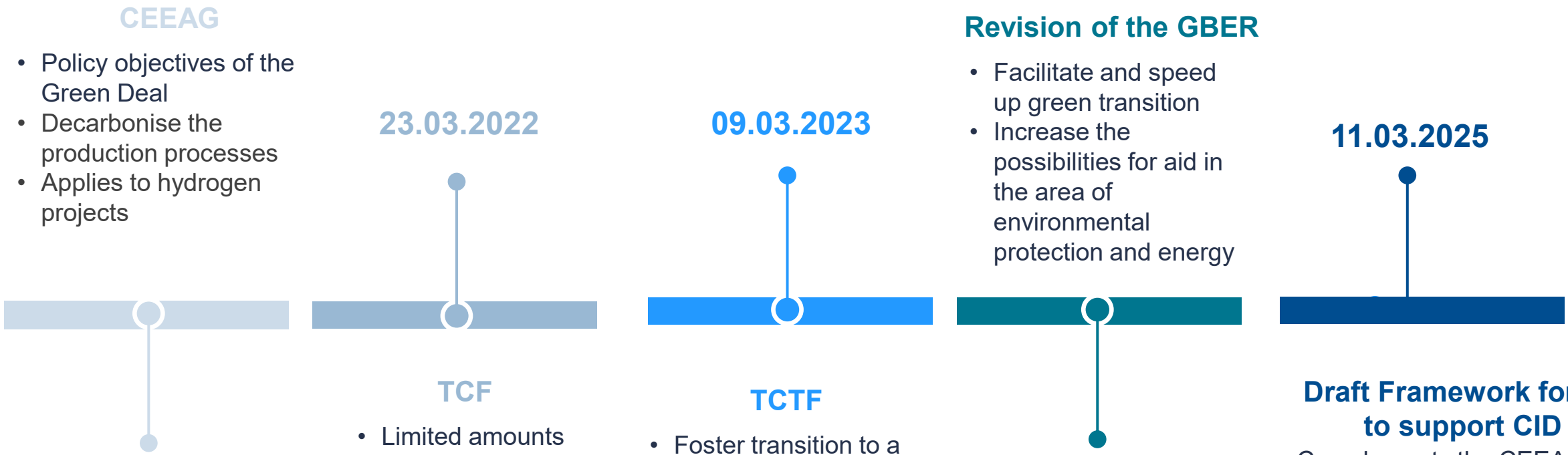
The Role of State Aid in Promoting the Hydrogen Sector

Marlene Wimmer-Nistelberger

Why is State Aid necessary in the hydrogen sector?

- Correcting market failures
- Enabling technology development and innovation
- Building infrastructure and market demand
- Ensuring fair competition and avoiding market distortions
- Leveraging private investment

Evolution of State Aid rules



Relevant State Aid documents

Guidelines on State aid for climate, environmental protection and energy (CEEAG)

General Block Exemption Regulation (GBER)

EU Temporary Crisis and Transition Framework for State Aid (TCTF),e.g for rollout of renewable energy + storage, for decarbonization of industrial processes through electrification/use of hydrogen

Communication on Criteria for the analysis of the compatibility with the internal market of State aid to promote the execution of important projects of common European interest (IPCEI)

CEEAG: Support for hydrogen is permitted across the value chain

Aid measures covered, e.g.:

- Reduction of GHG emissions, incl. support for renewable energy
- For resource efficiency and for supporting the transition towards a circular economy
- Energy infrastructure

Support across the value chain in the hydrogen sector:

- Production of renewable hydrogen
- Low-carbon hydrogen (strict conditions)
- Hydrogen storage and infrastructure (pipelines, hydrogen hubs, refueling stations)
- Aid for sectors switching to hydrogen (industry and transport)

Example – Hydrogen project based on CEEAG

- **ArcelorMittal's Decarbonisation**
- German project, funded with €1.3 billion, partly through RRF.
- Aid: direct grant; will support the construction of a direct reduction plant and three new electric arc furnaces
- Natural gas will be gradually phased out of the steel production processes to be replaced by low-carbon and renewable hydrogen. Ultimately, the new installation will operate using exclusively renewable hydrogen.

TCTF (support until end of 2025)

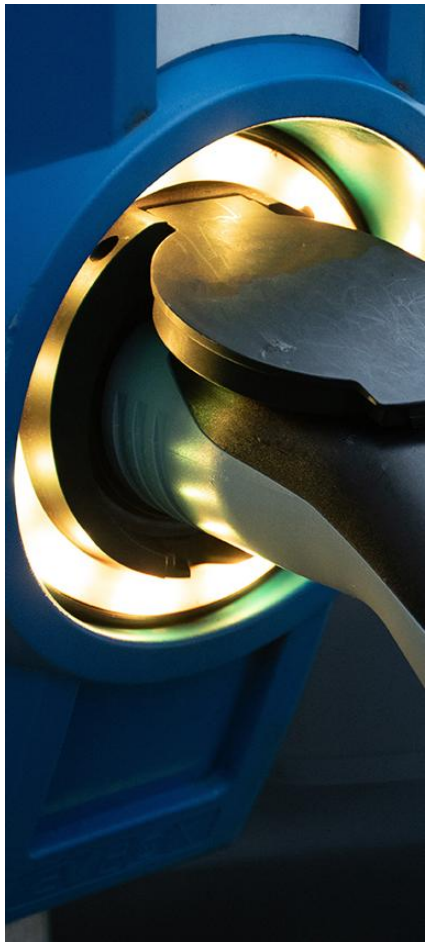
	Investment Aid for Rollout of Renewable Energy and Energy Storage
Eligible projects	Renewable energy production, including H2, and storage projects.
Specific requirements	For H2: from renewable energy sources in accordance with the methodology of Directive 2018/2001, covers newly installed or refurbished capacities
Eligible costs	**Aid amount**: Competitive bidding process (compulsory for large solar and wind) or administrative definition.
Aid intensity	100% if bidding process, 45 % if administratively set
Cumulation	Cumulation with operating aid possible
Notification thresholds	No threshold but aid shall be awarded on the basis of a scheme with an estimated volume and budget

	Operating Aid for Rollout of Renewable Energy and Energy Storage
Aid type	Two-way contracts for difference
Eligible projects	Renewable energy production, including H2, and storage projects.
Aid Amount	Competitive bidding process or administrative definition.
Cumulation	Cumulation with investment aid possible
Thresholds	Non applicable

Example – Hydrogen Project based on TCTF (July 2024)

- €1.2 billion scheme supporting investments in the production of renewable hydrogen in hydrogen clusters or valleys to foster the transition towards a net-zero economy (fully RRF funded)
- Investments supported may encompass
  - the production of renewable hydrogen-derived fuels
  - renewable hydrogen storage
  - the production of renewable electricity.
- Aid mechanism:
  - Form: Direct grants covering investment costs.
  - Selection: Competitive bidding process to determine aid amounts.
  - Deadline: Aid granted before 31 December 2025.

GBER I



Aid for, e.g.

- renewable hydrogen production (Art 41)
  - for renewable hydrogen projects consisting of an electrolyser and one/more renewable generation units behind a single grid connection point, the capacity of the electrolyser shall not exceed the combined capacity of the renewable generation units.
  - infrastructure for the transmission or distribution of renewable hydrogen + storage facilities for renewable hydrogen.
- clean mobility - hydrogen vehicles and refueling infrastructure (Art 36a and 36b)
  - for recharging or refuelling infrastructures that supply vehicles, mobile terminal equipment or mobile groundhandling equipment with electricity or hydrogen.
  - Commitment that refuelling infrastructure will solely supply renewable hydrogen by 31.12.2035.
  - purchase / leasing (at least 12m) of clean vehicles powered at least partially by electricity or by hydrogen or zero-emission vehicles and for the retrofitting of vehicles allowing them to qualify as clean vehicles or zero-emission vehicles.

GBER II

Aid for, e.g.

- hydrogen use in industrial decarbonization (Art 38 and 38a)
  - investment aid for energy efficiency measures other than in buildings + in buildings
- hydrogen infrastructure (Art 48)
  - Aid for gas infrastructure: Must be dedicated to the use for hydrogen and/or for renewable gases, or used for the transport of more than 50 % hydrogen and renewable gases

IPCEI - Example

IPCEI Hy2Infra: EC approved up to €6.9 billion of State aid in the hydrogen sector

MS: Germany, Italy, the Netherlands, Poland, Portugal, and Slovakia, 32 companies participate in 33 projects

Shall unlock €5.4 billion in private investments.

Will cover a wide part of the hydrogen value chain by supporting:

deployment of

- large-scale electrolysers to produce renewable hydrogen;
- new and repurposed hydrogen transmission and distribution pipelines of approximately 2,700 km;
- large-scale hydrogen storage facilities

construction of handling terminals and related port infrastructure for liquid organic hydrogen

Speaker

Marlene Wimmer-Nistelberger
T +43 1 40443 5100
E marlene.wimmer-nistelberger@cms-rrh.com

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