

WELCOME TO *our webinar*



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MODERATOR

AGENDA

for today



INTRODUCTION | What is RGI, and why are we looking into circular solutions for power grids?



BEST PRACTICE SHOWCASE | Installation of closed-loop aluminium alloy conductor on RTE's grid



INTERVENTION | Challenges and opportunities for a circular aluminium supply chain



Q&A SESSION | Use the chat or raise your hand!

INTRODUCTION

& setting the scene

FOSTERING discussions

RGI is a unique collaboration of NGOs and TSOs.

EUROPEAN ORGANISATIONS



CAN
CLIMATE ACTION NETWORK
Europe


WWF

BirdLife
INTERNATIONAL
BIRDLIFE EUROPE

BELLONA
EUROPA

EMBER

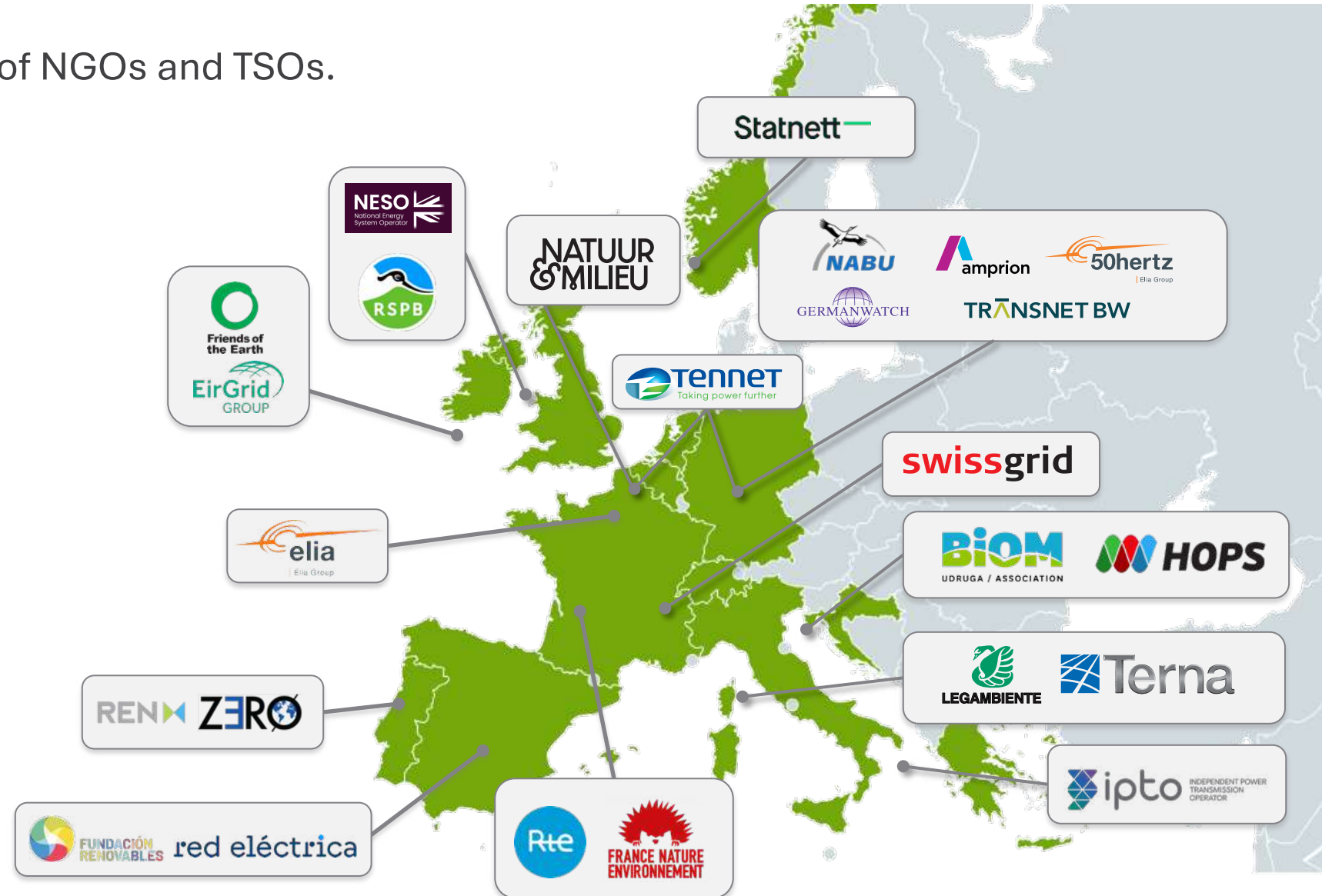
SUPPORTING MEMBERS



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IUCN

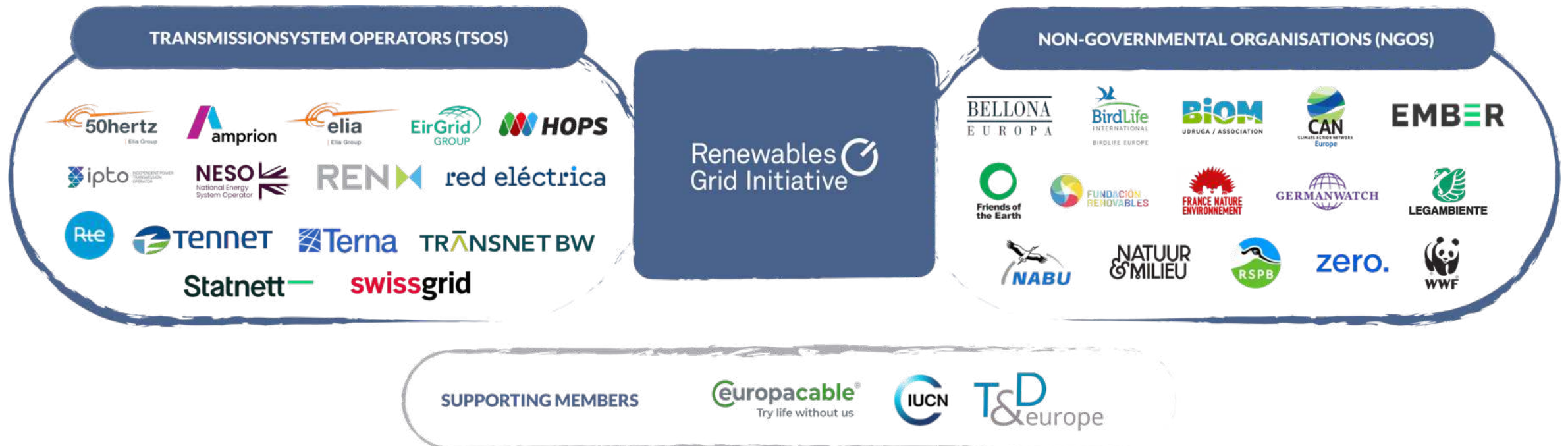
T&D
europe



FOSTERING *discussions*

RGI is a unique collaboration of NGOs and TSOs.

We engage in an energy transition ecosystem of actors and promote **fair, transparent, sustainable grid development** to enable the growth of renewables to achieve full decarbonisation in line with the Paris Agreement.



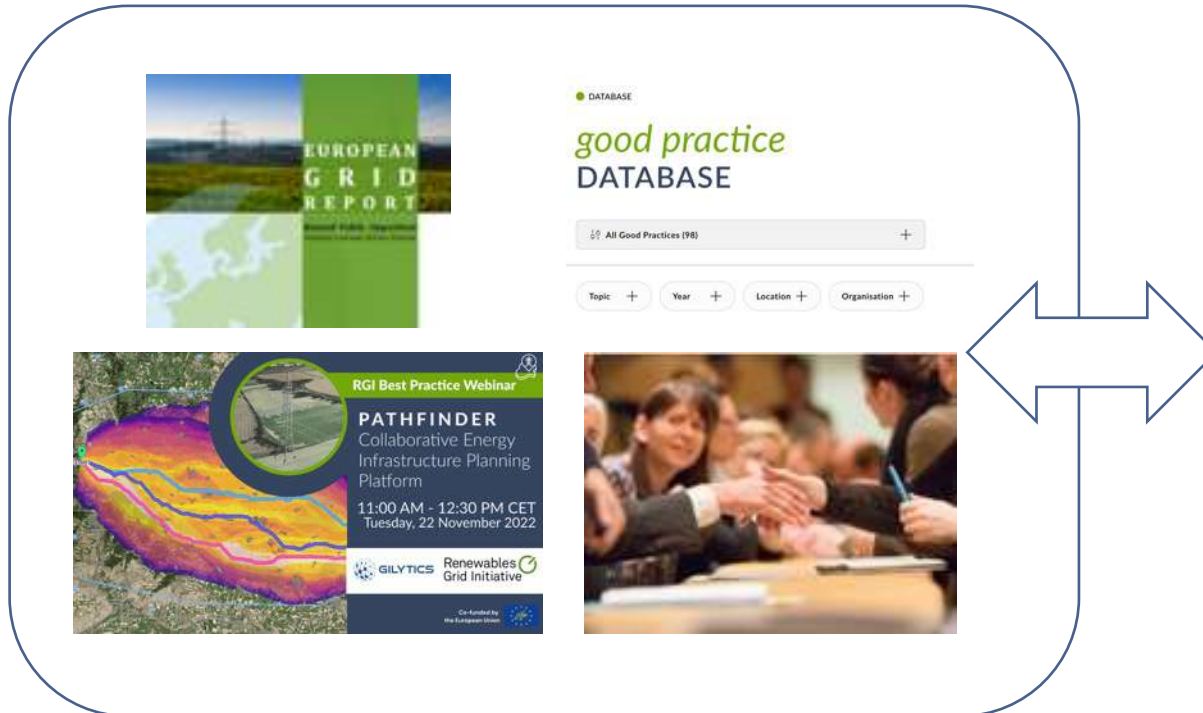
SHARING Best practices

SHARING EXPERIENCES WORTH REPLICATING

Collecting
practices

and

talking about
them



The box contains three images: the cover of the 'EUROPEAN GRID REPORT', a screenshot of the 'good practice DATABASE' interface with search filters, and a poster for the 'PATHFINDER Collaborative Energy Infrastructure Planning Platform' webinar.



As a solutions-driven organisation with focus on the electricity infrastructure implementation, we foster knowledge exchange, discussions on the needs of grid infrastructure, and best practices sharing within **three dimensions**:

GRIDS & ENERGY SYSTEMS

We enable discussions on how to **model, plan and implement** decarbonised and optimised clean energy systems, including different voices in the process.

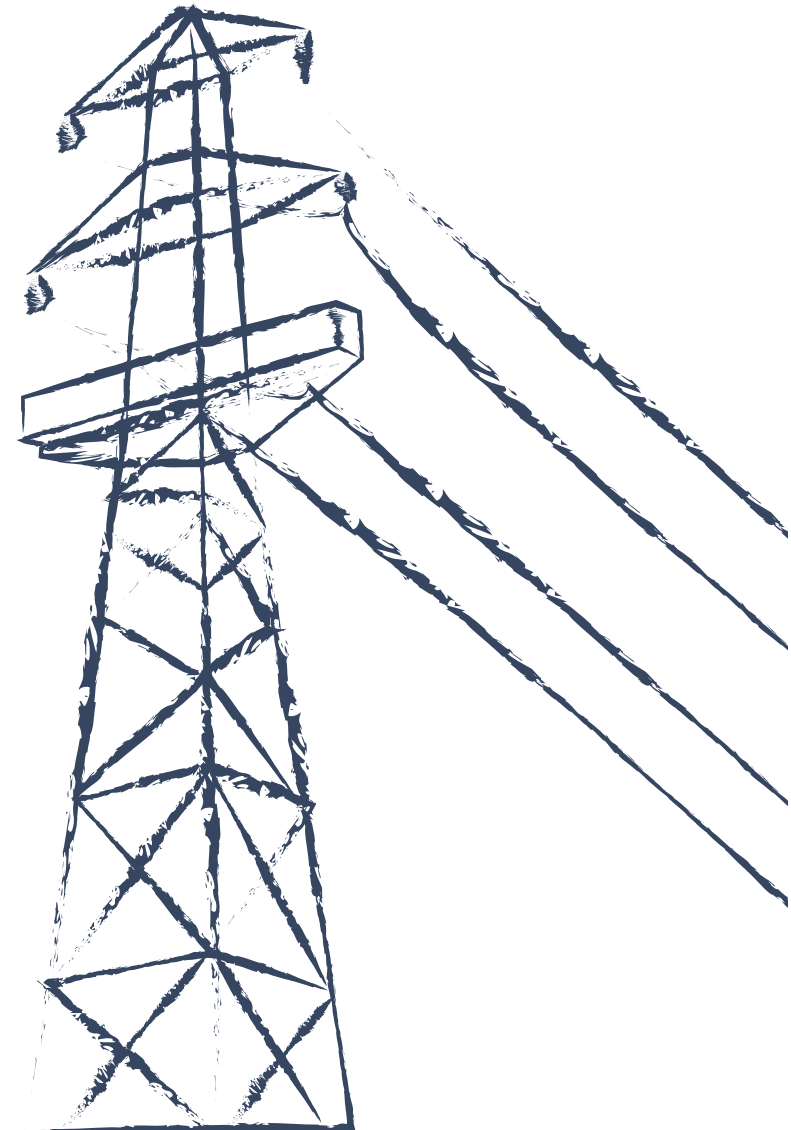
ENERGY & NATURE

We ensure energy systems both onshore and offshore are developed in **coherence with nature and biodiversity**, promoting mitigation, enhancement and restoration measures.

ENERGY & SOCIETY

We include and engage **citizens, civil society and policymakers** on strategies towards full decarbonisation, building capacity on the role of grids within the energy transition.

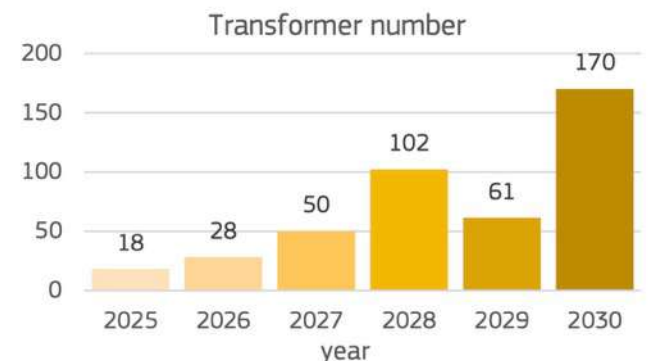
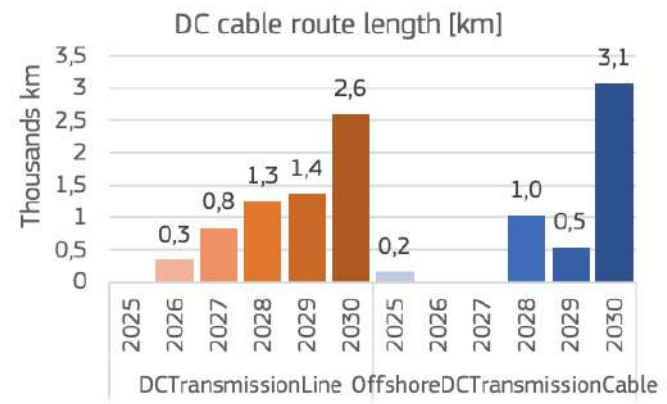
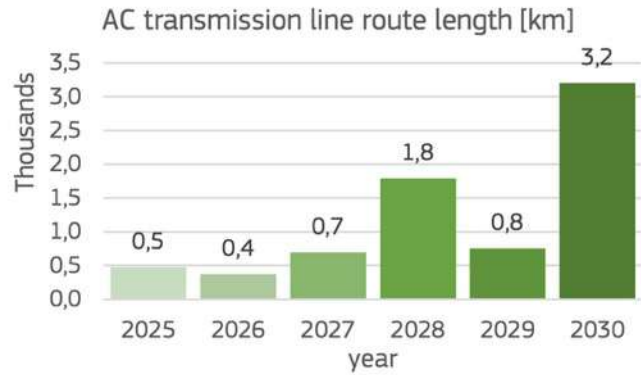
RESILIENT & OPTIMISED
power grids



ENERGY TRANSITION

material needs

As we accelerate infrastructure deployment, more grid components and equipment will be needed.



JRC, 2025

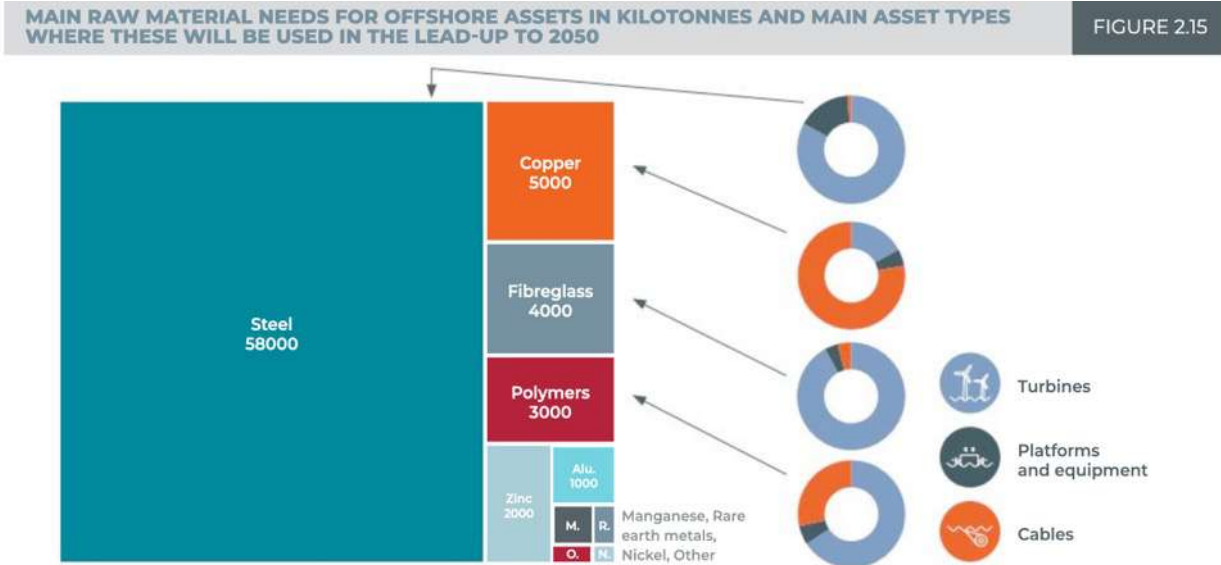
ENERGY TRANSITION

material needs

As we accelerate infrastructure deployment, more grid components and equipment will be needed.

In turn, more raw materials and manufacturing capacity will be required.

The energy transition is a materials transition: dependence shift from fossil fuels to technologies, manufacturing and materials.

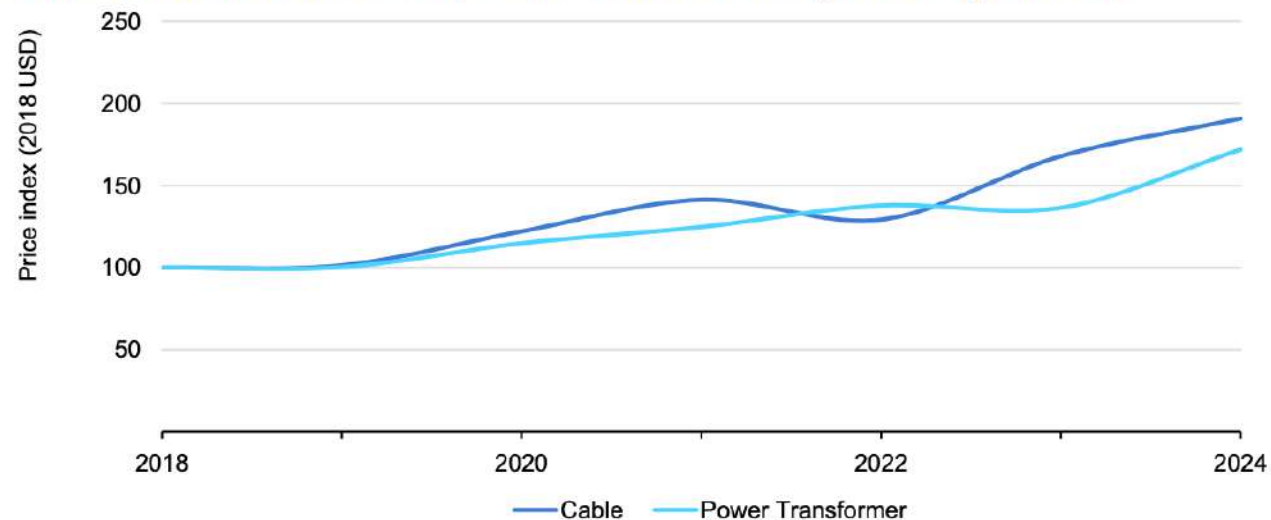


[Enea Group \(2024\): Going like the wind: The virtuous cycle of offshore wind benefits in Europe](#)

IMPACTS OF material needs

Transmission components are facing **higher costs**, impacting the affordability of the transition.

Power transformer and cables price index in real terms (2018 USD), 2018-2024



IEA. CC BY 4.0.

Note: Analysis based on cable auctions >320 kV (excluding submarine) and IEA survey for underground cables.
Source: IEA Survey 2024.

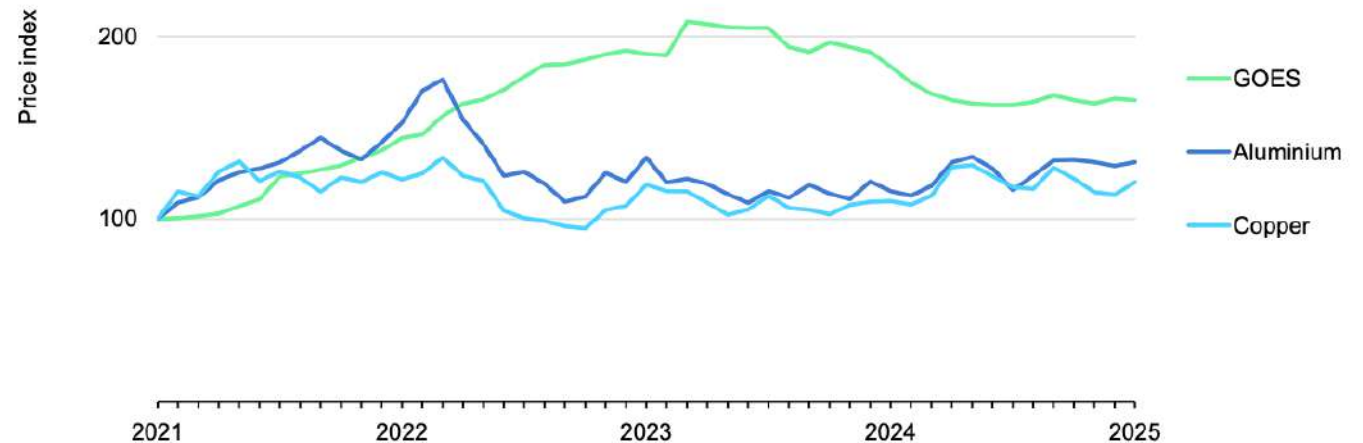
IMPACTS OF material needs

Transmission components are facing **higher costs**, impacting the affordability of the transition.

High material prices are one of the main causes. Among raw materials, the volatility in the costs of copper, aluminium, and oriented electrical steel (GOES) has contributed to the cost surge in transmission components.

Strong competition between sectors and technologies, as well as geopolitical competition between world regions, raises even more concerns.

Price index for key materials: GOES, copper and aluminium, 2021-2025

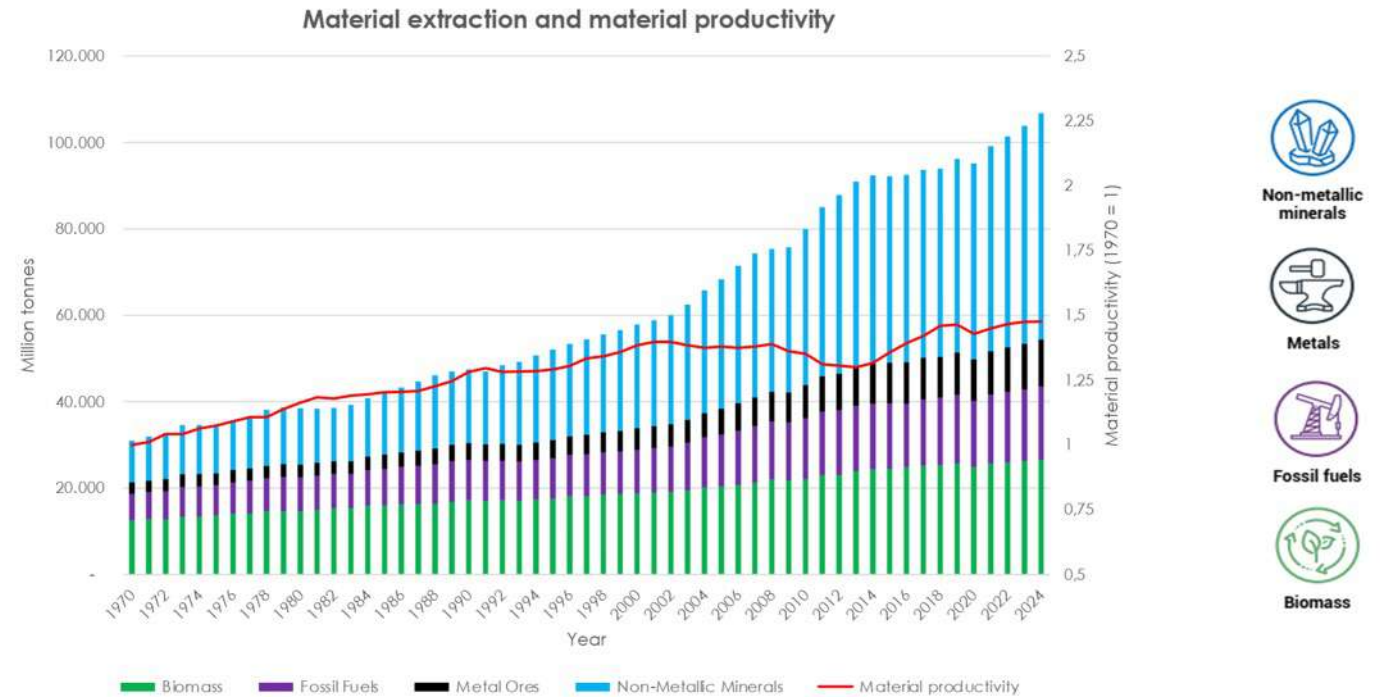


IEA. CC BY 4.0.

Source: IEA analysis based on data from Bloomberg, [T&D Europe](#), [Federal Reserve Economic Data](#).

IMPACTS OF material needs

At the same time, material productivity has been historically steady worldwide.



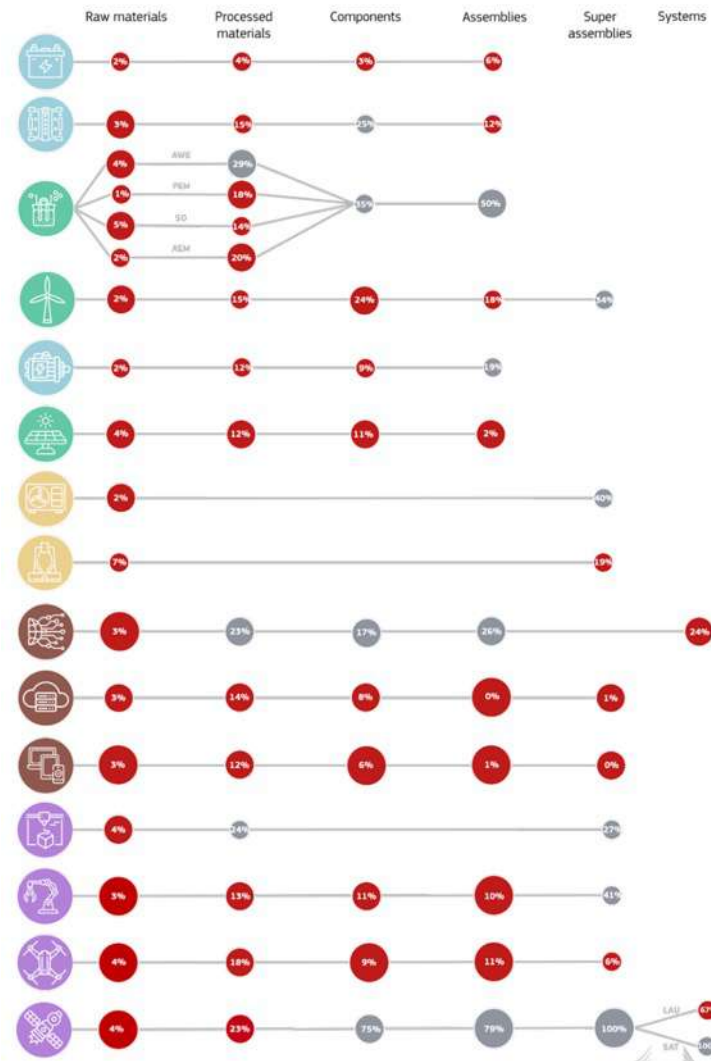
2 Source: International Resource Panel (2024), Global Resources Outlook 2024 (<https://www.resourcepanel.org/reports/global-resources-outlook-2024>)

IMPACTS OF material needs

At the same time, material productivity has been historically steady worldwide.

In the European context, while the assembly and manufacturing stages are mostly secured, the EU's share in the global production of raw materials has **never been higher than 7%**.

These disparities lead to a **systematic dependence on raw and critical materials imports**.







POLICY EFFORTS to increase resilience

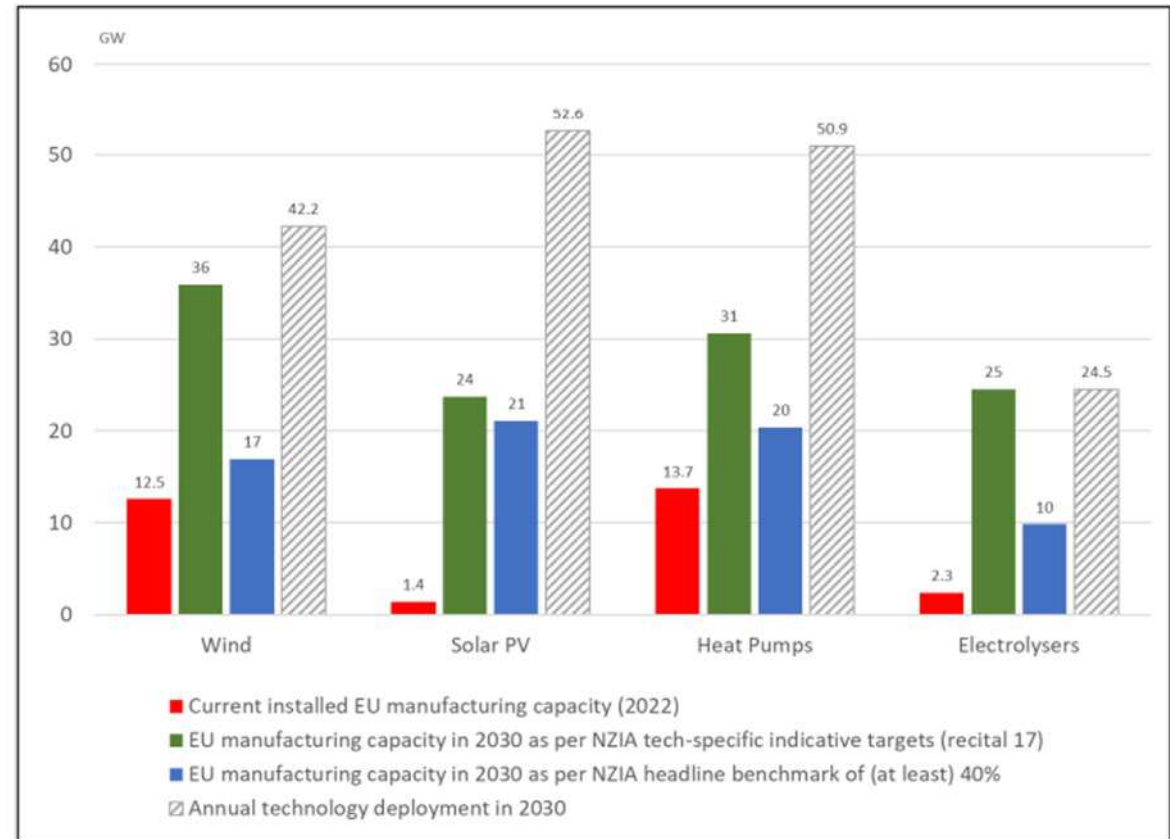
The Critical Raw Materials Act and the Net Zero Industry Act can be leveraged to **strengthen an EU-based value chain.**

NZIA: increase EU clean-tech manufacturing capacity by 40% until 2030.

CRMA: by 2030, at least 10% extraction, 40% processing, and 15% recycling of annual EU consumption.

Implementation has been taking place, but grids do not seem to be the focus of these files.

NZIA Potential



Source: SWD(2023) 219

[European Commission](#)

POLICY EFFORTS to increase resilience

Clean Industrial Deal (CID)

Launched in **February 2025**, outlines actions to support EU competitiveness through industrial transformation. Focus on energy-intensive industries (including steel, metals, and chemicals) and the clean-tech sector.



With the **Affordable Energy Action Plan** and the **Grid Action Plan**, the EU reaffirms the need for grid expansion and recognises the challenges faced by grid supply chains.



Circularity as a key pillar for the EU clean industry. Actions include facilitating demand aggregation from EU companies, increasing the EU circularity rate and the **Circular Economy Act**.



Revision of **Public Procurement Directives** envisioned for Q2 2026 to include the use of non-price criteria.



Steels and Metals Action Plan (SMAP) to help the sector decarbonise, remain competitive, and integrate circular economy measures.

POLICY EFFORTS

to increase resilience

Circular Economy Act (CEA)

To be launched in **Q4 2026**, aims to establish a Single Market for secondary raw materials, increase the supply of high-quality recycled materials and stimulate demand for these materials within the EU.



Slow progress towards a circular economy with the circularity rate stagnant over the last 15 years – from 10.7% in 2010 to ([EU, 2025](#)).



As part of the Clean Industrial Deal, circularity rate to double from 11.8% in 2023 to **24% by 2030**.



Measures being considered to strengthen the business case for secondary materials include simplifying regulations, harmonising rules, improving CRM recovery, and facilitating cross-border flows.



Should complement and align with **existing and emerging EU legislation** (ESPR, CRMA, NZIA, CID, CBAM, CSRD, Steel and Metals Action Plan etc.) to reduce overlap and contradictions.

CIRCULARITY IN energy systems

Bringing stakeholders together, we have discussed possibilities and explored the challenges and possibilities of incorporating circularity within energy systems and grid supply chains.

26 June
2024



Expert Workshop
Closing the Circle

[More information](#)

24 October
2024



Webinar
Wired for Circularity
w/ IRENA, JRC & RTE

[More information](#)

December
2024



Factsheet
Summarising findings

[More information](#)

25 September
2025



Expert Workshop
Powering Security with ICA Europe

[More information](#)

06 November
2025



RGI Statement on the
Circular Economy Act

[More information](#)

POTENTIAL BENEFITS of circular approaches

Implementing measures of **circularity** in energy infrastructure can reduce environmental pressure, increase the security of supply, and provide societal benefits.

Beyond recycling, circular strategies must incorporate resource optimisation, infrastructure efficiency and asset lifetime extension.



RAW MATERIALS

- Promote sustainable sourcing, including CO₂ reduced sourcing and closed-loop strategies
- Engage in on-the-ground corporate sustainability projects and partnerships
- Improve the efficiency of mineral and metallurgical processing, especially for minor metals



END-OF-LIFE (EOL)

- Establish partnership agreements with credible recycling companies
- Ensure traceability of EOL components to avoid improper treatment, sorting and downcycling
- Extend EOL of existing infrastructure where possible



OPERATION

- Apply predictive maintenance of assets
- Form in-house or close relationships for repair services
- Increase transmission efficiency of existing infrastructure through technological advancements and energy system adjustments

DESIGN

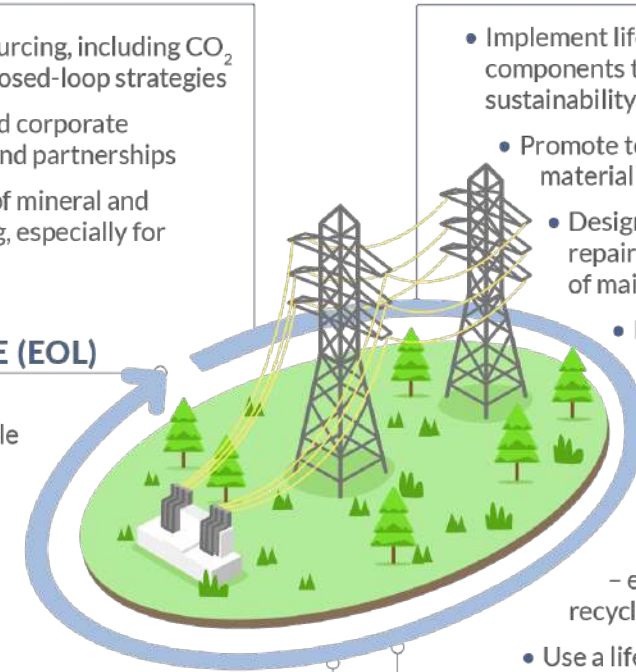
- Implement life cycle thinking when designing grid components to optimise resource use and enhance sustainability throughout their entire lifespan
- Promote technological innovation to reduce material intensity
- Design products with emphasis on repairability, availability of spare parts, ease of maintenance, and simple disassembly
- Replace or reduce materials with the highest impact

PROCUREMENT

- Introduce circularity criteria in procurement to reduce environmental & social footprints – e.g. reusability, repairability, recyclability
- Use a life-cycle approach for procurement decision-making

MANUFACTURING

- Use of Material Flow Analysis to identify material hotspots of manufacturing processes
- Implement innovative manufacturing technologies to reduce emissions and enable higher integration rates of secondary resources in industrial processes
- Encourage suppliers to share products' life cycle data to optimise upstream & downstream supply chains



CIRCULARITY IN energy systems

To create awareness on potential solutions and dive deeper into the multiple perspectives within this topic, RGI is organising the **Webinar Series** under our Activity **‘Resilient & Optimised Power Grids’**

This is the first session, and the next webinar will be held in **July – stay tuned for more info!**



Explore our work on
circularity & supply chains

bit.ly/RGI-Circularity

