DE NORA

SUSTAINABILITY DAY

26 NOV

CREATING VALUE AND
GENERATING POSITIVE IMPACTS
ALONG THE VALUE CHAIN

MUSEO NAZIONALE SCIENZA E TECNOLOGIA
LEONARDO DA VINCI, MILAN

DE NORA

De Nora Sustainability Plan to 2030

Chiara Locati
Martina Vettori


Green
Innovation
People:
inclusion,
wellbeing &
continuous
development
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
5 GENDER EQUALITY
17 PARTNERSHIPS FOR THE GOALS
8 DECENT WORK AND ECONOMIC GROWTH
GOVERNANCE ETHICS
& TRANSPARENCY
14 LIFE BELOW WATER
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
13 CLIMATE ACTION
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Climate Action &
Circular Economy
Community
engagement &
sustainable
supply chain

Our Action Plan

A set of quantitative targets to boost our positive impact

(vs. 2022 baseline)

	2024	2025	2026	2027	...	2030
GREEN INNOVATION	**Circular Design Guidance** **Scorecard** framework set-up	**100%** new products assessed by scorecard	**>80%** of R&D contributing SDGs **>50%** of revenues contributing SDGs	**100%** existing products assessed by scorecard		
CLIMATE ACTION		**100%** facilities ISO 14001	**40%** renewable electricity	**25%** reduction Scope 1 & 2 emissions **100%** facilities certified ISO 50001		**50%** reduction of Scope 1 and 2 **52%** reduction of Scope 3 intensity **100%** renewable electricity
CIRCULAR ECONOMY			**40%** of wood packaging reused **4%** reduction in noble metal used			**5%** of recycled noble metals content in products **> 80%** of deforestation-free wood packaging

1. Target is applied on 3 product groups: (1) Membrane, (2) Pools and Electrochlorination, (3) Alkaline Water Electrolysis

A set of quantitative targets to boost our positive impact

(vs. 2022 baseline)

	2024	2025	2026	2027	...	2030
PEOPLE: INCLUSION WELLBEING DEVELOPMENT	**DE&I** policy **Parental & Relocation** policy, extension to all couples and single parents	**100%** of sites certified ISO 45001 **100%** facilities with Safety Day and Quarterly H&S reports	**100%** sites with a mental health hotline **100%** employees trained on mental health awareness			
SUPPLY CHAIN		**2** Suppliers audited (pilot)	**>25%** suppliers (by spend) assessed **100%** High-Risk suppliers engaged			**>50%** suppliers (by spend) assessed
GOVERNANCE ETHICS	**Human Rights** policy		**100%** employees trained on anti-corruption policy **100%** of territories have an Export Control guideline			

ESG Plan progress

GREEN INNOVATION

- Circular Design Guidance embedded in our R&D process
- Sustainability Product Scorecard framework defined
- Ongoing analysis on SDGs contribution both on revenues and R&D expenses

CLIMATE ACTION & CIRCULAR ECONOMY

- 60% plants ISO 14001 certified in 2024 (27% in 2023). 28% plants ISO 45001 certified (20% in 2023)
- Sustainable packaging scouting: reused woods and other solutions
- 3.1 GWh PV plants connected
- Decarbonization plan ongoing
- Refinement to Scope 3 calculation and SBTi submission
- Internal procedure for GHG emission in investment selection

PEOPLE & LOCAL COMMUNITES

- DE&I Policy Adopted
- Launch of InCLUDe Leadership program
- Partnerships for Affinity Network (e.g. Valore D)
- Ongoing definition of a target for % women among new hires

SUPPLY CHAIN & BUSINESS ETHICS

- ESG suppliers' evaluation platform selection
- Human Rights Policy Adopted
- Conflict Minerals analysis and declaration
- Other policies adopted in 2024: ESG supply chain, QEHS

Leading External Recognition[1]

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Plantable paper badge with seeds

ecocard®

Decor made with recovered plants

RE PLANT
IL RICICLO DEL VERDE

200 trees planted for the event

treedom
let's green the planet

treedom
let's green the planet

De Nora

De Nora, an Italian multinational listed on Euronext Milan, specializes in optimizing energy efficiency for industrial electrochemical processes and offers solutions for water treatment.

www.denora.com

200 Alberi piantati

46,78 t* CO_2 assorbita

1 Foreste

8 Paesi

ALBERI

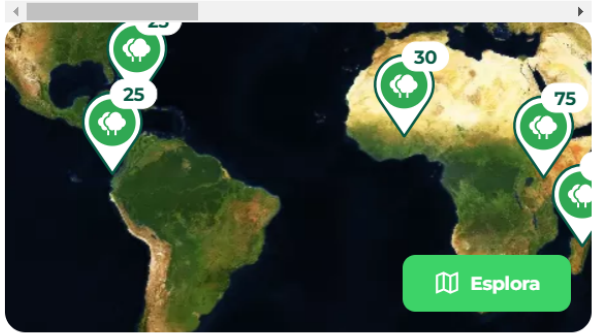
Scopri >

I nostri alberi sono fotografati, geolocalizzati ed hanno una loro pagina online dove puoi seguire la storia del progetto di cui fa parte.

Tanzania
60 alberi

Thailandia
5 alberi

Nep
30 al



FORESTE

Scopri >

Ultima foresta creata

De Nora Forest

200 Alberi piantati

1 Custodi

Visita la foresta

ALBERI CUSTODITI DA

Scopri >

Martina Vettori

DE NORA

ESG Market Trends

Fabio Cancarè
Antonio Lorenzo Antozzi
Marwan Nesicolaci

COP29 Baku | Outcomes

COP29 was an important milestone in the Paris Agreement. It needed to deliver the finance to translate global consensus into national ambition.

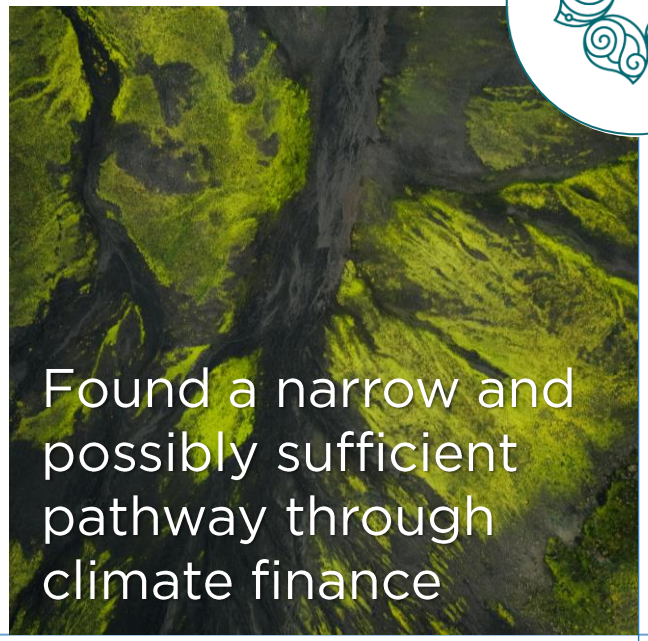
Despite headwinds, COP29 delivered progress in two areas

- Developed countries agreed a **new climate finance goal of $300B per year by 2035** for developing countries, as part of a broader effort to mobilize $1.3T
- Parties agreed to **operationalize carbon trading under Article 6** of the Paris Agreement, raising the prospect of an UN-backed carbon market

COP29 made incremental progress on other negotiations, e.g., Loss & Damage Fund operationalization.

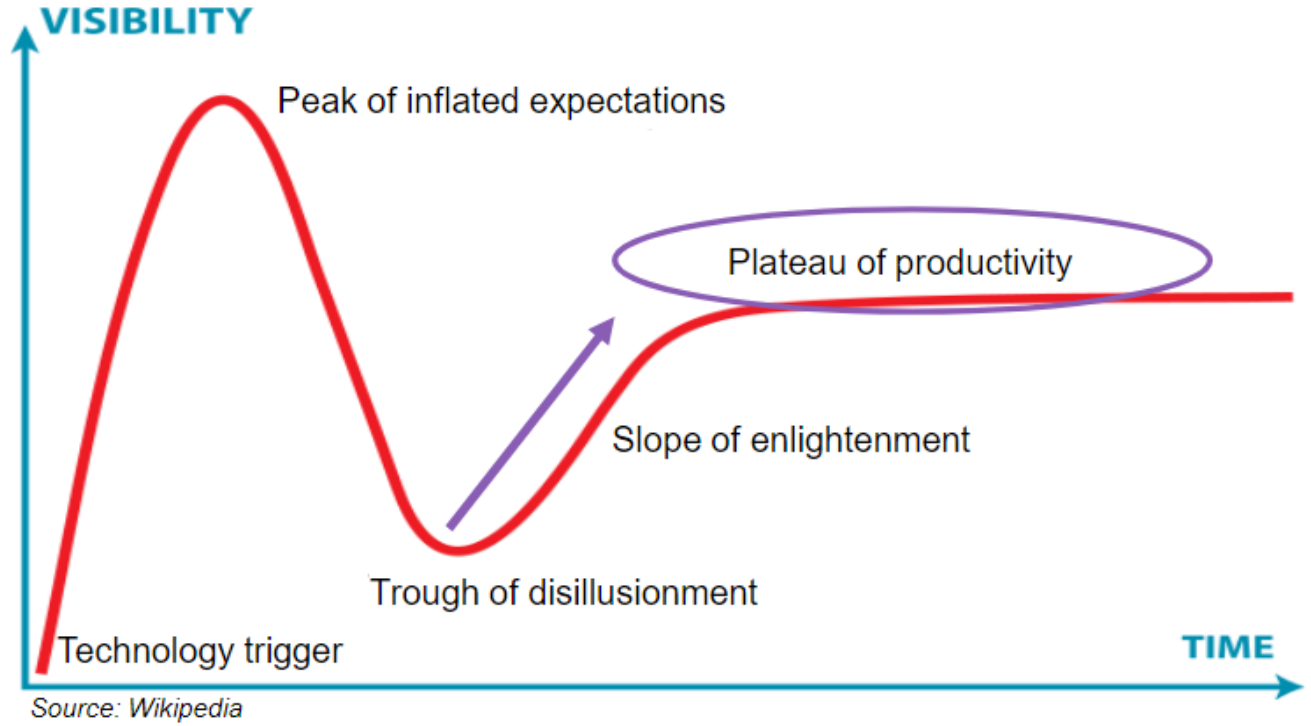
But COP29 failed to advance the **COP28 UAE Consensus**, including its call to 'transition away from fossil fuels' leaving its legacy in question.

Looking ahead, national ambition will be the key theme of **COP30 in Brazil**; forests, food, agriculture and biofuels will be relevant too.



H_2 Market Overview

WHERE DO WE GO FROM HERE?

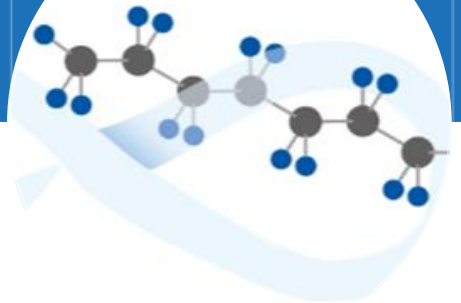


Source: Wikipedia

- Growing electrolyzer capacity reaching FID
- Growing government support
- Quotas
- Carbon prices

PFAS: the forever chemicals

What are PFAS



- Per- and poly-fluoroalkyl substances (PFAS)
- Man-made group of chemicals used in manufacturing and consumer products since 1950s
- Strong chemical bonds that take decades to break down naturally

9,000+ types

Where are they found

- Non-stick & waterproof coatings
- Textiles (color fastness)
- Pharmaceuticals, jet engines, refrigeration systems, electrical devices, etc.
- Fire fighting foams

In Everyday Life

Why “forever”

“Nothing Eats Then”

- There are no known natural process to degrade this bond
- Example, 500mg of PFOS would take 400 years to break down
- It accumulates in the environment unless removed and destroyed by technology

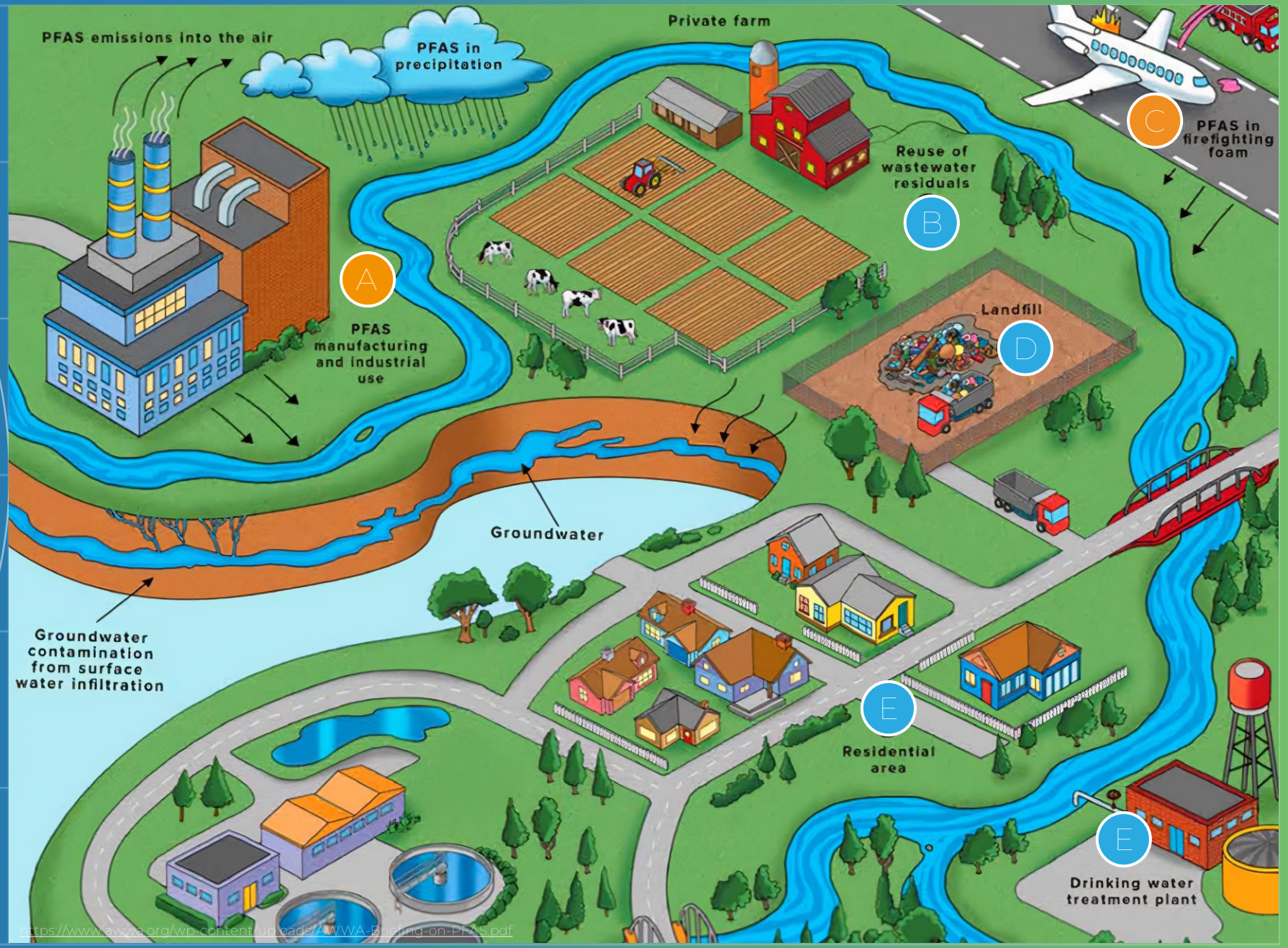
Stay Forever

How Does PFAS Get Into Water

PFAS from industry find their way into drinking water sources from either **direct pollution, landfill leachate**, or **plume runoff.**

- A Industrial Discharge
- B Agriculture Chemical Seepage
- C Man-made heat-resistant materials
- D Landfill Leachate Contamination
- E Residential Disposals (sewage into bodies of water)

- Industrial Sources
- Municipal Sources



Why Do We Care – The Impacts of PFAS

UNAVOIDABLE

- Pervasive in daily life
- Not restricted by geographical boundaries.

  → It can be transferred through sea spray aerosols and rainwater

ACCUMULATION IN ORGANISMS

- Persistent and Resilient
- BIOACCUMULATION – they build up in organisms' tissues higher than those in the environment
- Parts Per Trillion in water → Parts per Billion in bloodstream
- Found in wildlife and the bloodstream of 99% of humans, even in remote corners

SEVERE HEALTH CONCERNS

- Reproductive & development issues
- Low birth weight
- Hormone imbalance
- Immune system effects
- Cancer
- Restricted liver and kidney function

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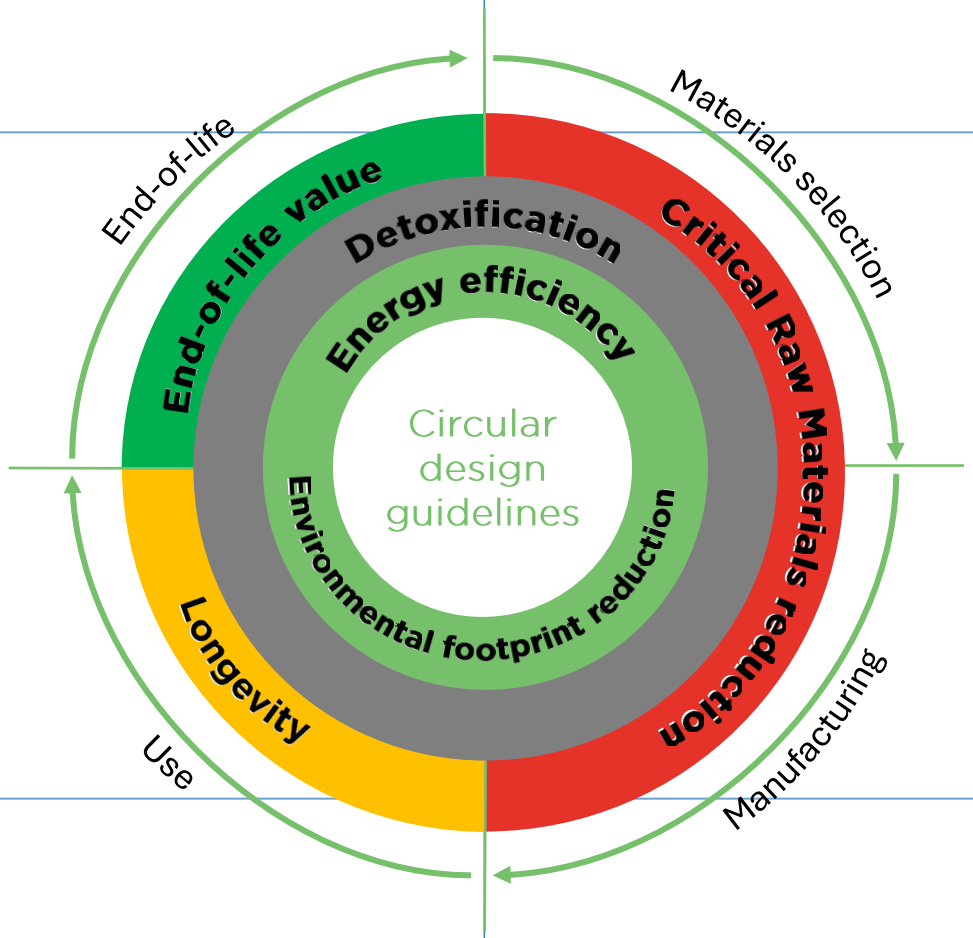
POSITIVE IMPACT THROUGH SUSTAINABLE TECHNOLOGIES

Product scorecards: De Nora's product sustainability

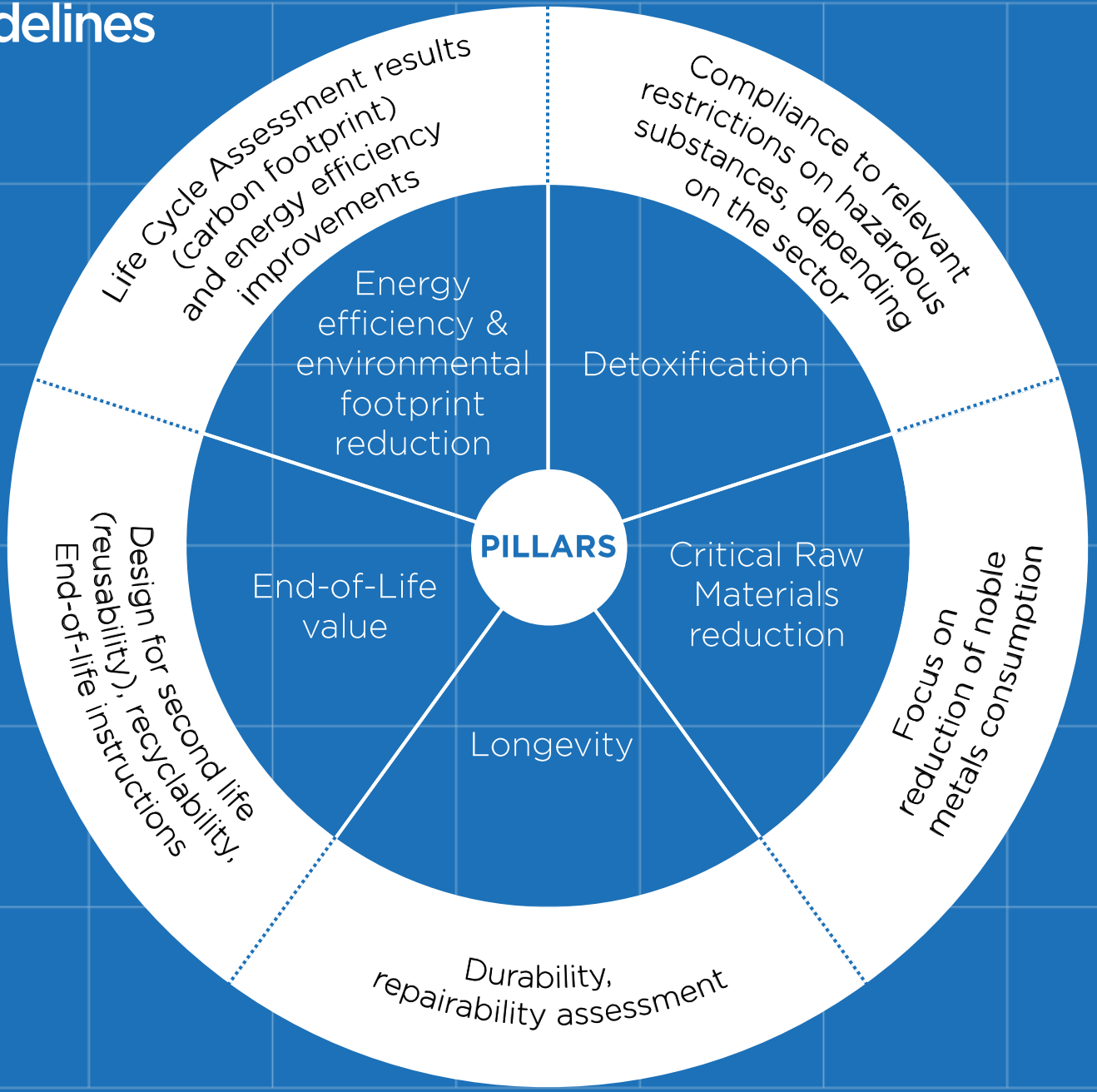
Davide Rovelli
Green Innovation Manager

Products' sustainability | 2023 - 2024 journey

- Internal procedure for Life Cycle Assessments
- First audited carbon footprints of our products
- Adoption of circular design guidelines + dedicated training



Circular Design Guidelines adoption



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Sustainability of De Nora's products: Scorecard

Contribution to Sustainable Development Goals

Life Cycle Assessment results

Carbon footprint:

- kg CO_2-eq emitted during construction of the product
- kg CO_2-eq saved due to improved energy efficiency
- % renewable energy consumed during manufacturing

Circularity indicators

- Consumption of critical raw materials: % noble metals reduction, with respect to previous product version; average recycled noble metal content
- Mapping hazardous substances, if any
- Guaranteed lifetime: 8 years
- Possibility to reuse substrate and structural components; and to recycle residual noble metals at end-of-life

Energy Transition products

Contribution to decarbonization: potential CO_2-eq avoided across product useful life, due to enabling green hydrogen production

Water Technologies products

Contribution to clean water production: m^3 drinkable water/day produced across product useful life

... And so on

Additional technical documents, if needed

- Environmental product declarations, LCA-based
- Product datasheets for electrodes

Social sustainability initiatives

PDF CODE OF ETHICS

PDF HUMAN RIGHTS POLICY

PDF SUPPLIERS' CODE OF ETHICS

...

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POSITIVE IMPACT THROUGH SUSTAINABLE TECHNOLOGIES

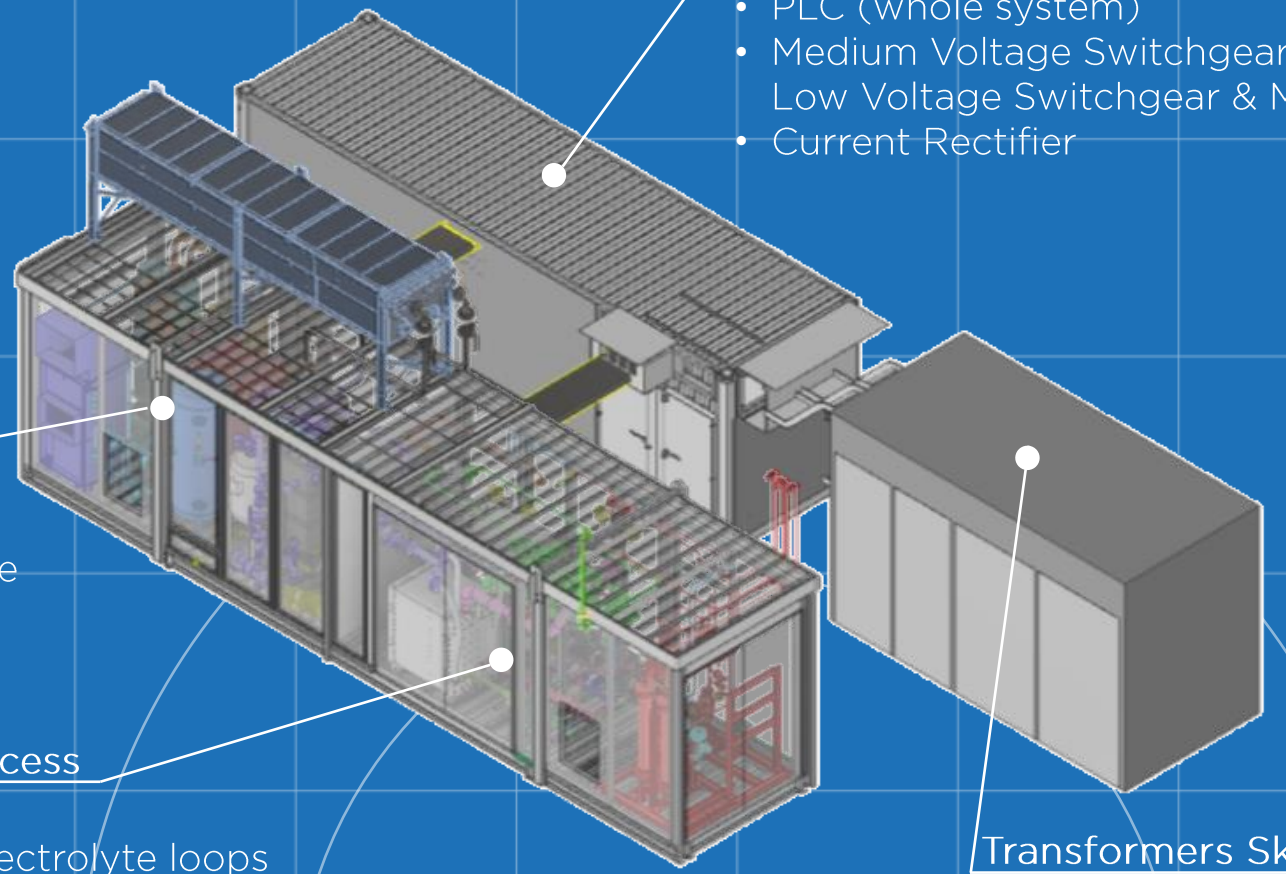
Technologies enabling Energy Transition: DragonFly® Case

Alessandro Fiorucci
R&D Engineering Manager

DragonFly® System

SYSTEM BREAKDOWN (1MW size)

Overview based on
HyTecHeat Project



Electrical & Instrumentation
- UPS & Battery Pack
- PLC (whole system)
- Medium Voltage Switchgear, Low Voltage Switchgear & MCC
- Current Rectifier

Utilities
- Compressed air generator & storage
- Nitrogen generator & storage
- Demi water generator & storage
- Chiller

Main Process
- Stack
- KOH electrolyte loops
- Cooling Water Circulation
- Hydrogen Treatment
- Gas Analyzer (O_2/O_2 & O_2/H_2)

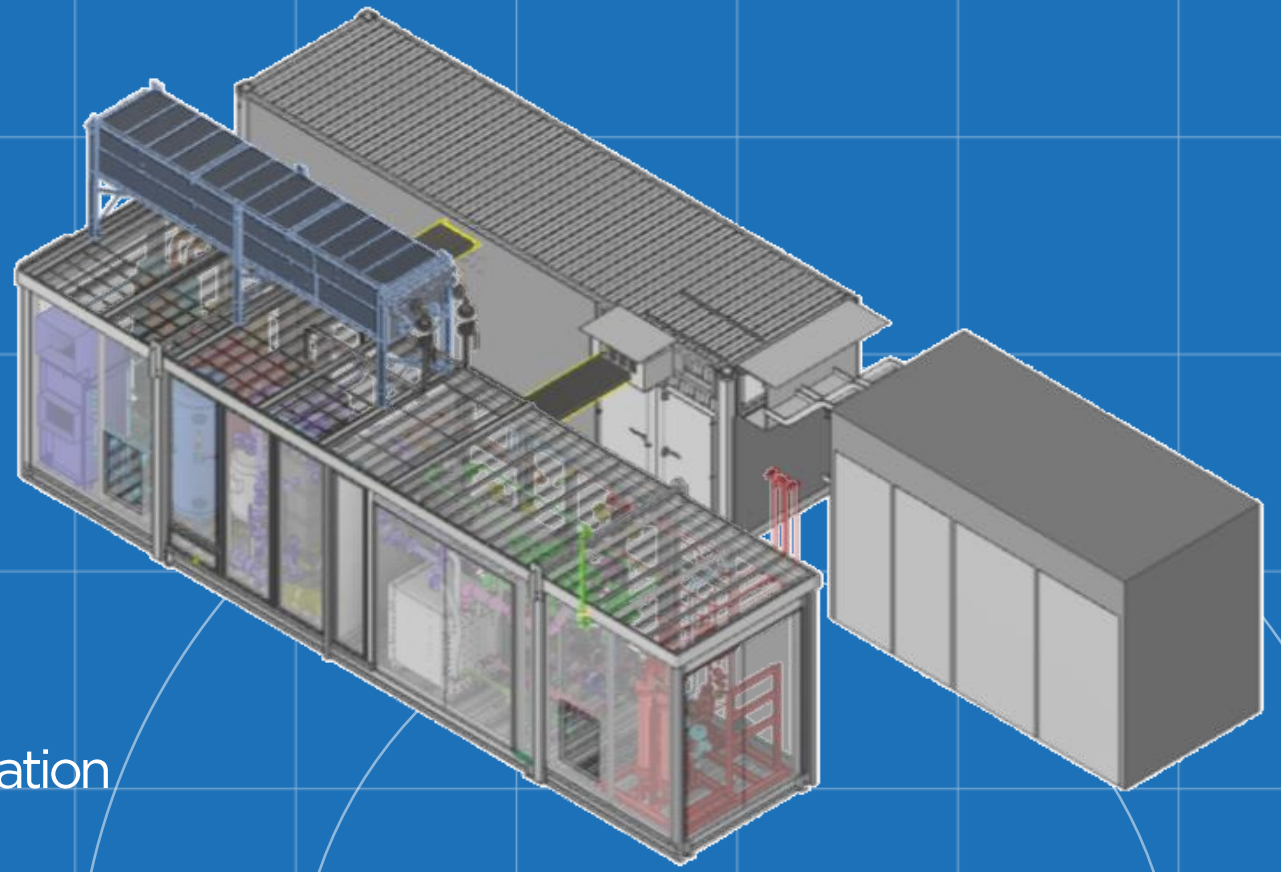
Transformers Skid

DragonFly® System

LIFE CYCLE ASSESSMENT

Study basis: System Bill of Material & Assembly Routing

- First Assessment:
  - internal know-how
    (e.g., electrode manufacturing)
  - interaction with key suppliers
    (e.g., evaluation of scrap rate)
  - literature datasets
    (e.g., third-party supply)
- System first rough CO_2 footprint evaluation
- Further revision in next design review



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POSITIVE IMPACT THROUGH SUSTAINABLE TECHNOLOGIES

CECHLO™ MS 200

High-Strength On-Site Sodium Hypochlorite Generation System

Alex Bettinardi

Global Product Director Water Technologies

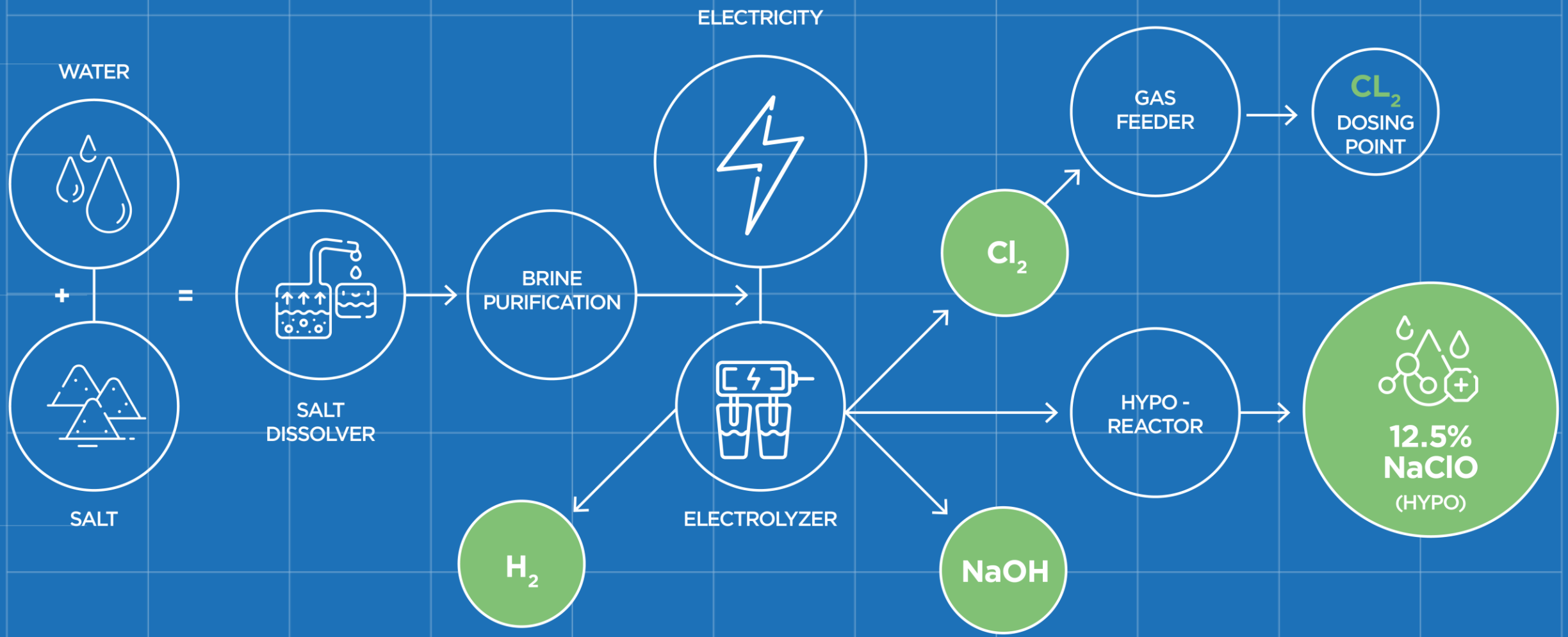
Challenges in modern water treatment

- Supply chain insecurity
- Complexity and size of equipment
- Ensuring public and employee safety
- Cost
- Disinfection byproducts
- Equipment support

Why CECHLO?

- Supply chain peace of mind
- Small footprint and easy to operate
- Safe technology using just salt, water, power
- Low lifecycle costs
- Mitigates disinfection byproducts production
- Global equipment support and expertise

CECHLO System



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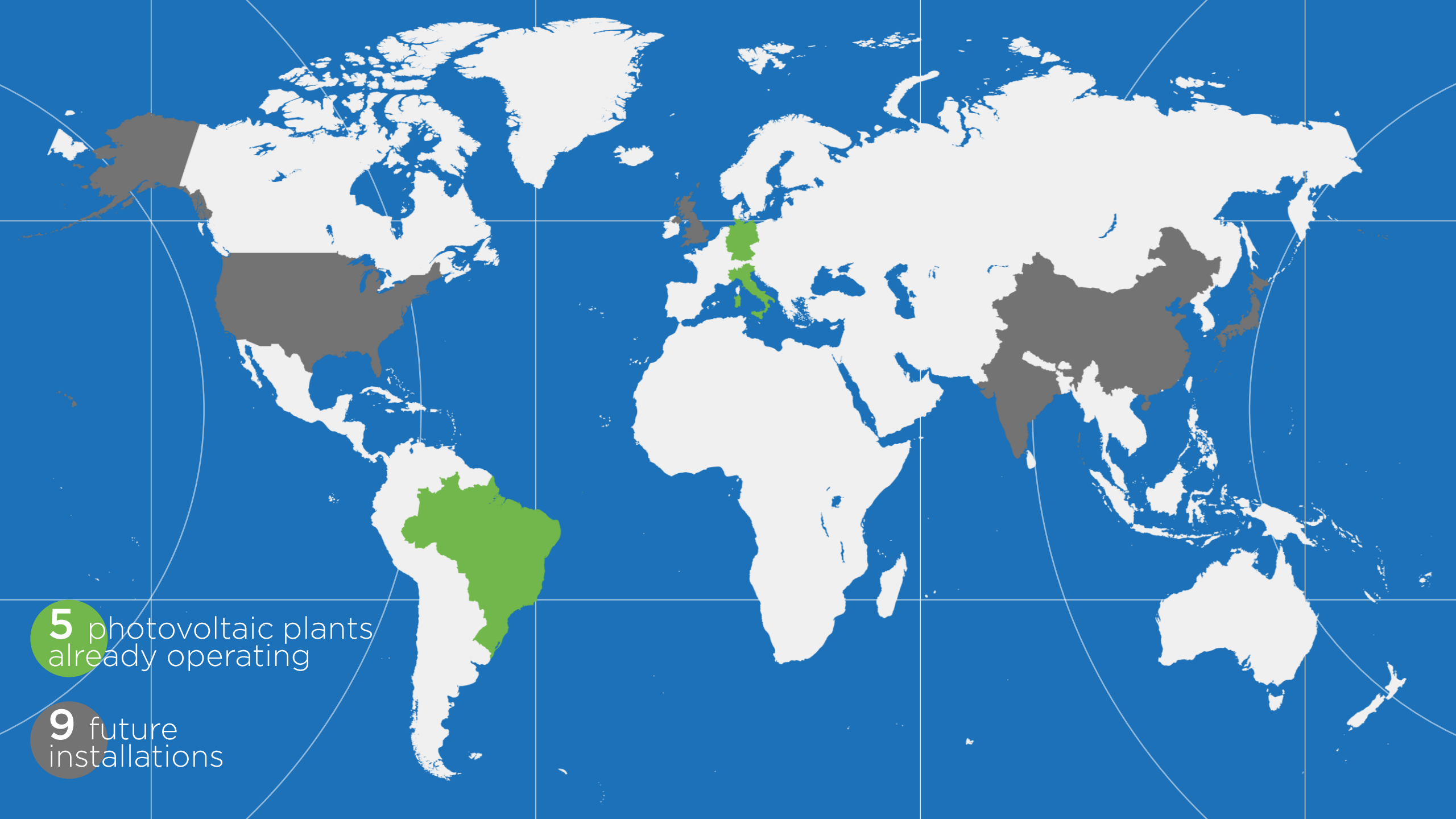
Climate Action & Circular Economy

Filippo Ronzani
Peter Damiano
Edoardo Cecchetti
Christian Urgeghe

Decarbonization Plan


5 photovoltaic plants already operating
9 future installations

New Industrial Hub

Milestone for the development of the Sustainable Italian Industry

Minimization of CO_2 emissions

Hub for all De Nora Business units

TIMELINE

2024

mid-2026
fully operative

Sustainable Architecture

Energy production through photovoltaic panels

Photocatalytic materials covering the facades (promoting the decomposition of atmospheric pollutants)

Transparency to natural light and natural ventilation

Workplace respecting natural resources

Value-generating sustainable supply chain for GigaFactory and Dragonfly® system

GigaFactory

A model for a sustainable future

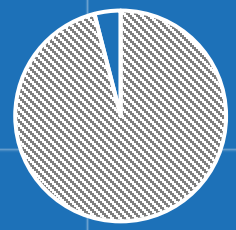
Scope: supply chain from the construction to machinery integrating ESG values at every level of our supply chain

Tool: comprehensive ESG questionnaire

Result: suppliers align with our commitment to sustainable practices, ethical sourcing, and reduced environmental impact

Dragonfly®

96% Suppliers
with an average distance
of 80km from the factory



PROCUREMENT AWARD

Sustainable and local supply chain generates value for:

Environment, with the minimization of CO_2 emissions related to transport and returnable packaging initiatives

Italian firms, allowing their development in a new emergent technology making them more competitive in a new market

The **society**, with the development of new job positions and infrastructures

De Nora Supply Chain Strategy

Building a Strong Foundation
Objective : Assessing the ESG level of our suppliers to understand their compliance to these themes
Outcome : Evaluating the level of sustainability of our supply chain

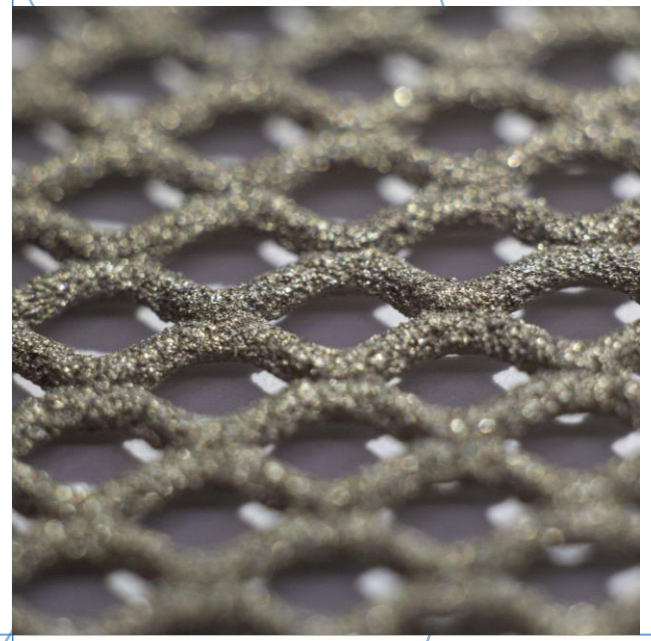
Proactive ESG Risk Assessment
Objective : Developing tools to identify suppliers who might have a high ESG risk
Outcome : Engage high-risk suppliers

ESG Criteria Integration in Supplier Selection
Objective : Integrating ESG into selection criteria (quality, cost, timing, and sustainability)
Outcome : Align our supplier ecosystem with our long-term ambitions to create shared value and maximize resilience

Creating Competitive Advantage
Objective : Investors and consumers increasingly value companies with strong ESG credentials
Outcome : A competitive advantage through a sustainable and innovative supplier network

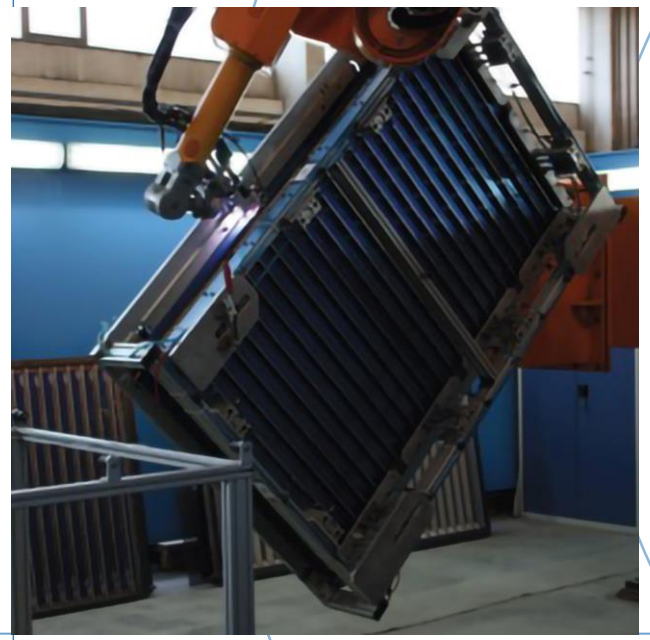
Circular Economy: a priority in our ESG journey

De Nora Products



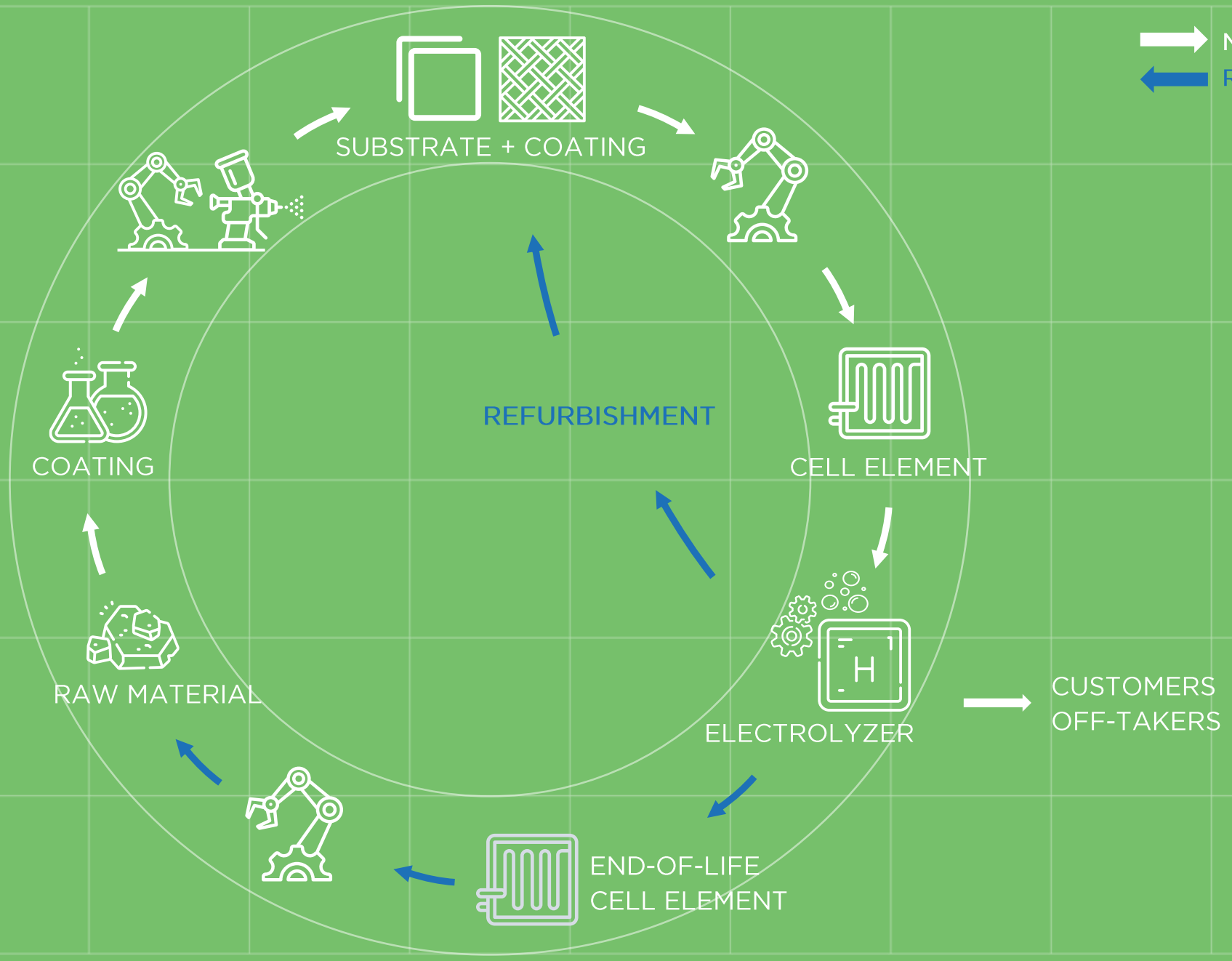
Coating

Electrode



Cell Element

Our Circular Model



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THANK YOU