

CFA Research Challenge



SAPIENZA
UNIVERSITÀ DI ROMA



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Industrie De Nora S.p.A. (BIT:DNR)

Sector: Industrial products and services

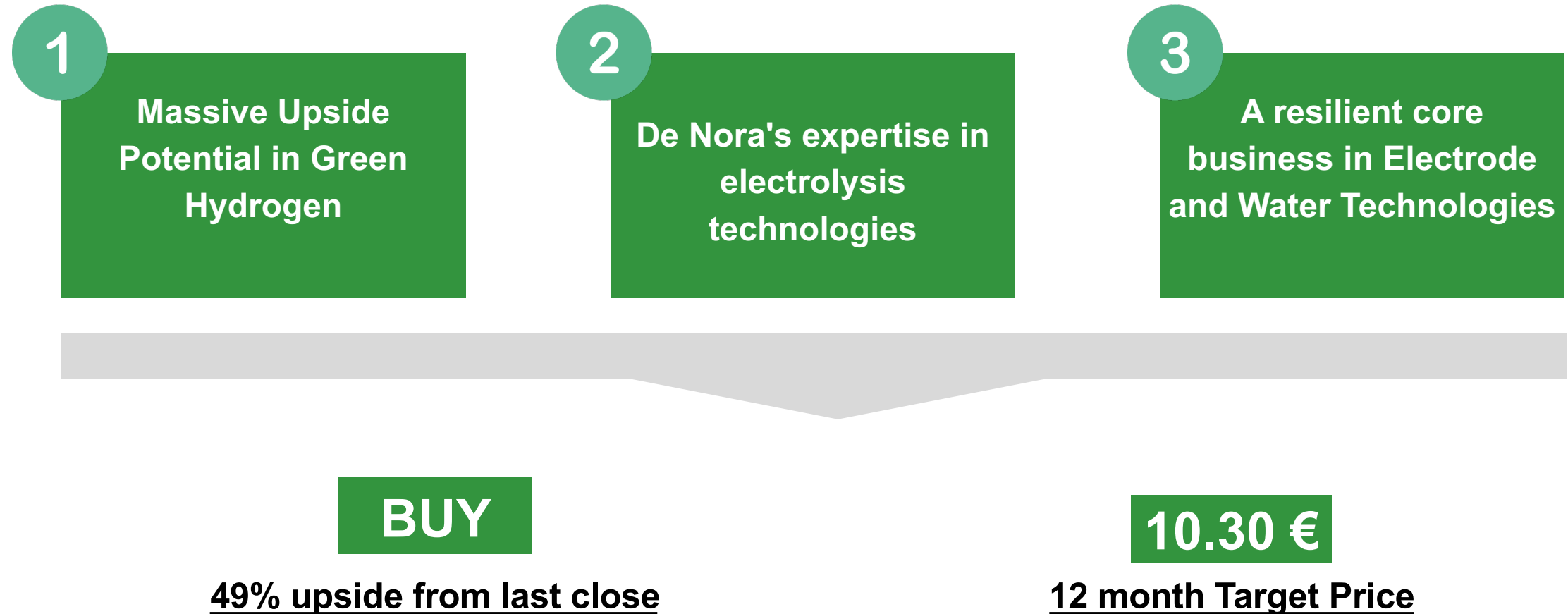
BUY RECOMMENDATION

Current Price: 6.89 € Target Price: 10.30 €



Recommendation: BUY

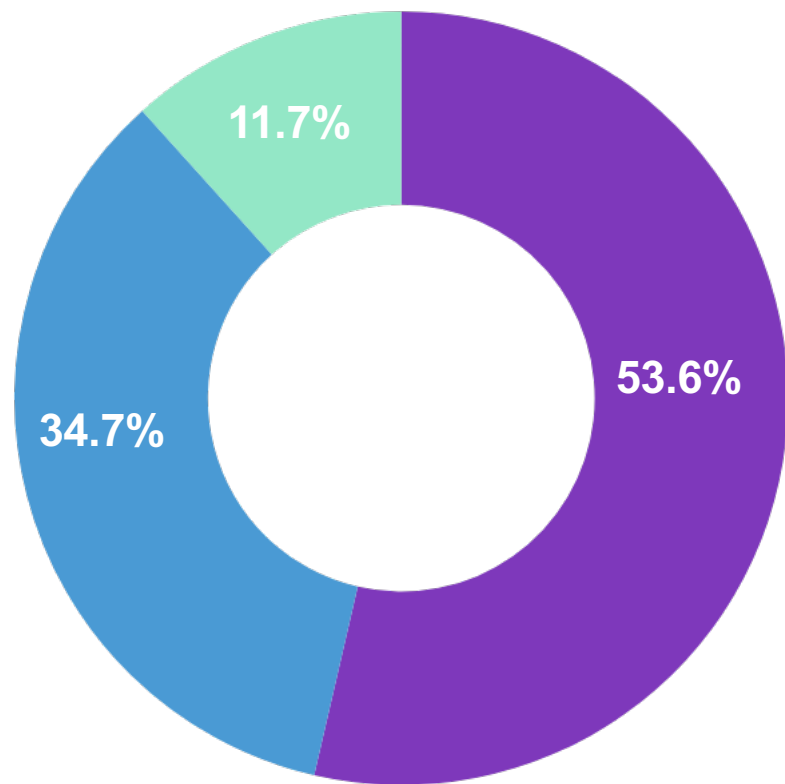
We issue a BUY recommendation with a 12-month target price of 10.30 €, representing a 49% upside.



Business Overview

Industrie De Nora S.p.A. is leader in the provision of electrochemical products and services.

2024 9m Revenue Breakdown



Electrode Technologies 53.6%

Water Technologies 34.7%

Energy Transition 11.7%

Overview

Investment Thesis

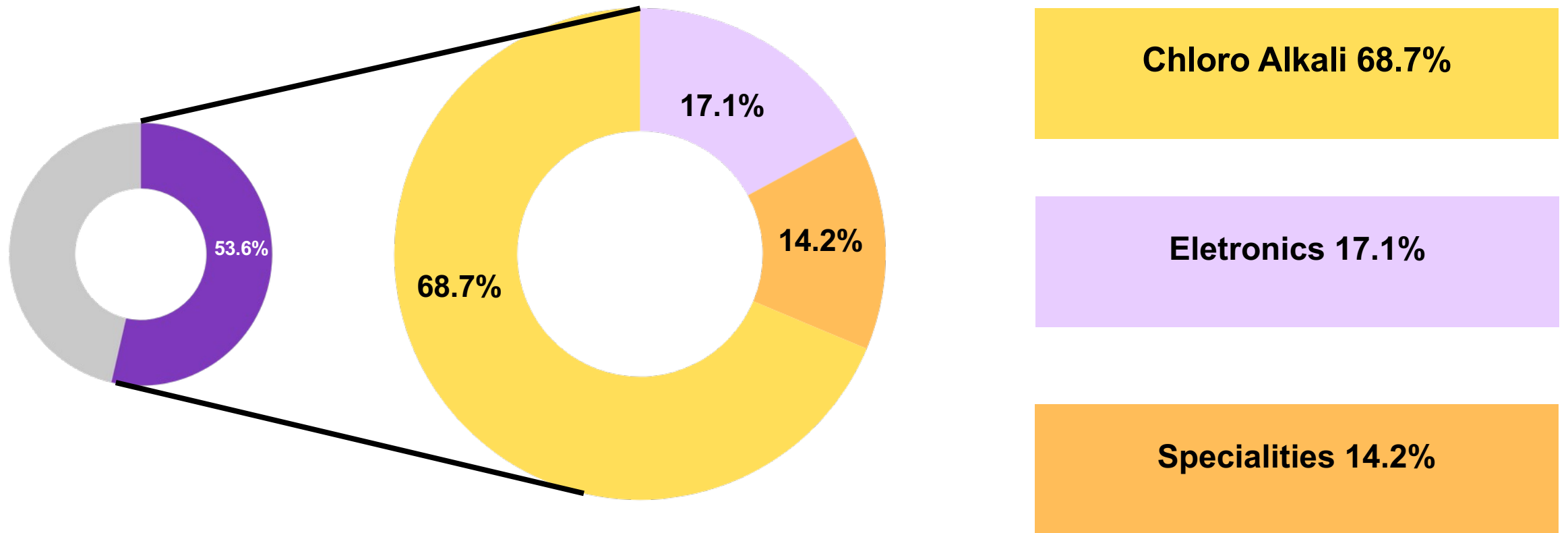
Valuation

ESG

Risks

Business Overview

DNR Electrode Technologies segment is divided into 3 macro areas, driven primarily by Chloro Alkali.



Overview

Investment Thesis

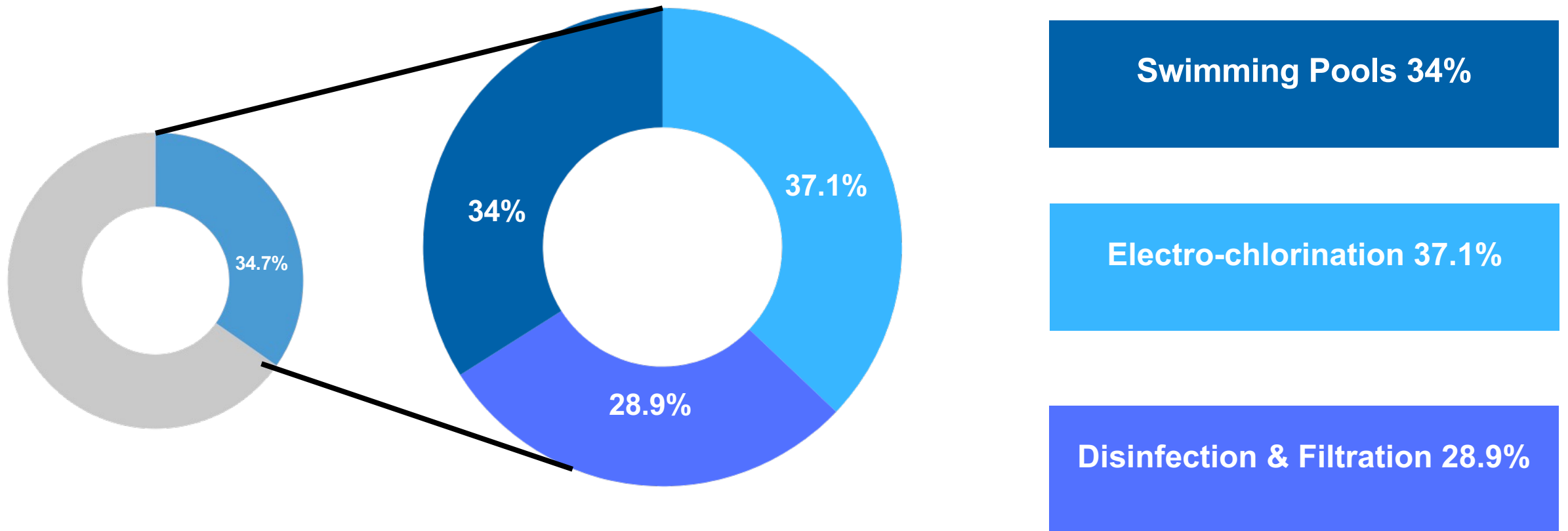
Valuation

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Business Overview

In Water Technologies segment these three macro areas are equally weighted supporting DNR long-term resilience and innovation.



Overview

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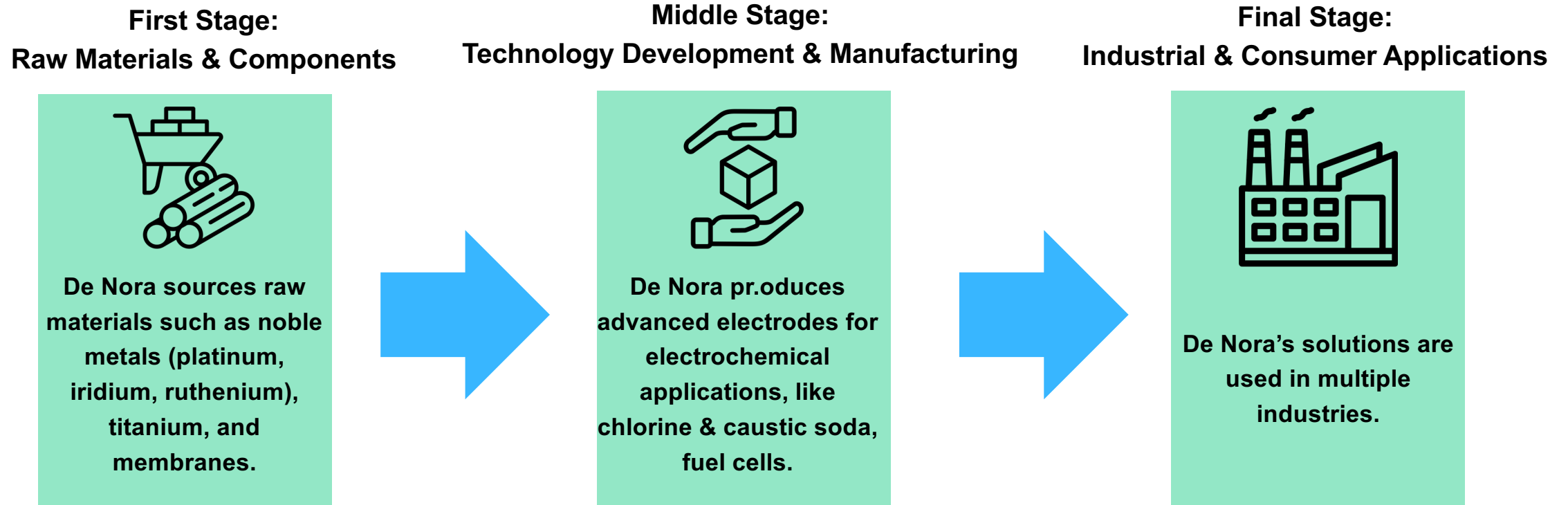
Valuation

ESG

Risks

Industrie De Nora Value Chain Overview

B2B excellence in electrochemistry, water, and energy transition



Overview

Investment Thesis

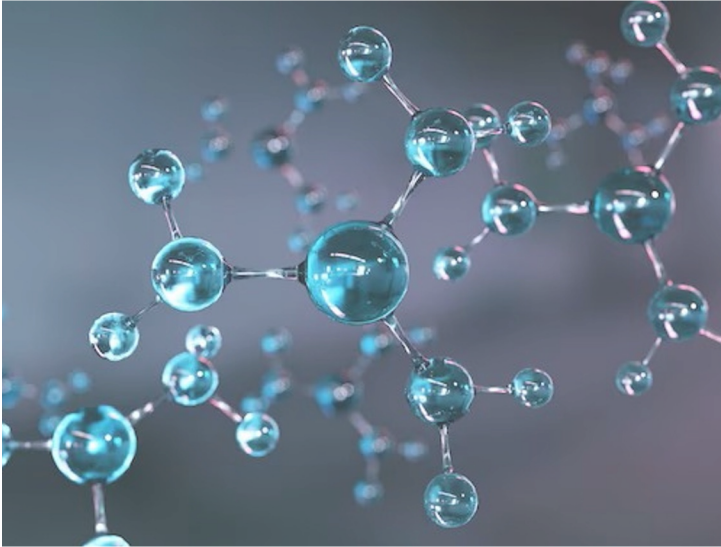
Valuation

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Industry Overview

ELECTROCHEMICAL ELECTRODES



- Chlorine-caustic soda
- Printed Circuit Boards
- Electrowinning

Electrodes technologies

WATER TREATMENT



- Electrodes for electro-chlorination (pools)
- Electro-chlorination systems (industries)
- Water Filtration and disinfection systems

Water technologies

HYDROGEN



- Green hydrogen

Energy transition

Overview

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Electrochemical & Electrodes Overview



Barriers to Entry:

Due to the significant capital investment required for production facilities, extensive technical know-how, and regulatory compliance.



Concentration and Competition:

The market is highly concentrated with a relatively low level of competition, leading to a situation of pseudo-monopoly.



Customization:

Clients often require tailor-made products, which reduces the threat of buyers easily switching to competitors.



Innovation is key:

Technological advancement is essential in this market, significantly impacting its equilibrium.

Due to the diverse types of electrochemical electrodes, each with its own distinct properties and configurations, we have excluded from this macro-sector the categories that fall outside the markets in which De Nora operates, as their fields of application differ significantly.

Electrochemical & Electrodes: Alternatives and Positioning



> 50% Market Share

- Chlor-alkali
- Electronics
- Nickel & Cobalt Electrowinning

Caustic soda and chlorine production methods:

- mercury cell process
- diaphragm cell process
- membrane cell process

HDI Printed Circuit Boards production methods:

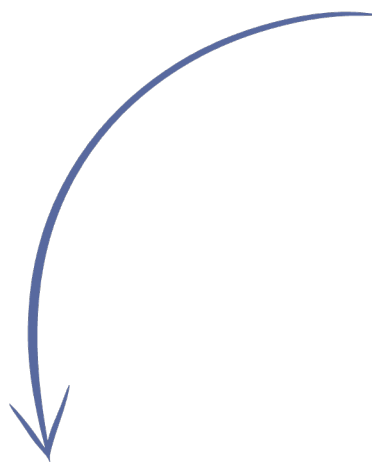
- Electroless copper plating
- Electrolytic copper plating

No alternatives to Electrowinning

Water Treatment Overview

Competition:

Highly competitive, with large global players and numerous regional competitors vying for market share. This results in strong price competition and continual technological innovation



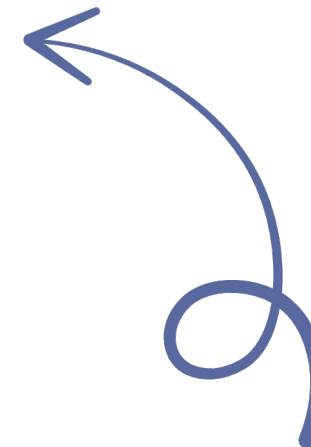
Buyer Power:

Water treatment solutions are usually sold to large municipal or industrial clients with significant buying power, which is further increased by market competition that allows easy switching between providers.



Accessibility:

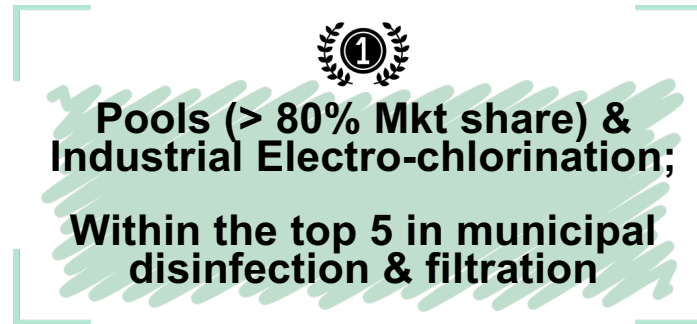
Highly fragmented but generally open to new entrants, especially those offering innovative solutions, although certain sub-sectors have more stringent technical requirements.



Water Treatment: Alternatives and Positioning

Water quality types:

- Drinking water
- Water for Industrial Use
 - Water for irrigation
- Treated Wastewater
 - Mineral water
 - Pools water

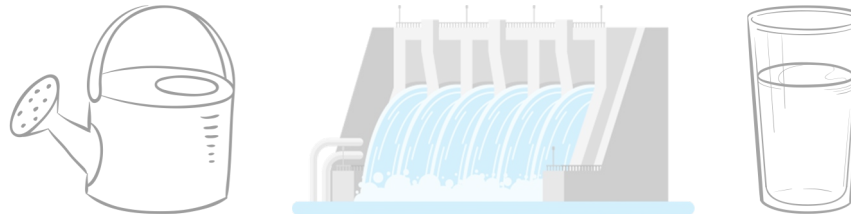


The technologies:

- Physical processes
- Biological processes
- Membrane processes
- Chemical processes

Treated types of water:

- Rainwater
- Pools water
- Urban wastewater
- Industrial wastewater



Geographical influence:

Geographical location and operating spaces may impact costs and adequacy of the available technologies

Hydrogen Overview

Competition:

The hydrogen market comprehends a vast number of competitors, thus resulting in intense competition, particularly in the electrolysis market.

Necessary help:

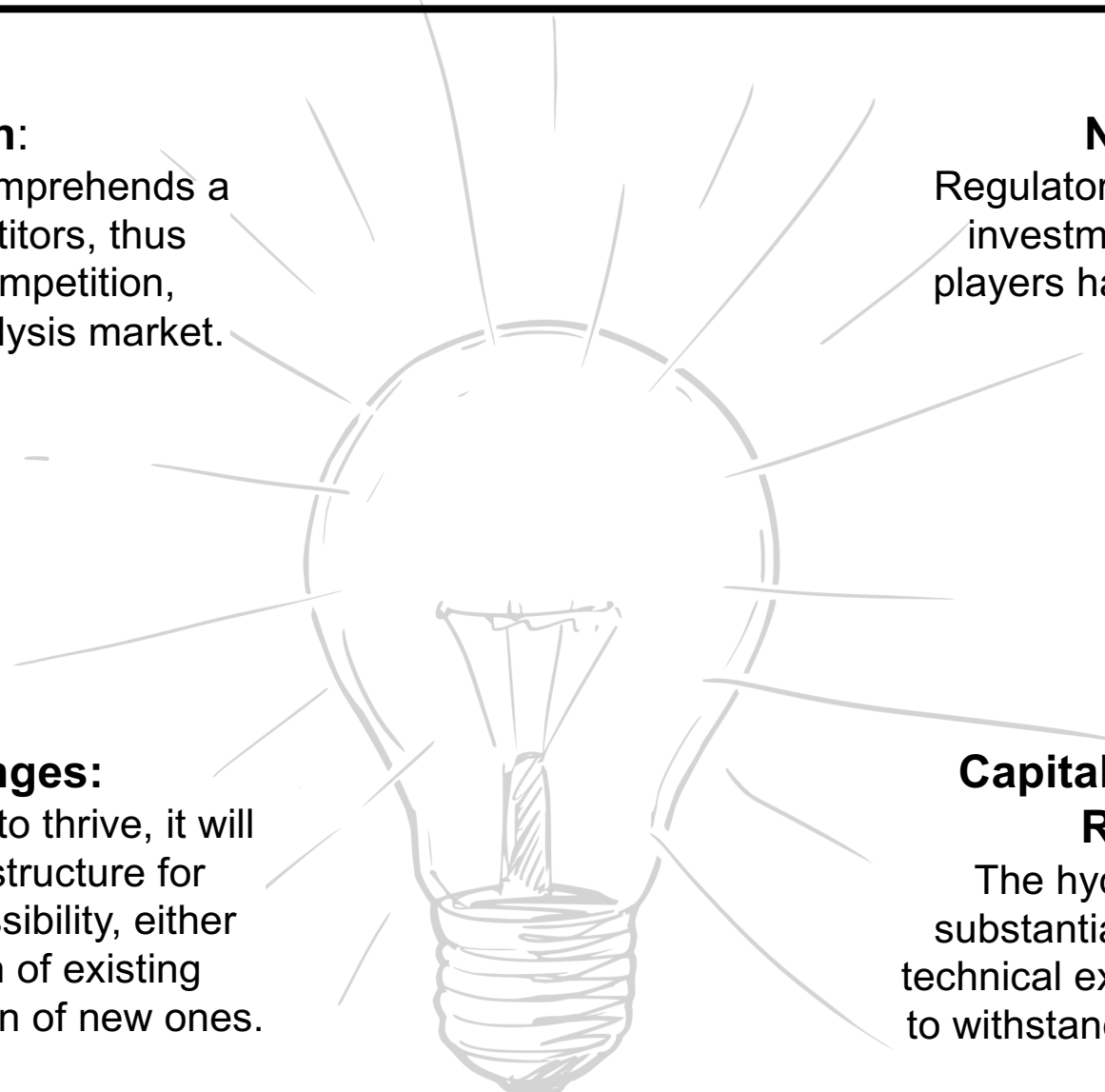
Regulatory support and government investments are crucial, as most players have yet to reach the break-even point.

Essential changes:

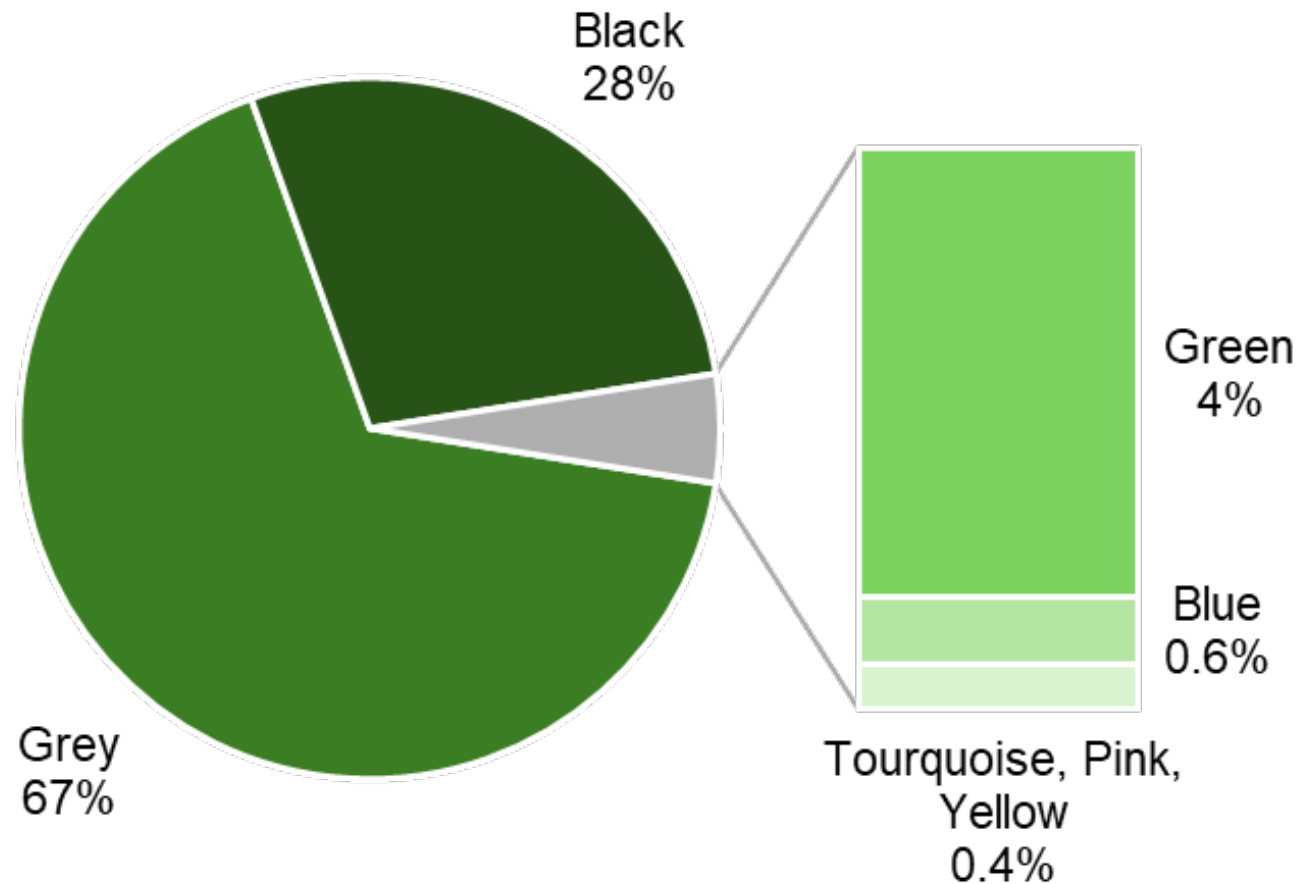
For the hydrogen market to thrive, it will require adequate infrastructure for transportation and accessibility, either through the conversion of existing facilities or the construction of new ones.

Capital and Technological Requirements:

The hydrogen sector requires substantial capital investment and technical expertise, and the capability to withstand relevant financial stress.



Hydrogen Market



Hydrogen production methods and varieties

Coal gasification:

- Black Hydrogen (Coal)

Steam reforming:

- Grey Hydrogen (Natural gas)
- Blue Hydrogen (Natural gas)

Pyrolysis:

- Turquoise Hydrogen (Natural gas)

Water electrolysis:

- Green Hydrogen (Renewable based)
 - Pink Hydrogen (Nuclear)
 - Yellow Hydrogen (Solar)



Green Hydrogen Production AWE Technology

Overview

Investment Thesis

Valuation

ESG

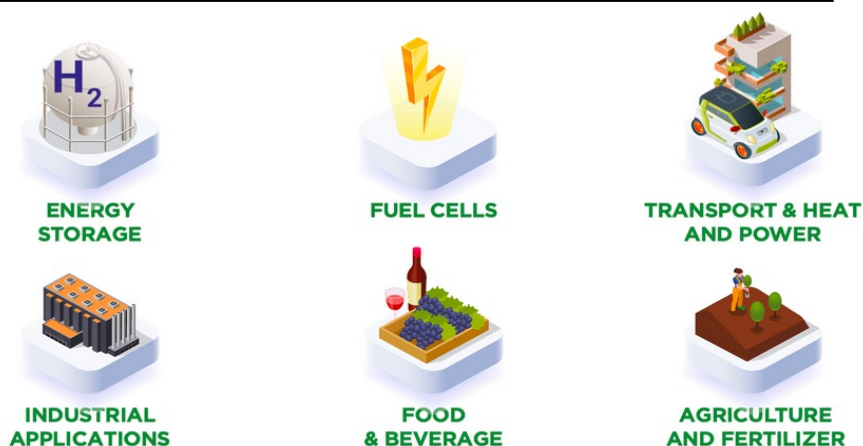
Risks

Thesis 1 : Massive Upside Potential in Green Hydrogen

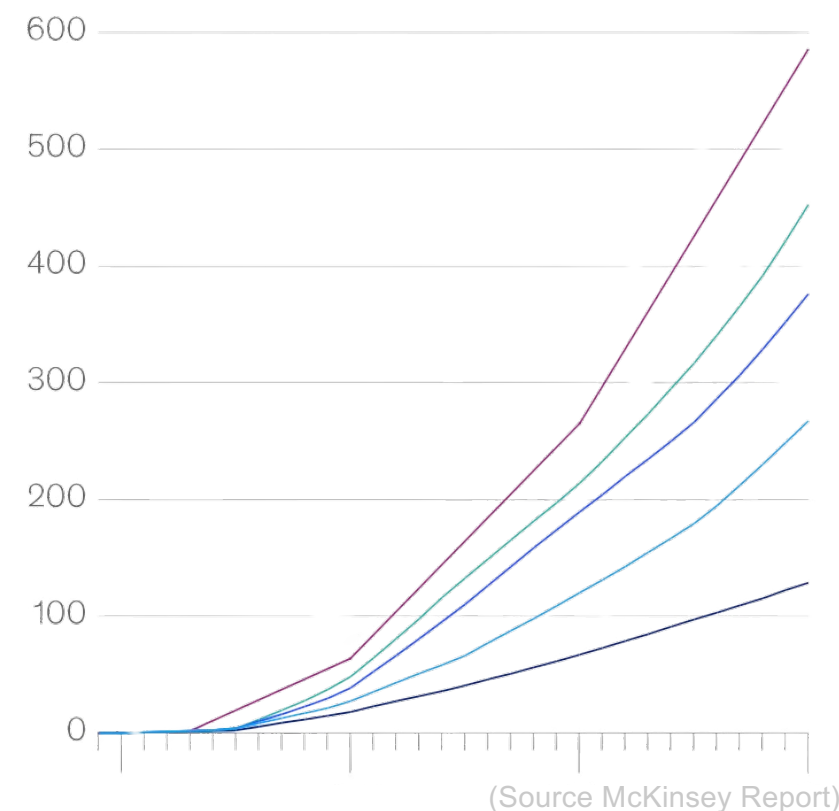
Clean Hydrogen Demand is Set to Skyrocket

- With green hydrogen set to transform energy markets, De Nora is primed for substantial upside
- Green hydrogen demand is accelerating
- First-mover advantage and strategic partnerships

Potential Utilize



Expected Green Hydrogen Demand



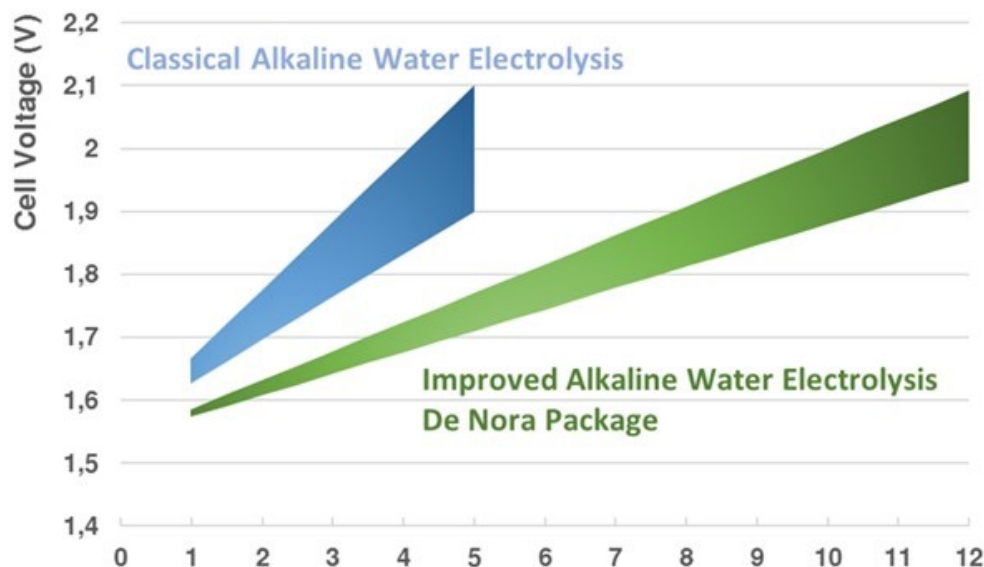
Thesis 2 :

De Nora's expertise in electrode and electrolysis technologies

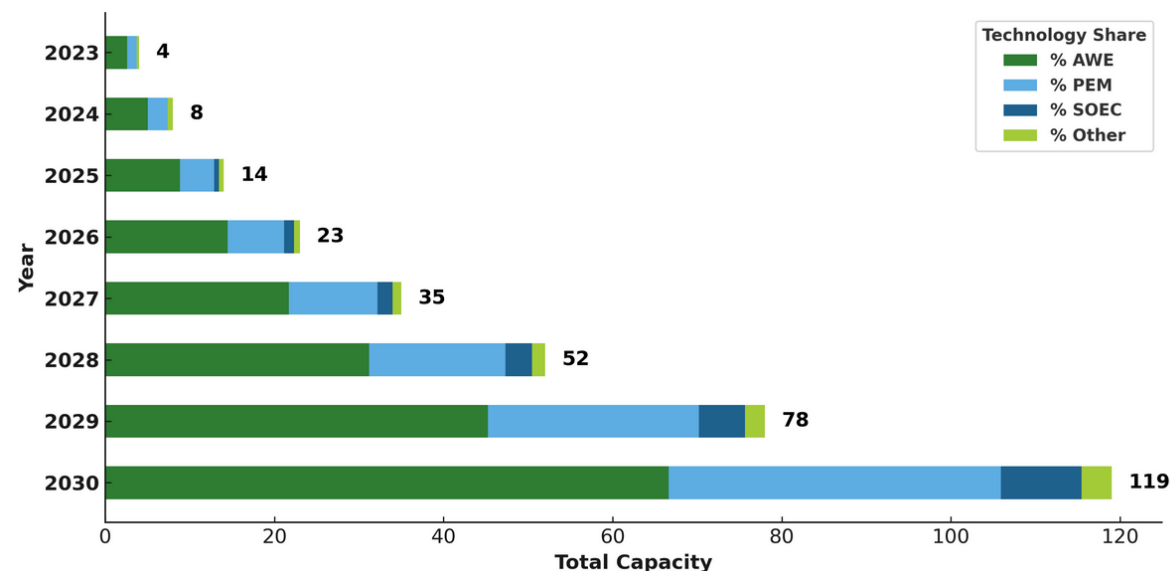
Uniquely positioned to capitalize on the renewable transition

De Nora's century-long expertise in electrochemistry, coupled with continuous R&D investments, positions the company as a leader in Alkaline Water Electrolysis (AWE), a key enabler of the green economy.

Technology Evolution



AWE Potential by 2030



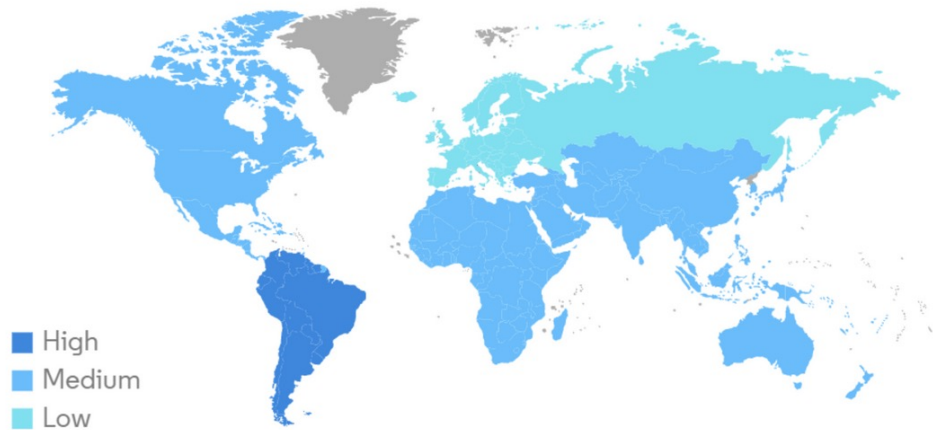
Thesis 3 :

A resilient core business in Electrode and Water Technologies

Solid Business Model

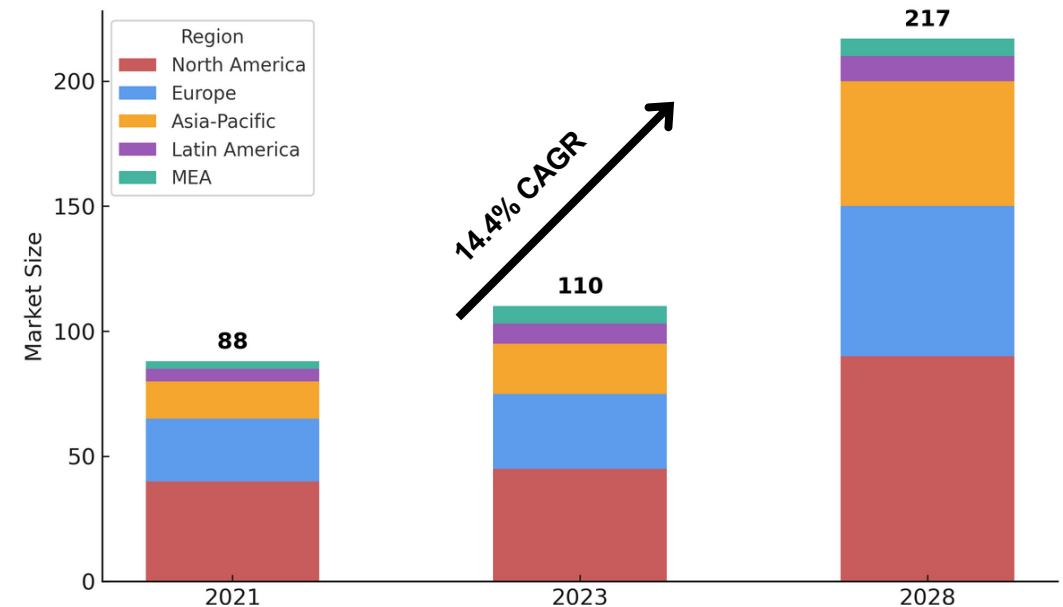
De Nora's core business in electrode and water technologies ensures financial stability and long-term growth, benefiting from diversified industrial applications and strong demand across multiple sectors.

Chlor Alkali Market Growth Rate by Region 22-27



Source: Mordor Intelligence

PFAS Growth Rate by Region 22-27



Overview

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Investment Thesis

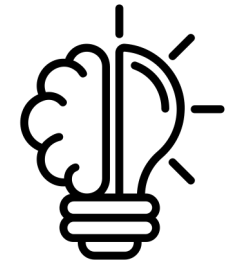
1.

Massive Upside Potential in Green Hydrogen



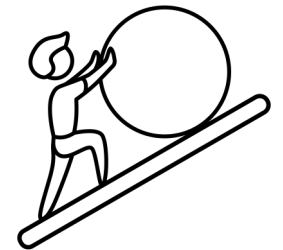
2.

De Nora's expertise in electrode and electrolysis technologies



3.

A resilient core business in Electrode and Water Technologies



Recommendation: BUY

Challenge and Strategic Focus on De Nora's Energy Transition

Since its debut in the capital markets in 2022, De Nora has faced volatility in both market trends and economic performance due to shifts in the external environment and internal dynamics.



Scenario Analysis

Bear

Base

Bull

DNR +33%

Price: 9.2€

Revenues CAGR: 4.29%



No upside in Green hydrogen

**Failure to capitalize on
expertise**

No growth, just stability

DNR +49%

TP: 10.3 €

Revenues CAGR 6.3%



**Good Upside Potential in Green
Hydrogen**

**De Nora's expertise in
electrochemistry**

A resilient core business



DNR +67%

Price: 11.52€

Revenues CAGR: 8.34%



**Massive Upside Potential in
Green Hydrogen**

Expertise well capitalized

Good growth in ET & WT

Overview

Investment Thesis

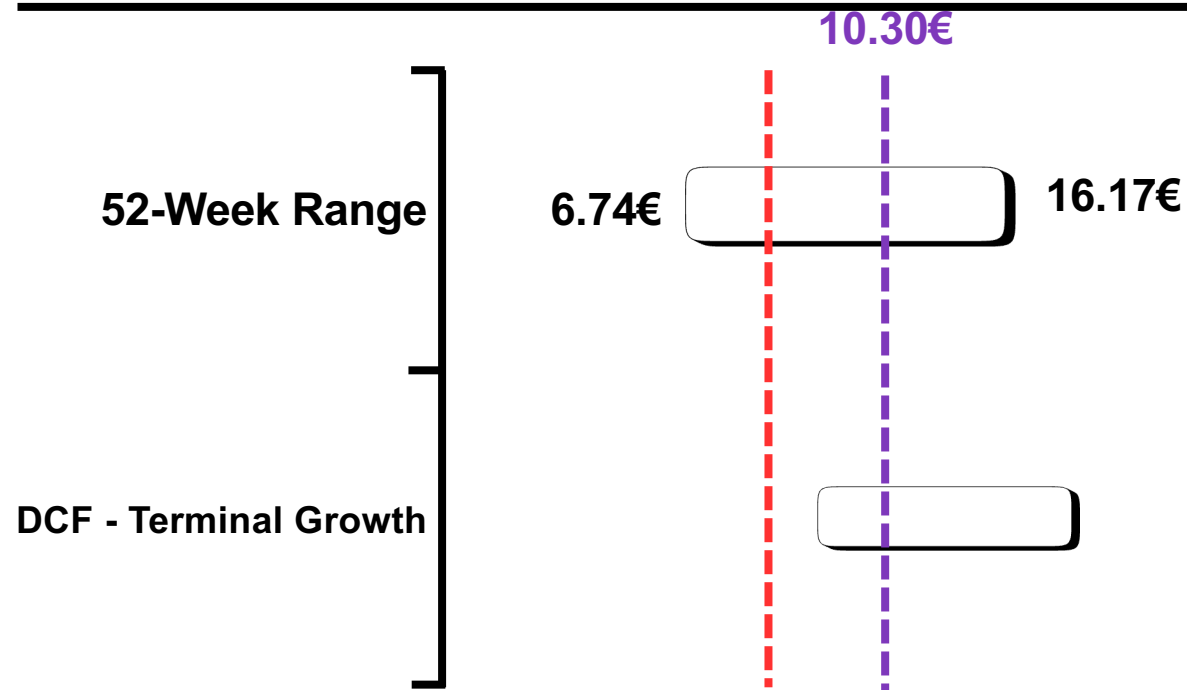
Valuation

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Intrinsic Valuation

Valuation Football Field



Assumptions

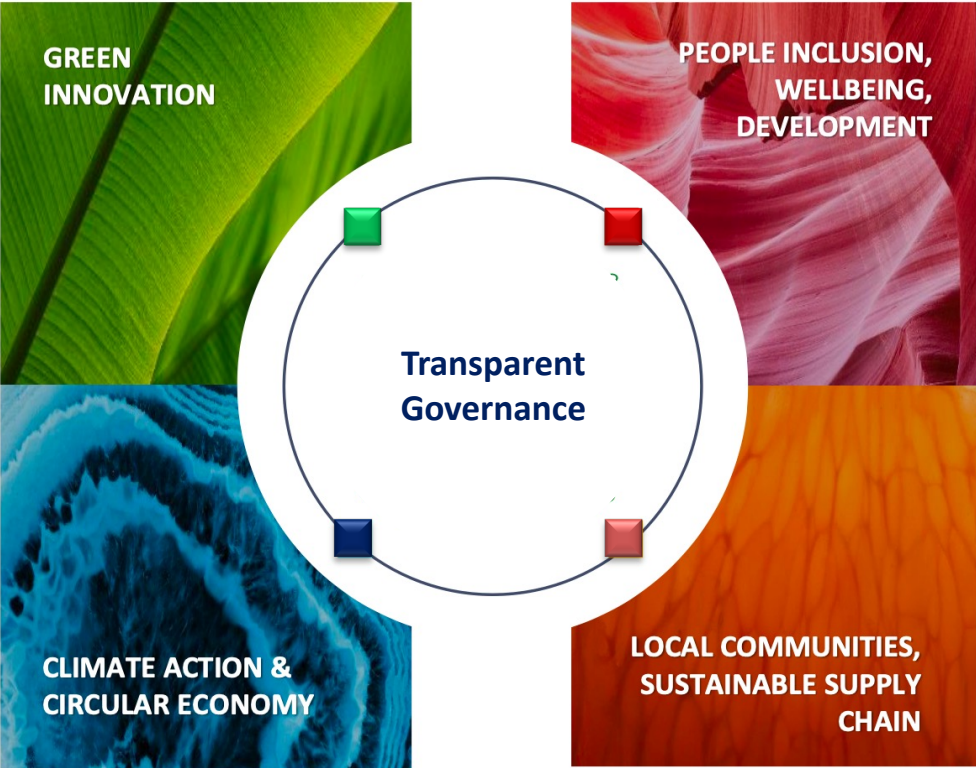
Revenue CAGR ('24-'26)	6.3%
EBITDA Margin ('24-'26)	22%
WACC	7.80%
Terminal Growth Rate	2%

Target Return

Upside : 49.3%

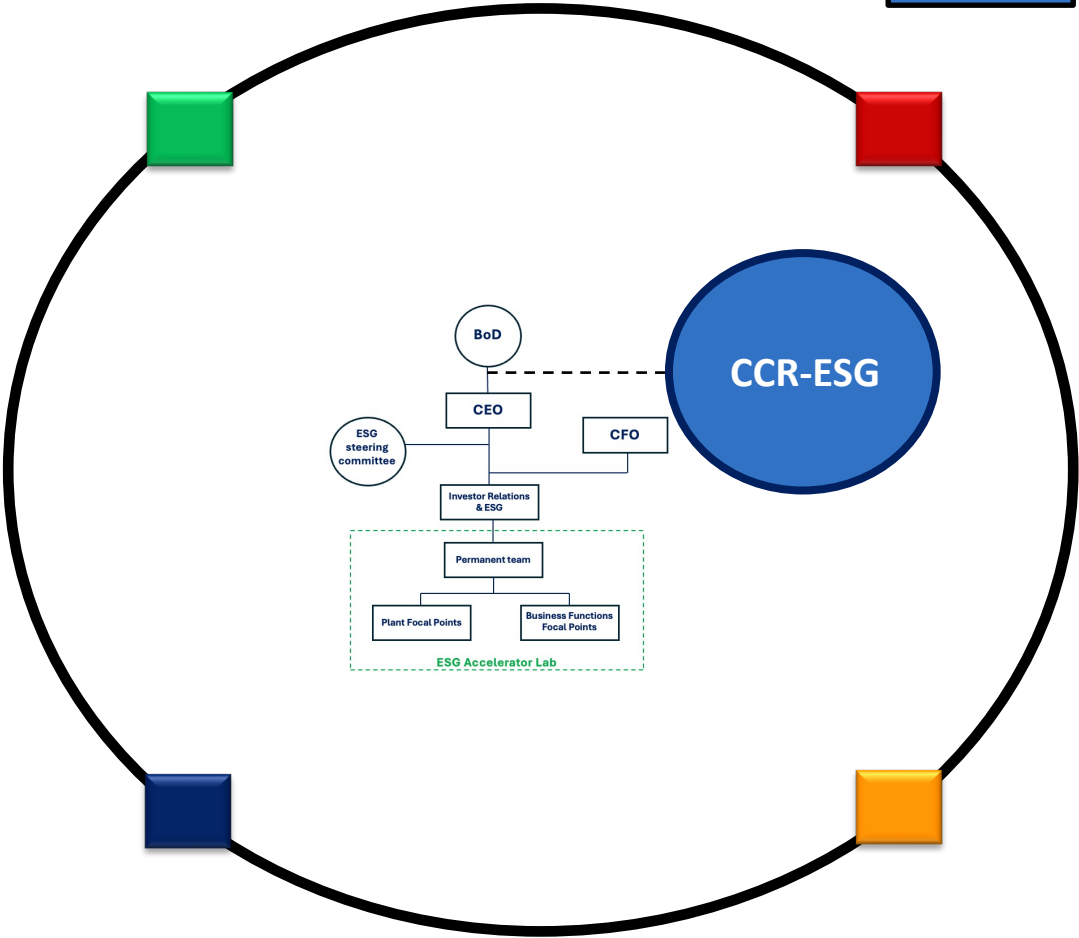
Environmental, Social and Governance

ESG Strategic Pillars



DNR's Corporate Governance

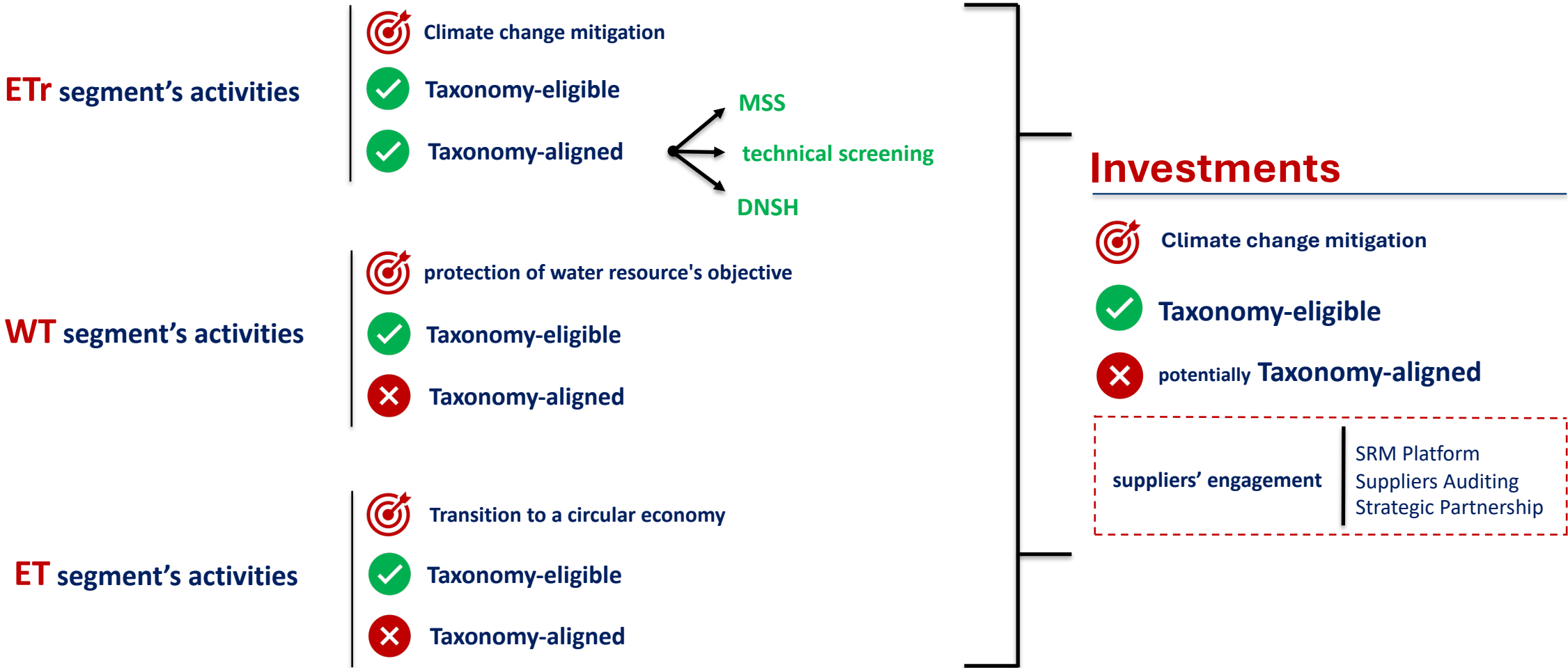
7.90



Environmental, Social and Governance

The **CCR-ESG** committee is responsible for alignment with the EU Taxonomy.

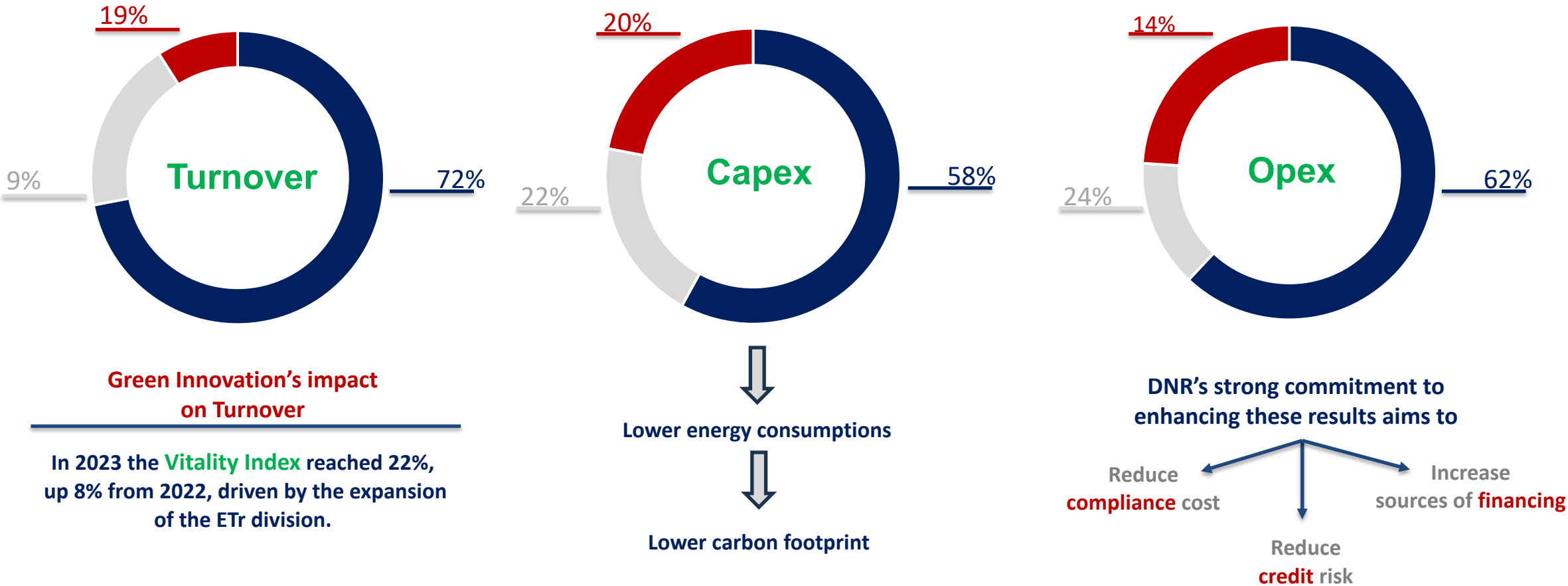
The economic activities of DNR’s business areas qualifying as **sustainable** under the EU Taxonomy:



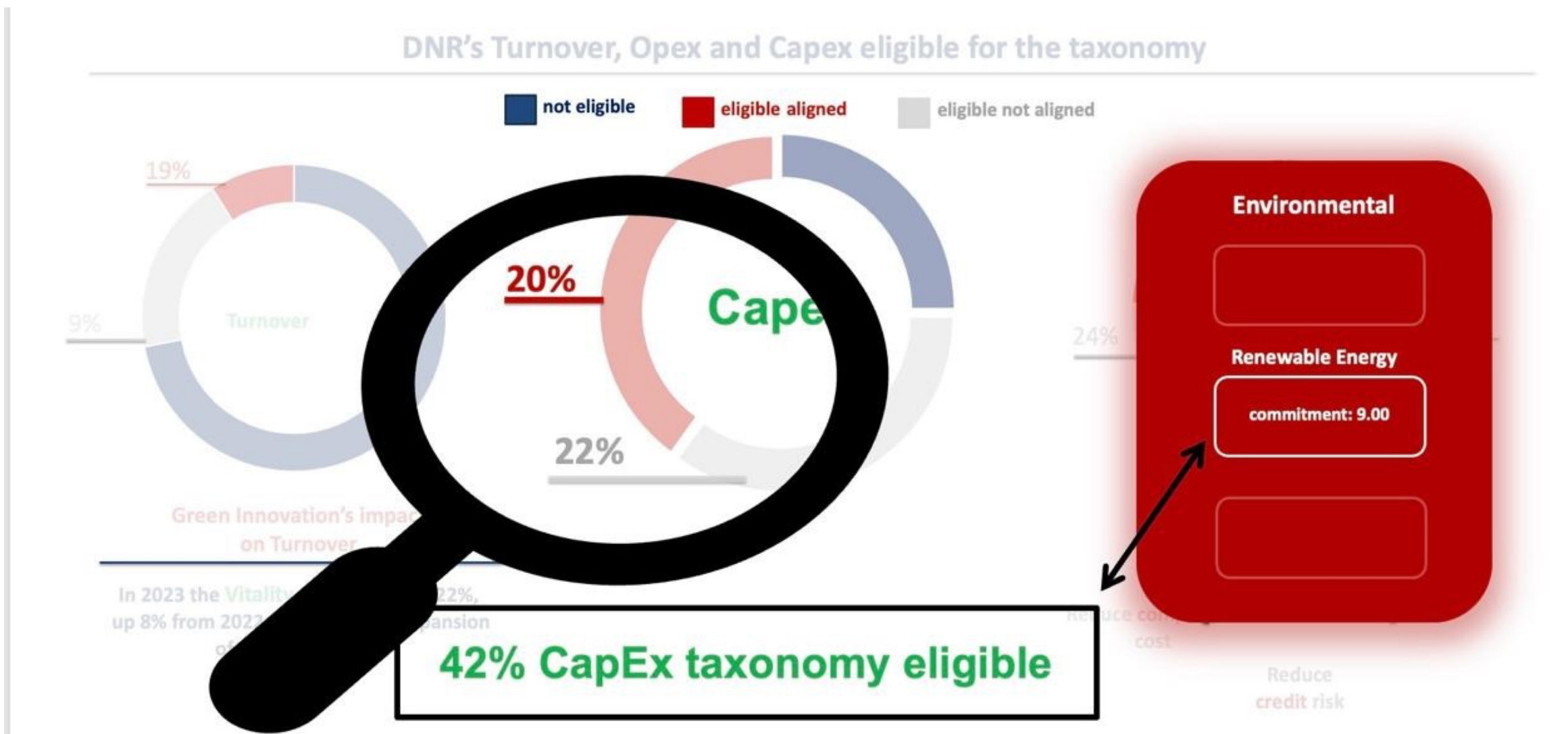
Environmental, Social and Governance

DNR's Turnover, Opex and Capex eligible for the taxonomy

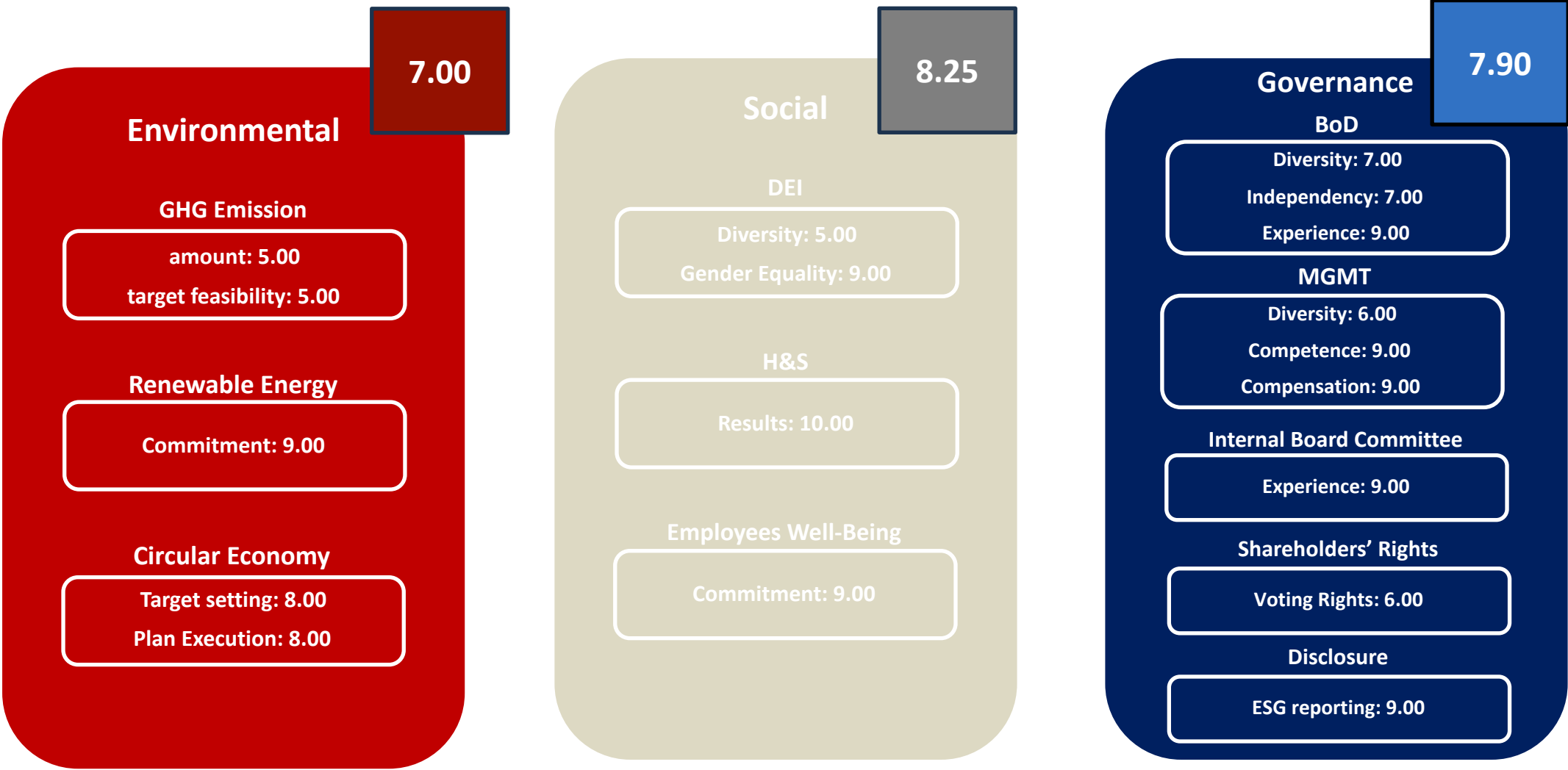
not eligible eligible aligned eligible not aligned



Environmental, Social and Governance



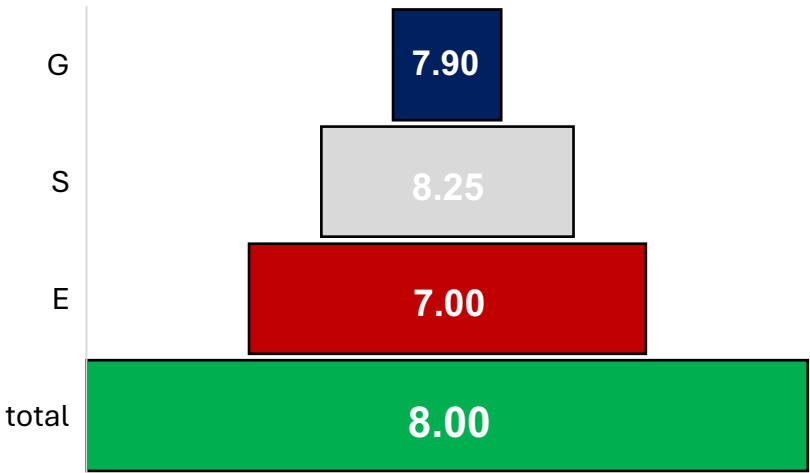
Environmental, Social and Governance



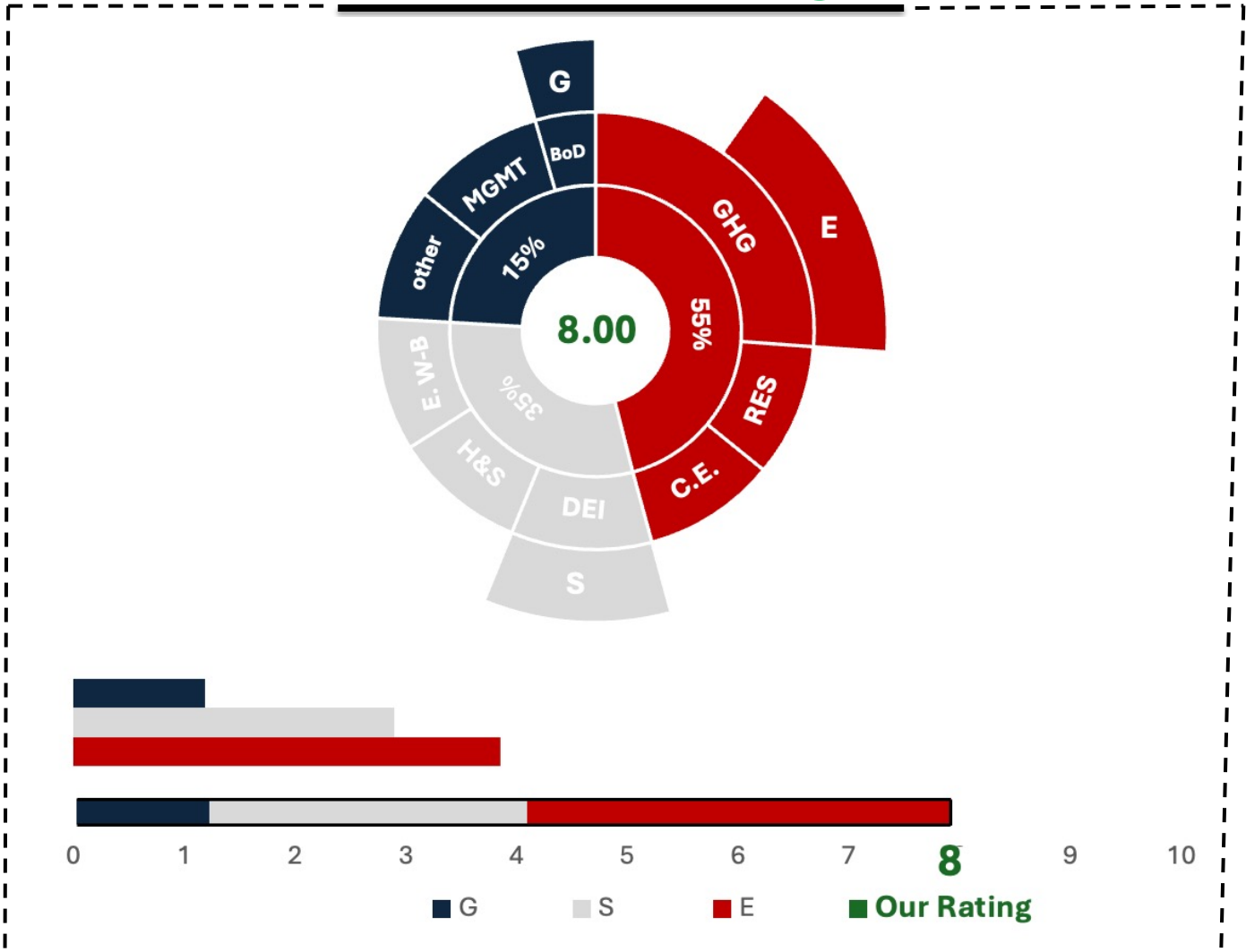
Environmental, Social and Governance

ESG Scorecard

Pillar	Score	Weight
E	7.00	55%
S	8.25	35%
G	7.90	15%



Our ESG Rating



Overview

Investment Thesis

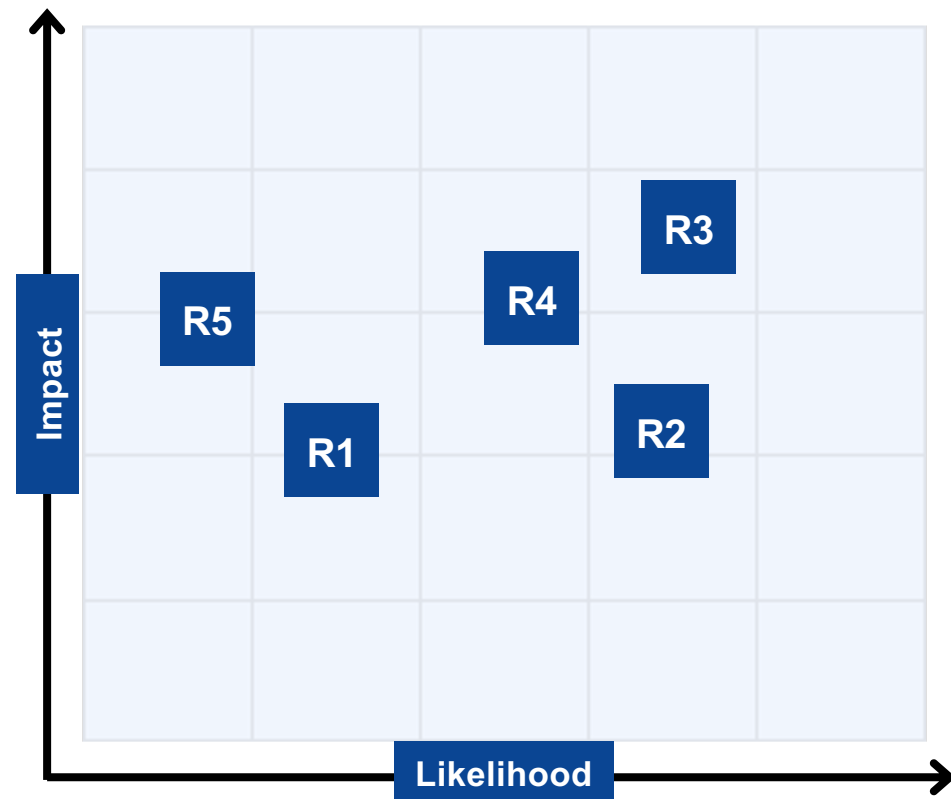
Valuation

ESG

Risks

Investment risk

Key Risk Factors for De Nora: Assessing Probability and Impact



Risk 1	Potential Development of Replacement Technologies
Risk 2	Tariffs
Risk 3	Regulatory Changes
Risk 4	Limited Number of Suppliers
Risk 5	Losses from Exchange Rate Fluctuations

Overview

Investment Thesis

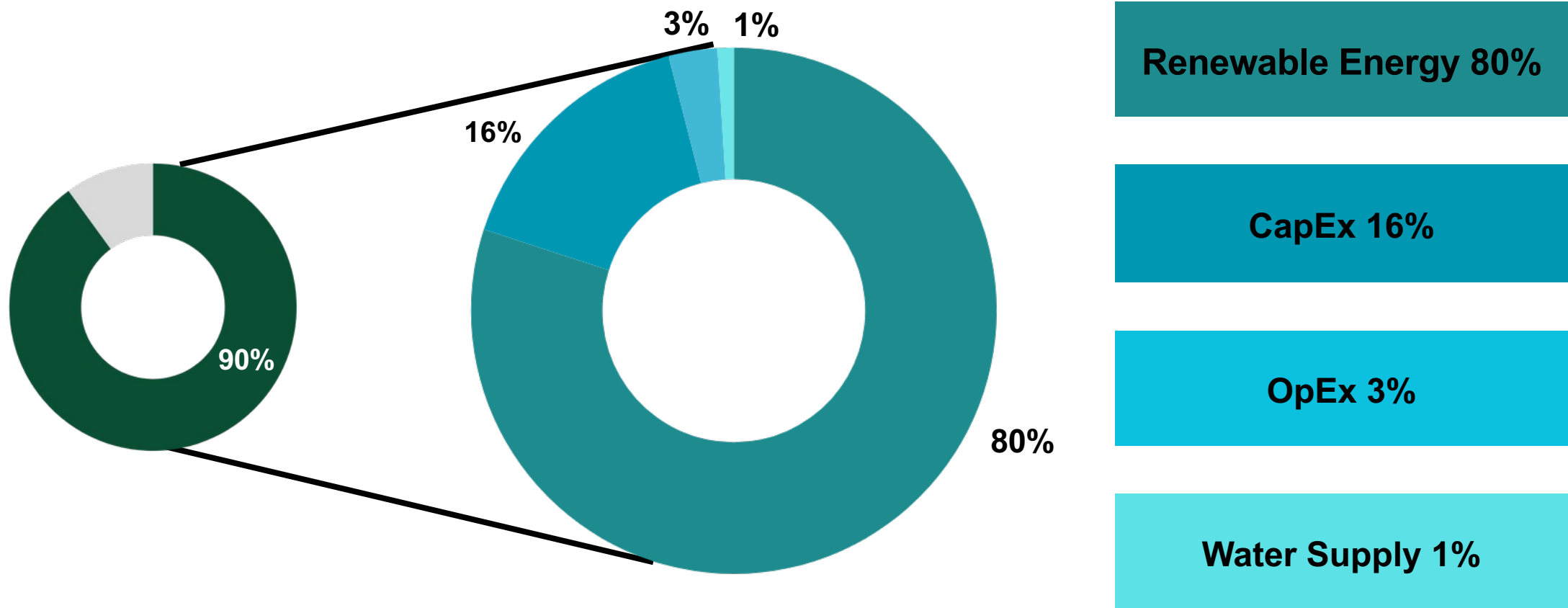
Valuation

ESG

Risks

Investment risk

Breakdown of Green Hydrogen Production costs



Overview

Investment Thesis

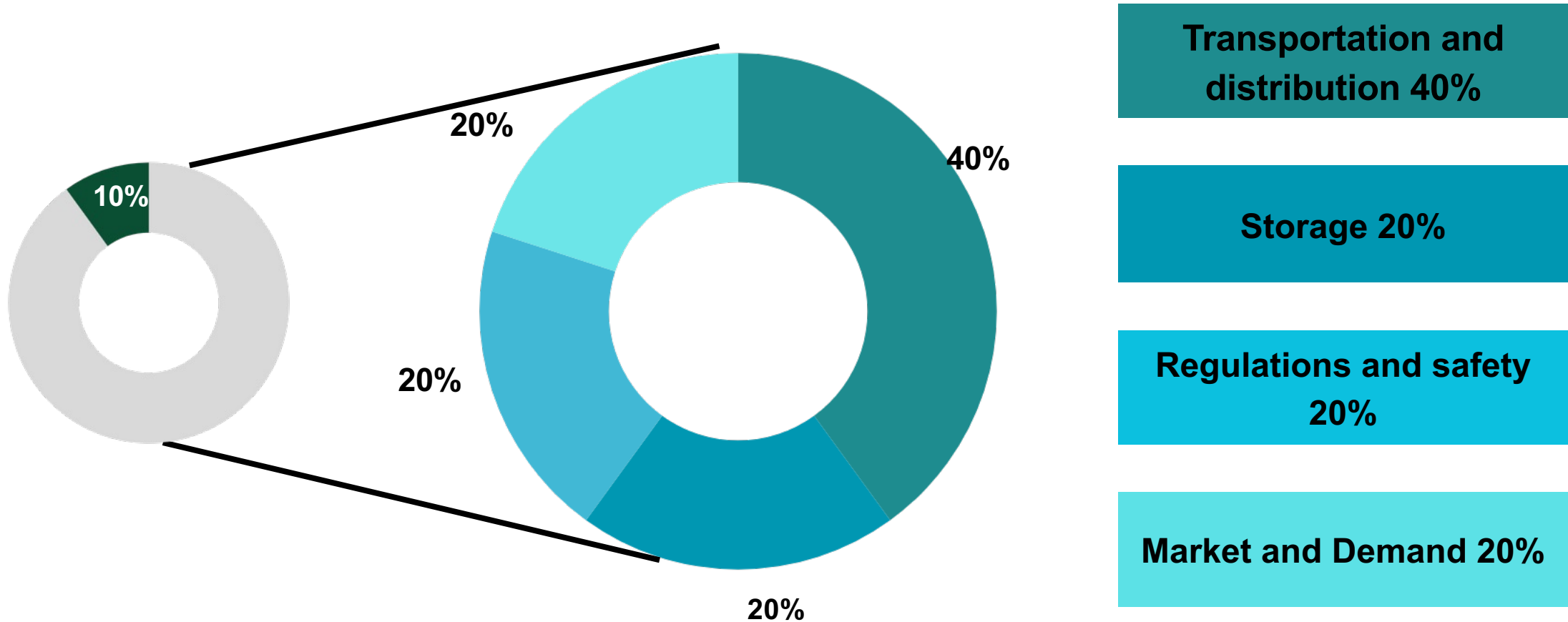
Valuation

ESG

Risks

Investment risk

Breakdown of Green Hydrogen costs Beyond Production



Overview

Investment Thesis

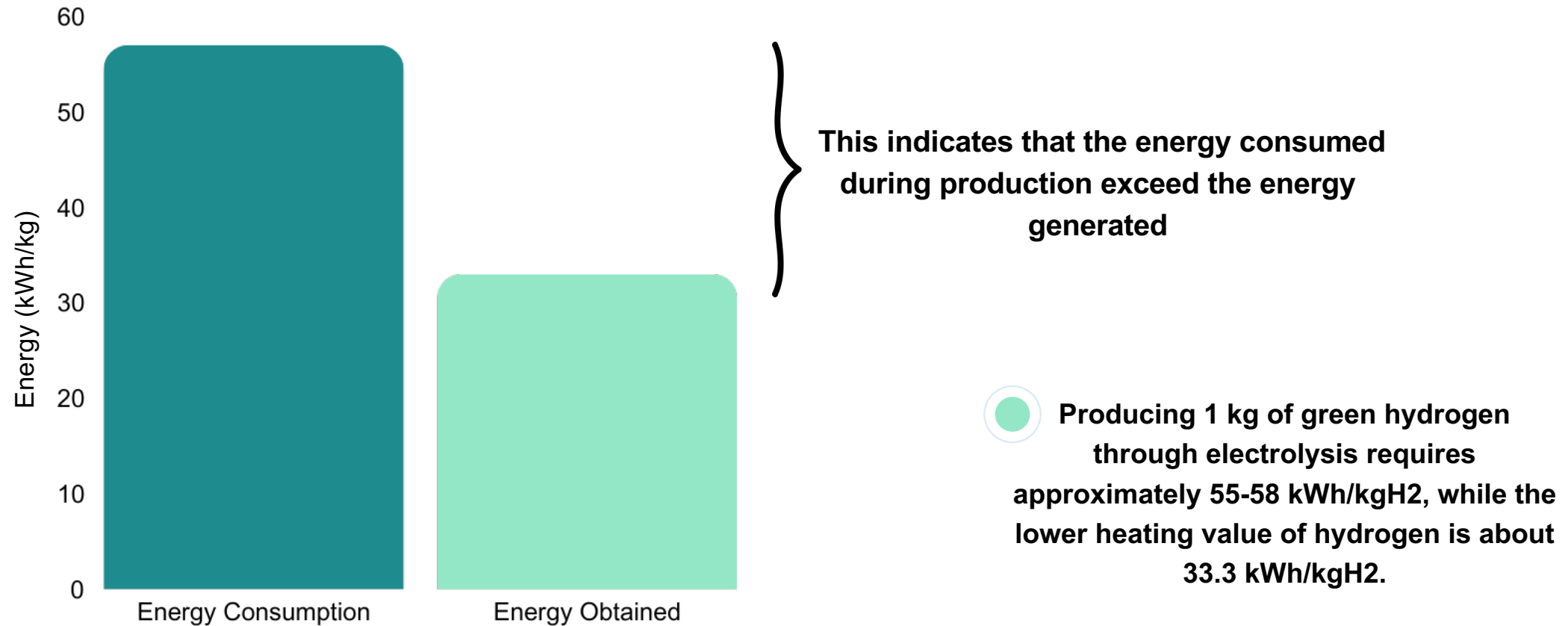
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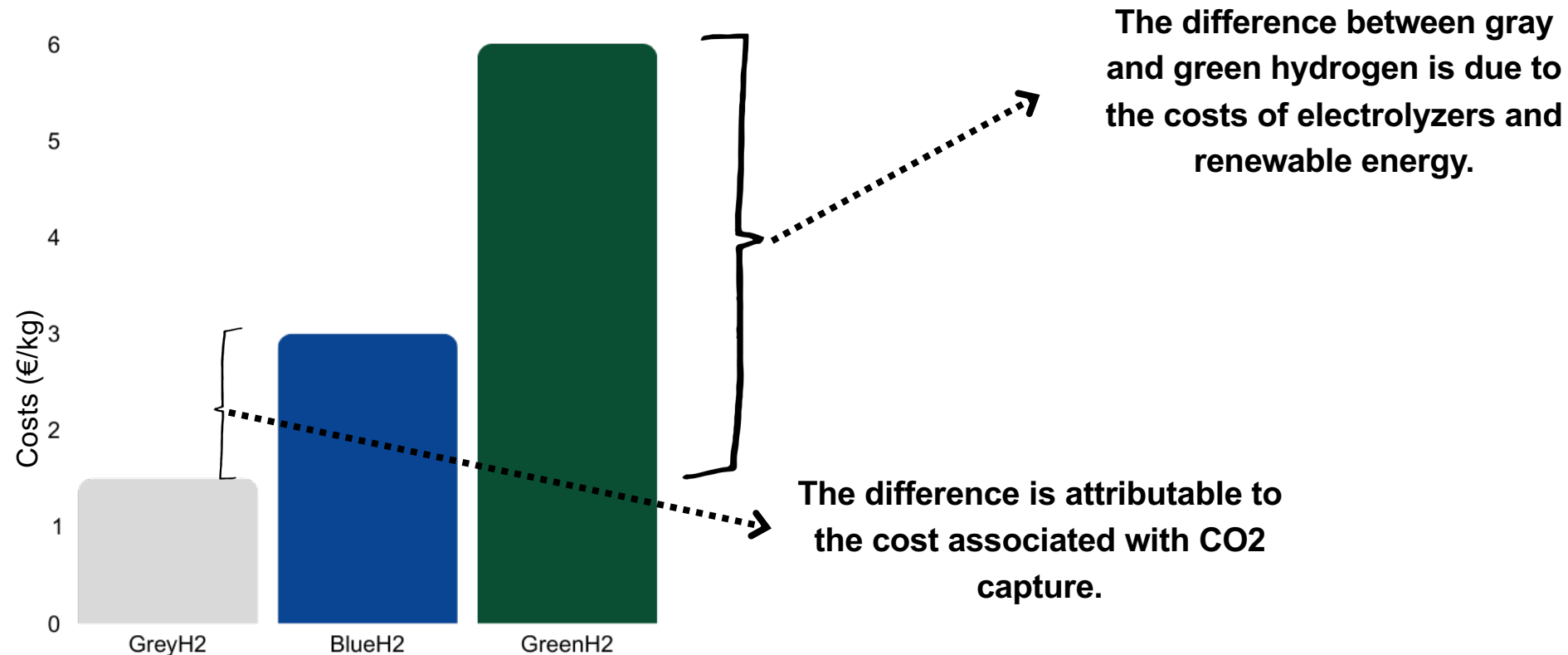
Investment risk

Green Hydrogen Energy Consumption



Investment risk

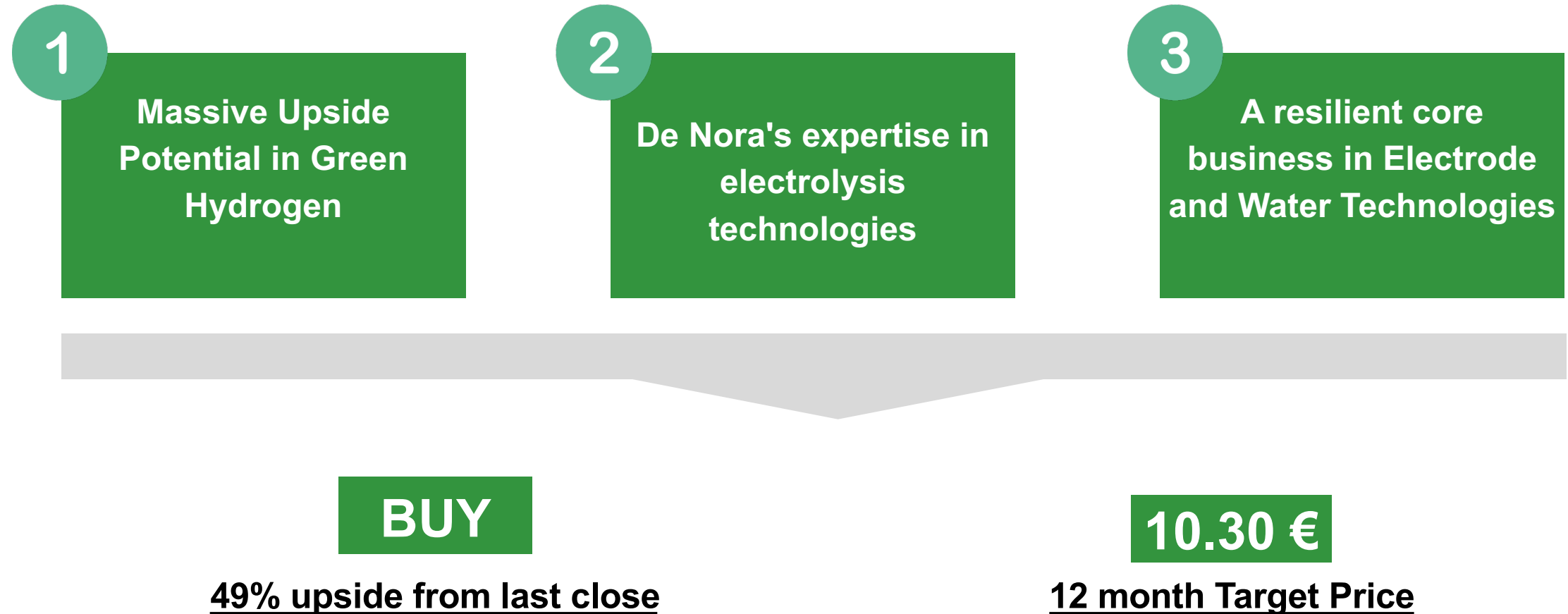
Cost Comparison of Grey, Blue and Green Hydrogen



Thesis: In the short term, blue hydrogen could serve as an intermediate solution, while in the long term, green hydrogen is expected to potentially emerge as the most cost-effective and sustainable option.

Recommendation: BUY

We issue a BUY recommendation with a 12-month target price of 10.30 €, representing a 49% upside.



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-

DNR products: Electrode technologies

Production of electrode used in various sector, in particular in chlor-alkali production



Dimensionally Stable Anodes and Electrodes: the flagship products of DNR for this segment

DNR products: Water Technologies

Development, production and sales of system and technologies for its **four business line**:

- **Pool disinfection** → **NEWTROL®**
- **Electro chlorination** → **ClorTec® and SEACLOR®**
- **Sanitization and filtration of drinking water and wastewater** → **Sorb and De Nora Tetra Solutions**
- **Water treatment and system for marine application** → **Sorb and De Nora Tetra Solutions**



Electrodes for pool chlorinators



ClorTec® On-Site Hypochlorite Generators



Capital Controls® Ozone Generators



CECHLO® On-Site Generators



Capital Controls® UV Systems



SORB™ Contaminant Removal

DNR Products: Energy Transition

Systems to produce green hydrogen through water splitting and converts hydrogen into electrical energy.

DNR Dragonfly® System: flagship product in ET division.
Completely integrated Hydrogen generation unit



Electrolyzer technologies in use or under development:

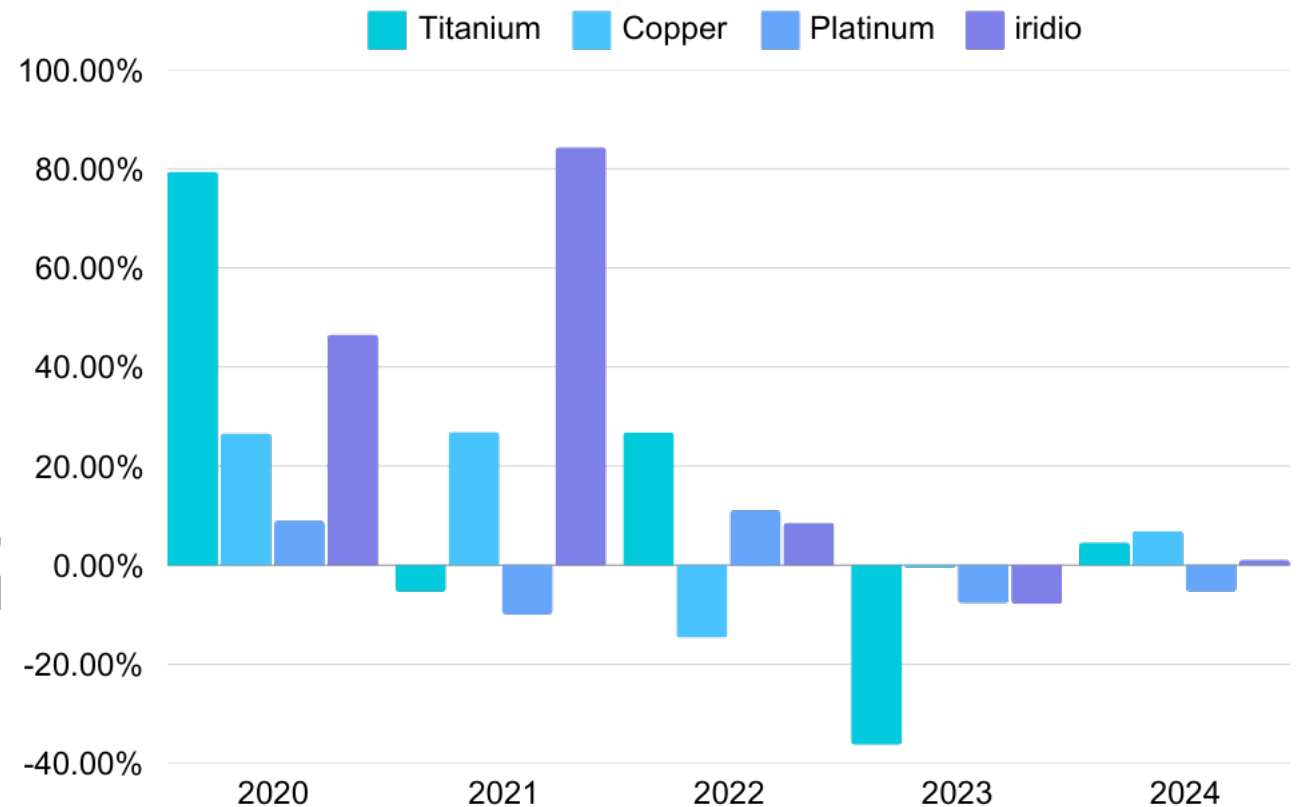
- Alkaline (AWE)
- Proton Exchange Membrane (PEMWE)
- Solid Oxide (SOWE)
- Anion Exchange Membrane (AEM)

Market risk

Raw material price and supply chain risks: influenced by:

- **Tariff (MEDIUM)**, caused by protectionist measures imposed by U.S. to China, Mexico and Canada
- **Geopolitical tensions (LOW)** that cause uncertainty, but DNR has no strategic interest in conflict zones,
- **Limited Number of Suppliers (MEDIUM)**, caused by specificity of raw materials used by DNR.

Raw material price variations



Additional risks

Asset Depreciation Risk (LOW): obsolescence caused by technological innovation.

Shortage of Skilled Workforce (MEDIUM): for difficult to find qualified professionals in key sector

Reputational Risk (MEDIUM): influenced by possible ESG disputes

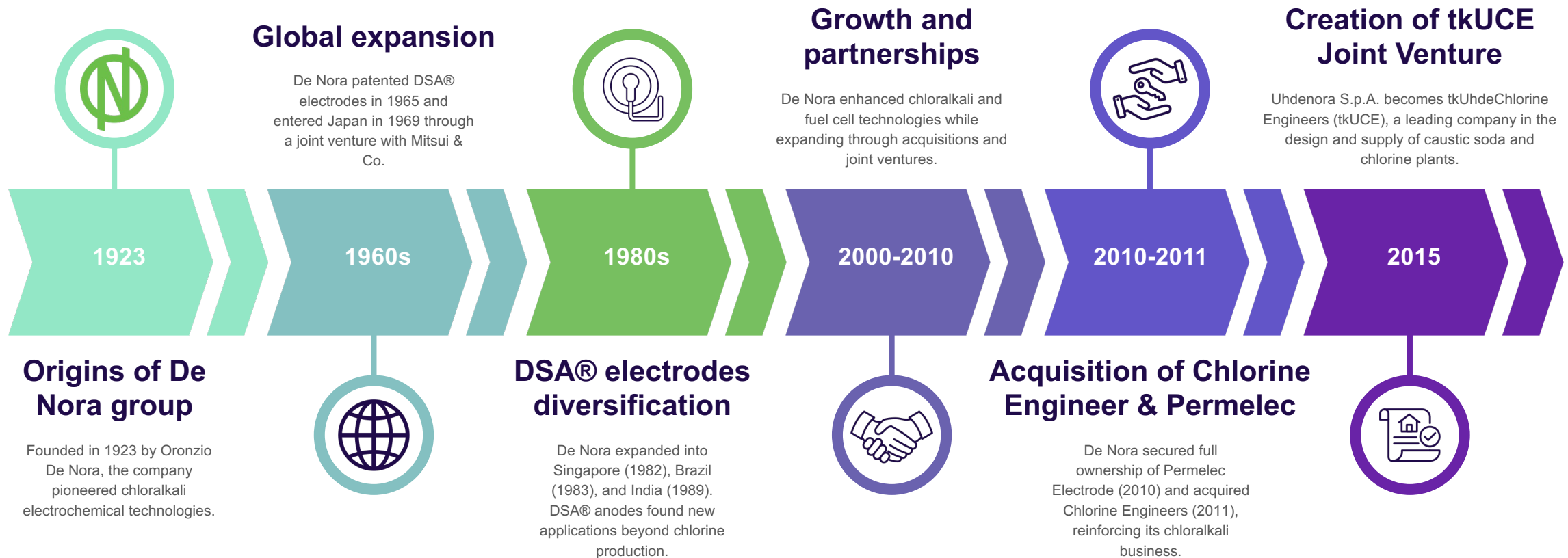
Risk of Low Demand (HIGH): Due to the potential low growth of hydrogen.

Risk of Faster Technological Innovation by Competitors (HIGH): more efficiency and cost-effective developed by competitors



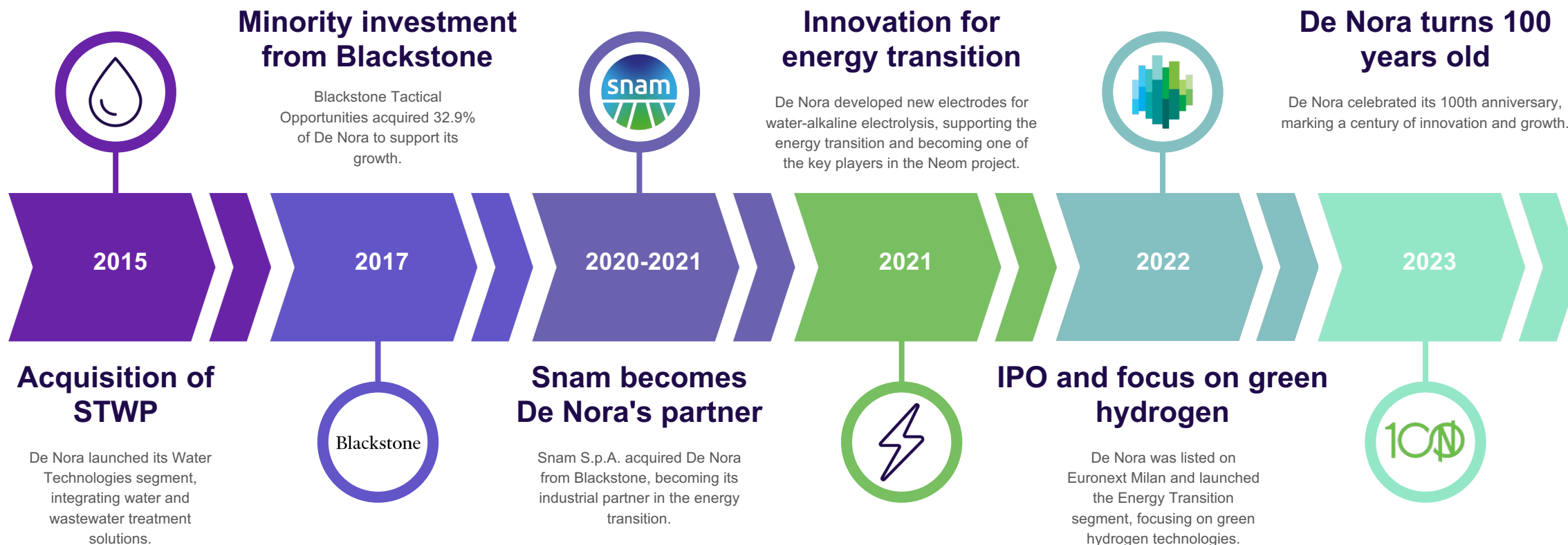
De Nora's history (1/2)

A heritage founded on **entrepreneurialism** and **innovation**.



De Nora's history (2/2)

A heritage founded on **entrepreneurialism** and **innovation**.



Key operating segments

The company's diverse focus areas are: Electrode Technologies, Water Technologies, and Energy Transition. Each of these three segments plays a **critical role** in De Nora's growth, from its leadership in electrolytic technologies to its pioneering work in water treatment and green hydrogen solutions.

Electrode Technologies

54% of its revenue

The oldest and most established segment, specializes in producing electrodes and membranes for electrolytic cells. It boasts a global market share exceeding 50% in key industrial applications, such as chlor-alkali and electronics. The segment also generates consistent aftermarket revenue through recoating and retrofitting services, comprising approximately 54,2% of its revenue.

Water Technologies

34% of its revenue

De Nora produces specialized electrolysis cells and electrodes for diverse applications, ensuring compliance with regulatory standards. Recent expansions (75% of the residential pool water treatment market) include solutions for electrochlorination, PFAS removal, and enhanced modular cell systems integrating seamlessly into existing infrastructure, boosting efficiency and sustainability.

Energy Transition

12% of its revenue

The “youngest” business unit, DNR is set to benefit greatly from the green hydrogen transition. Indeed, traditional chloralkali components are also suitable for AWE (Alkaline Water Electrolysis), the most widely used technology to produce hydrogen from water electrolysis. This division is projected to achieve an 80% market share for large-scale projects by 2030.

SWOT

De Nora analysis of strengths, weaknesses, opportunities and threats.

Strengths

Leadership in electrodes: De Nora is the world's largest manufacturer (supplier)

Global presence: 24 operating companies in 10 countries

Large patent portfolio: the group currently has 2,387 patents or utility models already granted in 82 countries

Management team with strong expertise

High quality customers: leading companies in the chemical and energy sectors

Weaknesses

Supply chain disruption

Risk of operational disruption: De Nora faces potential risks of production halts or suspensions caused by equipment malfunctions, accidents, or natural disasters at its manufacturing sites

Geographic concentration risk

Water technologies lower-than-average profitability: compared to De Nora's overall operations (due to high competition)

Opportunities

Expansion in green hydrogen market: green hydrogen is hydrogen produced by electrolysis of water, using renewable energy

Electric vehicles: EVs are driving a significant acceleration in the demand for lithium battery components

Growth in the water treatment market: the water treatment market presents expansive growth opportunities, driven by increasing global water scarcity

Threats

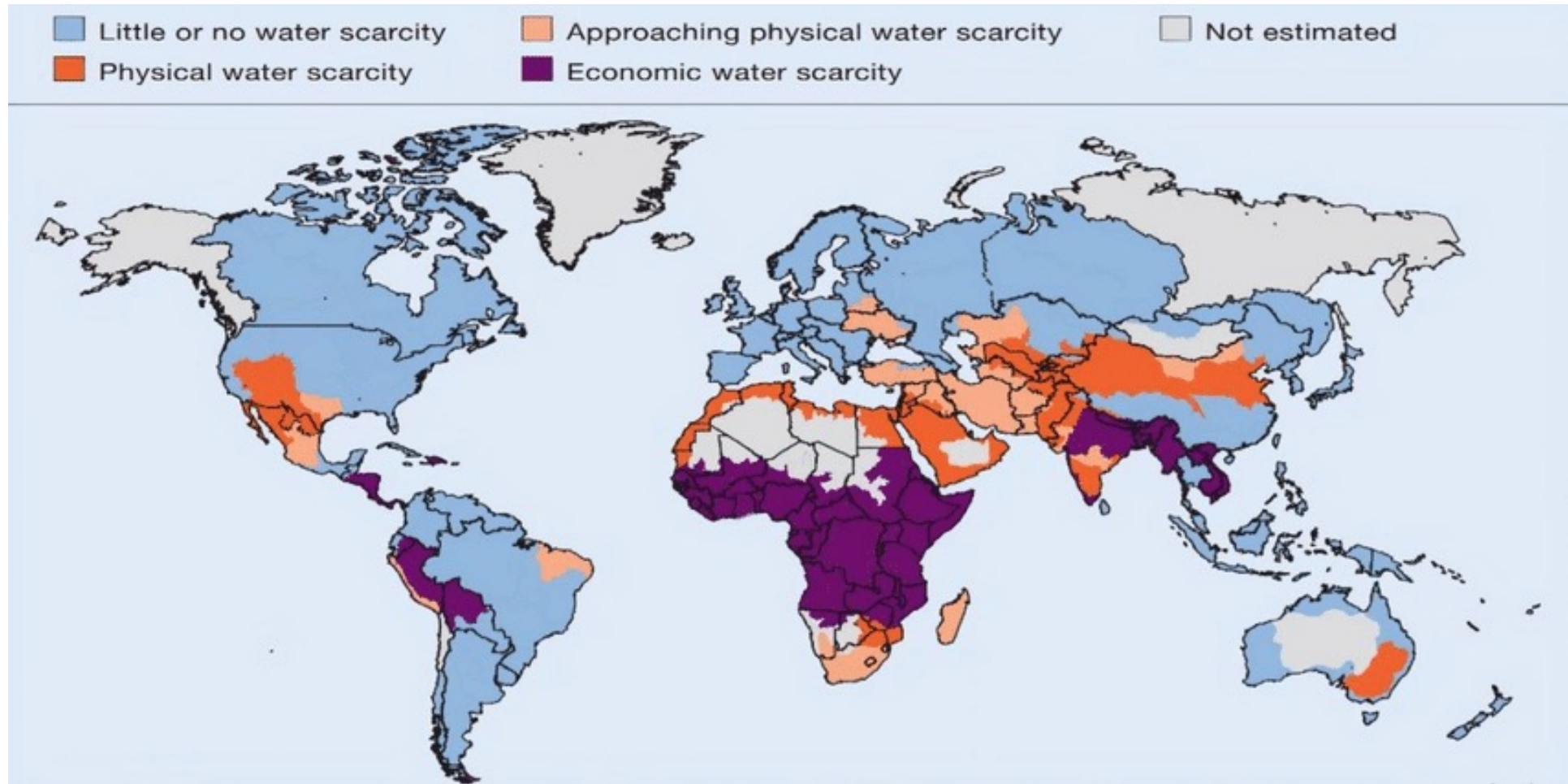
Foreign exchange volatility: the group is exposed to risks stemming from fluctuations in foreign currency exchange rates due to its significant international operations

Regulatory and compliance risks: the group operates in heavily regulated sectors like water treatment, energy, and environment

Energy cost volatility: De Nora's manufacturing processes are energy-intensive

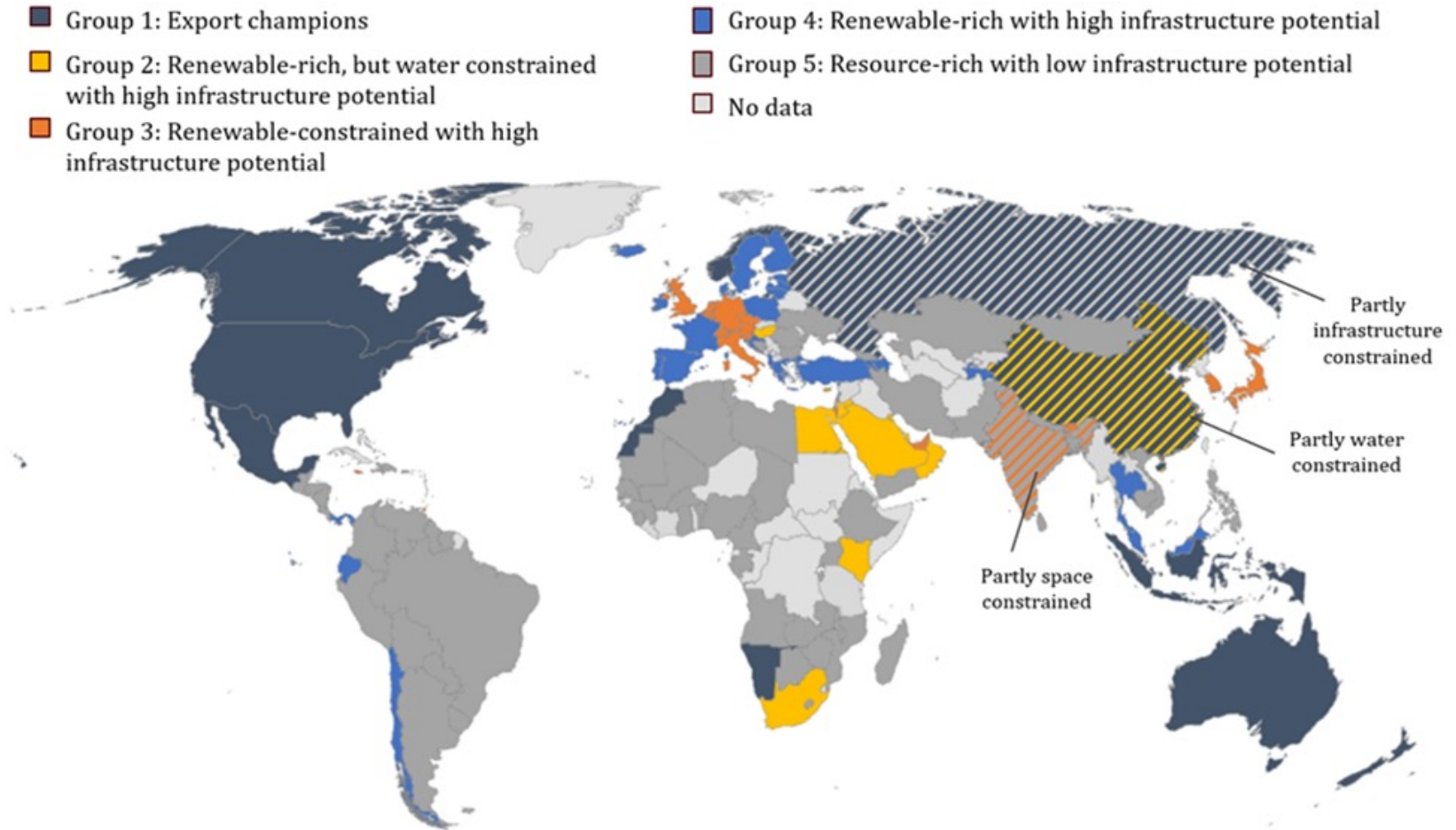
Cybersecurity threats

Water scarcity on a global scale



Source: A comparative Appraisal of Classical and Holistic Water Scarcity Indicators, <https://doi.org/10.1007/s11269-022-03061-z>

Geographical representation of the hydrogen market



Source: La geopolitica dell'idrogeno rinnovabile <https://www.ispionline.it/it/pubblicazione/la-geopolitica-dellidrogeno-rinnovabile-30233>

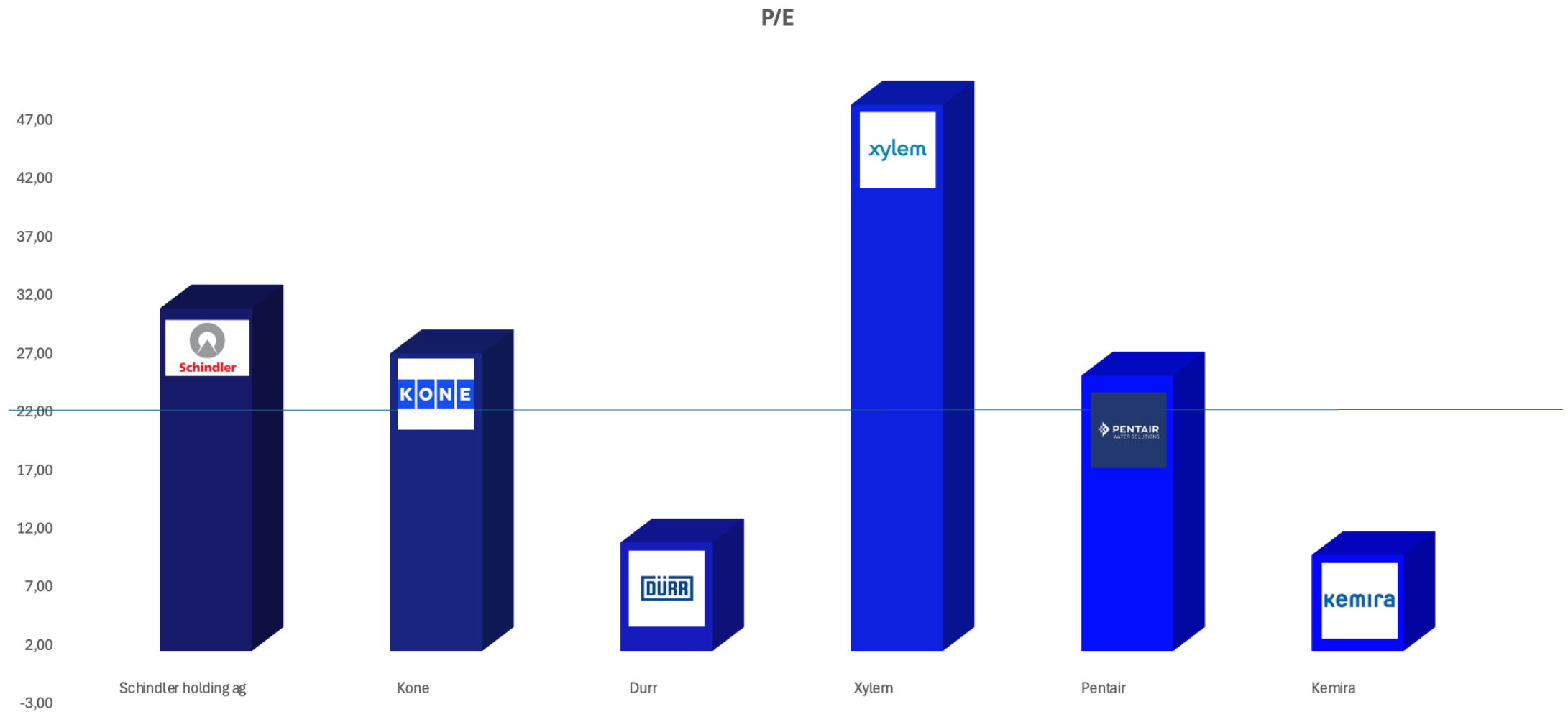
Comparison Criteria

- Realistic representation of the entire market
- Companies primarily operating in a single business area
- Specifically for the electrode sector, the use of CIGS criteria

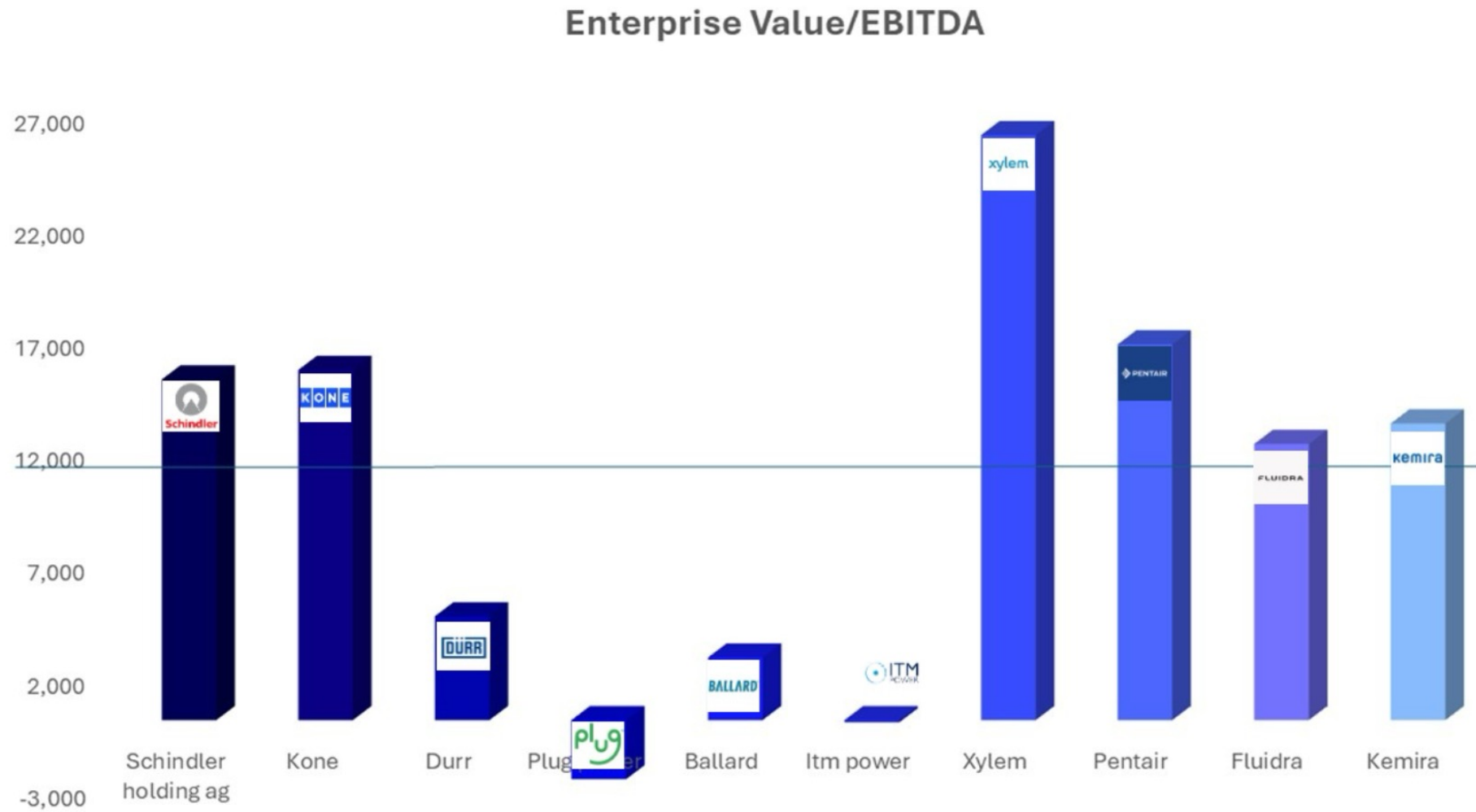


PEERS COMPARISON				
Company	Market Cap (Mln, EUR)	Net Sales (2023) (Mln, EUR)	Business Areas	# Employees
Industrie De Nora S.p.A.	€1.622,00	€867,00	  	1.929
Electrode Technologies (comparables)				
Schindler	€28.400,00	€12.335,75		70.406
Kone	€21.650,00	€10.952,30		60.000
Rotork	€3.270,00	€866,52		3.500
Water Treatment				
Xylem	€29.330,00	€7.364,00		17.300
Pentair	€16.880,00	€3.905,00		10.000
Fluidra	€4.910,00	€2.051,00		7.000
Energy Transition				
Plug Power	€2.110,00	€843,51		3.353
Ballard	€479,70	€97,32		1.170
ITM Power	€259,82	€19,87		360

Equity Multiples (Price / Earnings)



Asset Multiples



WACC Buildup

Estimation of Cost of Equity, Cost of Debt, and WACC

$$wacc = k_d * \frac{D}{D + E} * (1 - tax\ rate) + k_e * \frac{E}{D + E}$$

Company: Chemical / italy

rfr rsik free rate , BTP 10 y	3,46
rfr rsik free rate , BTP 15 y	3,78
Equity Risk Premium ERP	6,12

average 3 month
average 3 month
ERP Ita

Unlevered Beta	0,77
D/E tartget	30%
Corporate tax Italy	26%
Beta levered	0,94

assumed target structure

Ke - Cost of Equity	9,19%
---------------------	-------

(rfr10y * (β * ERP))/100

Bank Spread	2%
Floor (i.e. IRS)	2,284%
Kd - Cost of Debt	4,284%

irs 10 y 3 month average

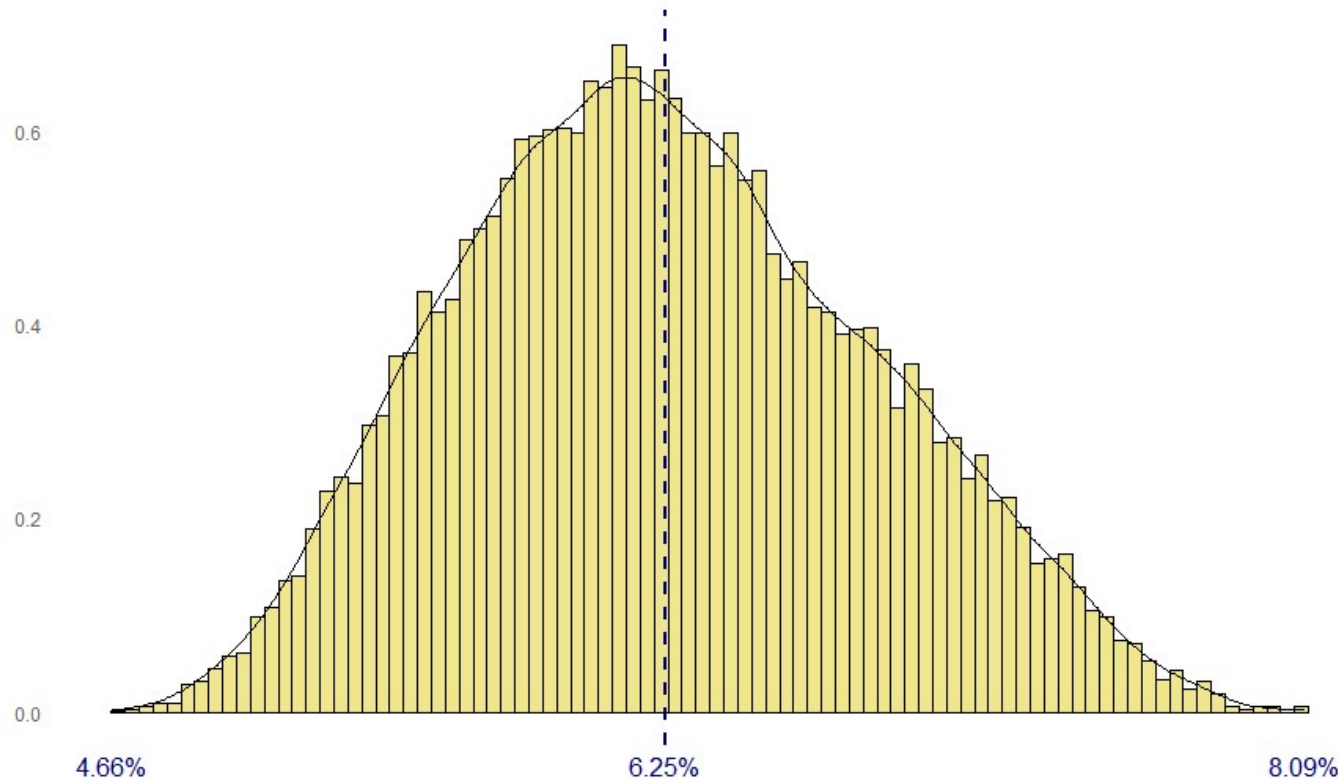
D/E target	30%
D/(D+E)	23,1%
E/(D+E)	76,9%

rate tax Italy	26%
WACC	7,803%

DCF Base Case

Tabella 1: Scenario Analysis						Base				
	2020	2021	2022	2023	CAGR	2024E	2025E	2026E		
Sales ET	290	358	473	464	19%	493	524	557	WACC	7.80%
Sales WT	209	258	337	290		307	324	343	Discount Period	
Sales ETr			43	102		111	120	130	Discount Factor	
Sales	499	616	853	856		910	968	1029	Present Value of Free Cash Flow	
Non operating revenues	15	39	41	11		28	30	32		
Total revenues	514m	655m	894m	867m		939m	998m	1061m	Sum of the PV of FCF	350m
COGS	214	290	400	358	27%	381	405	430	Discount Factor	0.74
Gross Profit	300	366	494	509		558	594	631	Growth Rate g	2.00%
% margin									FCF	
SG&A	214	242	326	333		354	377	401	Terminal Value	2365m
EBITDA	86	123	168	176		204	217	230		
% margin	17%	19%	19%	20%		22%	22%	22%	Present Value of TV	1751m
D&A	31	36	42	39	35%	41	44	46		
EBIT	56	88	126	137		163	173	184		
% margin									Total Value	2101m
NOPAT	48m	76m	110m	119m		142m	151m	160m		
D&A	31m	36m	42m	39m		41m	44m	46m	Fair Value Price	10.30€
Gross Cash Flow	79m	112m	152m	158m		183m	194m	207m		
Capex	27m	31m	38m	57m		61m	65m	69m		
Change in NWC		112m	185m	78m		-32m	14m	4m		
NWC	124m	236m	421m	263m		231m	244m	248m		
FCFF						154m	116m	134m		

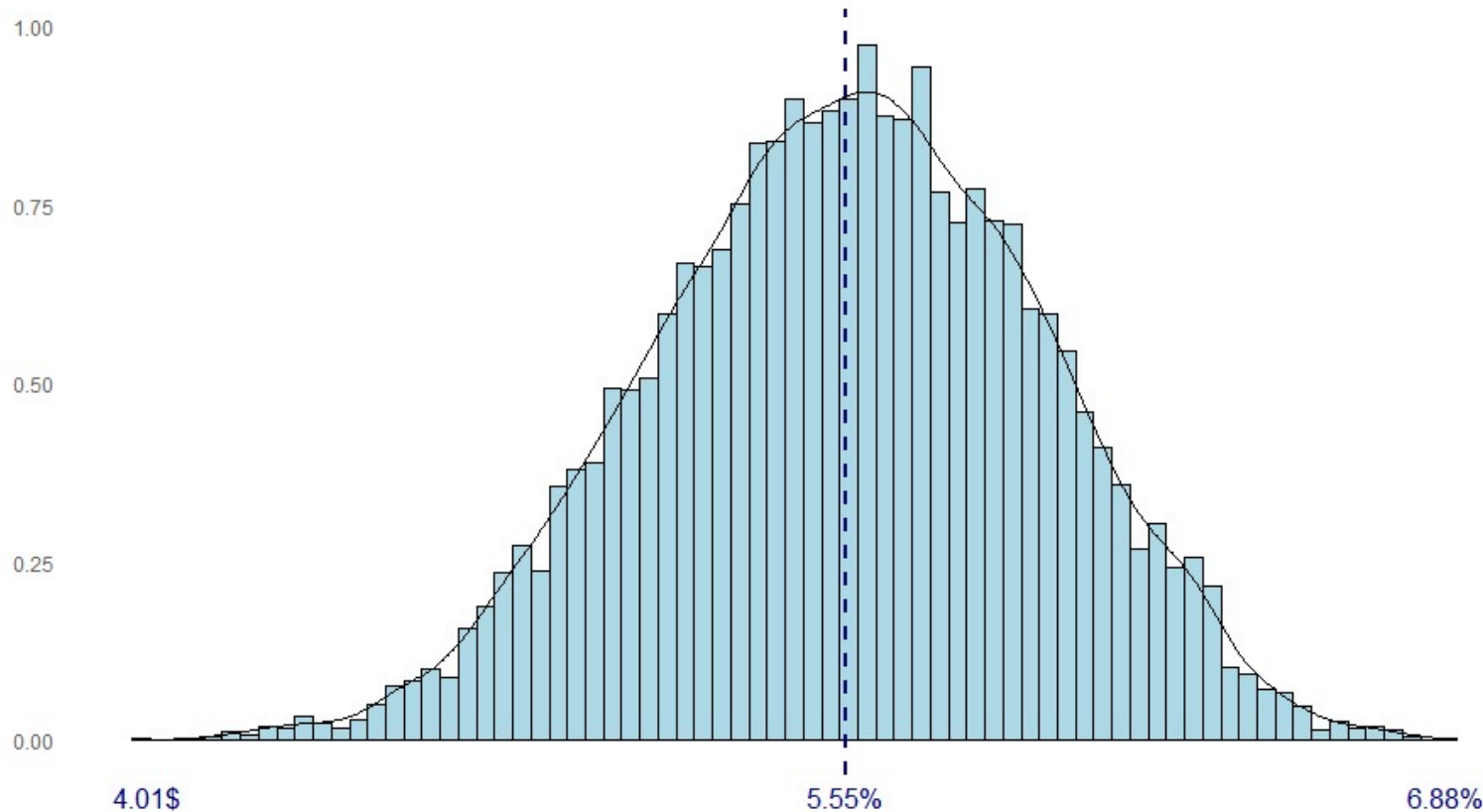
Montecarlo analysis for Electrode Technologies



Expected Yield: ET

The **minimum** is set at **4.06%**, reflecting a conservative estimate, while the **maximum** is **8.09%**, capturing an optimistic market expansion. The **most likely value** at **6.5%** represents the expected market trend based on historical data and industry dynamics.

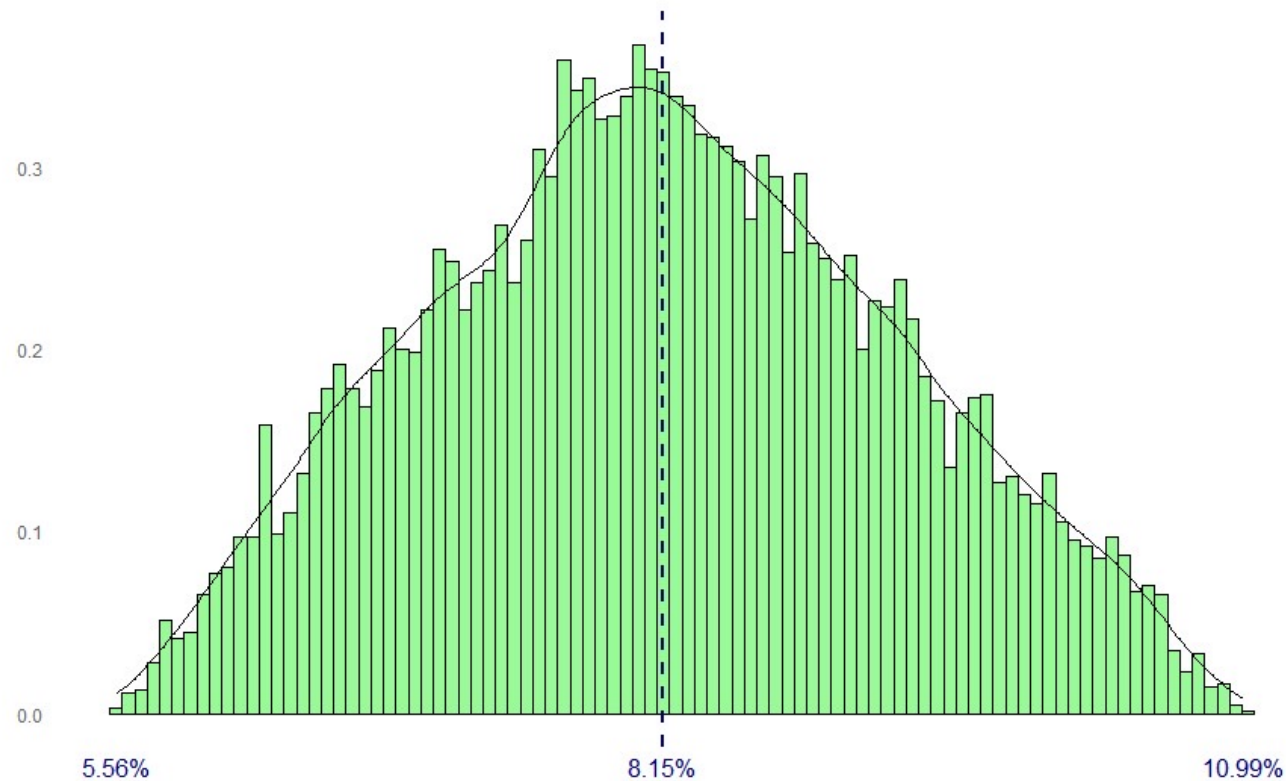
Montecarlo analysis for Water Technologies



Expected Yield: WT

The probability distribution was adjusted to favor stable growth, given regulatory support and technological adoption. The **minimum** is **4.06%**, ensuring a worst-case scenario, while the **maximum** is **6.88%**, capturing the high-end potential. The **most likely value** is **5.55%**, aligning with sector trends and expected investments.

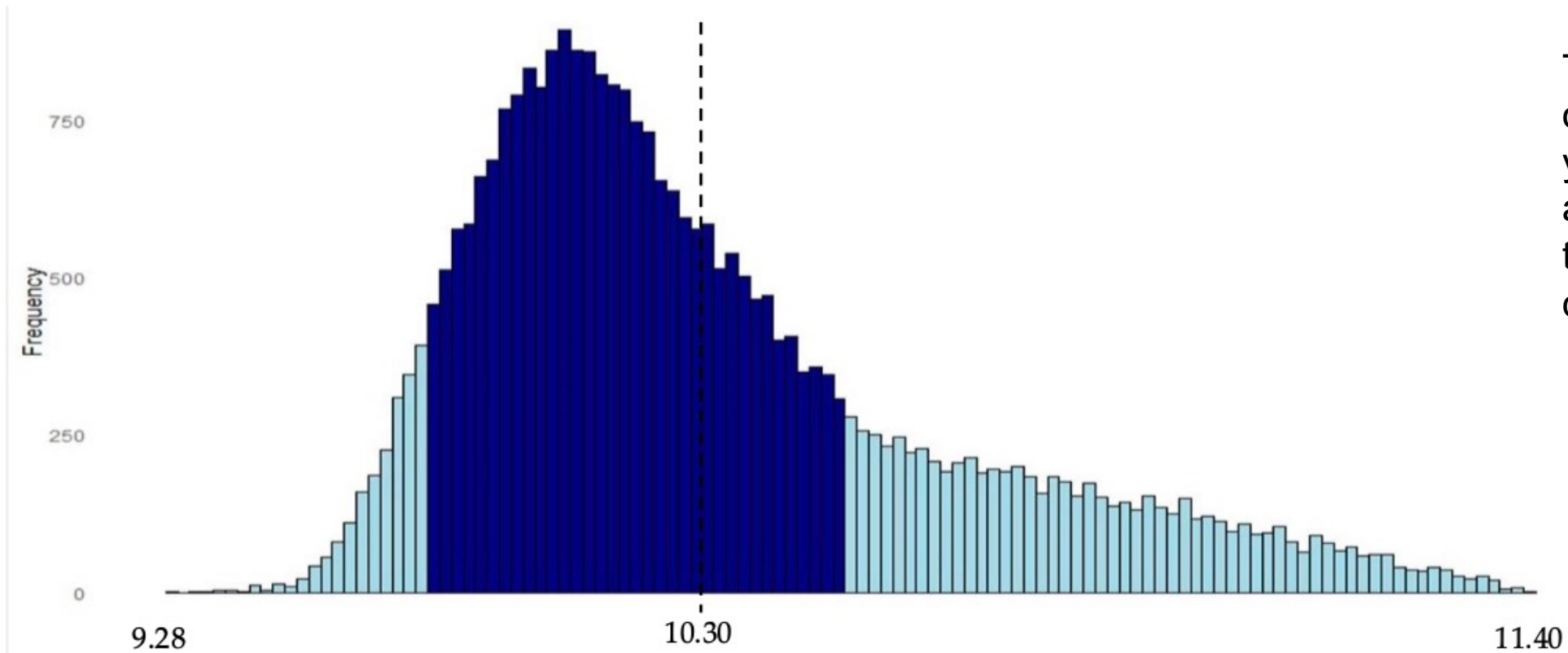
Montecarlo analysis for Energy Transition



Expected Yield: ETr

Due to high uncertainty in the hydrogen sector, the distribution was skewed towards a moderate adoption rate. The **minimum** is **5.56%**, representing cost-related constraints, while the **maximum** is **11%**, assuming an accelerated transition. The **most likely value** at **8.15%**.

Montecarlo Analysis



The 3 segment
of expected
yields united,
always with a
triangular
distribution

Montecarlo Parameters

Contribution for Electrode Technologies

cloro alcali

elettronica

specialities

	G	N	B
70%	8,90%	6,50%	5,00%
15%	6,50%	4,90%	3,20%
15%	8,00%	3,20%	4,00%
1	8,41%	5,77%	4,58%

Contribution for Water Technologies

electrowinning

electrloration

purification

	G	N	B
33%	8,20%	6,20%	4,00%
33%	7,00%	5,40%	3,50%
34%	6,50%	5,70%	3,50%
1	7,23%	5,77%	3,67%

Contribution for Energy Transition

green hydrogen

	G	N	B
100%	11,00%	8,00%	5,50%
1	11,00%	8,00%	5,50%

Probability of scenario	
G	25%
N	55%
B	20%
100%	

Montecarlo Analysis

Summary Statistic		Percentile	Outpt price
Minimum	9.28 €	5%	9.30 €
Maximum	11.40 €	10%	9.31 €
Mean	10.30 €	15%	9.42 €
Std Deviaton	1.22	20%	9.52 €
Variance	1.488	25%	9.63 €
Skewness	0.31	30%	9.73 €
Kurtosis	3.45	35%	9.84 €
Errors	0	40%	9.94 €
Mode	10.4	45%	10.05 €
Trials	10000	50%	10.25 €
		55%	10.46 €
		60%	10.66 €
		65%	10.87 €
		70%	10.96 €
		75%	11.05 €
		80%	11.14 €
		85%	11.23 €
		90%	11.32 €
		95%	11.41 €

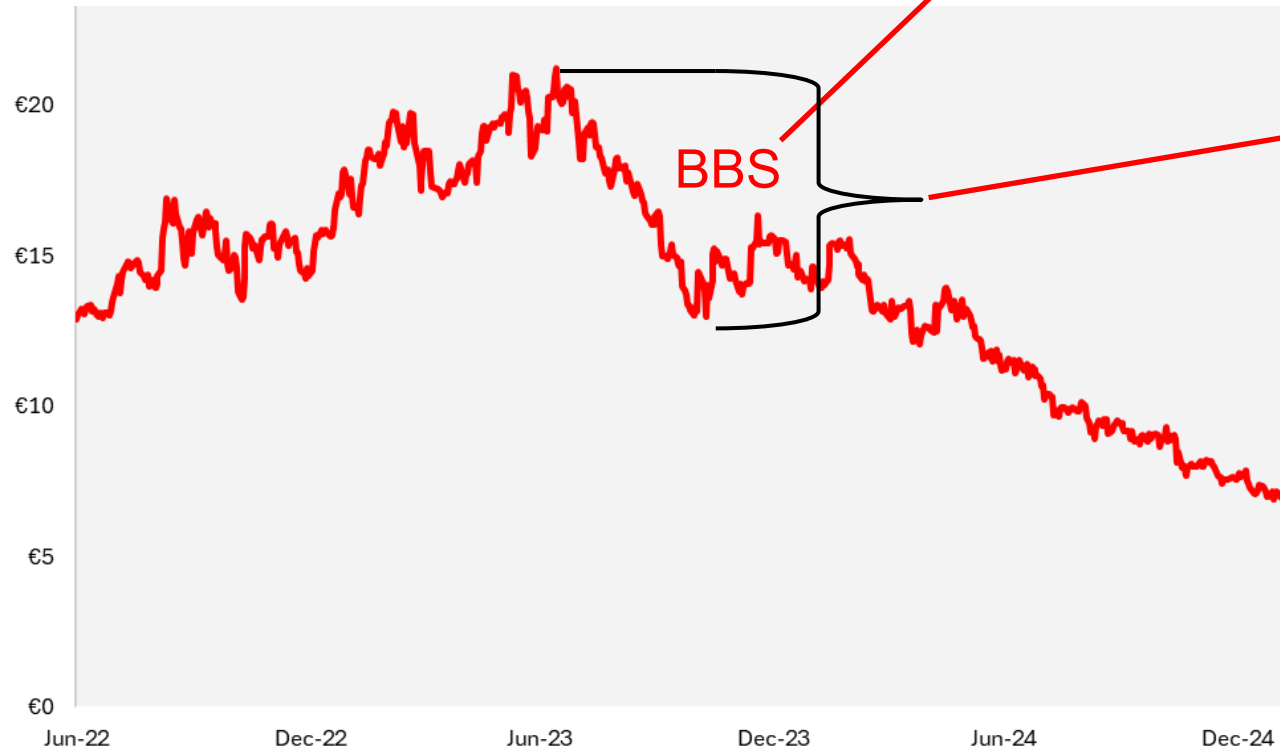
Buyback Strategies

Program 2023-2024

Start Date: *November 9, 2023* – End Date: *August 9, 2024*

Allocated Budget: **43.410.213 mln**

Number of Shares Repurchased: **3 mln** (1.847% of total share capital)



Why?

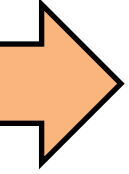
Following lower revenues and a 30% price drop, management launched a buyback to boost confidence, retain employees, and allocate resources for potential M&A deals.

What can we expect for the future

Despite downward expectations, De Nora's financial strength and investment policies suggest that management believes the stock is undervalued, and a new buyback program could be considered in the future.

Potential M&A for Industrie De Nora

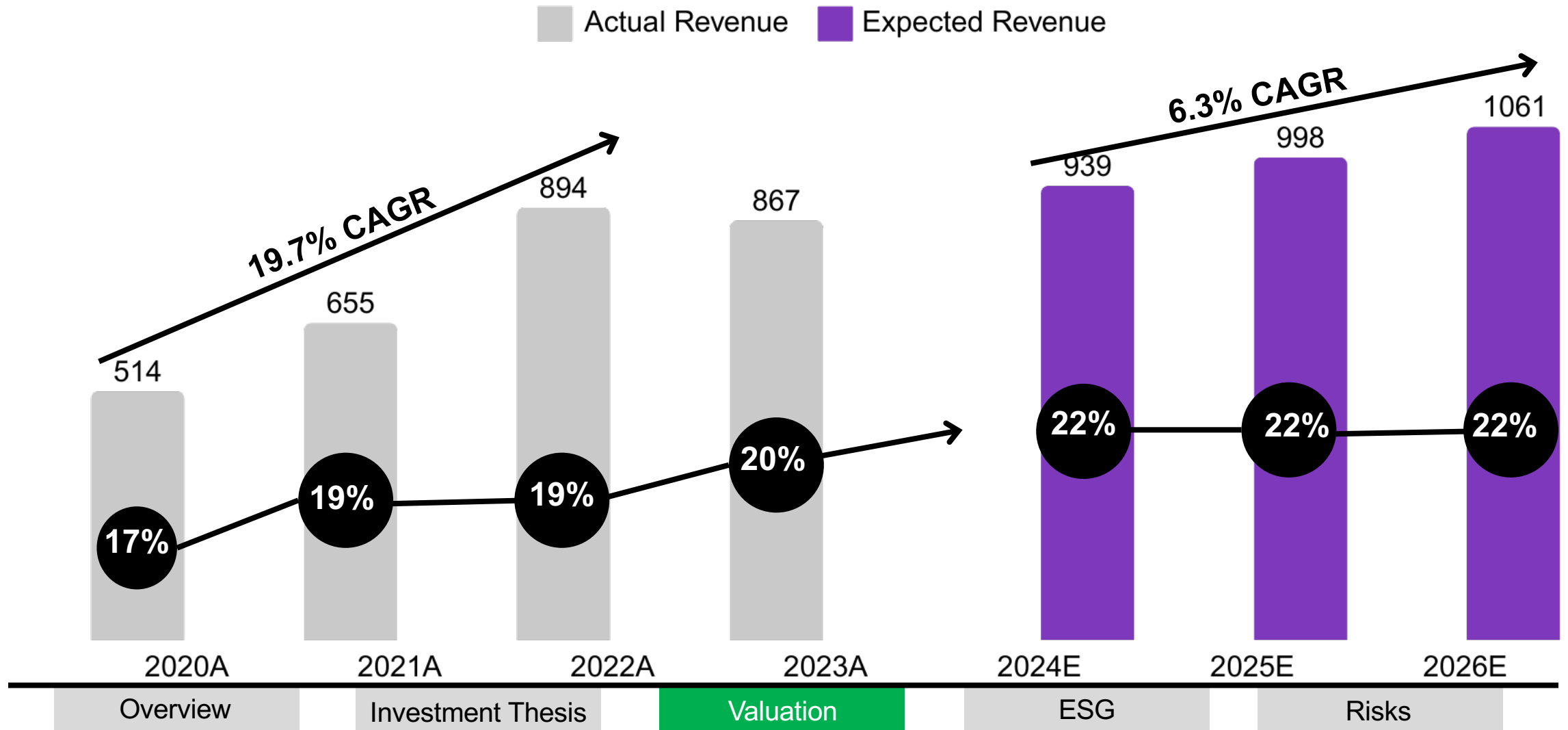
2015	2022	2023		2024-2025
De Nora acquires water purification business from Severn Trent , strengthening its presence in the water treatment sector.	IPO De Nora The company is listed on the Milan Stock Exchange, raising capital to expand its growth strategy, including potential M&A operations.	De Nora acquires Shotec GmbH , specialized in plasma coating technology, strengthening its expertise in advanced surface treatments.	Italian GigaFactory In a joint venture with Snam, De Nora acquires an industrial site to build a facility for the production of green hydrogen electrolyzers.	Potential M&A operations CEO Paolo Dellachà has expressed interest in strategic investments in Sweden, indicating potential M&A opportunities in the region.



Intrinsic Valuation

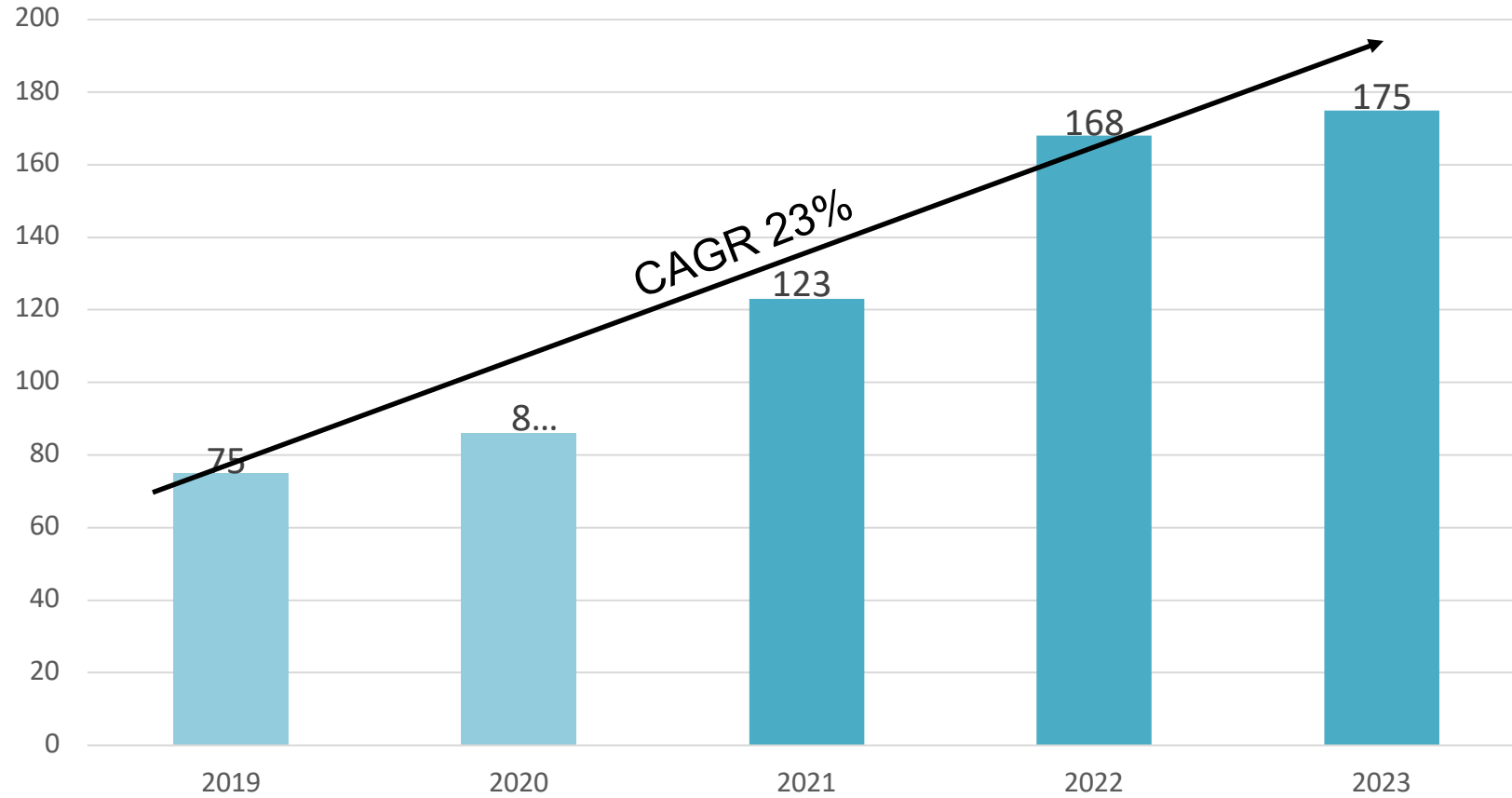
Assuming a base case scenario, DNR still shows upside at its current price

We have adopted a conservative view, on revenue growth, combined with modest EBITDA margin expansion.



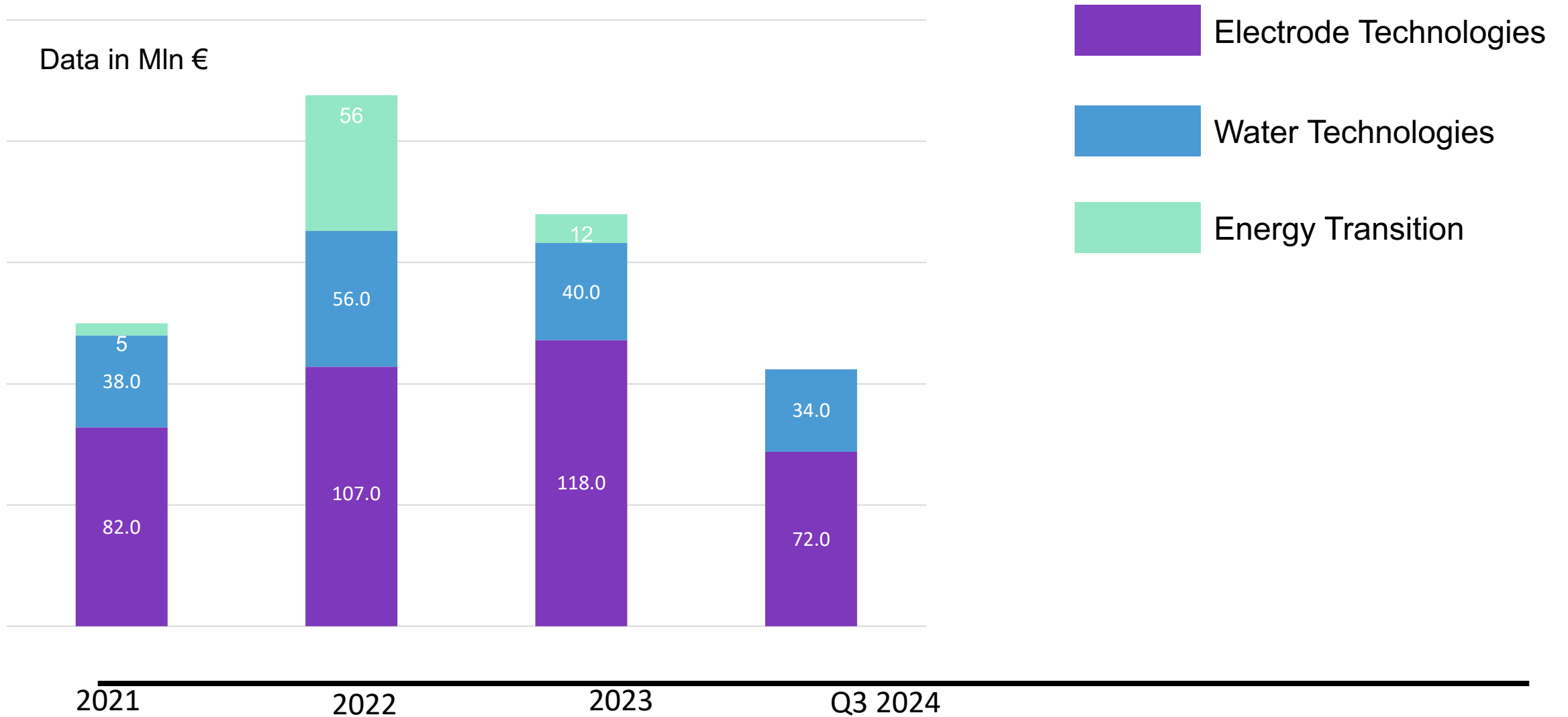
EBITDA Performance

Ebitda growth from 2019-2023, data in Mln €



EBITDA per segment

Data in Mln €



DuPont Analysis

	2020A	2021A	2022A	2023A
DuPont Analysis				
Gross Margin	58%	56%	55%	59%
EBITDA Margin	17%	19%	19%	20%
Net Profit Margin	6%	10%	10%	27%
Asset Turnover	0.67x	0.66x	0.69x	0.65x
Return on Assets	4%	7%	7%	17%
Debt-to-Equity	0.9x	1.2x	0.7x	0.5x
Return on Equity	9%	17%	14%	34%
Return on Capital Employed	9%	17%	12%	13%
Liquidity and Debt Ratios				
Cash Ratio	0.52x	0.16x	0.73x	0.8x
Current Ratio	2.3x	1.1x	3.4x	2.8x
Interest Coverage Ratio	2.3x	5.4x	4.5x	6.2x
Efficiency Ratios				
Days Sales Outstanding (DSO)	87	106	76	93
Inventory Turns	1.8x	1.2x	1.4x	1.4x

As we can see, gross margin, EBITDA Margin, and net profit margin all increased from 2020 to 2023. This is clearly a sign of improvement in company efficiency

Increase in ROE and ROA are a good sign for both the management and shareholders

Aftermarket Services and Customer Focus

The Group demonstrates a strong commitment to aftermarket services and customer focus, which are considered key drivers for sustainable growth and maintaining a competitive edge. Evidences from the financial report underscore this strategic orientation:

- **Electrode Technologies Segment:** In addition to new installations, the Group provides maintenance, spare parts, system re-engineering, on-site or remote monitoring, and electrode re-coating services.

	2023	%	2022	%
(in migliaia di Euro e in percentuale sui ricavi del segmento)				
Nuove Installazioni	271.343	58%	272.230	57%
Servizi	192.871	42%	201.214	43%
Totale ricavi	464.214	100%	473.444	100%

- **Water Technologies Segment:** After-sales services are provided to ensure the consistency of treated water quality.

	2023	% dei ricavi del segmento di business	2022	% dei ricavi del segmento di business
(in migliaia di Euro)				
Nuove Installazioni	214.348	74%	265.185	79%
Servizi	75.614	26%	71.534	21%
Totale ricavi	289.962	100%	336.719	100%

Aftermarket Services and Customer Focus

- **Strategic Market Focus:** Growth is concentrated on key strategic markets (municipal and industrial) through an optimized technology portfolio.

- Water Technologies: this includes offerings related to water treatment systems, which includes electrodes, equipment, systems and facilities for disinfection and filtration of drinking, wastewater and processing water; the main applications are residential swimming pool disinfection, municipal water disinfection and filtration, and industrial and marine water treatment;

- **Customer Relationships:** Strong customer relationships are built through research projects aimed at meeting specific client requests, potentially leading to product commercialization and relationship consolidation.
-

PESTEL Analysis

P

Inauguration of Donald Trump as president of the United States:

The declared policies favoring fossil fuels will likely have a significant impact on the renewable energy sector and its pricing in the short to medium term.

Wars in the Middle East/Russia-Ukraine and the trend toward deglobalization:

Both ongoing conflicts contribute to the uncertainty of the geopolitical landscape, presenting tangible risks of escalation with potentially massive impacts on global markets. Many companies are strategically opting for vertical integration of certain internationalized segments of their supply chains to reduce dependence on third-party countries.

E

Tariffs and U.S. protectionist policies:

It is highly likely that, during Trump's administration, tariffs will be imposed on China, the EU, Mexico, and Canada, which could heavily impact the cost of raw materials and U.S. inflation.

Interest rates:

The restrictive monetary policies of the FED and ECB have shifted trends, and interest rates are expected to decline in the coming months, more rapidly in the EU than in the U.S. (where the trend could be influenced by the consequences of trade tariff policies), thereby encouraging investments across various sectors.

Government incentives for green energy and hydrogen:

Numerous governments have planned substantial funding aimed at promoting the green economy. Examples include the implementation of the PNRR in Italy (€2.9 billion for six different hydrogen supply chains) and initiatives such as the European "Five Supply Hydrogen Corridors".

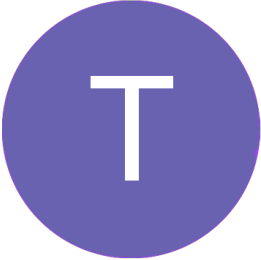
S

Green awareness:

Consumers, financial institutions, and institutional investors are increasingly focusing on environmental sustainability issues.

Skepticism toward hydrogen technologies:

As with all emerging technologies, the widespread adoption of hydrogen may depend on consumer perception of its safety. Hydrogen, with the highest energy density of any fuel, poses potential risks such as jet fires, flash fires, explosions, and asphyxiation due to storage issues and tank leaks.

T**Various methods of hydrogen production:**

“Brown” hydrogen production alternatives (black, grey, and blue hydrogen) remain more cost-competitive than green hydrogen production, primarily due to the high cost of renewable energy. For green hydrogen, in addition to water electrolysis, production can also occur through technologies such as the trigeneration platform (which utilizes renewable biogas to produce hydrogen, electricity, and water) or the solar-thermal method. In the future, technologies for producing pink hydrogen (nuclear energy) and turquoise hydrogen (methane pyrolysis) may also gain prominence.

Different water treatment methods:

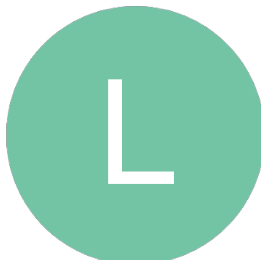
Water purification processes can involve physical (aeration, sedimentation, filtration), biological (anaerobic digestion, biological oxidation), or chemical methods.

E**The central role of water in emerging macro-trends:**

Industries such as artificial intelligence, big data, data centers, and blockchain technology consume vast amounts of potable water, which is already becoming an increasingly scarce resource.

Intermittency of Green Energy Technologies as Alternatives to Hydrogen:

The non-linear nature of green electricity production, influenced by weather conditions (solar, wind, etc.), can lead to fluctuations in energy output. In extreme cases, an excess of electricity production relative to demand can occur, potentially resulting in negative pricing phenomena. These trends could positively impact green hydrogen producers relying on third-party energy sources but negatively affect those producing green energy in-house, as they may face inefficiencies and additional costs related to energy storage (BESS) or curtailment.

L**Strategic implementation of plans for hydrogen and renewable energy supply chains worldwide:**

Regulations and significant investments, such as those outlined in the Inflation Reduction Act (IRA), “Fit for 55%,” and RePowerEU, are expected to drive the growth and scaling up of the sector while reducing reliance on fossil fuels.

Strict European and American regulations on PFAS industrial production:

- TSCA (Toxic Substances Control Act, Section 8(a)(7) on PFAS)
- REACH Regulation (EC) 1907/2006 (Registration, Evaluation, Authorisation, and Restriction of Chemicals)
- RoHS 3 Directive (EU) 2015/863
- POPs Regulation (EU) 2019/1021
- Stockholm Convention, POPs Regulation

These regulations aim to limit and ban toxic substances across various industrial sectors to mitigate water pollution risks.

De Nora ESG Ratings

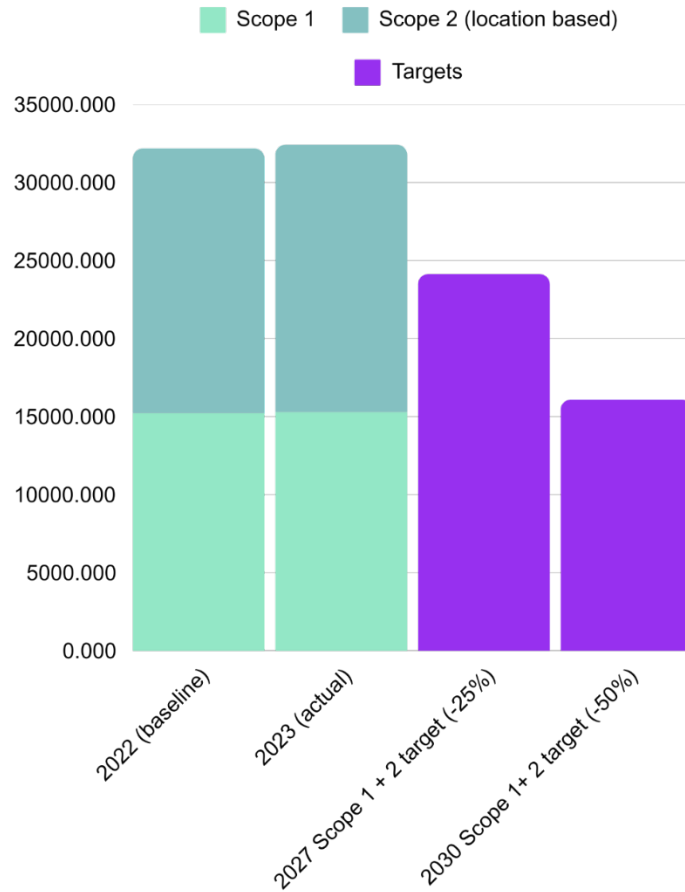
ESG Index	OVERALL	E	S	G
Susteinalytics Morningstar (RISK)	22.2 (medium risk)			
LSEG	60/100	62	92	16
S&P	42 /100	34	50	45
MSCI	AA/AAA			
Great Place To Work			73/100	
Our Index	75/100	70	83	79

Industry ESG Ratings

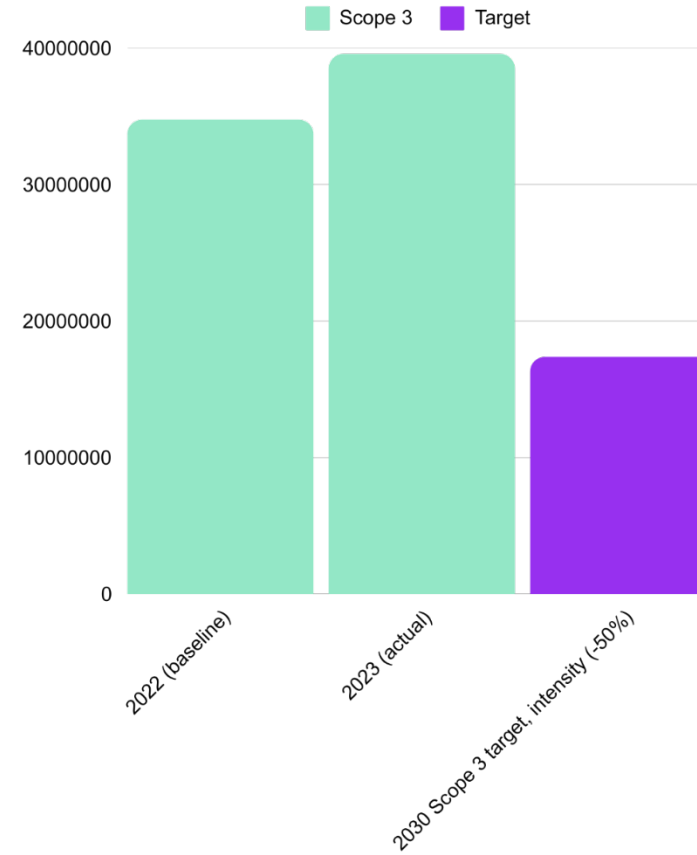


Environmental: Targets

GHG emissions (Scope 1 + Scope 2, in tCO₂e)

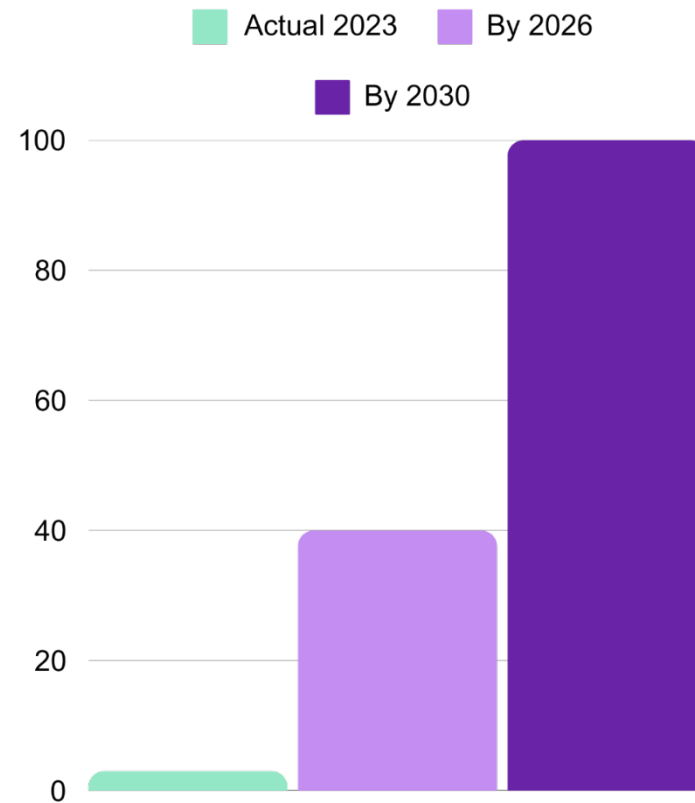


GHG emissions (Scope 3, in tCO₂e)

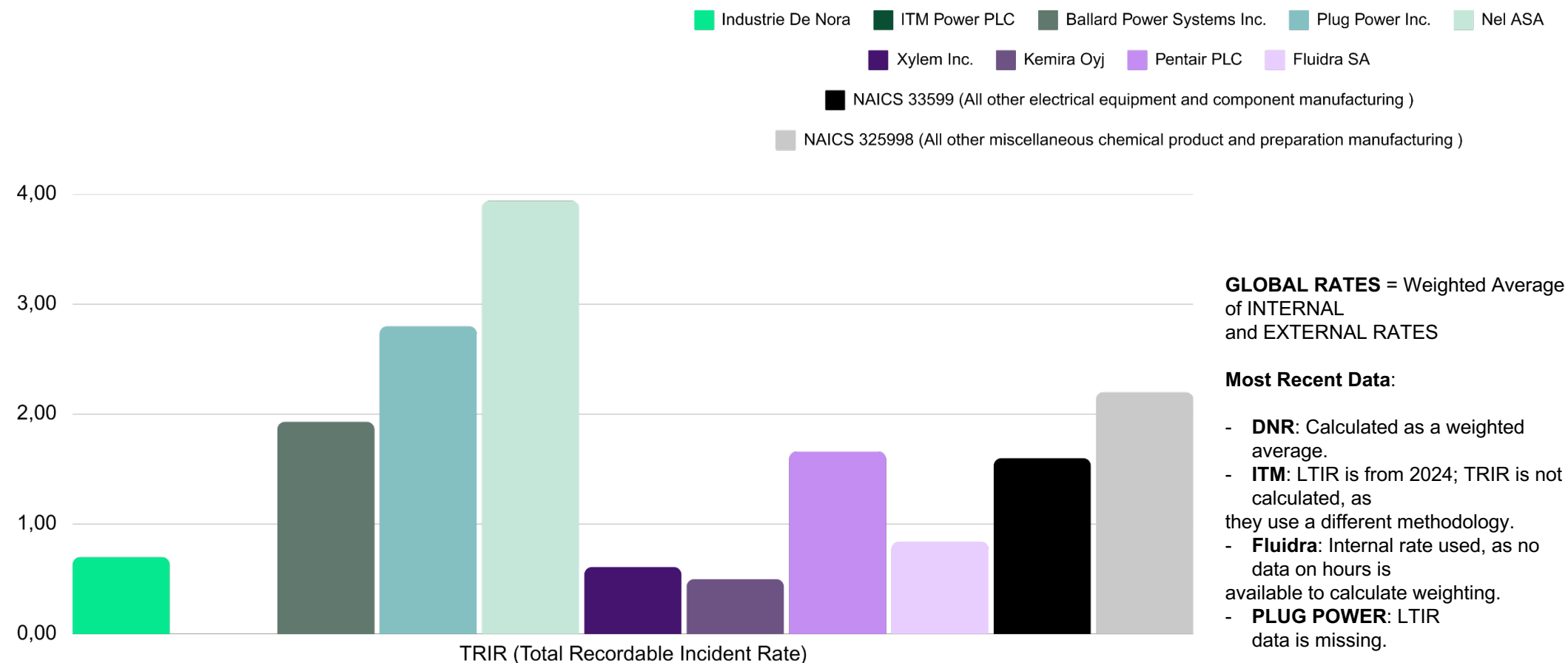


Environmental: Targets

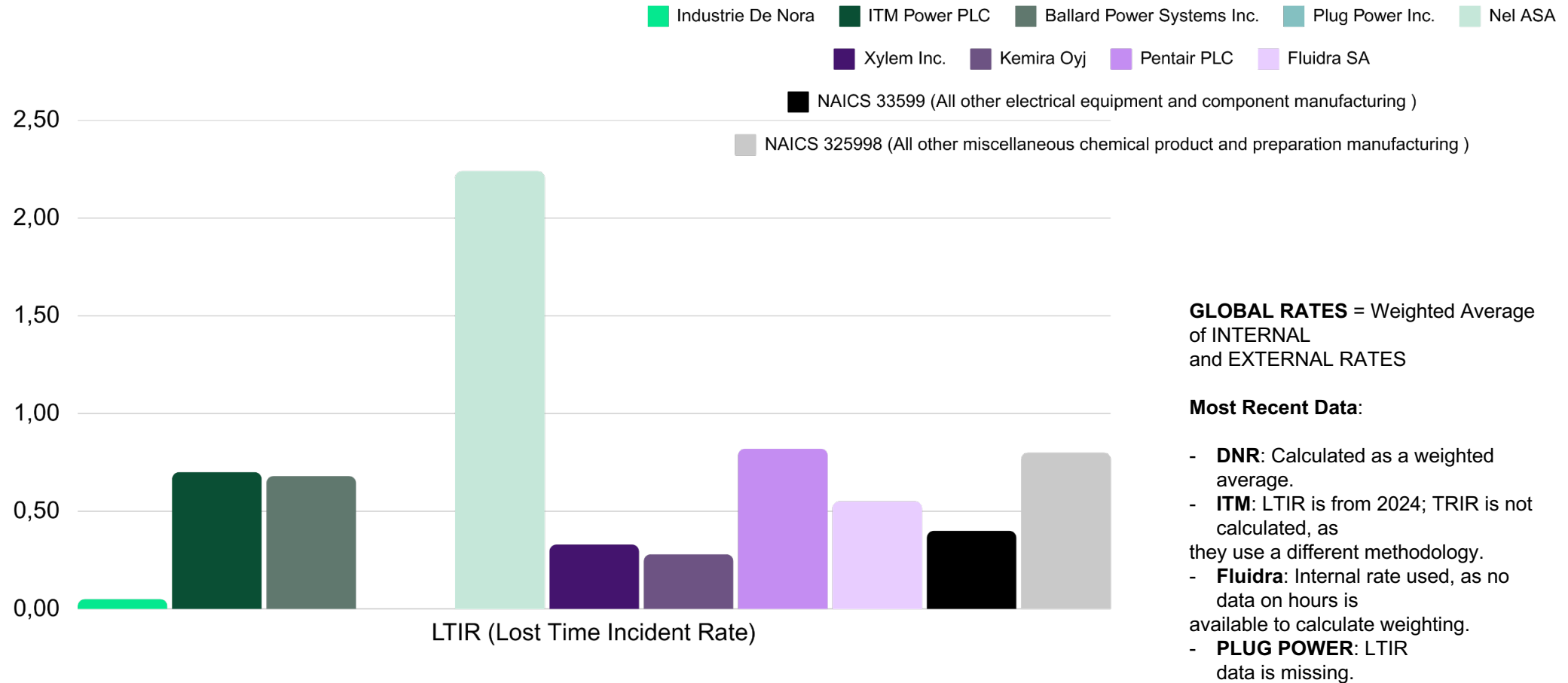
% of electricity from renewable sources



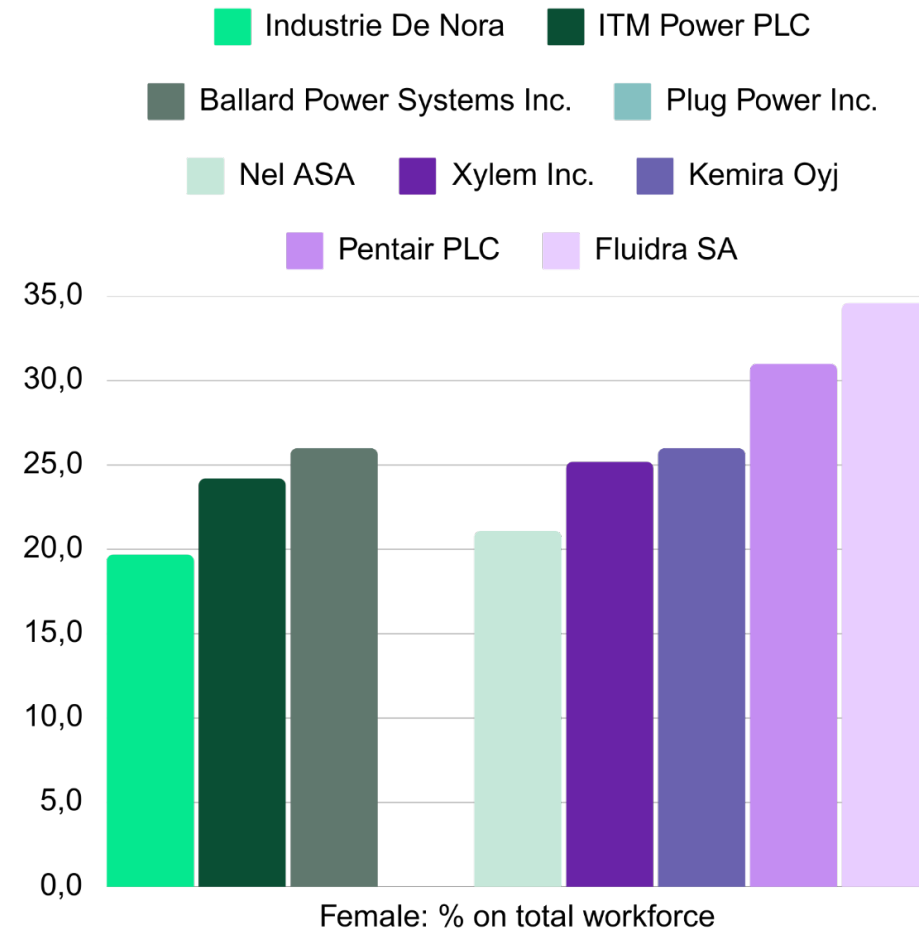
Social: Incident rates (/200k hours worked)



Social: Incident rates (/200k hours worked)

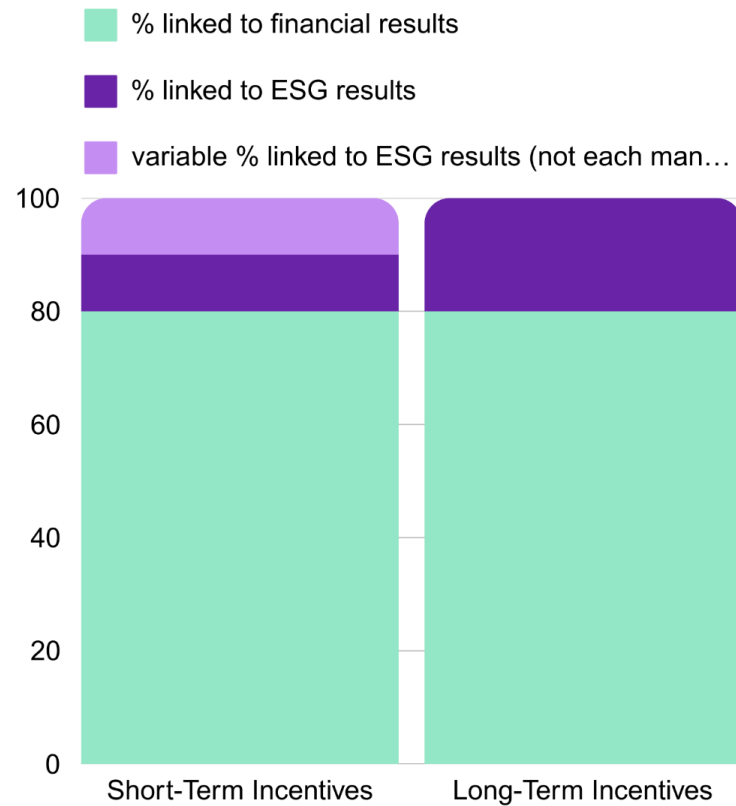


Social: Female (% on total workforce)

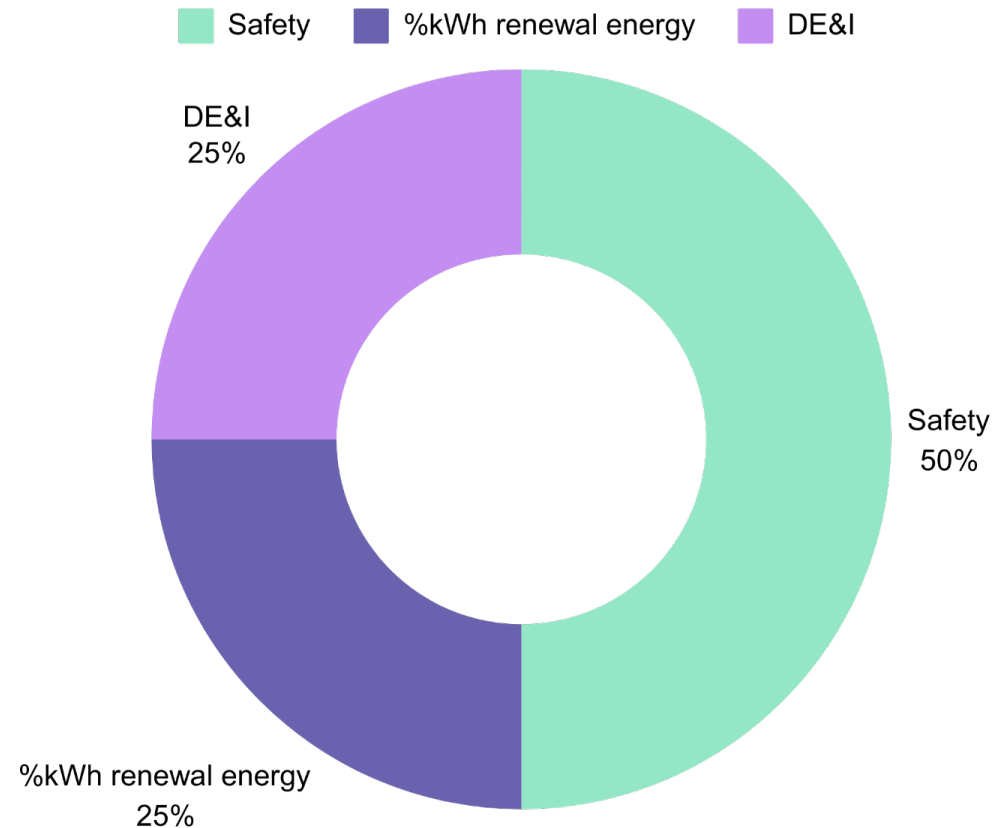


Governance: Top Management and CEO ESG remuneration

Structure of variable
Top Management remuneration

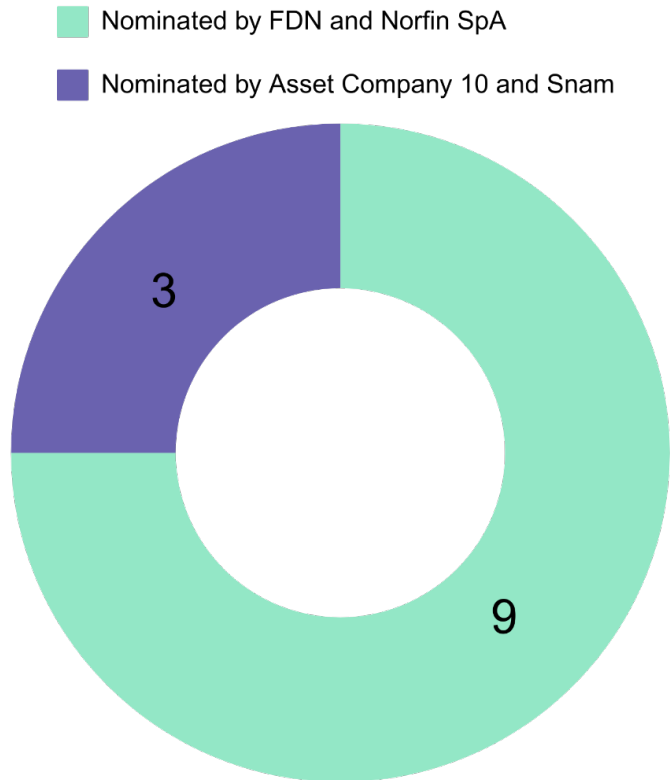


Structure of ESG tied
CEO remuneration

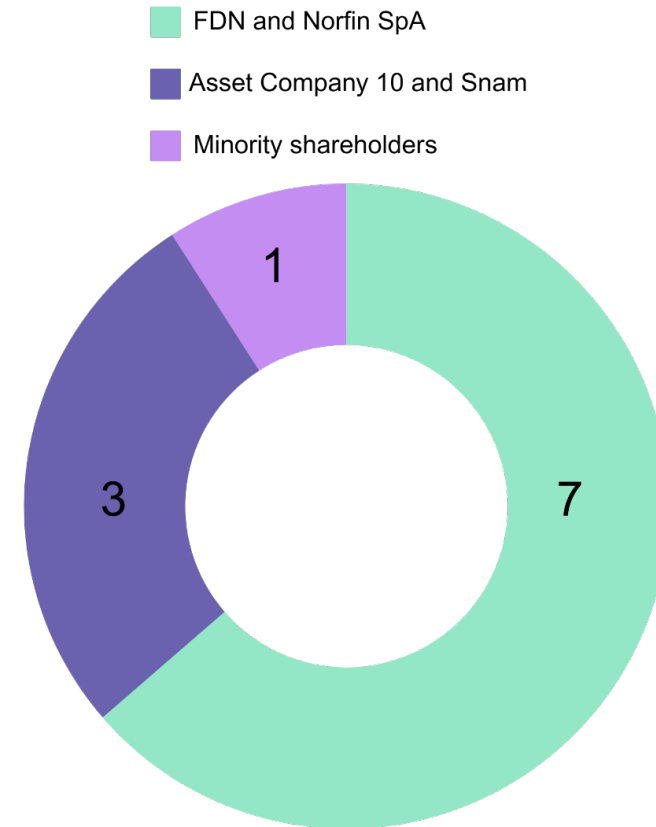


Governance: BoD's composition, shareholders rights

Actual BoD's composition



Future BoD's composition (from 2024)



ESG Scorecard

Environmental	
GHG Emissions	Given the increase compared to 2022, especially in scope 3 emissions (+13.86%), we assume that the targets set by DNR may be somewhat too ambitious.
	Rating
Actual amount of GHG emissions	5.00
Target Feasibility	5.00
Circular Economy	Circularity is promoted both internally, vertically across the entire value chain, and horizontally within the three ASA (Areas of Strategic Activity) in which DNR operates. It is at the core of the company's environmental policies and is primarily demonstrated through processes such as recoating and water treatment.
	Rating
Commitment	9.00
Use of Renewable Energy	The company is strongly committed to increasing the share of renewable energy in its total consumption. The investments already made and those planned make the ambitious target set by the management, in our view, achievable.
	Rating
Target setting	8.00
Plan execution	8.00
E pillar Mean	7.00

Social	
Diversity, Equity, and Inclusion (DEI)	De Nora, despite the low percentage of women in its total workforce (although consistent with our peers), is committed to ensuring that every individual has equal career opportunities.
	Rating
Diversity	5.00
Gender Equality	9.00
Health & Safety (H&S)	The workplace incident rates (TRIR = 0.7 and LTIR = 0.05) were excellent, demonstrating De Nora's commitment to safety and its training and safety policies, such as the Safety Triangle.
	Rating
Results	10.00
Employees Well-being	De Nora is committed to annually improving its employees' work contracts, benchmarking against the industry median (for employees at the same level) and utilizing a performance evaluation system that assesses each individual's contribution to the company's activities. This approach also encourages internal innovation.
	Rating
Commitment	9.00
S pillar Mean	8.25

ESG Scorecard

Governance (15%)	
Board of directors	All members meet the requirements of professionalism, integrity and independence. Several directors have held and/or hold top positions in leading Italian companies. The female gender is well represented within the board with 33% of the seats.
	Rating
Independence	8.00
Experience	9.00
Diversity	7.00
Management	The management is highly qualified and has specific knowledge of the industry in which the company operates; moreover, it's highly specialized in ESG. The variable part of top management's remuneration is linked to performance, in particular to the achievement of ESG goals. The female gender isn't well represented.
	Rating
Experience and competence	8.00
Diversity	6.00
Compensation structure	9.00

ESG INDEX
E
S
G
TOTAL
TOTAL/100

Weights
55%
30%
15%
7.5
75

Internal board committee	DNR is characterized by the presence of several internal committees of the board, including the CCRESG. This committee pays great attention to social and environmental risks and is strongly committed to implementing policies and strategies for the management of these risks, through the control of the work of the directors and suggestions to the board. The CCRESG is made up of 3 independent directors who are very competent on the ESG issues.
	Rating
Independence	8.00
Experience	9.00
Shareholder rights	Shareholders' rights vary depending on the type of shares they hold. The Management and the board are committed to transparent and timely communication with shareholders, but this does not affect the nature of the rights they hold, established by law. It is possible to observe a trend towards strengthening the voting rights of minority shareholders, who, starting in 2024, will have the opportunity to be represented by a director on the board of directors.
	Rating
Voting rights	6.00
Disclosure	Material financial and non-financial information is promptly and clearly communicated to stakeholders. Particular attention is paid to ESG disclosure through the annual publication of the sustainability report, which compares the state of achievement of ESG goals with the related targets contained in the sustainability plan.
	Rating
Financial reporting	7.00
ESG reporting	10.00
G pillar Mean	7.91

De Nora's Expansion

De Nora has solidified its position in the international arena through strategic agreements in Saudi Arabia. These collaborations, facilitated during governmental discussions, highlight De Nora's pivotal role in advancing green industrial growth and decarbonization efforts

Key Points:

- Strategic Partnerships:** De Nora has entered into two significant contracts in Saudi Arabia, signaling a major expansion of its business in the Middle East. One agreement is with Acwa Power, focusing on enhancing the efficiency of water treatment systems. The second is with the Saudi Water Authority for three high-tech pilot plants. These plants will focus on chlorine dioxide use, PFAS treatment, and hydrogen production using electrochlorination systems.



De Nora's Expansion

- **Financial Backing and Gigafactory Development:** The Italian government is significantly supporting De Nora's gigafactory project in Cernusco sul Naviglio, with a total of €63 million allocated to date. This investment is part of a broader European initiative (Ipcei Hy2Tech) to bolster the hydrogen value chain. The gigafactory is expected to create approximately 2,000 jobs and play a crucial role in Italy's ecological transition, emphasizing hydrogen production and fuel cell component manufacturing.

