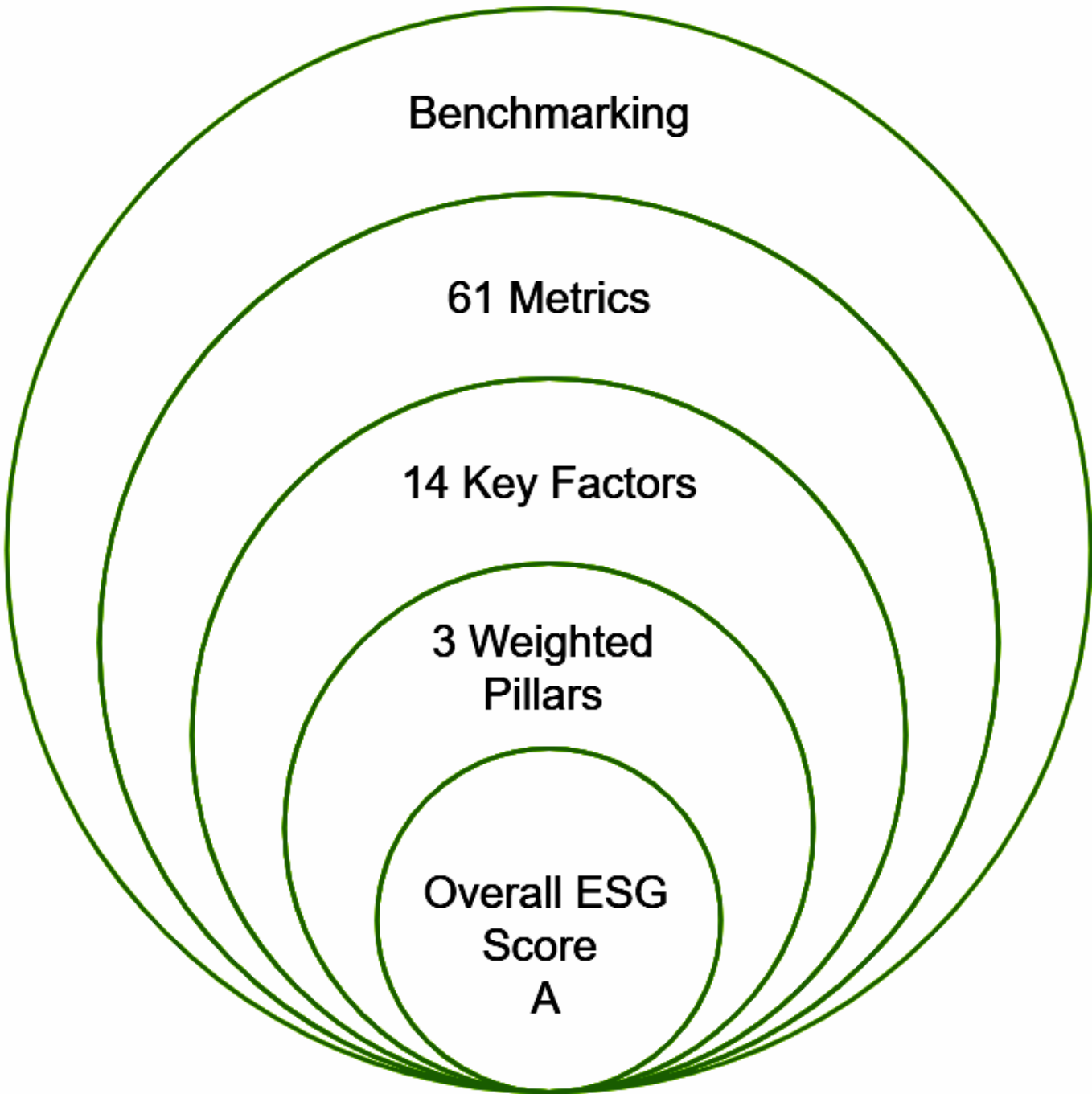
6.1 ESG Scorecard

Varying assessment by ESG rating agencies.

	E	S	G	ESGC score
LSEG	B	A+	D	B
MSCI	-	-	-	AA
Morningstar Sustainalytics	-	-	-	22.2/40+
Bloomberg	3.02 Below Average	1.84 Below average	3.35 Behind	2.76 Below average
FactSet	-	-	-	Above Average
S&P Global	34	50	45	42/100, Very High
Team Analysis	Below Average	Above Average	Below Average	A

6.2 ESG Scoring Procedure

Overall Procedure



SCORES		
C	CC	CCC
B	BB	BBB
A	AA	AAA

Selection of Companies for Comparison

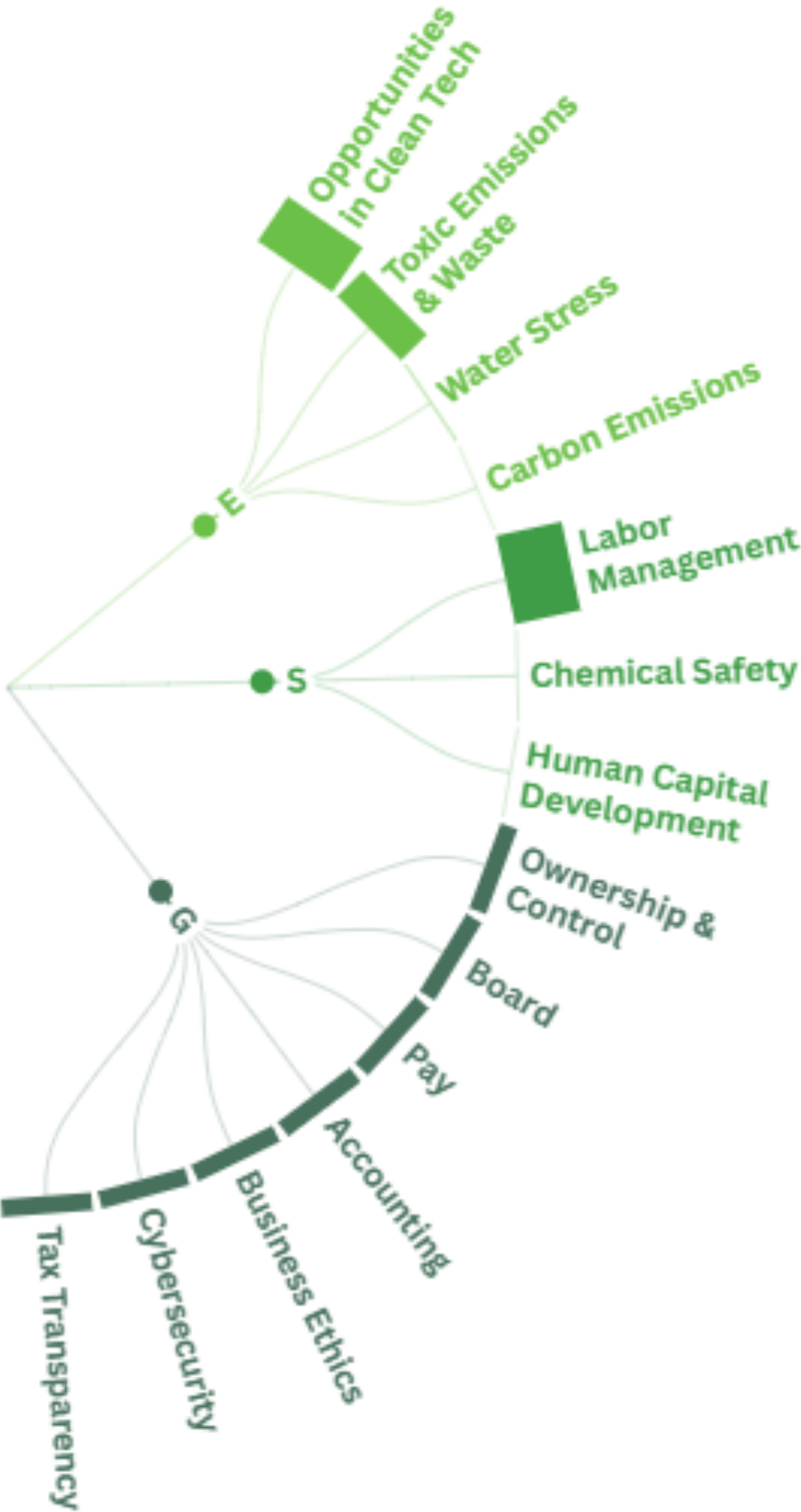
Environmental and Social

3 Water Technologies
+
4 Energy Transition
+
4 Italian Small Cap Index "Industrial Goods"
=
11 Companies

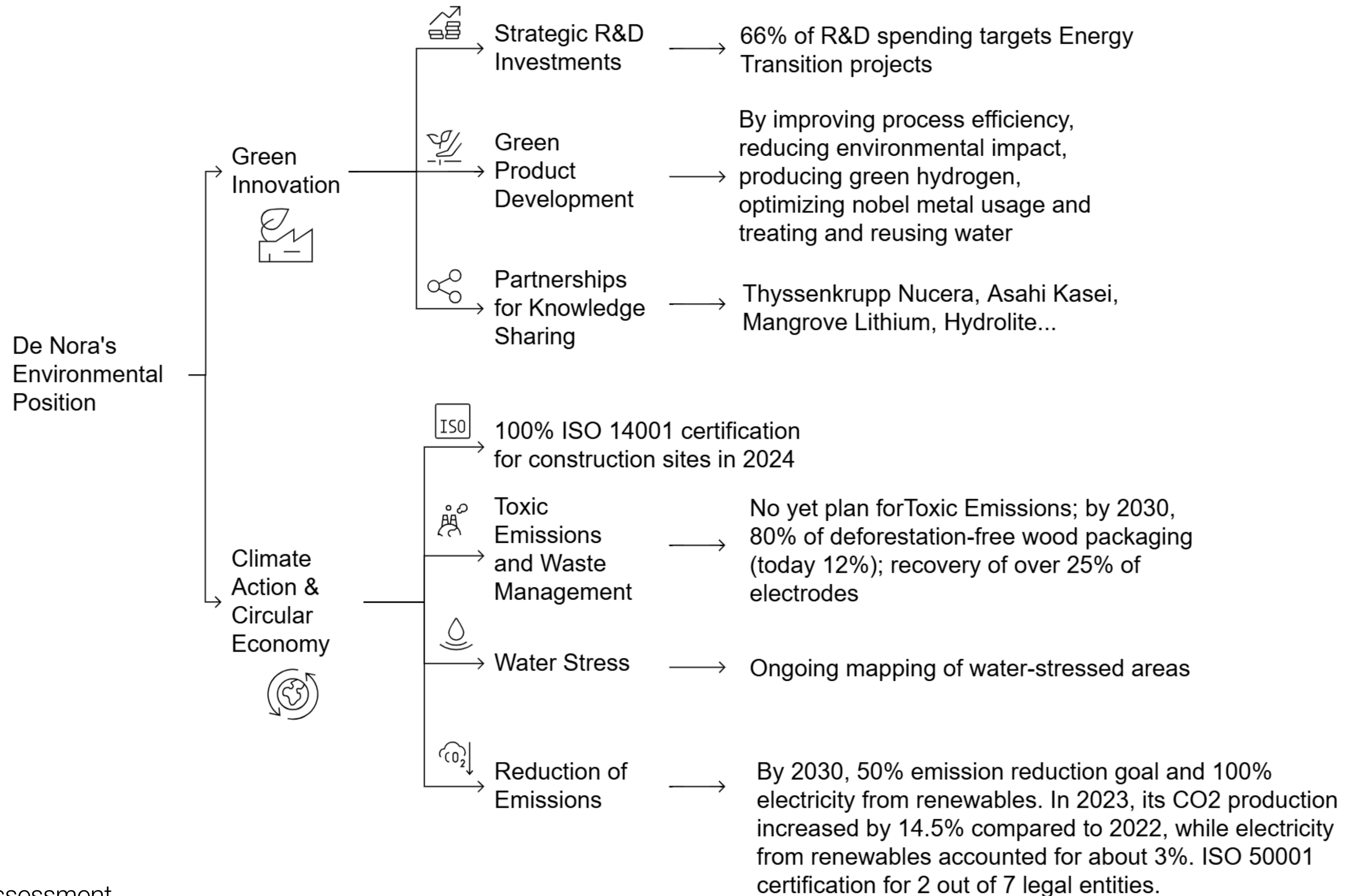
Governance

4 Italian Small Cap Index "Industrial Goods"

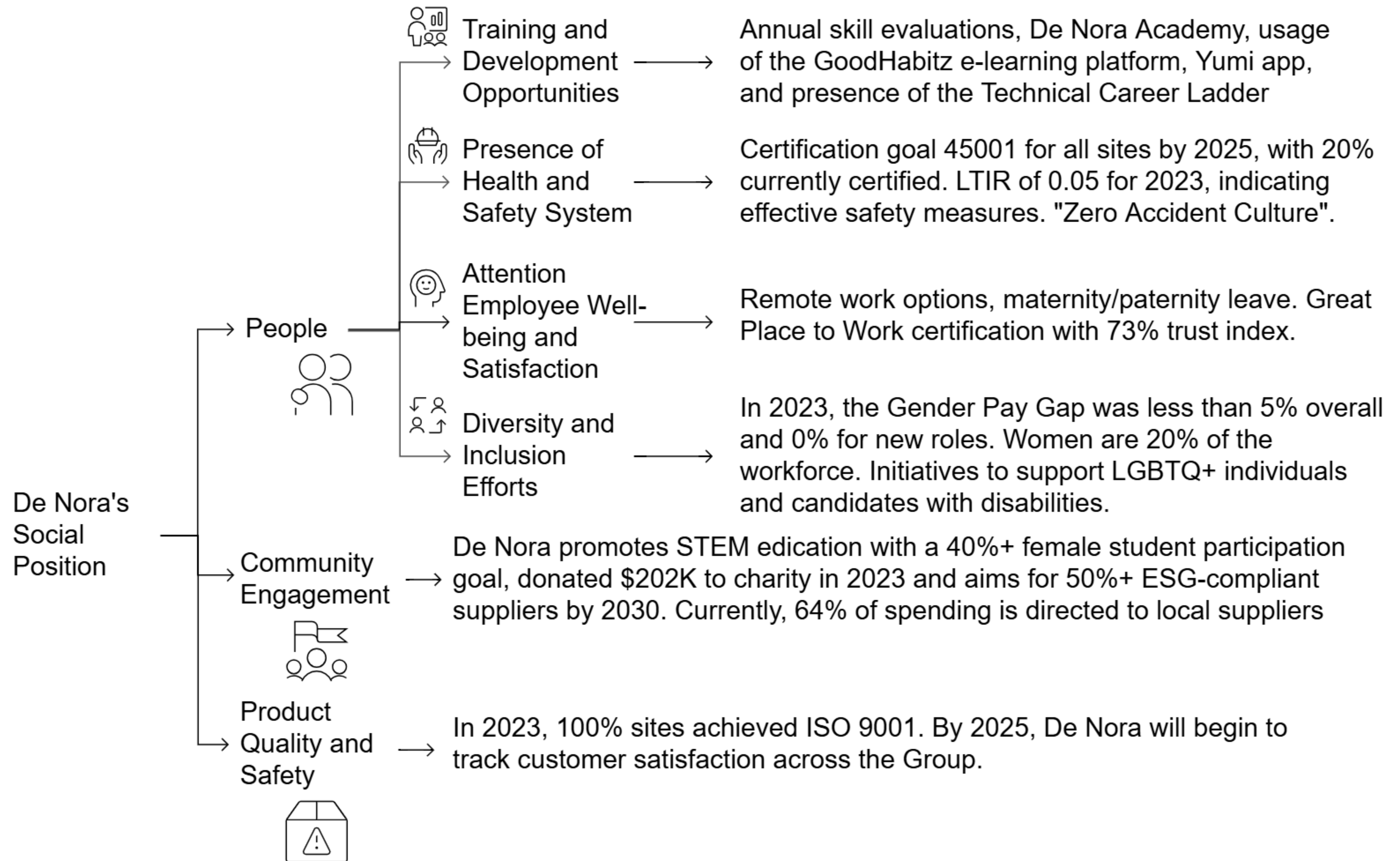
Key Factors



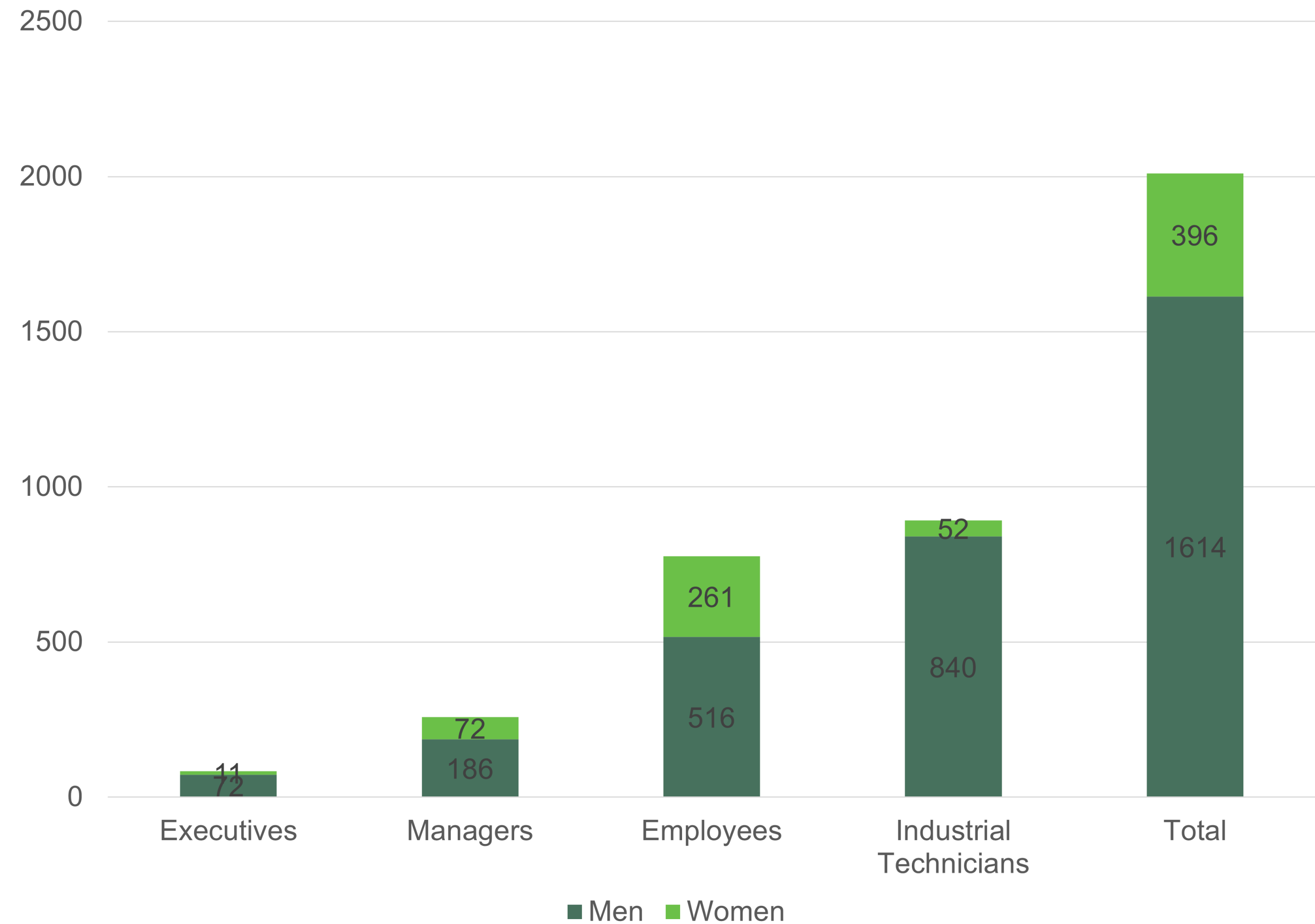
6.3 Environmental



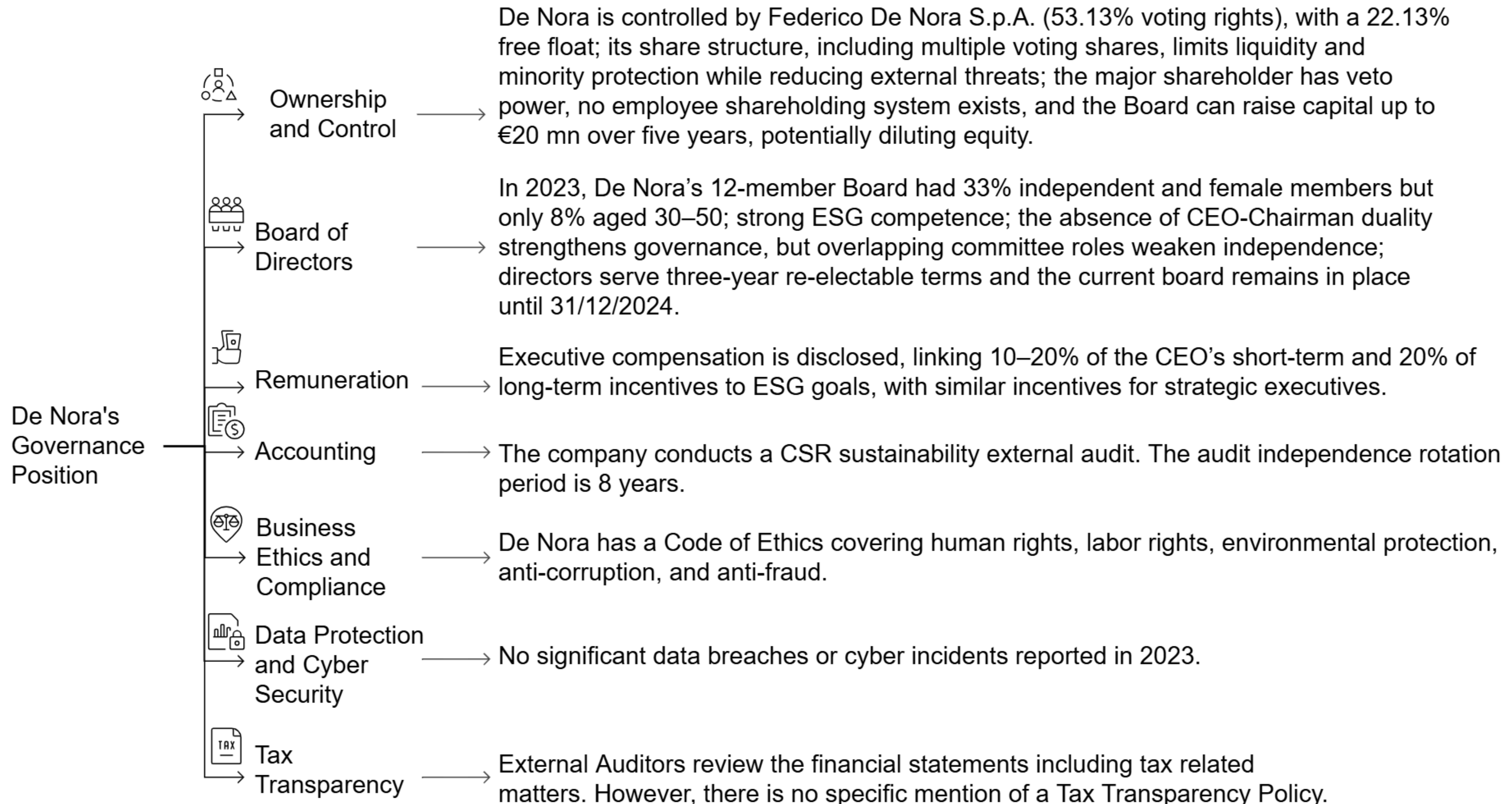
6.4 Social



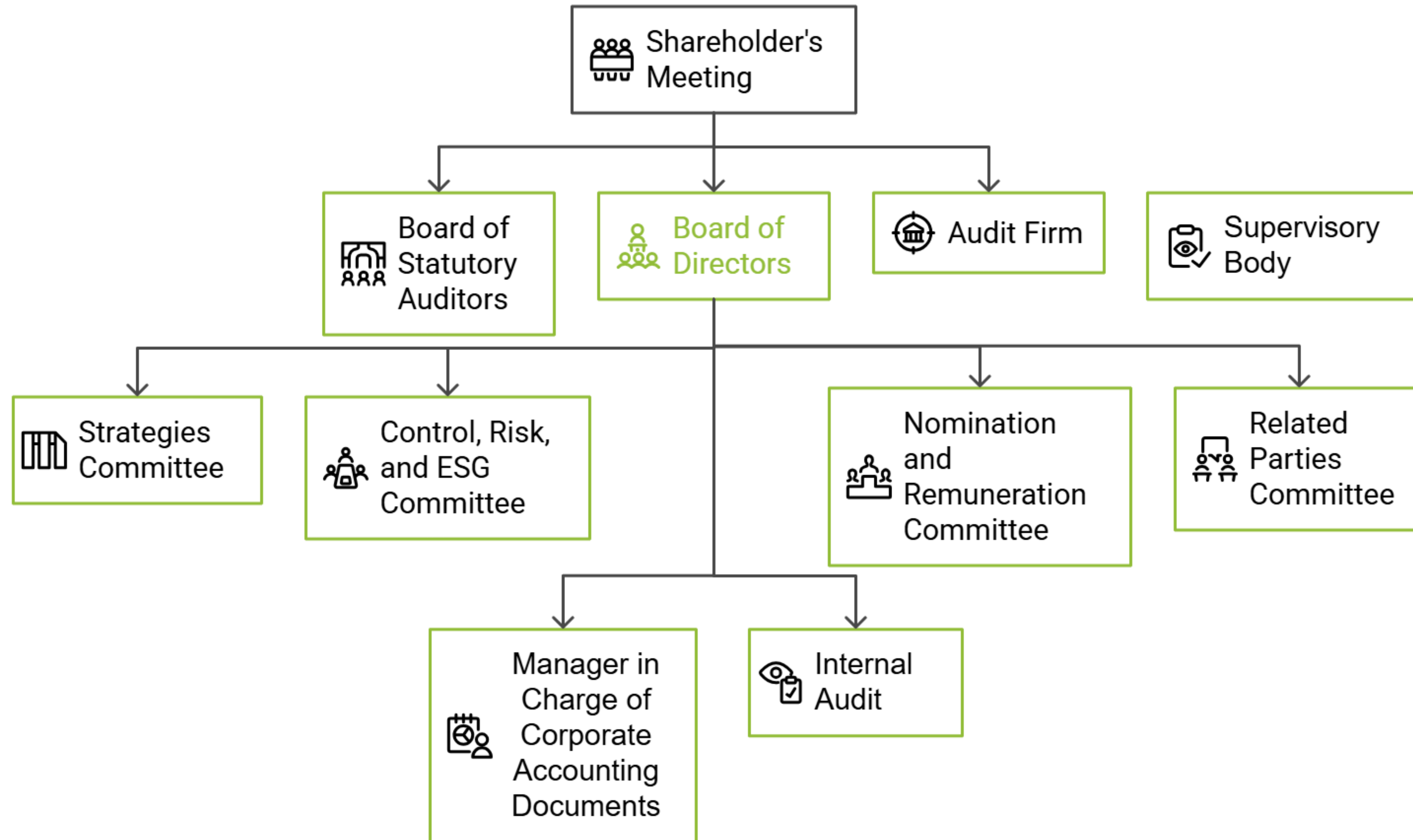
6.5 Employees by Category and Gender



6.6 Governance



6.7 Corporate Governance System



6.8 Board of Directors

Appointed on March 9, 2022 and in office until the financial statements' approval of December 31, 2024.



Chairman & Executive
Federico De Nora



Chief Executive Officer
Paolo Dellachà



Non-Executive
Director Stefano Venier



Independent Non-
Executive Director
Maria Giovanna Calloni



Non-Executive
Director Mario Cesari



Non-Executive
Director
Michelangelo Mantero



Independent Non-
Executive Director
Elisabetta Oliveri



Non-Executive
Director
Paola Bonandrini



Independent Non-
Executive Director
Giovanni Toffoli



Independent Non-
Executive Director
Alessandro Garrone



Independent Non-
Executive Director
Anna Chiara Svelto



Independent Non-
Executive Director
Giorgio Metta

6.9 Internal Committees

STRATEGIES COMMITTEE



Chairman & Executive
Federico De Nora



Chief Executive Officer
Paolo Dellachà



Non-Executive
Director Stefano Venier



Non-Executive
Director Mario Cesari



Non-Executive Director
Paola Bonandrini

APPOINTMENTS AND REMUNERATION COMMITTEE



Independent Non-
Executive Director
Elisabetta Oliveri



Independent Non-
Executive Director
Maria Giovanna Calloni



Non-Executive
Director Mario Cesari

RELATED PARTIES COMMITTEE



Independent Non
Executive Director
Maria Giovanna Calloni



Independent Non-
Executive Director
Elisabetta Oliveri



Independent Non-
Executive Director
Anna Chiara Svelto

CONTROL, RISK AND ESG COMMITTEE



Independent Non-
Executive Director
Anna Chiara Svelto



Independent Non-
Executive Director
Giovanni Toffoli



Non-Executive Director
Paola Bonandrini

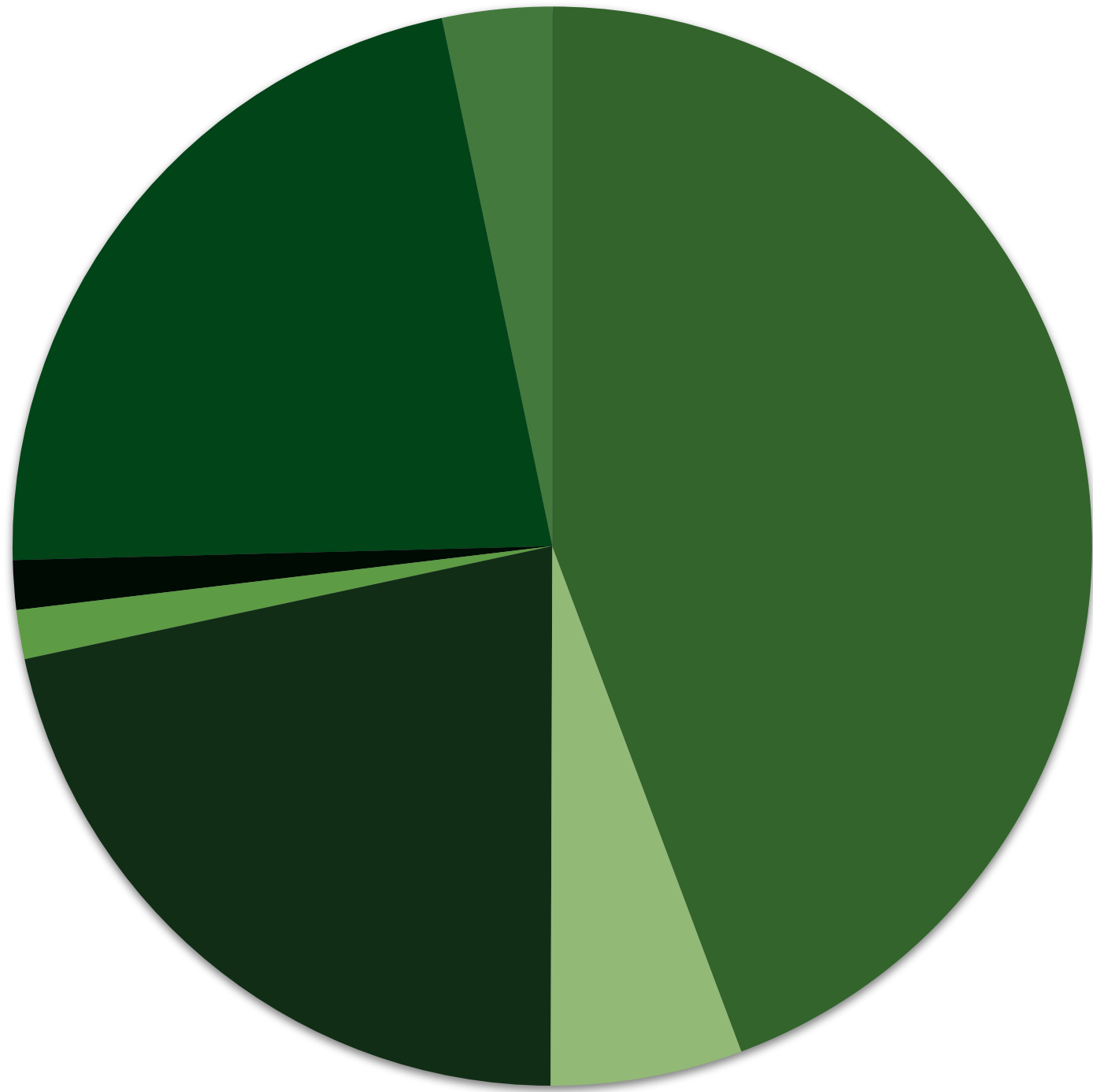
6.10 Shares and Voting Rights

Share capital amounts to euro 18,268,203.90 represented by shares without nominal value. Multiple-vote shares are not admitted to trading and give 3 votes at the shareholders' meeting.

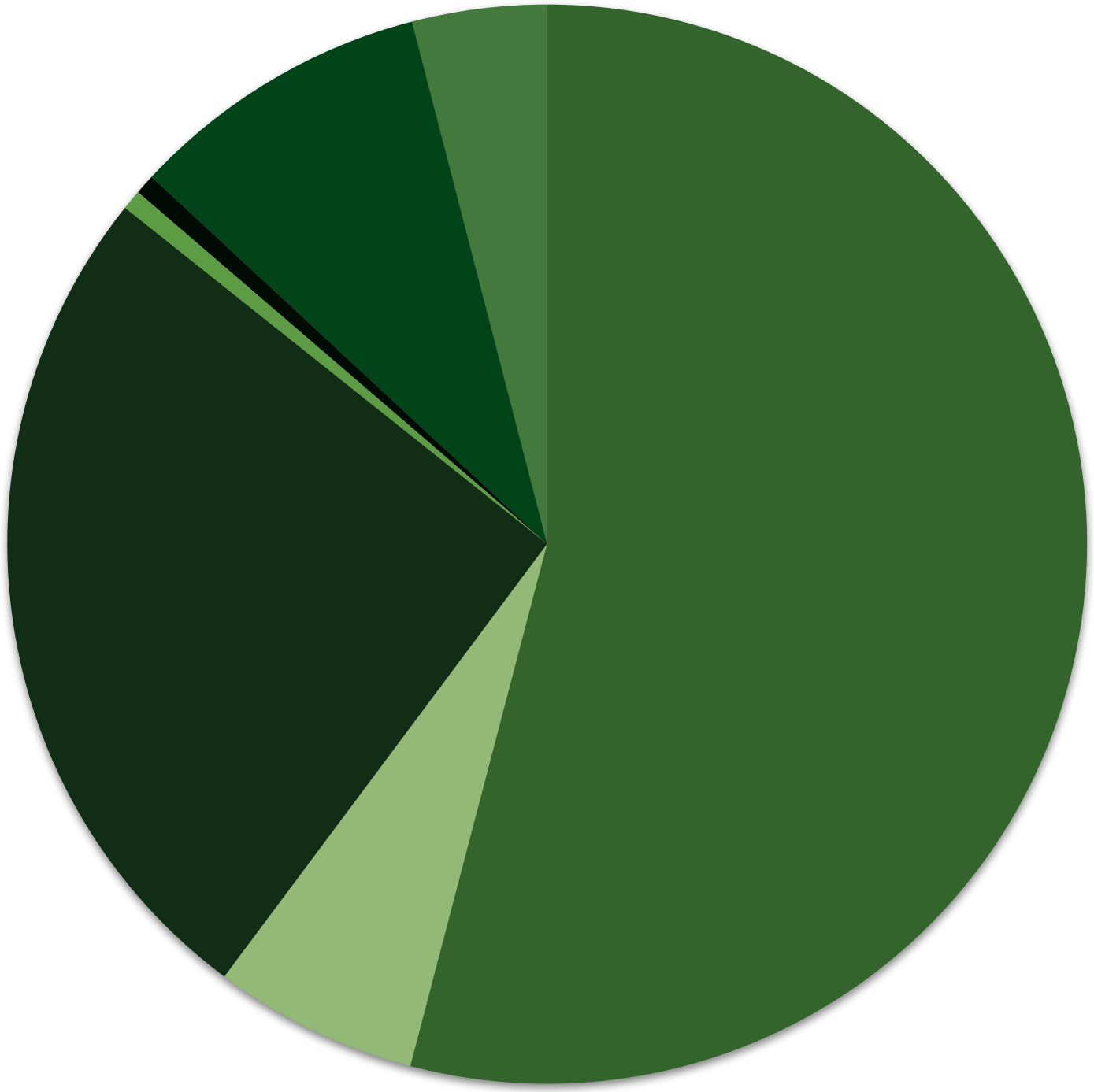
Type	Number of Shares
Ordinary Shares	51,203,979
Multiple Vote Shares	150,481,195
Total	201,685,174

Free Float	22.13%
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Percentage of Shares



Percentage of Voting Rights



- Federico De Nora S.p.A.

Management

Federico De Nora
- Norfin S.p.A.

Treasury shares
- Asset Company 10 S.r.l.

Other institutional and retail investors