



# Hydrogen Europe Research

Policy Working Group

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7 JUNE 2024

# Agenda

1. Welcome & agenda
2. Update on EU institutions' activities
  - Institutional renewal
  - Results of the Hydrogen Bank first auction
  - Revision of the free allowances regulation
  - Launch of a tender to support the development of a hydrogen market
  - Validation of a new IPCEI on hydrogen
  - Update on Hydrogen Valleys
  - Accelerating the establishment of a Southern hydrogen corridor
  - EU and Japan cooperation in commercial and technological development of hydrogen
  - Update on EU legislations
3. Funding opportunities and updates
4. Data & reports

The background of the slide is a light gray color with a pattern of water droplets of various sizes. Some droplets are in sharp focus, showing their rounded shape and reflections, while others are blurred in the background, creating a sense of depth. The droplets are scattered across the entire frame.

# UPDATE ON EU INSTITUTIONS' ACTIVITIES

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# European Commission Spitzenkandidat



- ▶ **Ursula von der Leyen, European Commission President**
  - ▶ Elected on 07/03 by the European People's Party

- ▶ **Nicolas Schmit, EU Commissioner for Jobs and Social Rights**
  - ▶ Elected on 02/03 by European Socialists

- ▶ **Walter Baier, President of the European Left party**
  - ▶ Elected by the European Left on 24/02

- ▶ **Bas Eickhout and Terry Reintke, Members of the EU Parliament**
  - ▶ Elected by the European Greens on 03/02

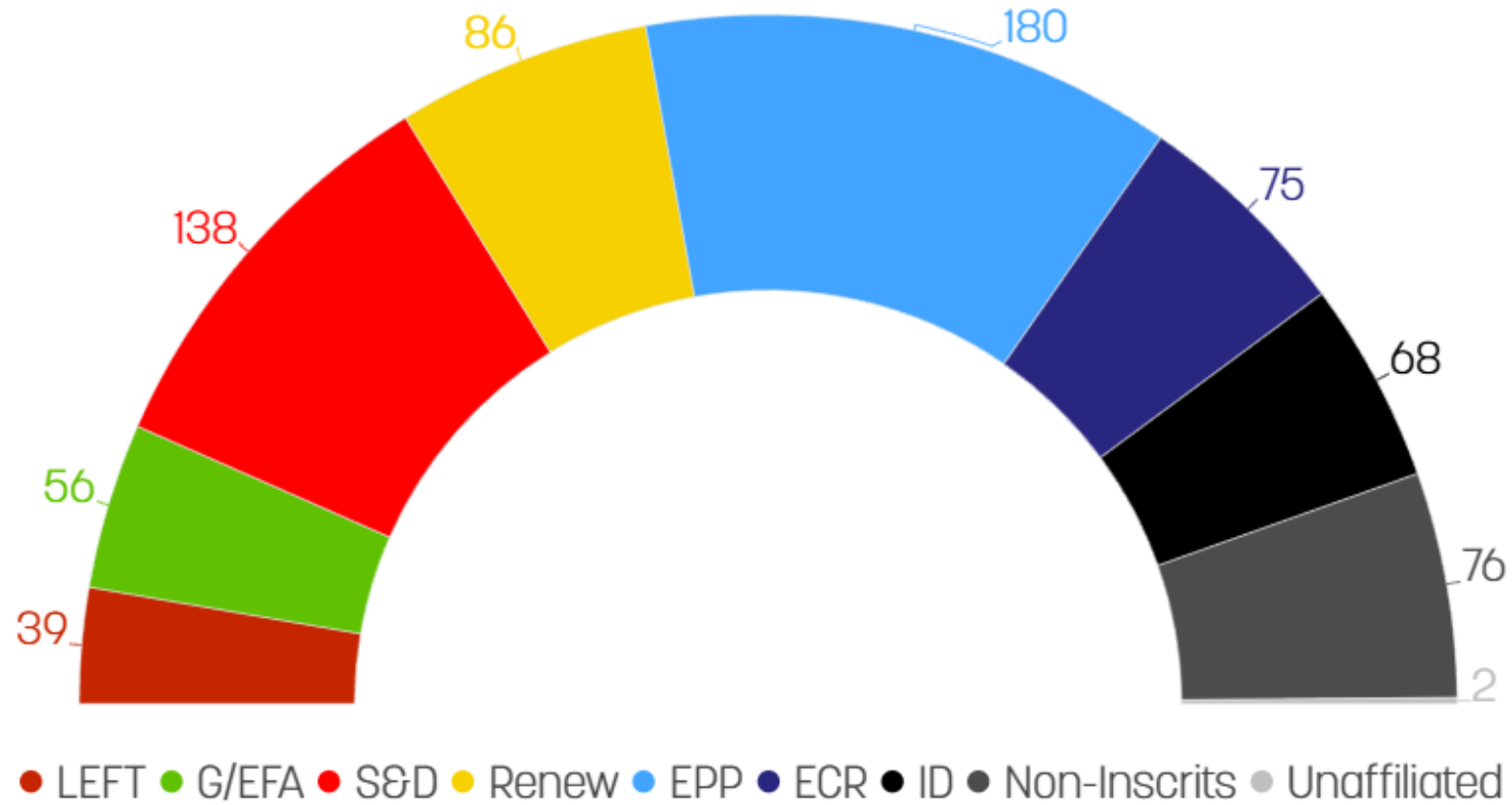
- ▶ **Valérie Hayer, MEP Sandro Gozi and German MP Marie-Agnes Strack-Zimmermann**
  - ▶ Elected by the Liberals (ALDE, Renew and EDP) on 20/03



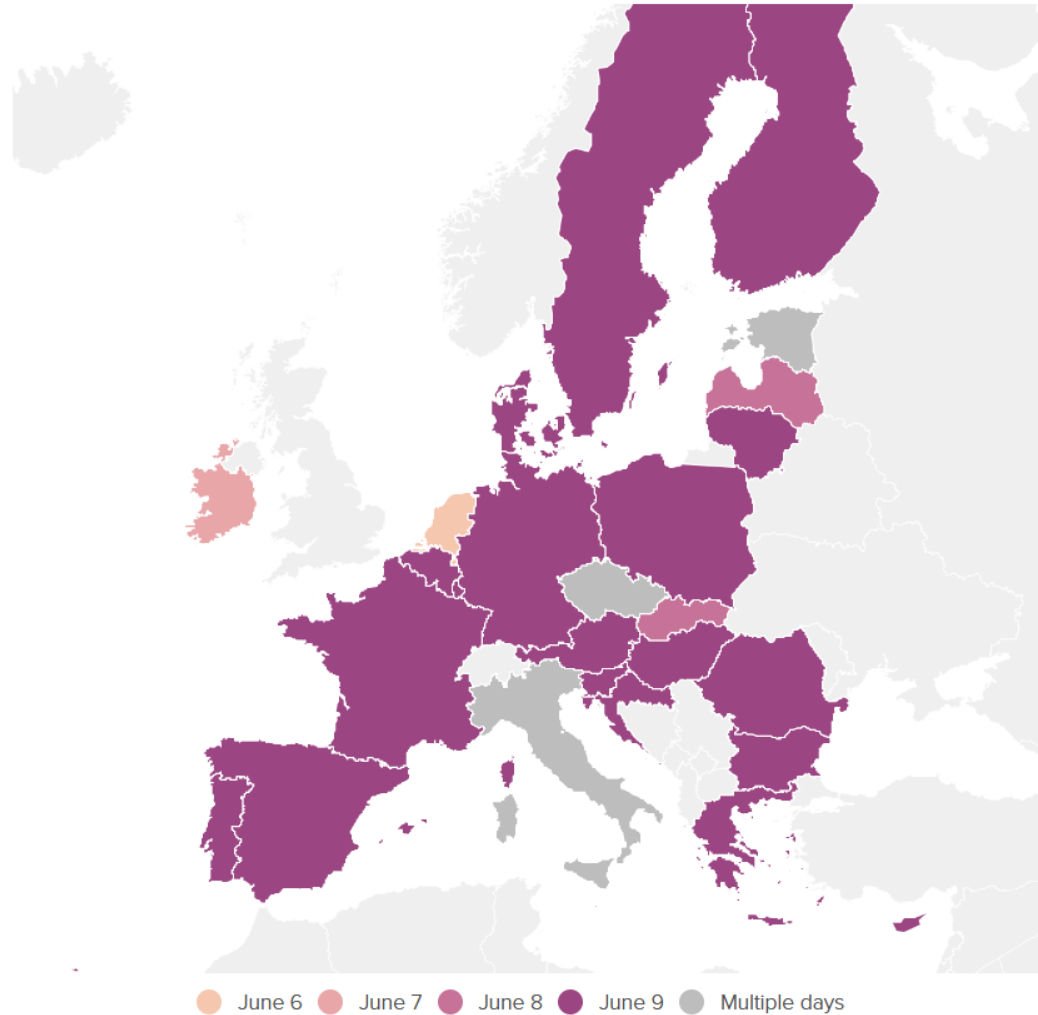
*ID and ECR decided not to put forward a Spitzenkandidat*



# May forecast for the European Parliament elections



# Map of voting days across Europe



SOURCE: POLITICO research

Some results are already out! Dutch voted on Thursday 6/06

9.30 PM CEST Ipsos-I&O exit poll

GL/PvdA-G/EFA|S&D: 21.6%

PVV-ID: 17.7%

VVD-RE: 11.6%

CDA-EPP: 9.7%

D66-RE: 8.1%

BBB→EPP: 5.3%

Volt-G/EFA: 4.9%

PvdD-LEFT: 4.4%

NSC→EPP: 3.8%

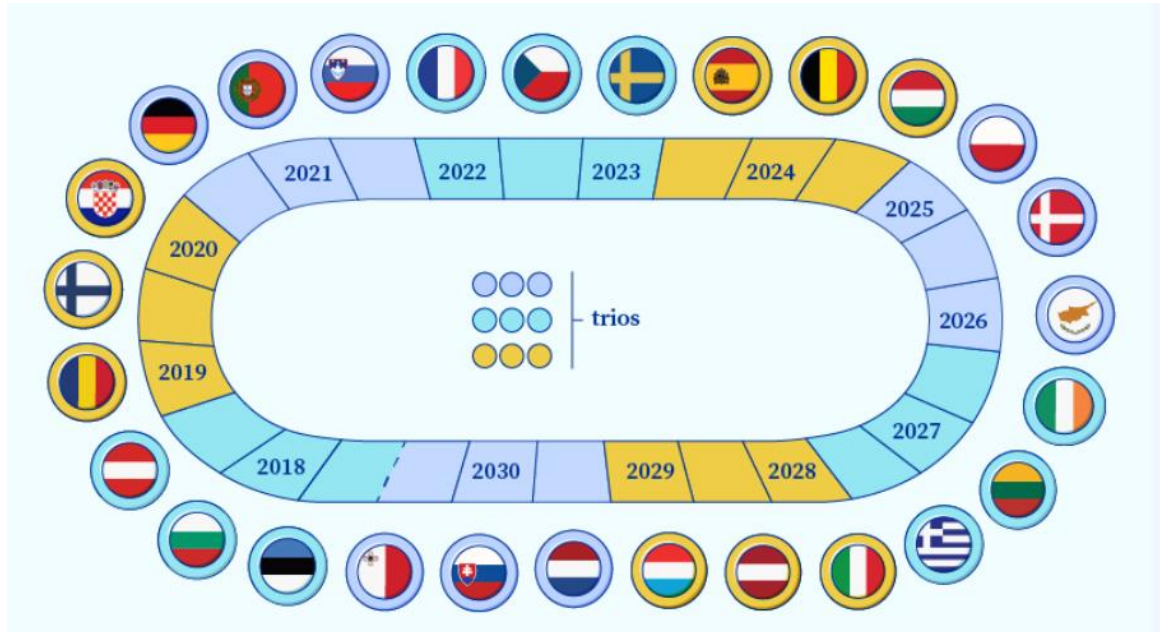
SGP-ECR: 3.4%

CU-EPP: 2.7%

FvD-NI: 2.5%

SP~LEFT: 2.0%

# Priorities of the Hungarian Council presidency



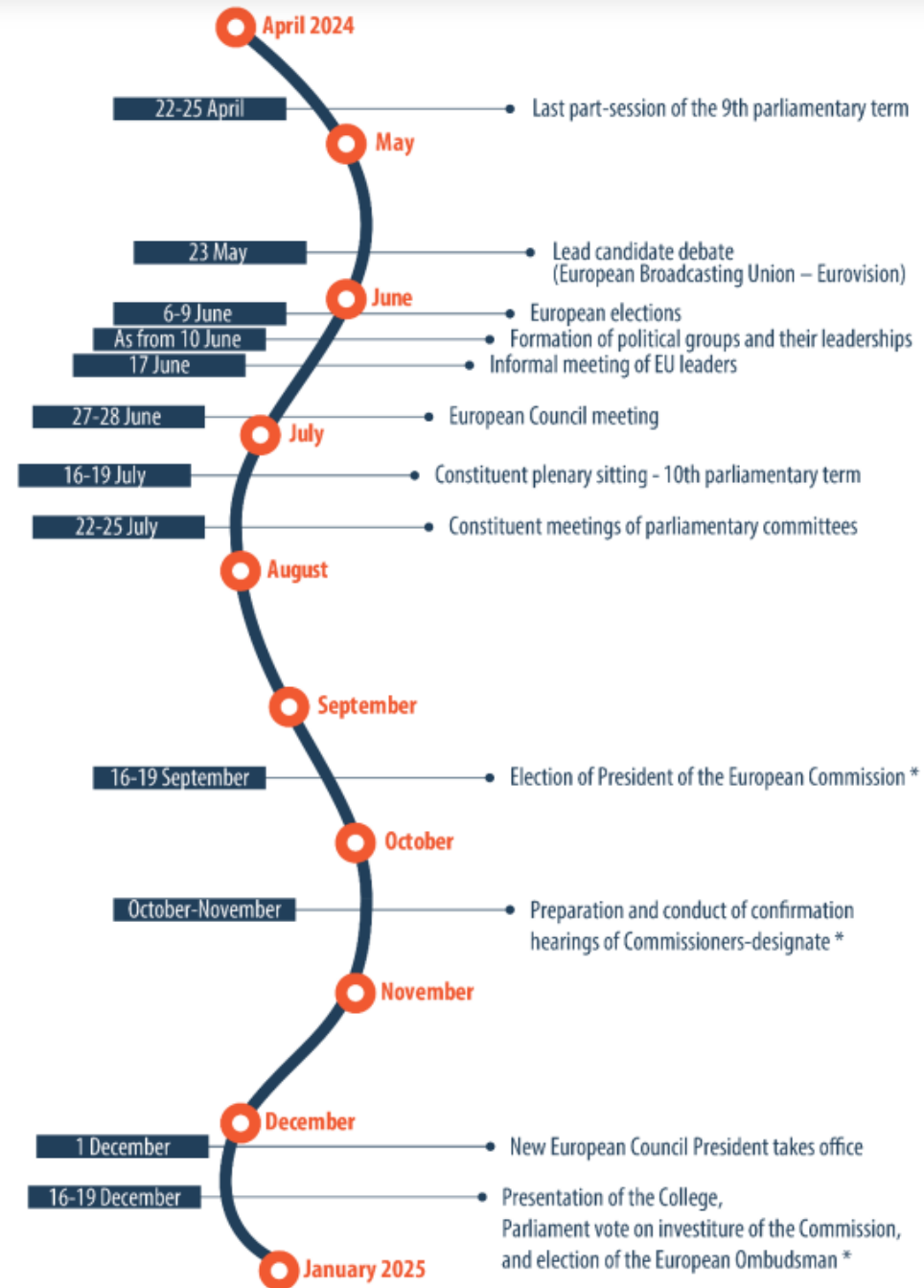
- The rotating presidency of the EU Council will come to Hungary.
- The rotating presidency will last for 6 months from July to December 2024.

5 priorities have been put forward by Viktor Orban:

- Migration
- Ukraine
- Defence – developing a European defence
- European competitiveness – *rethink the green transition « before it kills » industry*
- Demography – sharing best practices « other than immigration' in order to handle the demographic crisis.

# Update on the EU political cycle

*What is going to happen in the next months?*





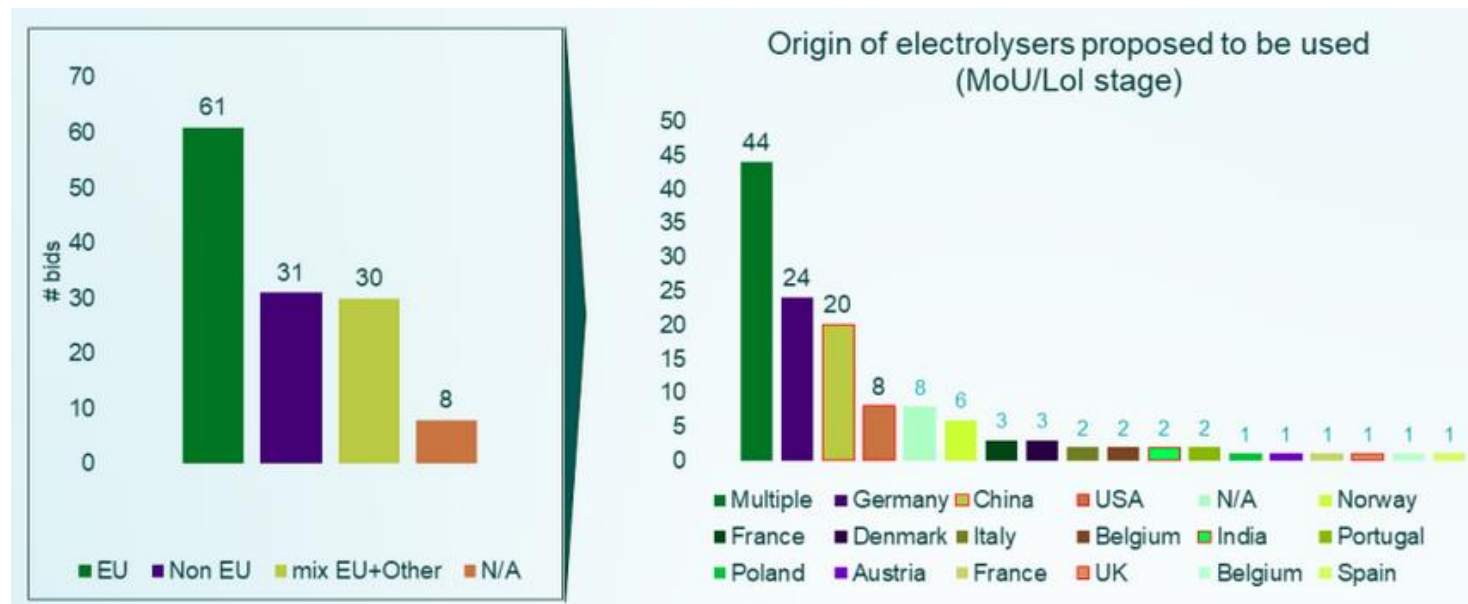
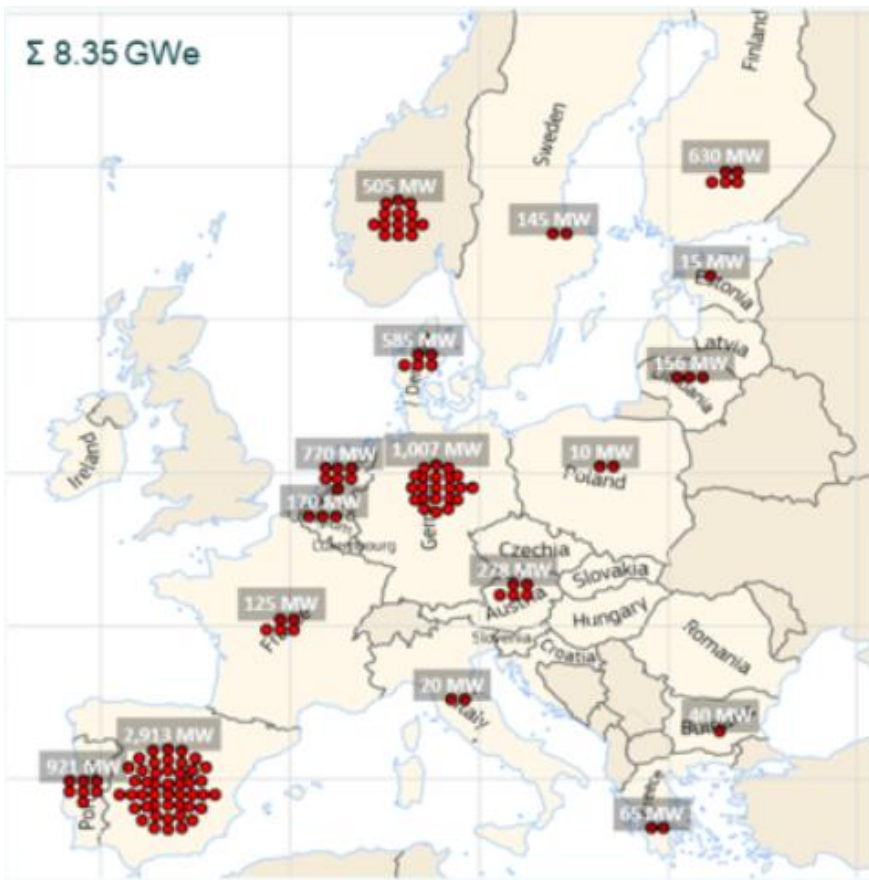
# Results of the Hydrogen Bank first auction

The [results of the Hydrogen Bank](#) have been published!

- The auction attracted [132 projects bids](#) from 17 European countries, 119 considered admissible, 7 bids selected.
- The budget was 15X oversubscribed.
- Almost all bidders propose to use Alkaline or PEM electrolyzers, or a combination of both technologies.
- Most projects intend to procure an electrolyser from the EU.
- A wide range of subsectors are represented in the off takers, with competitive prices also in industry applications (not only mobility).



# Results of the Hydrogen Bank first auction



# Results of the Hydrogen Bank first auction

## The 7 bids selected:

- Shall consume **€720 million** of the budget for 1.5 GW of electrolyser capacity, 1,6Mt of H<sub>2</sub> produced.
- The renewable H<sub>2</sub> production projects are located in Spain, Portugal, Finland and Norway.
- They would enter into operations within 3y and will benefit from a fixed premium ranging between 0.37 and 0.48€/kg of H<sub>2</sub> produced for 10y.

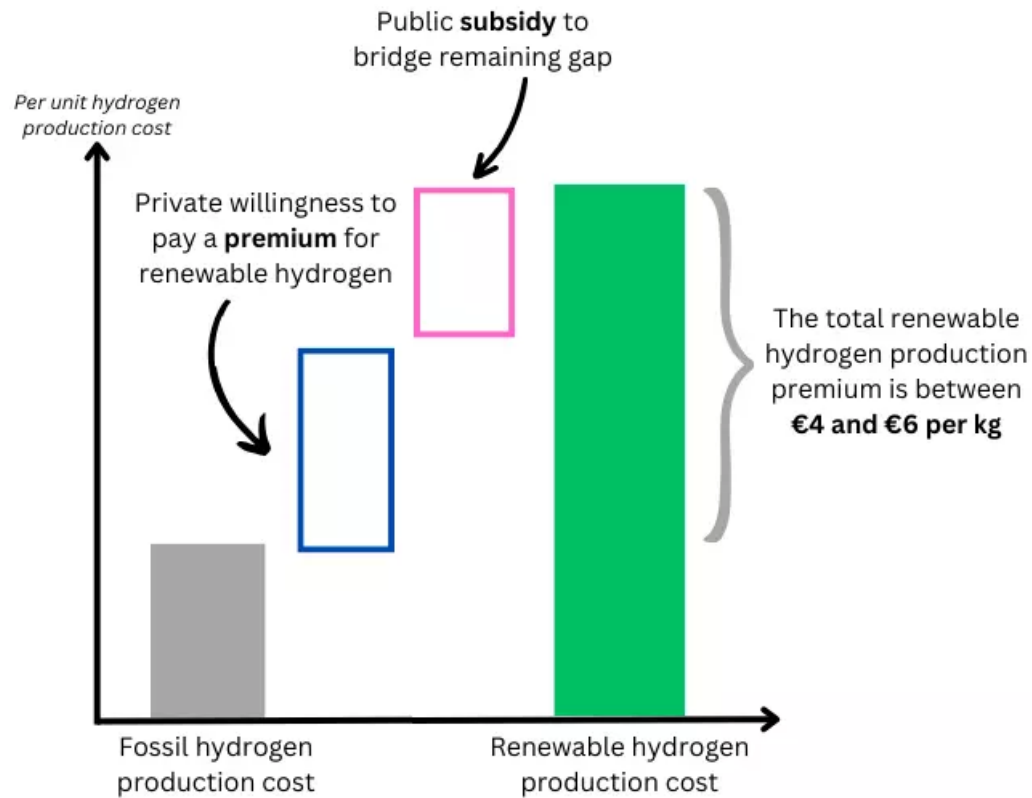
## Key Take-aways:

- The EHB subsidy **ceiling price** was €4.50/kg, but the winning bids were **less than 10% of this price**, with an average of €0.40/kg. This indicates that some **buyers are prepared to pay a large share of the 'green premium'** for renewable hydrogen compared with fossil hydrogen, whose production cost is lower by €4 to €6 per kilogram.
- Lowest average LCOH are found in Greece, Sweden and Spain (between 5.3 and 5.8 EUR / Kg)
- Highest average LCOH are found in Poland, France, Austria, Germany, Denmark (wow?) and Belgium (from 13.5 to 11 EUR / Kg)
- The average offtake price for H<sub>2</sub> was 5.67 EUR / Kg from industrial offtake and 8.34 EUR / Kg from Mobility offtakers.

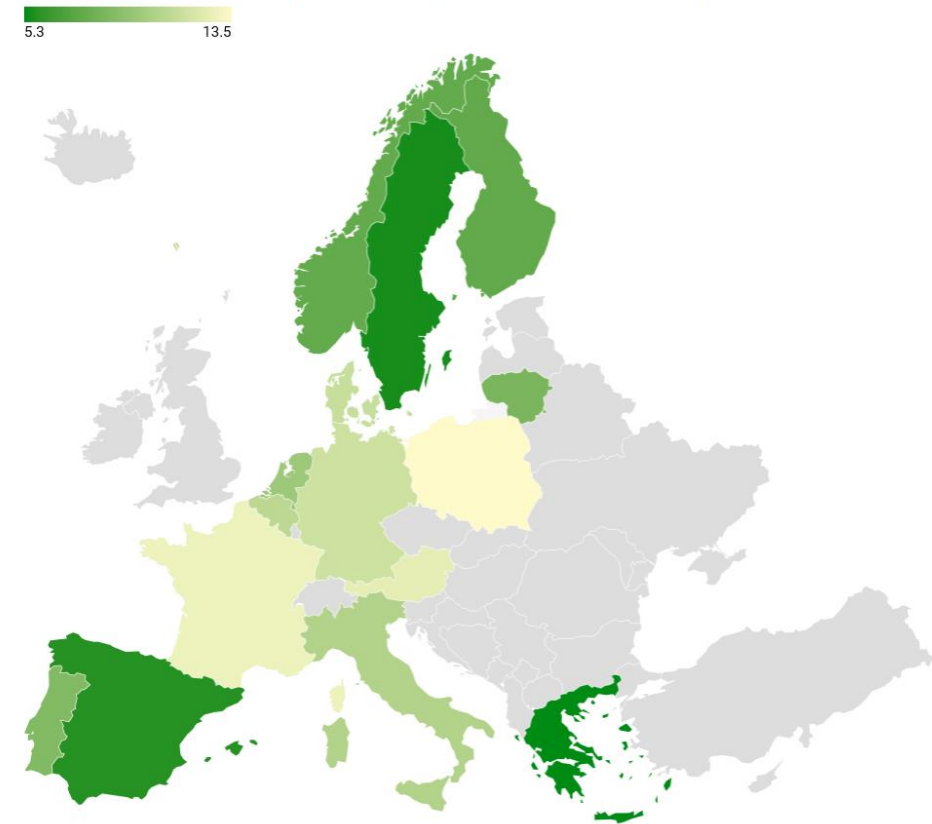
Bruegel published an analysis on this point.

# Results of the Hydrogen Bank first auction

Source: Report from [Bruegel](#)



Logic of the renewable H2 premium and public subsidy



Average cost of H2 €/kg implied from bids

# Revision of the free allowances regulation

The Free Allowances Regulation determines the rules to access free allowances on the EU’s carbon market, the EU ETS.

- **Renewable and low-carbon hydrogen production is now eligible to free allowances (FA)** and will be able to sell them back on the secondary market to generate profit.
- Depending mainly on the ETS benchmark value and the carbon price, **FA could represent an indirect subsidy ranging between 0.3 and 0.8€.**

What is the difference between the Hydrogen Bank’s fixed premium (FP) and the EU ETS’ free allowances?

- **Conditionality:** FP allocation is based on an auction process and therefore conditional to eligibility and selection criteria, whereas the FA is unconditional if the plant operates under the EU ETS with a capacity of more than 5 tonnes of H2 per day.
- **Funding predictability:** FP is guaranteed for 10y but allocation under future auctions depends on political agenda of the EC and available budget of the Innovation Fund, whereas FA revenue is guaranteed - until current rules remain in force - for incumbents and new entrants, yet varies with carbon price and will gradually be phased out (until 2034) as the CBAM phases in (H2 is covered).



On top of the Hydrogen Bank and the free allowances, **future H2 users in the transport sector (maritime and aviation) will benefit from specific support downstream:**

- specific window for maritime under the next call of the H2 Bank, to be financed by the 20 M of allowances reserved to maritime under the revised EU ETS Directive
- 20 M of allowances reserved to finance the cost gap between kerosene and alternative aviation fuels.

# Launch of a tender to support the development of a hydrogen market

## Opening of a **call for tenders to support the development of the European hydrogen market:**

- “Design, development, operation, and maintenance services for an IT platform for the collection and exchange of market data about demand and supply, demand aggregation and/or joint purchasing of energy-related products and SRM”
- From mid-2025 to minimum 2030.
- Part of the European Hydrogen Bank.
- Scope:
  - link hydrogen suppliers and buyers, identify market dynamics and provide information on project financing opportunities.
  - producers will be able to find buyers and partners with whom they can apply for projects. The mechanism is based on *AggregateEU*, the joint gas purchasing platform
  - Deadline: 12 August 2024.

To see the call: <https://aer.eu/f/cho>

# Validation of the HY2MOVE IPCEI on hydrogen mobility

On 28 May, the European Commission has approved the 4th 'Important Project of Common European Interest (IPCEI) on hydrogen mobility, 'Hy2Move'.

Commission approves up to €1.4 billion of State aid by 7 Member States for an IPCEI in **Hydrogen Mobility and Transport** (IPCEI Hy2Move)

**Mobility and transport applications**   **Fuel cell technology**   **Hydrogen onboard storage solutions**   **Hydrogen production technologies**

- ◆ Contributes to key **EU objectives** (i.e. European Green Deal, Hydrogen Strategy, Smart and Sustainable Mobility Strategy)
- ◆ Boosts breakthrough **innovation**
- ◆ Generates **positive spill-over effects** across the EU
- ◆ Ensures fair competition via **proportionate public spending and safeguards**

- ◆ **7 participating Member States:**
- ◆ **11 companies** of all sizes
- ◆ **13 research, development and first industrial deployment projects**
- ◆ Collaborations with **1 associated partner** and **200+ indirect partners**
- ◆ Expected to unlock **€3.3 billion of private investments**

Competition

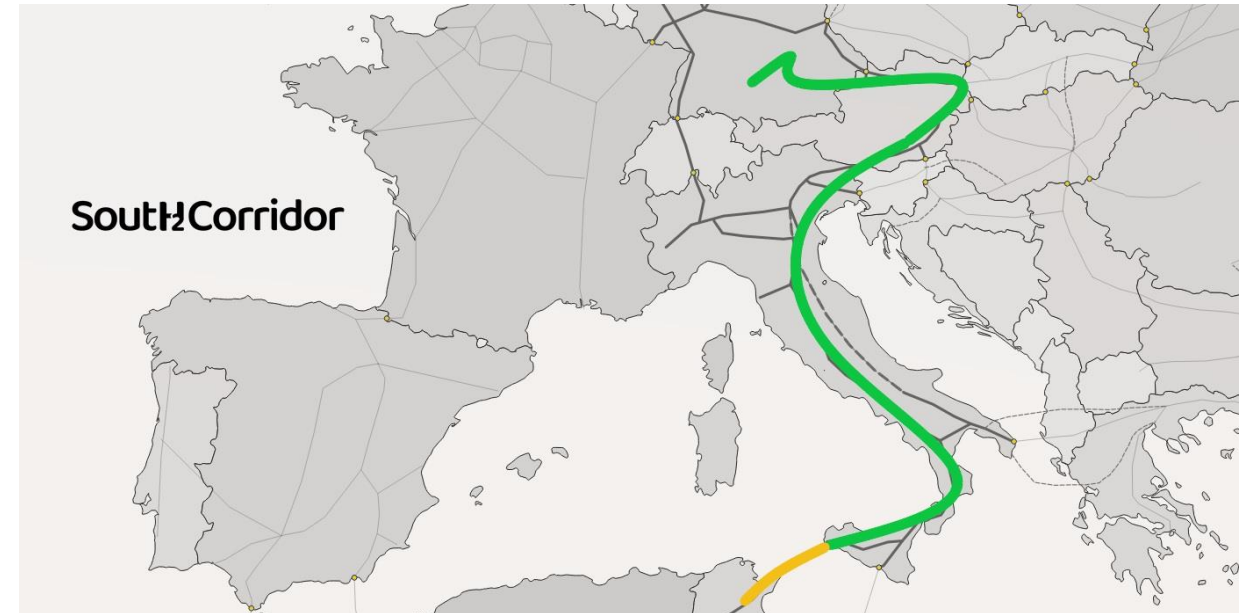
The completion of the overall IPCEI (including Hy2Tech Hy2Use and Hy2Infra) is expected by 2031, with timelines varying in function of the individual projects and the companies involved. Around 3,600 direct jobs are expected to be created, and many more indirect ones.

# Signing of a declaration of intent to accelerate the establishment of a hydrogen corridor

On 30 May, **Germany, Austria and Italy** signed a **Joint Declaration of Intent** in Brussels to accelerate establishment of a hydrogen corridor connecting the three countries.

This “Southern Hydrogen Corridor” has already been selected at EU level as a Project of Common Interest (PCI). It aims to enhance energy security for the respective countries’ main industrial demand clusters while supporting the EU’s climate objectives.

It should utilize >70% of repurposed infrastructure, complemented by new pipeline segments where necessary.





# Update on Hydrogen Valleys

**Communication on a “Roadmap on Hydrogen Valleys” planned for Summer 2024.**

The EU will continue to support Hydrogen Valleys and complement it with **Renewable Energy Valleys** > topic in Horizon Europe Work Programme 2023/2024

**Hydrogen Valley days** to take place in Brussels on 17-18 June at the Hotel, organised by the Clean Hydrogen Partnership.



# EU and Japan cooperation in commercial and technological development of hydrogen

On 3 June, the Commissioner for Energy, Kadri Simson, took part in the **EU-Japan High-Level Hydrogen Business Forum, in Tokyo**, to deepen cooperation on the commercial and technological development of hydrogen in the context of the specific **EU-Japan Memorandum of Cooperation signed in December 2022**.

The next steps will be to:

- draw up a joint work plan;
- exchange information on hydrogen policies and standardisation;
- strengthen secure and regulated trade in renewable, low-carbon hydrogen.

Several cooperation agreements have been signed between EU/Japan:

- *Between the Clean Hydrogen Partnership and NEDO (New Energy and Industrial Technology Development Organisation)*
- *Between the Japan Hydrogen Association and Hydrogen Europe*



- After getting final approval from the EP (25 April) and the Council (27 May), NZIA has come into force.
- **Hydrogen & decarbonized gas market package – adopted on 21 May 2024**
  - Definition of low-carbon hydrogen: greenhouse gas emission savings of at least 70%
  - Certification system using the tools of the Renewable Energy Directive
    - Life-cycle emission approach, methodology to be set out in a delegated act
- On 23 May, the Council adopted a **recommendation defining research security**. Three risks had been identified by the Belgian presidency:
  - unwanted knowledge transfer;
  - foreign interference;
  - breaches of ethics or integrity.

*“‘Research security’ refers to anticipating and managing risks related to: (a) the undesirable transfer of critical knowledge and technology that may affect the security of the Union and its Member States, for instance if channelled to military or intelligence purposes in third countries; (b) malign influence on research where research can be instrumentalised by or from third countries in order to inter alia create disinformation or incite self-censorship among students and researchers infringing academic freedom and research integrity in the Union; (c) ethical or integrity violations, where knowledge and technologies are used to suppress, infringe on or undermine Union values and fundamental rights, as defined in the Treaties.”*

The background of the slide is a light gray color with a pattern of water droplets and bubbles of various sizes. Some droplets are in sharp focus, while others are blurred, creating a sense of depth. The droplets are translucent and have highlights on their surfaces, suggesting they are made of water. The overall aesthetic is clean and modern.

# OPPORTUNITIES

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# Funding opportunities and funding updates

Programme	Call	Budget	Deadline
Horizon Europe	<a href="#">Call for policy feedback initiatives.</a>	€2 million	3/09/2024
Horizon Europe	<a href="#">MSCA International cooperation.</a>	€2 million	4/09/2024
Horizon Europe	<a href="#">MSCA post-doctoral fellowships</a> to help experienced researchers acquire new skills and develop their careers by working abroad.	€417.2 million	11/09/2024
Horizon Europe	<a href="#">A COFUND MSCA call</a> , which helps organisations to create or improve their doctoral training and postdoctoral fellowship programmes.	€104.8 million	26/09/2024
Horizon Europe	<a href="#">Call for proposals for doctoral networks</a> , as part of the <i>Marie Skłodowska-Curie Actions (MSCA)</i>	€608.6 million	27/11/2024

- **Exploratory talks to associate Singapore to the Horizon Europe programme** have been initiated. These discussions will examine the main parameters and principles of a potential association agreement. The parties will then decide whether or not to enter into formal negotiations
- The ERC wants to introduce lump sums to simplify procedures for its beneficiaries.

The background of the slide features a soft-focus, high-key image of numerous water droplets and bubbles of varying sizes. The droplets are rendered in shades of light gray and white, with some showing highlights and reflections, giving them a three-dimensional appearance. They are scattered across the frame, with a larger, more detailed droplet in the upper right quadrant. The overall aesthetic is clean, fresh, and scientific.

# REPORTS & DATA

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# Reports, publications & data

## Publication of the EHO report – [The European hydrogen policy landscape](#)

*It aims to summarise the status of the European hydrogen policies and standards landscape.*

- 63% of the European countries have successfully published their national hydrogen strategies (6% in drafting stage)
- 17 countries provide support for capital expenditure (CAPEX), 7 countries provide support for operational expenditure (OPEX).
- 8 countries have instituted official permitting guidelines for hydrogen production projects, while 5 countries have enacted a legal act or established an agency serving as single point of contact.
- Only 2 countries reported providing support schemes for H<sub>2</sub> injection. More countries have defined the hydrogen limit in their grid (from 0,02% to 15%).

**Have a look to find out more!**



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# Reports, publications & data

- [According to IEA](#), **clean energy accounts for almost a third of GDP growth in European Union in 2023** – it is the highest share of all regions evaluated (US, China, India, EU).
- **ENTSO-E and ENTSO-G published their [joint scenarios for ten-year network development plans 2024](#)** for electricity and gas. These scenarios, the fourth since 2018, assess the interactions between electricity, gas and hydrogen networks in order to determine infrastructure requirements from an integrated system perspective.
- A [report by Ember](#) highlights that **wind and solar power have developed faster than any other source of electricity in history**. It took just 8 years for solar energy to go from generating 100 TWh to 1,000 TWh of electricity. It is now leading the energy revolution: by 2023, solar energy will have added more than twice the electricity generated by coal.
- The **European Research Executive Agency (ERA)** published a [report to better assess directionality in national R&I systems in the EU](#) and the countries associated with *Horizon Europe*, and to propose a framework on how to collect evidence on how directionality is taken into account in R&I policies.



# Reports, publications & data

- **ENTSOE and ENTSOG published their [joint electricity and hydrogen Interlinked Model 2024 progress report](#)** for public consultation until 18 June. This report presents an assessment methodology for both electricity and hydrogen and includes recommendations for the use of integrated models in the cost-benefit analyses of their Ten-Year Network Development Plans.

# THANK YOU!



**Hydrogen Europe  
Research**

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**Next meeting: 12 JULY**

**<https://hydrogeneuroperesearch.eu/>**