



Hydrogen Europe

Research

HYDROGEN EUROPE RESEARCH

Policy Working Group 06/05/2021

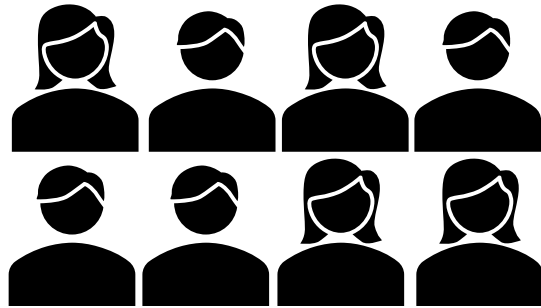
Agenda

- 1. Welcome and approval of the agenda**
- 2. Subgroups updates**
 - a. Communication paper
 - b. Technical paper
- 3. Latest updates on EU news**
 - a. Adoption of the EU Climate Law
 - b. RED III proposal expected for July 2021
 - c. Review of the Communication on the Framework State aid for research and development and innovation
 - d. Taxonomy
 - e. Pact for Research & Innovation in Europe
 - f. Reports and data
- 4. Presentation of the Innovation Fund**
- 5. AOB**

Communication Paper

- No meeting was held in the past month.
- Ongoing work to:
 - Develop visuals
 - Draft a new recommendation: to ***Promote an inclusive, transparent, applicable, comparable and practical approach to evaluate the carbon footprint related to the production, distribution and usage of hydrogen***

Communication Paper

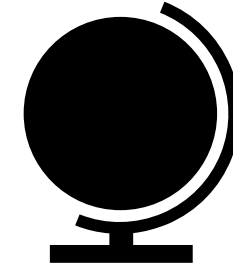
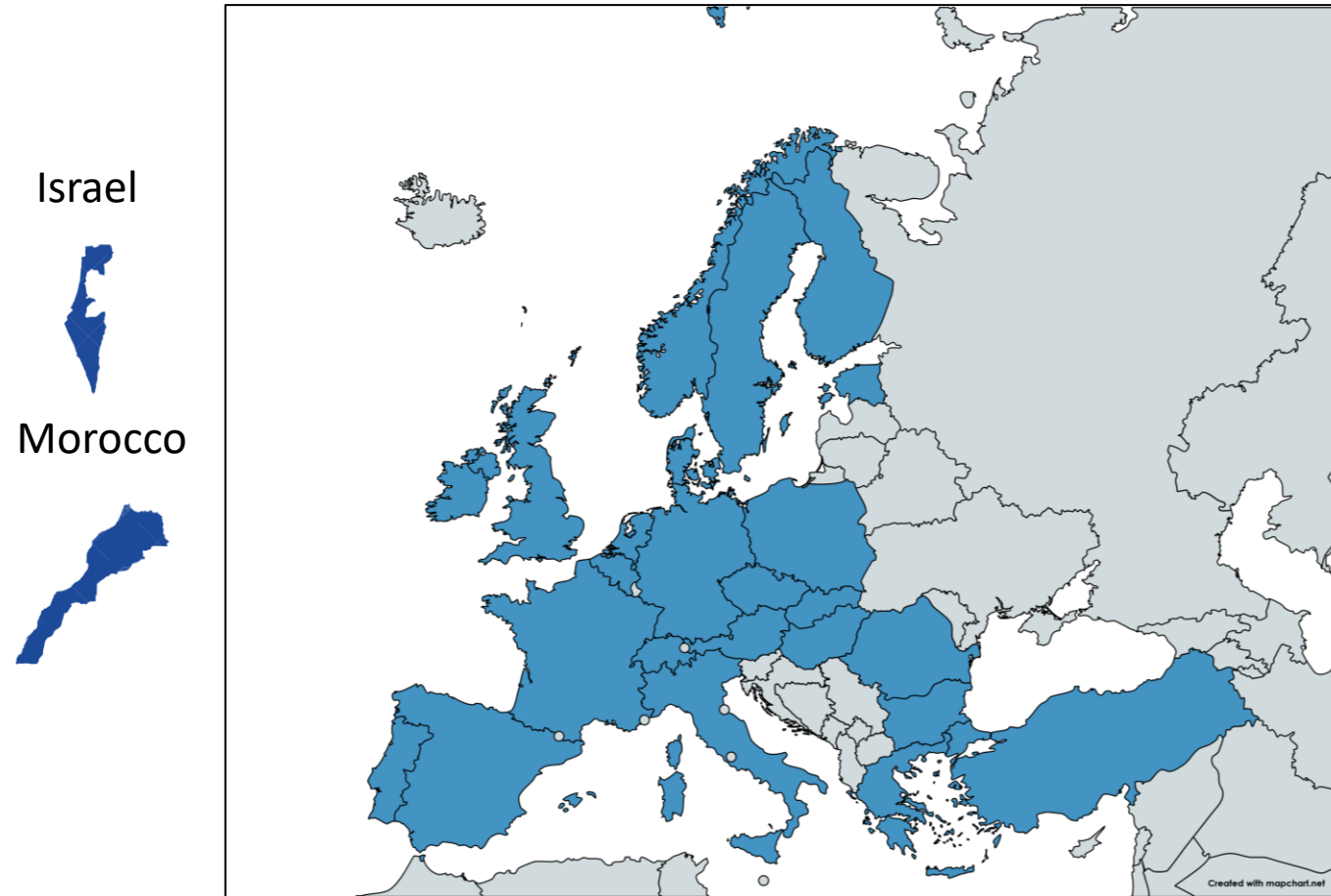


400+ scientists
involved in defining priorities
for the FCH sector



90 Member Organisations
40 Higher education establishments
50 Research organisations

Communication Paper



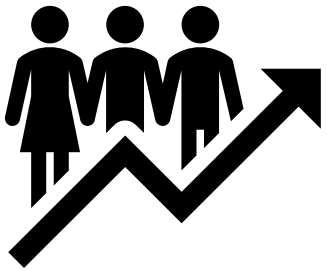
**Present across 26
countries**



**In 20 EU
Member States**

Communication Paper

In 13 years:



Our membership basis has
doubled



...so did our geographic coverage

2008

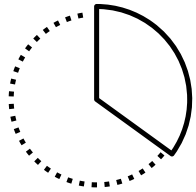


2021



Communication Paper

In 2020...



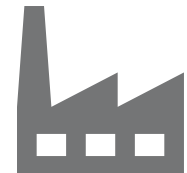
One third of Hydrogen Europe Research members were awarded projects from the FCH 2 JU



21 projects awarded by the FCH 2 JU included Hydrogen Europe Research members



€150 million* of additional activities audited by members during the FCH 2 JU



28 members of Hydrogen Europe Research were awarded projects from the FCH 2 JU

Technical Paper Subgroup

State of play:

- Structure defined
 - Presentation by strategic priorities declined in challenges. For each challenge, several topics may be described. **We must however not duplicate the SRIA and possibly prioritise more.**
- Challenges and topics have been listed for H2 production and H2 storage, transport & distribution
- **The document should not be a call for more funding for research, but should stress the overall picture that research aids the development of technologies that will be used in the wider society**
- Next steps
 - List challenges and topics for H2 end-uses (and possibly cross-cutting issues)
 - Draft short descriptions, challenges and expected impact of the topics
 - Next subgroup meeting: **Tuesday 11 May 17:00-18:00**




Suggestions:

- The document could regularly be updated (every 2 years?) to identify which challenges should be added and which challenges have been/are being addressed
- On this second point, feedback from industry could be undertaken on a regular basis

Latest update on EU news

Adoption of the EU Climate Law

21 April - Provisional agreement on the EU Climate Law:

- 
- 55% of net GHG emissions reduction by 2030 (taking into account the absorption by carbon sinks)
 - Limitation of the role that carbon absorptions can play (225 million t./eq. CO₂)
 - By 2050 binding objective of climate neutrality. The EU should have negative emissions after 2050.



50% to 52% of GHG emissions reduction by 2030
(reference year 2005)



40% to 45% of GHG emissions reduction by 2030
(reference year 2005)



46% of GHG emissions reduction by 2030
(reference year 2013)



Carbon neutrality by 2050 (- 10 years) and erase illegal deforestation by 2030



Carbon neutrality by 2060 and peak of GHG emissions planned in 2030. Limitation on the coal consumption.

Other commitments are expected.

RED III

An early draft of the upcoming RED III has leaked, the new objectives for 2030 would be the following:

- **38-40% of RES in GFEC**
 - This would mean roughly doubling the current share of RES in the EU
- A boost for renewables used in **heating and cooling**, with a new binding target of **1.1 percentage point annual increase**
 - Used to be 1.3 percentage point annual increase (or 1.1 ppai for MS where waste heat and cold is not used)
- A possible increase in the renewables target for transport, from 14% to 26%
- An increase in the sub-target for advanced biofuels, from 3.5% to 5.5%, and the introduction of a dedicated supply obligation for aviation

Different policy options, amongst which:

- A ban on fossil fuels in district heating and cooling
- An EU benchmark for renewables used in buildings
- Increased cross-border cooperation on offshore renewables, with an obligation for EU member states to cooperate within each sea basin, and a one-stop-shop for permitting of cross-border offshore wind projects
- An EU benchmark for the use of renewables in industry, including labelling for green industrial products in certain sectors
- Mainstreaming of renewable electricity in transport, and heating and cooling
- A certification system for renewable and low-carbon fuels
- A targeted strengthening of bioenergy sustainability criteria, with possible national caps on the use of stem wood above a certain size for energy

The new Directive will be **presented on 14 July** as part a “package” of laws to meet the EU’s climate goals for 2030

State Aid for RDI

Publication of the Commission's draft [Communication on the Framework for State aid for research and development and innovation](#).

42 pages document introducing - *among others* - the following changes:

- New definitions: innovation clusters, industrial research, experimental development, etc.
- Definition of technology infrastructure and setting of compatibility criteria to allow financial support for their development. The scope of support will be the same than for Research Infrastructure.
- Simplified methodology to calculate indirect costs of R&D projects

2 Annexes:

- Annex I on Eligible Costs (p. 39 - 40)
- Annex II on Maximum Aid intensities (p.41)

Taxonomy

On 21 April, the European Commission unveiled a first batch of implementing rules under the EU's sustainable finance taxonomy, spelling out detailed technical criteria that companies need to comply with in order to win a green investment label in Europe.

A decision on gas and nuclear has been delayed and will be dealt with separately.

On energy, the taxonomy defines two key thresholds:

- A low threshold of 100gCO₂/kWh below which energy generation technologies are generally considered “sustainable”. This excludes coal and gas from being labelled green, even if they are fitted with carbon capture and sequestration technology.
- A higher threshold, set at 270gCO₂/kWh, determines energy technologies which are deemed to make “significant harm” to the environment.

Gas technologies necessary to contribute to the energy transition and decarbonisation such as hydrogen and its infrastructure grids, anaerobic digestion, biomethane and district heating have been included in the taxonomy

Pact for Research and Innovation in Europe

The Pact aims to:

- i) identify areas where Member States will develop priority actions (such as the prioritisation of investments and reforms to accelerate the twin transition)
- ii) sharpen the focus on long standing key values and principles (openness, excellence, mobility of researchers).

A **non-binding instrument** assembling in one legal act the ERA's values and principles in order to promote their implementation throughout the Member States.

Areas covered:

- freedom of scientific research
- the pursuit of excellence and socio-economic valorisation
- gender equality
- open access or career conditions for researchers.

Feedback period: until 12 May. Publication expected on Q2-Q3.

Reports and Data

Two interesting reports have been published:

1. [Decarbonisation in Central-Eastern and South-Eastern Europe](#) report
2. [European Patent Office \(EPO\) – IEA study](#) on clean energy technologies

The report highlights:

- That specificities of all EU Member States must be considered when designing Europe's decarbonisation pathways
- That the existing gas infrastructure will play an important role when switching from coal to natural gas to hydrogen
- The following steps are put forward for 2030 and 2050:
 - 2030: Switching from coal to gas is expected to be an intermediate step in transitioning to a zero-carbon economy.
 - By 2050: Renewable and low-carbon gases will complement and slowly replace natural gas.
 - The existing gas infrastructure supports the integration of renewable electricity in Europe and reduces the need for large investments into electricity grids – on both transmission and distribution levels.
- The main goal of this report was to raise awareness about the current energy landscape and challenges in Central- and South-Eastern European countries and propose decarbonisation pathways

Decarbonisation in Central-Eastern and South-Eastern Europe:
How gas infrastructure can contribute to meet EU's long-term decarbonisation objectives



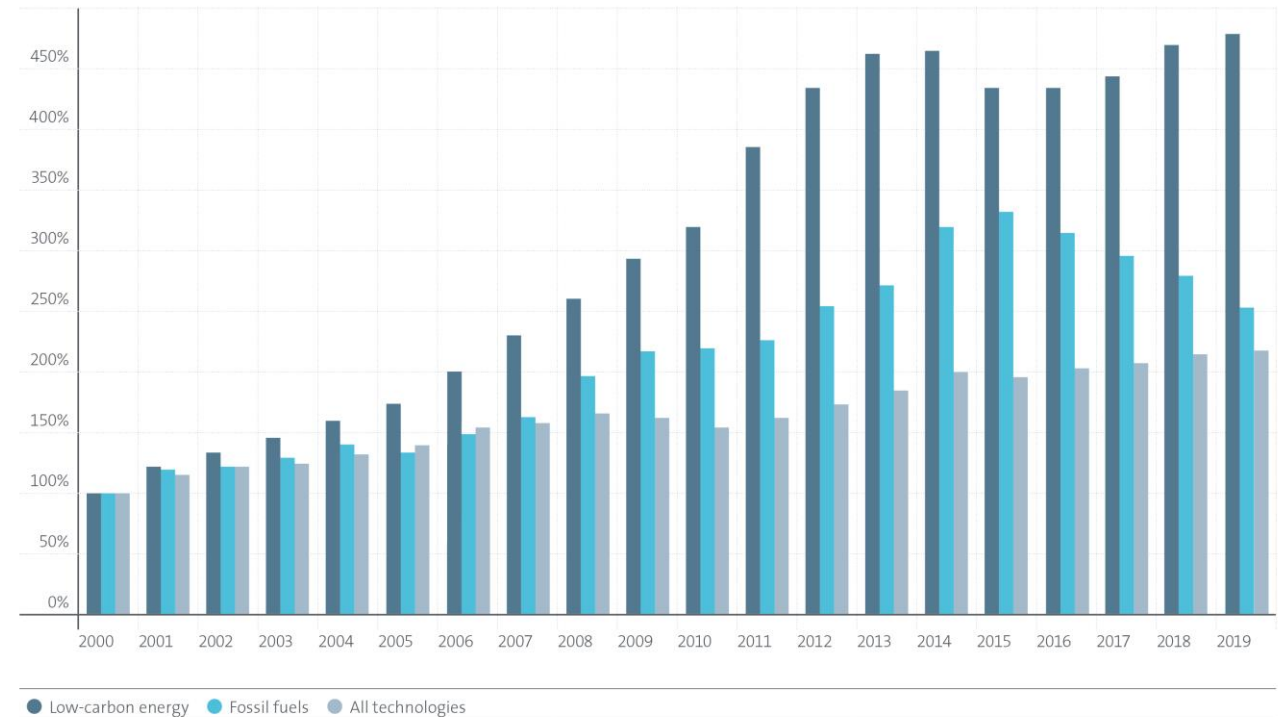
Reports and Data

EPO-IEA study highlights the need to accelerate innovation in clean energy technologies to meet climate goals

Main findings of the study:

- Over the 2017-2019 period, the number of patents for inventions related to low-C energy technologies around the world grew by an average rate of 3.3% per year, and overall has been rising over the past two decades
 - This contrasts with a decline in patenting in fossil fuels since 2015
- According to the IEA, current climate targets can only be achieved by a major acceleration in clean-energy innovation, as many of the technologies required in the coming decades to bring down CO2 emissions are only at the prototype or demonstration phase today
- "This report is a clear call for action to step up research and innovation into new low-carbon energy technologies, and improve existing ones. While it reveals some encouraging trends across countries and industry sectors, including in key cross-cutting technologies, it also highlights the need to further accelerate innovation in clean energy technologies, some of which are still only emerging." – Antonio Campinos EPO President

Global growth of IPFs in low-carbon energy technologies versus all technologies, 2000-2019 (base 100 in 2000)



Source: European Patent Office



Innovation Fund

Innovation Fund

Budget: about **EUR 10 billion** of support over 2020-2030. Funded through the EU Emissions Trading System (EU ETS).

Scope: Commercial demonstration of innovative low-carbon technologies. The projects should focus on:

- innovative low-carbon technologies in energy-intensive industries, including products substituting carbon-intensive ones
- carbon capture and utilisation (CCU)
- construction and operation of carbon capture and storage (CCS)
- innovative renewable energy generation
- energy storage

Types of calls:

- Large scale projects (two steps application)
- Small scale projects (one step application, total capital costs < €7.5 million)

Innovation Fund

Grant: up to **60%** of the additional capital and operational costs of large-scale projects and up to **60%** of the capital costs of small-scale projects.

The **combination of grant** from the Innovation Fund **with public support** by a Member State is **possible**. The State aid rules apply and define the applicable cumulation thresholds. Synergies with other funds are also foreseen.

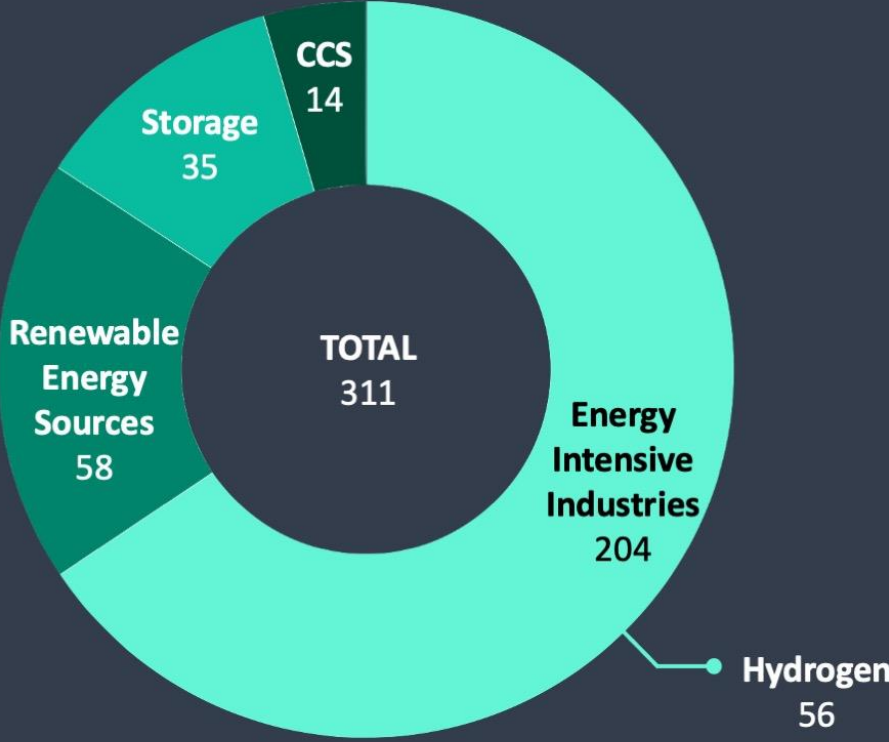
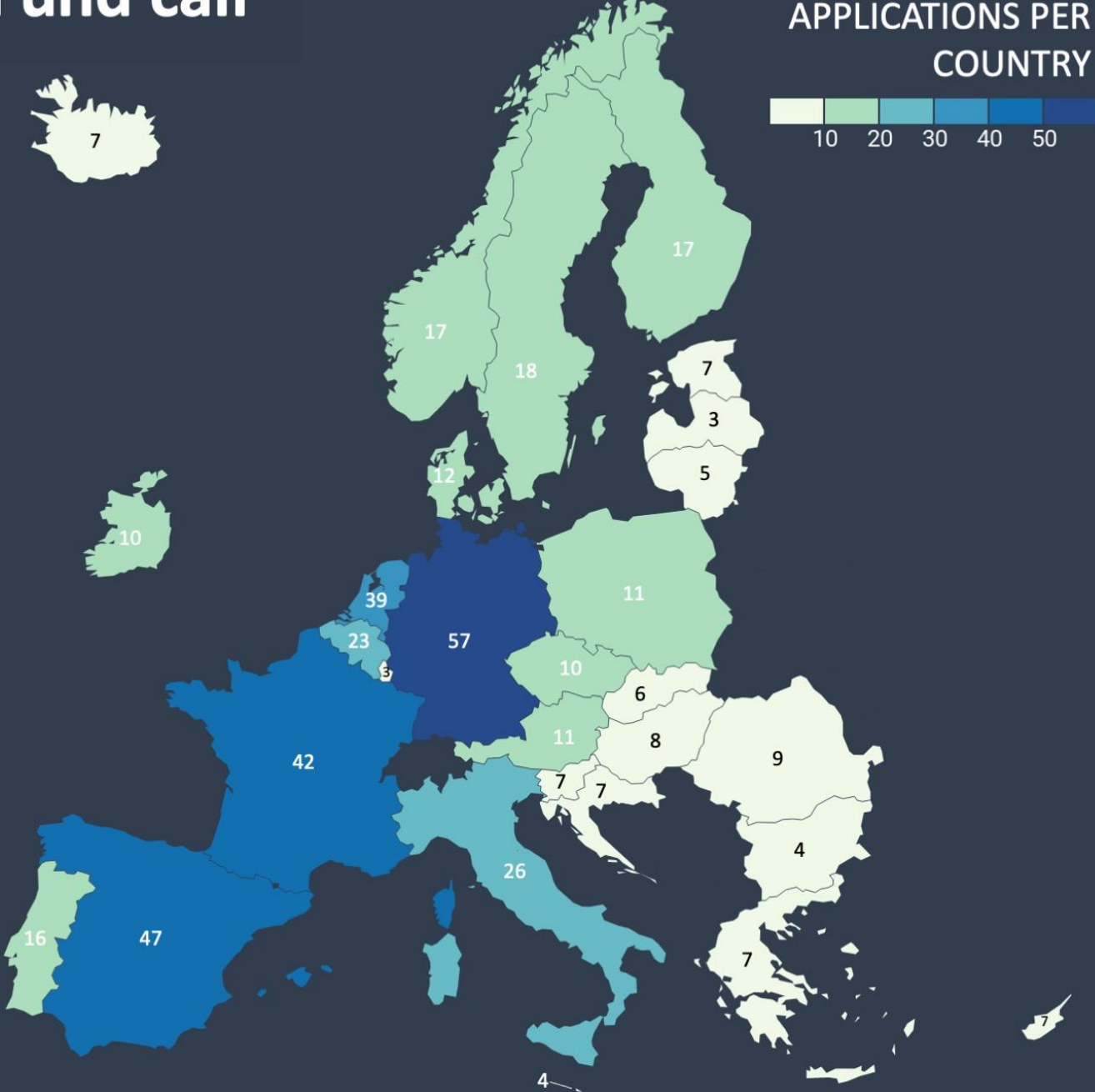
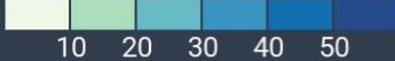
Award criteria:

- Effectiveness of GHG emissions avoidance
- Degree of innovation
- Project maturity
- Scalability
- Cost efficiency

Possible additional criteria for geographical and sectorial balance set in the calls.

Applications to first Innovation Fund call

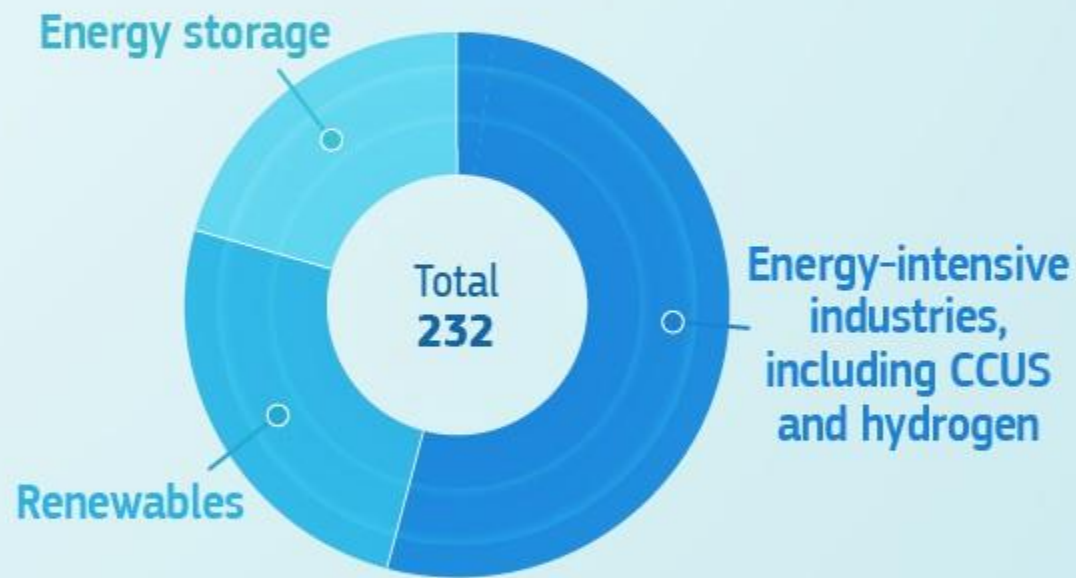
APPLICATIONS PER COUNTRY



APPLICATIONS PER ACTIVITY
of which some are cross-sectoral applications

Budget: €1Billion

Applications to first Innovation Fund small-scale call



Applications per activity
of which some are cross-sectoral applications



Other points of discussion



Thank you for your participation!

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