



Hydrogen Europe
Research

Policy Working Group

8 December 2023

Agenda

1. Welcome & agenda

2. HER Activities

- Future of the JU and work with the low TRL Working Group

3. Latest updates on EU institutions' activities

- Hydrogen Week announcements
- Hydrogen Bank
- NZIA & STEP
- Critical Raw Materials Act
- Gas Package and Electricity Market Reform
- EIC Pathfinders

4. Data, reports, opportunities

- Joint interactive hydrogen infrastructure map
- Evaluator for the Innovation Fund
- European Sandardisation Panel Survey launched on World Standards Day



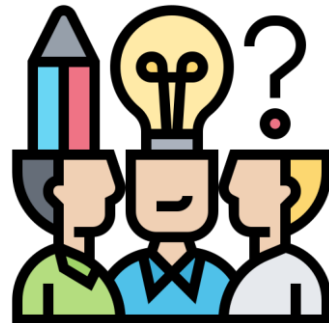
▶ HER Activities

Future of the JU & Work with the low TRL WG

Launch of the low TRL Working Group:

- First meeting 6th December
- Analysis of the answers received to the questionnaire on the future of the JU
- Links are to be established with the Policy Working Group to feed into a narrative for the future of a hydrogen Joint Undertaking.

**Are there members today with working experience from other Joint Undertakings?
Any points you would like to bring forward for consideration / discussions?**





Latest updates on ▶ EU institutions' activities

Feedbacks on the Hydrogen Week

Europe is at the “*dawn of the clean hydrogen era*”



On Monday, European Commission President Ursula von der Leyen shared a video-address and announced:

- the second European Hydrogen Bank auction in Spring 2024 with a budget of €2.2 billion.
- an agreement with the Brazilian State of Piauí to support the construction of a 10GW green hydrogen facility, part of a €2 billion Global Gateway investment in the hydrogen value chain in Brazil.

“We have authorised more than €17 billion in State aid for around 80 projects”

Maroš Šefčovič, the Commissioner responsible for the ‘European Green Deal’, stressed that hydrogen represented “*the missing link in our transition to climate neutrality*”, marking a stronger European commitment to support this field.



Feedbacks on the Hydrogen Week



The Commissioner for Energy, Kadri Simson, present at the H2 Week on 22nd November, welcomed the fact that discussions are moving “*from policy debates to project implementation*”, as shown with the progress of the interinstitutional negotiations on the gas package.

She indicated that a list of European cross-border hydrogen infrastructure projects will soon be presented, which will include new and re-purposed pipelines, as well as large electrolysers, hydrogen storage facilities and terminals.

The Commissioner for Climate Action Wopke Hoekstra launched on 23rd November the €800m competition bid from the Hydrogen Bank.
Bidding is now open and a decision on winning projects is expected by April 2024.



Hydrogen Bank

View from the European Parliament

On 28 November, the members of the ITRE Committee of the European Parliament adopted by a very large majority (+45, - 4, abstentions 6) - the draft own-initiative report on the European Hydrogen Bank ([text of the compromise amendment approved](#))

MEPs largely support the Commission's proposal while recommending significant improvements:

- Call for strengthening the financing of the bank.
- Propose to introduce regional auctions guaranteeing a fair allocation of resources between all Member States (to ensure a fair and balanced approach to the distribution of the funds).
- Suggests to the Commission to adjust some elements of the auction design, in particular the requirement for the minimum installed electrolyser capacity and the restriction for maximum volume bid, and consider the possibility of pooling applications, in order to facilitate the participation of SMEs.
- Calls on the Commission to consider inflation indexation for the fixed premium
- Urges the Commission to continuously monitor the cost of production and to reassess the fixed premium awarded to winning projects at the end of each contractual arrangement between producers and consumers, or at least every 5 years;

Hydrogen Bank

- Highlights the need to incorporate rigorous environmental and social sustainability criteria into the award process.
- Insisting on the creation of a functional and sustainable hydrogen market, which should not depend indefinitely on public subsidies.

12b. Stresses the importance of limiting the fragmentation of EU entities dealing with hydrogen; proposes to include the activities of the Clean Hydrogen Joint Undertaking, and especially the Fuel Cell Hydrogen Observatory, in the framework of the EHB; insists that such inclusion should not reduce public investment for research, development and innovation;

Next steps:

- Adoption in plenary session foreseen in December.

The Info Day on the first auctions took place on 30 November, covering the objectives and design of the auction, the application process & qualification requirements and the assessment criteria. All information can be retrieved [here](#).

Net Zero Industry Act

European Parliament

- [Position](#) adopted on 21 November.
- Abolished the Commission's two initial lists, '*strategic*' and '*net-zero*' to propose a single list comprising 17 categories - giving Member States the freedom to choose the technologies they consider to be strategic, and which will benefit from advantageous installation conditions.
- Extension of the scope of the text to the entire supply chain, including components, materials and production machinery.
- More selective selection criteria for public procurement contracts
- Increase the time required to obtain permits for projects, from 9 to 12 months for '*ordinary*' projects and from 6 to 9 months for '*strategic*' projects.

Council

- Discussions took place on 7 December during the EU Competitiveness Council leading to a [position](#).
- Discussions around the list of Net Zero technologies (including nuclear and sustainable alternative fuels technologies in the strategic list) and on the conditions on the auctions to deploy renewable energy sources (whether only the price should be considered or sustainability & resilience criteria)

Trilogues should start on 13 December.

Strategic Technologies for Europe Platform

What about STEP?

The Strategic Technologies for Europe Platform (STEP). STEP's future is hanging in the air, as member states look likely to refuse to top up the EU budget with extra money for the fund.

- The funding to be allocated to this funding mechanism was foreseen of €10 billions by the Commission, whereas the Parliament wishes to raise it to €13 billions
- STEP should fund the deployment of the technologies included in NZIA.
- The definitive resources to be allocated is to be decided by the Council as part of the ongoing discussions on the revision of the Multiannual Financial Framework, which should also determine the scope of action of STEP.
- It is at this point that the delicate debate surrounding the possible financing of nuclear technologies, as designated in the NZIA, by the funds allocated to *STEP* should arise.

Critical Raw Materials Act

On 13 November the EU Council and the European Parliament reached a provisional agreement on the Critical Raw Materials Act. Three rounds of negotiations were needed (faster than expected)

Notable changes:

- Amending the timeframes for granting permits (+3 months, 27 for extraction projects and 15 for recycling projects)
- List of 'strategic' raw materials including aluminium and synthetic graphite;
- 10% extraction target has not been changed; the processing of raw materials target: at least 40% of the EU's annual consumption must be processed on EU27 soil (less than what Parliament had voted for, 50%);
- The overall recycling target has been increased from 10% to 25%.

Next step:

- The agreement must formally be approved by the Council and the Parliament.

Gas Package & Electricity market reform

Electricity market reform

- Ongoing interinstitutional negotiations on the two texts of the Package
- Difficulties around the Contracts for differences among other things.
- Regarding Power Purchase agreements their scope is to be discussed (exclusively renewables or not)

Gas Package

- Agreement reached between EU Council and European Parliament on the Directive
- Ongoing negotiations on the Regulation
 - blending rate at a maximum of 2% on cross border interconnections
 - disagreements remain on the governance (separate hydrogen authority ENNOH or authority given to the ENTSOG currently working for gas)

Competitiveness Council dedicated to research (8 December)

- Expected adoption of **Council conclusions on the impact of research and innovation in policy making.**
- Ministers are invited to reach a **political agreement on a Council recommendation to create a European framework to attract and retain research, innovation, and entrepreneurial talents in Europe** - *how to retain European researchers make Europe an attractive destination for foreign R&I players.*
- Discussions to monitor on **how to valorise research as a tool for economic and industrial recovery and resilience** ([Policy debate](#))
- Information from the Commission on Evaluation of the implementation of the ERA Policy Agenda 20 concrete voluntary actions (cf [note](#) on a [monitoring report](#))
- The incoming **Belgian Presidency will present their work program** in the field of research whilst the Spanish presidency will come to its end.

EIC Pathfinders

The European Innovation Council (EIC) unveiled the five strategic plans for the portfolios of the EIC's 2021 *Pathfinder Challenges* grants programme, including [one on Novel routes to green production of hydrogen](#).

The strategic plans are dynamic documents defining the portfolio's objectives, in particular to fill gaps.

9 hydrogen projects are part of their portfolio are included and cooperation with our JU is set out in the actions.

The latest call from the EIC path finder attracted 371 project proposals, with 2,077 participants from 41 countries. The results will be announced in March 2024.

TABLE 2. DETAILS OF PORTFOLIO PROJECTS

Acronym	Project full title	Technological area	Input	Conversion method	Output
MacGhyver	Microfluidic wastewater treatment and Creation of Green Hydrogen Via Electrochemical Reactions	1	Wastewater	High-volume microfluidics, non-CRM electrodes and electrochemical compression	Hydrogen
GH2	GreenH2 production from water and bioalcohols by full solar spectrum in a flow reactor	2	Bioethanol	Photoelectrolysis	Hydrogen + chemicals
H2STEEL	Green H2 and circular bio-coal from biowaste for cost-competitive sustainable Steel	4	Biowaste and bioCH4	Pyrolysis	Hydrogen + Biocoal
DualFlow	Dual circuit flow battery for hydrogen and value added chemical production	6	Cellulose, nanocellulose	Electrolysis	Hydrogen + chemicals
PhotoSynH2	Photosynthetic electron focusing technology for direct efficient biohydrogen production from solar energy and biological fermentation	5	Photosynthetic Cyanobacteria	Solar assisted fermentation	Hydrogen
EPOCH	Electrocatalytic Production of liquid Organic hydrogen carrier and CHemicals from lignin	1	Water and lignin	Electrocatalysis	Hydrogen + chemicals
OHPERA	Optimised Halide Perovskite nanocrystalline based Electrolyser for clean, robust, efficient and decentralised production of H2	3	Water and glycerol	Photoelectrolysis	Hydrogen + chemicals
ELOBIO	Electrolysis of BIOMass	1	Water, aldose-based sugars and furanic compounds	Electrolysis	Hydrogen + chemicals
ANEMEL	ANion Exchange Membrane Electrolysis from Low-grade water sources	2	Saline and wastewater	Anion exchange membrane electrolyser	Hydrogen

Other news

STRATEGIC PARTERSHIP

On 30 November the EU signed a Memorandum of Understanding with the Government of Greenland for a strategic partnership aimed at developing sustainable raw materials value chains. Of the 34 critical raw materials considered by the Commission to be of strategic importance for European industry and the green transition, 25 can be found in Greenland.

GREEN TRANSITION DIALOGUE

On 30 November the President of the European Commission, Ursula von der Leyen, and the Executive Vice-President, Maroš Šefčovič, chaired the second dialogue on the green transition, focusing on energy-intensive industries. It is the second one after hydrogen.

“Europe wants to lead the way towards a ‘net zero emissions’ economy. Your industries have made considerable efforts to contribute to this goal, but we need to do so in a way that ensures a global level playing field” Ms von der Leyen.

LAUNCH OF HORIZON EUROPE INTERIM EVALUATION

First meeting of the Commission’s high-level expert group tasked with supporting the interim evaluation of Horizon Europe programme ([15 experts selected](#) out of 359 applications).

Other news

SAF IN AVIATION WORLDWIDE

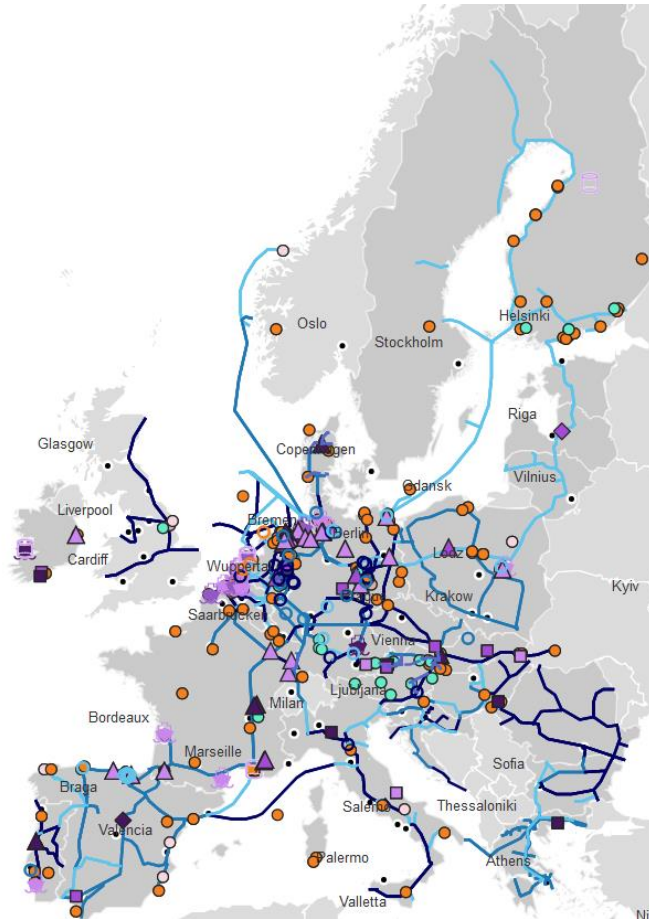
On 24 November, the Third International Civil Aviation Organization (ICAO) Conference on Aviation and Alternative Fuels reached an agreement calling for a **5% reduction in CO₂ emissions by 2030**, through the increased use of SAF and other cleaner aviation energies. ICAO agreed to review its ambition by 2028 to take account of market developments and new investment in production capacity around the world.



▶ Reports, studies

Joint interactive hydrogen infrastructure map

Shows the status of hydrogen projects planned for 2030, 2040 and 2050 in the EU.



- Distribution 2030
- High pressure distribution 2030
- High pressure distribution 2040
- High pressure distribution 2050
- Aquifer 2030
- Aquifer 2040
- Depleted field 2030
- Depleted field 2040
- Depleted field 2050
- Salt cavern 2030
- Salt cavern 2040
- Surface storage (tanks, etc.) 2030
- Surface storage (tanks, etc.) 2040
- Terminals and ports 2030
- Demand 2030
- Demand 2040
- Production 2030
- Production 2040
- Transmission 2030
- Transmission 2040
- Transmission 2050

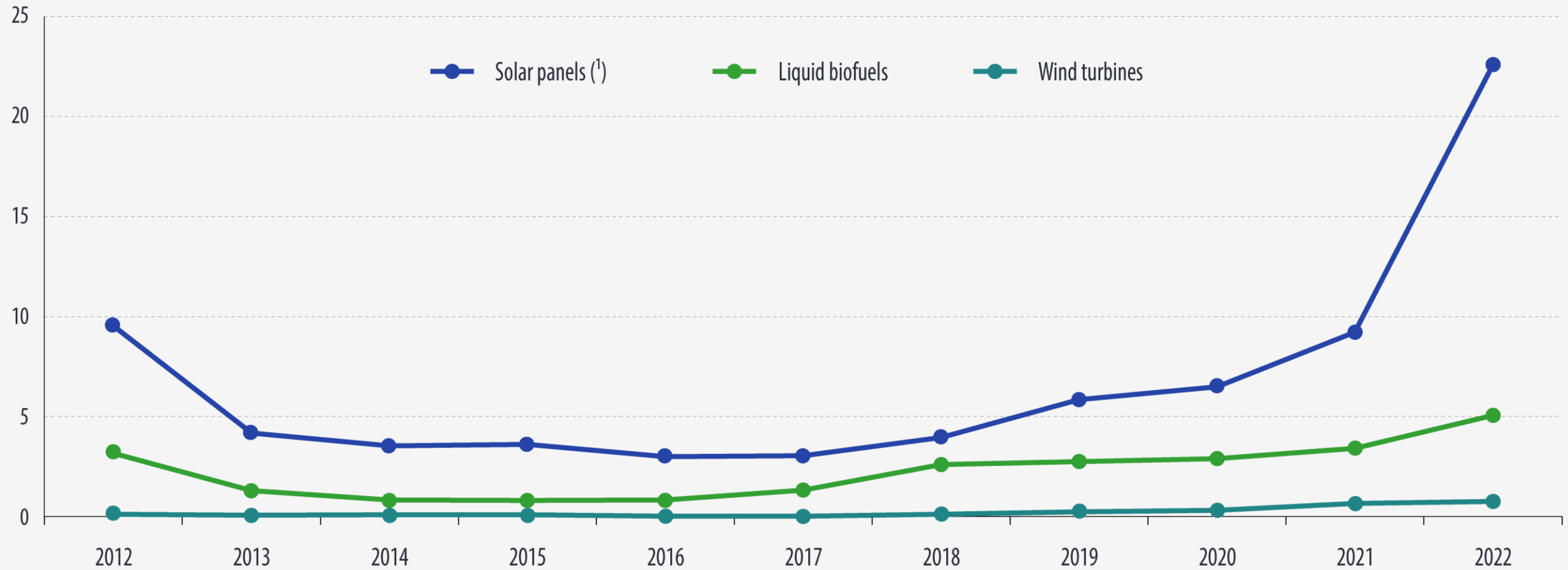
<https://www.h2inframap.eu/>

- + 91 new projects
- 120 transmission projects
- 50 distribution projects
- 60 storage projects
- 20 terminal and port projects
- 20 demand-side projects
- 160 hydrogen production projects

Extra-EU imports of green energy products, 2012-2022

(billion €)

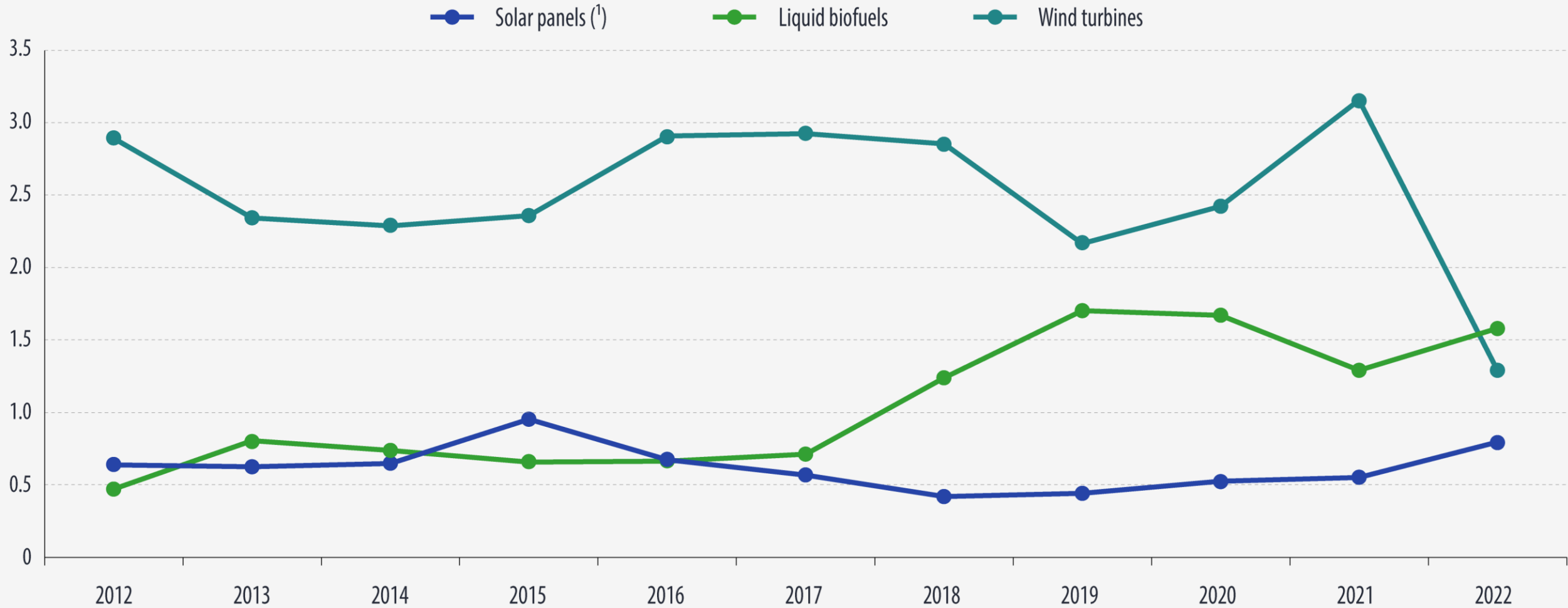
[Report](#) - In 2022 the European Union almost doubled its investment in imports linked to green energy production.



⁽¹⁾ 2012-2021 data estimated

Extra-EU exports of green energy products, 2012-2022

(billion €)



(¹) 2012-2021 data estimated

Opportunities

The European Climate, Infrastructure and Environment Executive Agency (CINEA)

Sign up as an EU expert

for the
INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality



More information here:



<https://europa.eu/RTnFw>

Join as project evaluator for the Innovation Fund

- Technical expert
- Financial expert
- GHG expert
- Rapporteur

2-3 weeks of flexible work
[More info](#)

[Sign up as an EU expert](#)



Opportunities

The [European Standardisation Panel Survey](#) was launched on 14 October and will be open until 31 December.

- The survey is identifying industry's demand for standards, help to assess how research and innovation framework programmes tackle such needs, and raise awareness on the importance of standardisation.
- The survey is mainly addressed to companies, their business and sector organisations.
- The results will ultimately support the development of recommendations for policy-makers, industry representatives and standardisation bodies to create a match between industry's demand for R&I based standards and their current supply. The recommendations will help future beneficiaries of public R&I programmes to pinpoint opportunities and techniques where standardisation can be used to create more impactful results from their research projects.
- So far about 2800 entities have responded
- Need to ensure that hydrogen industry is represented.

2 Actions:

- Share the survey to industry partners in your network
- Have a look to participate yourself



**Hydrogen Europe
Research**

Thank you!