Industry in transition

THE ROLE OF 24/7 CARBON FREE ENERGY (CFE) IN DECARBONISING THE EUROPEAN INDUSTRY

Outlook for industry decarbonisation

The decarbonisation of industry is a crucial step to achieve **EU climate targets.**

While energy-intensive industries create millions of jobs and considerable value to the EU economy, they also account for major shares in greenhouse gases' emissions. In 2019 alone, EU's energy-intensive industries were resposible for 22% of total GHG emission, according to the European Commission (2022).

However, the industrial transition to net-zero can be challenging as it should also ensure **EU competitiveness, optimise costs and resources, and prevent carbon leakage.**

PRINCIPLES FOR EFFECTIVE Industry decarbonisation

DIRECT ELECTRIFICATION

Prioritise electrification of applications and processes as the most efficient industrial decarbonisation strategy

RENEWABLE ENERGY

Accelerate renewable energy souces, mainly wind and solar, to reduce industry emissions

DEMAND REDUCTION

Reduce energy consumption & employ circular approaches to ensure resource-efficiency and optimisation

ALTERNATIVE SOLUTIONS

Utilise limited renewable hydrogen, carbon capture and other alternative solutions for hard-to-abate industries

Roadmap: Infrastructure enablers

To ensure a timely industry decarbonisation at the least cost, a set of strategic net-zero technologies, services and approaches are no-regret options:

ELECTRICITY GRIDS

Investments to anticipate and expand transmission capacities will be necessary to connect generation sites to industry centres, unlock flexibility, enable renewable hydrogen, and interconnect markets

HOLISTIC PLANNING

Incorporating robust and timely representation of industrial demand into energy system planning processes to allow for better understanding of infrastruture needs

TECHNOLOGY DEVELOPMENTS

Innovation can optimise resource needs and grids

FLEXIBILITY

Considering that industrial facilities are location dependent, demand flexibility and storage can help to address the variability of renewables, while optimising consumption and costs

24/7 CARBON FREE ENERGY
A granular approach to decarbonise the European industry

Granular reporting strategies can support a reliable decarbonisation of industry.

24/7 CFE calls for matching electricity needs with carbon-free energy in time and space, enabling large consumers to leverage their procurement power and providing an approach that ties renewable claims to electricity grid realities.

Implementation needs

What is required to implement a 24/7 CFE approach?

EU GRANULAR GUARANTEES OF ORIGIN (GOs) are time- and location-stamped tools that track energy sources and enable 24/7 CFE. They attribute electricity to a specific source, enhancing transparency.

ELECTRICITY GRIDS are responsible for transporting carbon-free electricity from generation sites to consumption centres, ensuring locational matching and deliverability.

TRACKING TOOLS that ensure a reliable deliver of the 24/7 CFE framework through accurate data and centralised granular certificates tracking mechanisms.

INCENTIVES in means of economic, policy-driven or reputational benefits for industries and consumers to pursue ambitious decarbonisation pathways and related solutions, such as the 24/7 CFE.

Regulatory enablers

What should the EU regulatory frameworks encompass to enable 24/7 CFE as a strategy for industry decarbonisation?

INCENTIVISE CONNECTIVITY

Recognise the importance of grids and anticipate investments to scale up and de-risk grid projects

FLEXIBILITY AND OPTIMISATION

Allow and incentivise flexible use of electricity and demand optimisation

HOLISTIC PLANNING

Optimise the energy system planning, including storage and electrolysis capacities, to minimise grid constraints

KNOWLEDGE EXCHANGE

Supporting and enhancing the implementation of 24/7 CFE enabling tools included in current relevant EU legislation

Renewables Grid Initiative

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Discover more RGI Factsheets at renewables-grid.eu