Workshop for Innovation Fund 3rd Large Scale Call – renewable energy projects

The role of Innovation Fund in the context of REPowerEU

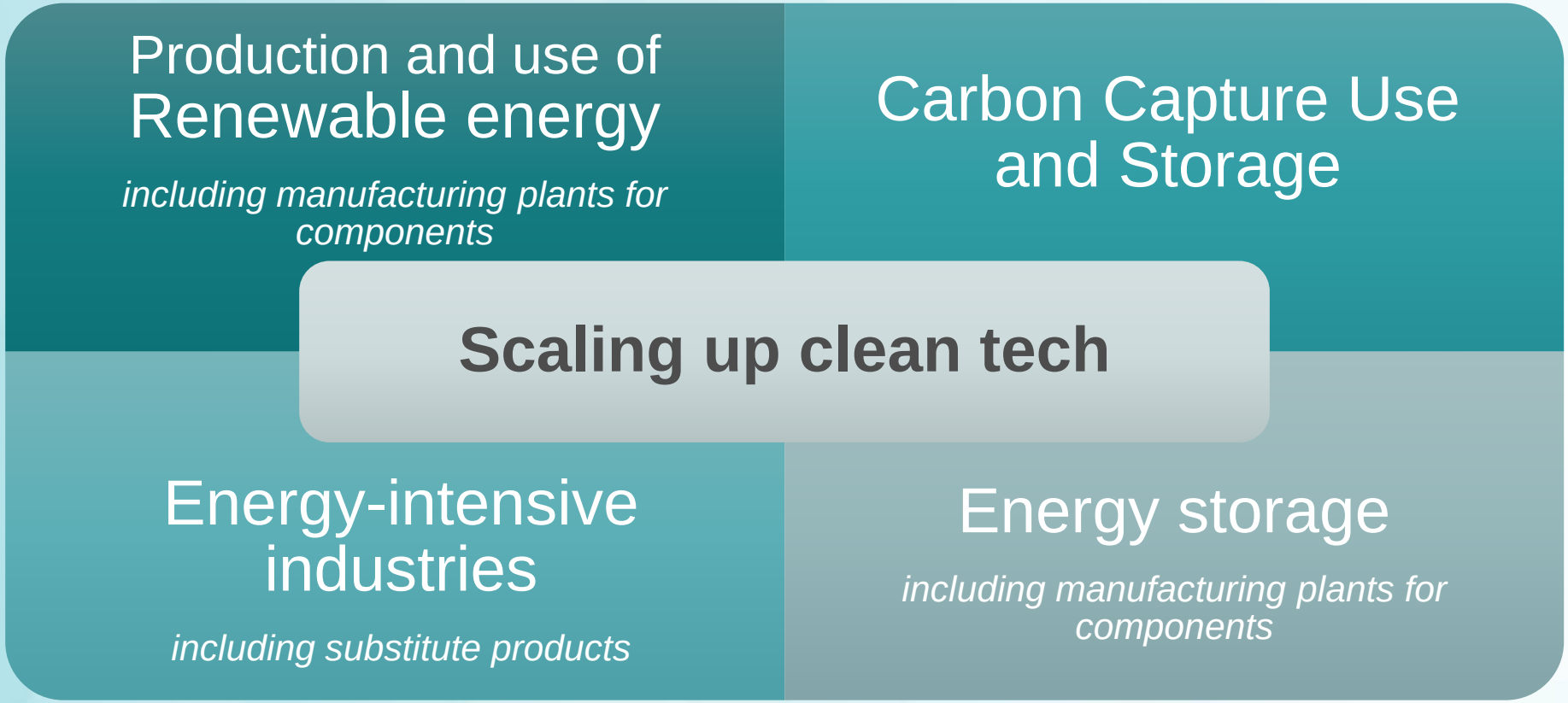
27 June 2022

Maria Velkova and Ewelina Daniel, DG Climate Action

Outline

1. **Innovation Fund – short introduction**
2. REPowerEU Plan and the Innovation Fund
   A. REPowerEU Plan
   B. Accelerated deployment and thematic windows under 3rd LSC
   C. Examples of successful clean tech manufacturing projects
   D. Next Steps
3. Questions on the design of the clean tech window

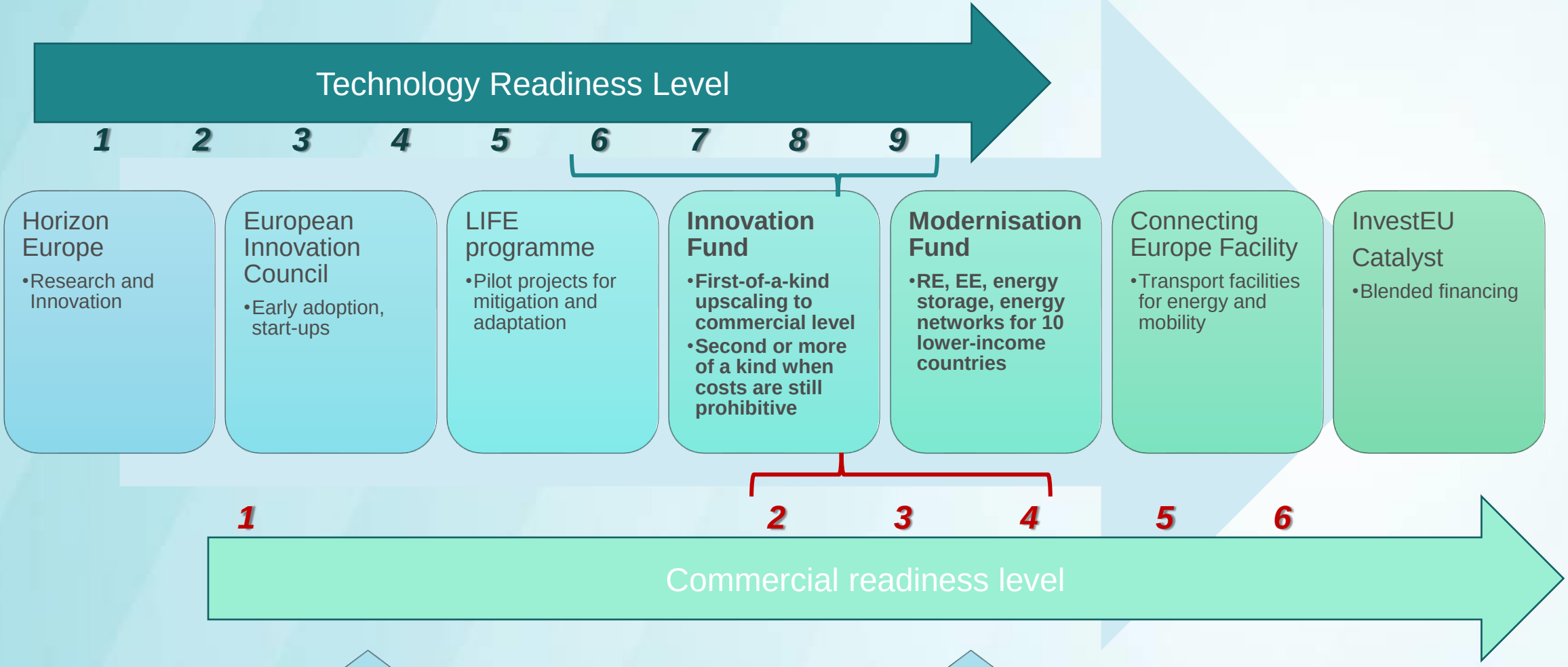
1. Innovation Fund introduction: eligibility



For complete information see Innovation Fund website

European Commission

1. Innovation Fund introduction: role vis à vis other EU Funding Programmes



*TRL & CRL are indicative; the braces show the levels relevant for the Innovation Fund only

European Commission

1. Innovation Fund introduction: key features

Volume of at least EUR 38 billion until 2030 (at EUR 75 carbon price)

Support of up to 60% of additional costs related to innovative technology

40% of grant disbursed at financial close

Financed from the revenues of the EU Emissions Trading System

Support of additional capital and operating costs (up to 10 years) – Small scale: ONLY CAPEX

60% of grant disbursed during 10-years operating period against GHG emission avoidance

Annual calls for large-scale and small-scale projects (CAPEX < EUR 7.5 million)

Single applicant or consortium

Project development assistance by EIB

European Commission

1. Innovation Fund introduction: award criteria

DEGREE OF INNOVATION	GHG EMISSIONS AVOIDANCE*	PROJECT MATURITY*	SCALABILITY*	COST EFFICIENCY
• Beyond state-of-the art* • *Only for LSC*: Contribution to EU policy objectives: EE, RE, circularity	• Absolute emissions avoidance • Relative emissions avoidance • Quality of calculation Net carbon removals Other GHG savings	• Technical maturity • Operational maturity • Financial maturity	Market potential • *Project & regional level* • *Sector level* • *Economy level*	EU contribution requested per tCO_2 avoided

Min criteria: *beyond incremental innovation, below ETS benchmarks, sustainable biomass feedstocks, sufficiently mature and scalable*

European Commission

Outline

1. Innovation Fund - introduction
2. **REPowerEU Plan and the Innovation Fund**
   A. REPowerEU Package
   B. Accelerated deployment and thematic windows under 3rd LSC
   C. Examples of successful clean tech manufacturing projects
   D. Next Steps
3. Questions on the design of the clean tech window

2. REPowerEU

REPowerEU Plan Communication, Annexes and Staff working paper

Amendments to Renewable Energy Directive, Energy Performance of Buildings Directive and Energy Efficiency Directive

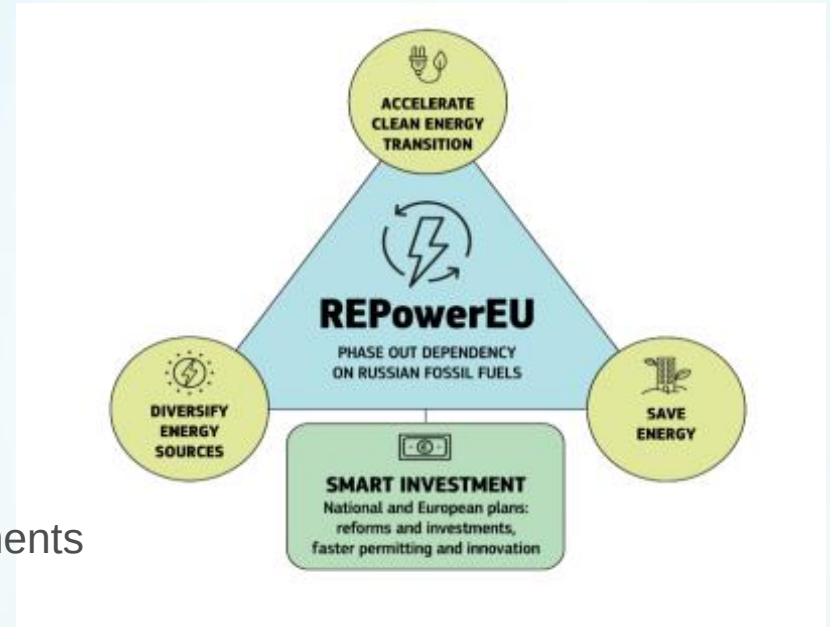
EU Save Energy Communication

EU Solar Strategy Communication

EU External Energy Engagement Communication

Recommendation on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements

Amendment to RRF Regulation and Guidance



Outside the package but adopted on the same day:

Electricity Market Design Communication

European Commission

2. REPowerEU: Smart Investment

REPowerEU chapter in revised recovery and resilience plans

Synergies and complementarities with **cohesion policy**

New call under **Connecting Europe Facility**

Enhanced transfer possibility of cohesion policy and EAFRD to RRF

Innovation Fund
1) **accelerating the deployment,**
2) **dedicated REPower windows**
3) **new tool of C(C)fD**

European Commission

2. REPowerEU and Innovation Fund

- Budget made available for **3LSC: 3bn** + 20% flexibility reserve
- In the 3 LSC, thanks to increased budget and due to REPower priorities, the Innovation Fund will become **more focused** by creating 3 dedicated windows for:
  - innovative **electrification and hydrogen applications in industry**
  - innovative **clean tech manufacturing** (such as electrolysers and fuel cells, innovative renewable equipment, energy storage or heat pumps)
  - **mid-sized pilot projects** that focus on validating, testing and optimising highly innovative solutions.
- **Fully bottom-up approach** (in the main window) **and award criteria** as defined in Delegated Regulation are preserved to serve existing project pipeline that covers all areas eligible under IF, as defined in ETS Directive

2. REPowerEU: Thematic windows under 3rd large-scale call (cont'd)

- The windows definitions aim to continue to **benefit numerous/all sectors** eligible under the IF and avoid "parcelling" IF
- The windows will allow to cater for specific **policy priorities**
- The windows will reserve a **dedicated budget envelope**
- The windows will make **competition among projects more focused**
- Through the windows, Commission is minded to **elicit projects that can enter into operation faster**
- Through the windows, Commission is minded to **provide additional guidance on some methodological aspects** and **adapt call conditions where necessary**

2. REPowerEU: Thematic windows under 3rd large-scale call – Clean Tech Manufacturing

Specific attention to **Clean-tech manufacturing**

- Accelerate deployment in accordance with Fit for 55, REPowerEU
- Develop resilient supply chains, establish industrial capacity and technology leadership, aim for strategic autonomy,
- Develop future-proof growth and jobs in the EU
- Address dependence on critical materials (substituting, reducing, recycling…)

➔ **Dedicated window for EU production facilities for innovative clean tech** (and components thereof) such as:

- **heat pumps**
- electrolysers / fuel cells
- innovative renewable equipment
- energy storage (short and long term)

European Commission

2. Examples Clean tech manufacturing

1st LSC: TANGO Project

- Industrial-scale pilot line in the south of Italy to manufacture bifacial heterojunction PV cells
- Scaling production capacity from 200 MW to 3 GW per year

1st SSC:

- **Helexio line**: Demonstrating manufacturing for innovative BIPV roof components
- **CarBatteryReFactory**: Assembly plant for serial production of industrial energy storage systems based on second-life car batteries and disruptive full-pack technology
- **Green Foil project**: Low CO_2 footprint battery foil/current collector for Li-ion batteries production

2. Best practice from successful clean tech manufacturing projects

- Best practices publication from 1st LSC and 1st SSC are available here: Best practices in IF
- Key take-aways:
  - Overall consistency: ensure explicit project support from all relevant parties
  - GHG: take full advantage of the provided GHG calculation tool
  - Degree of Innovation: establish state-of-the-art and explain how innovation goes beyond incremental innovation
  - Project Maturity: have a well-defined strategy for construction, supply contracts in place, ensure project parties are well defined
  - Scalability: quantify the impacts (show how it leads to GHG emission reductions)
  - Cost efficiency: justify the reference price and premium price

2. REPowerEU: Thematic windows under 3rd large-scale call – Mid-sized pilots

- Targeting innovation **upstream of large-scale demo** (limited operation time, limited/no revenues are expected)
- Validate, test and optimise breakthrough solutions
- Focus on highly innovative, game-changing/disruptive/breakthrough solutions
- Reach out more to innovative start-ups, scale-up companies that do not have yet the means to finance projects
- Zero or near zero solutions, but open to all areas eligible under IF
- Supporting key development stage where the pilots are too big for Horizon Europe or other EU funding programmes (seeking synergies and complementarities between the programmes)

2. RePowerEU: Next steps for Innovation Fund

(all dates are indicative)

1. Survey of project pipeline and dedicated workshops on manufacturing (June/July 2022)
2. Next IFEG meeting on 3rd Large Scale Call (12 July 2022)
3. Launch of 3rd Large Scale call (November 2022, deadline March 2023)
4. Lessons learned from past calls and Info-day for 3rd Large Scale call (November 2022)
5. Workshop on synergies between Horizon Europe and Innovation Fund (end of 2022)
6. Launch of 3rd SSC (April 2023, deadline Sept 2023)

Outline

1. Innovation Fund - introduction
2. REPower EU and the Innovation Fund
   A. REPowerEU Plan
   B. Accelerated deployment and thematic windows under 3rd LSC
   C. Examples of successful clean tech manufacturing projects
   D. Next Steps
3. **Questions on the design of the clean tech window:**

Discussion of questions at the workshop. Additional written input can be shared with organisers. Consolidated input welcome by DG CLIMA.

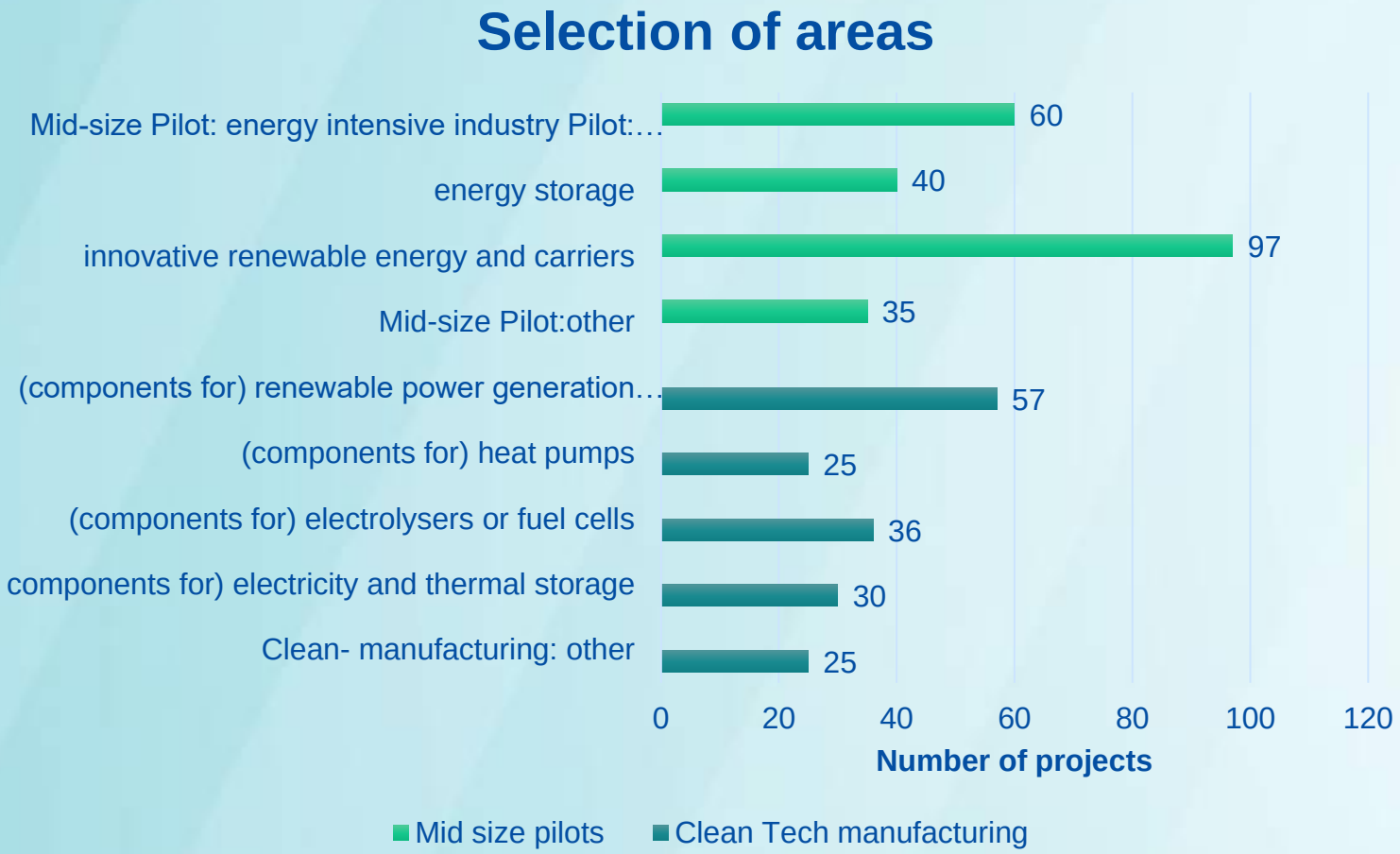
European Commission

3. Questions on the design of the clean tech window

1. What are current market conditions for large-scale manufacturing projects, main risks and barriers to implementation and what **pipeline can we expect** under 3LSC (discussion of preliminary **survey results**)?
2. Definition of **eligibility for thematic window**: what boundaries should we establish for projects eligible to apply under the specific window from your sector? Are there any specific exclusions that would be necessary (e.g. use of working fluids with GWP of above 150, use of specific raw materials?)
3. How much time do general projects need to reach Final Investment Decision and how much time do they need after for construction and commissioning?
4. Which **award criteria are the most pertinent** for the sectors?
5. Which award criteria are the **most difficult** and where additional guidance is most needed?

SURVEY RESULTS

Main areas selected are **renewable energy and carriers pilots** and **manufacturing for renewable power generation**



220 answers:

114 Clean-Tech manufacturing **(including 66 clean-tech manufacturing pilots)**

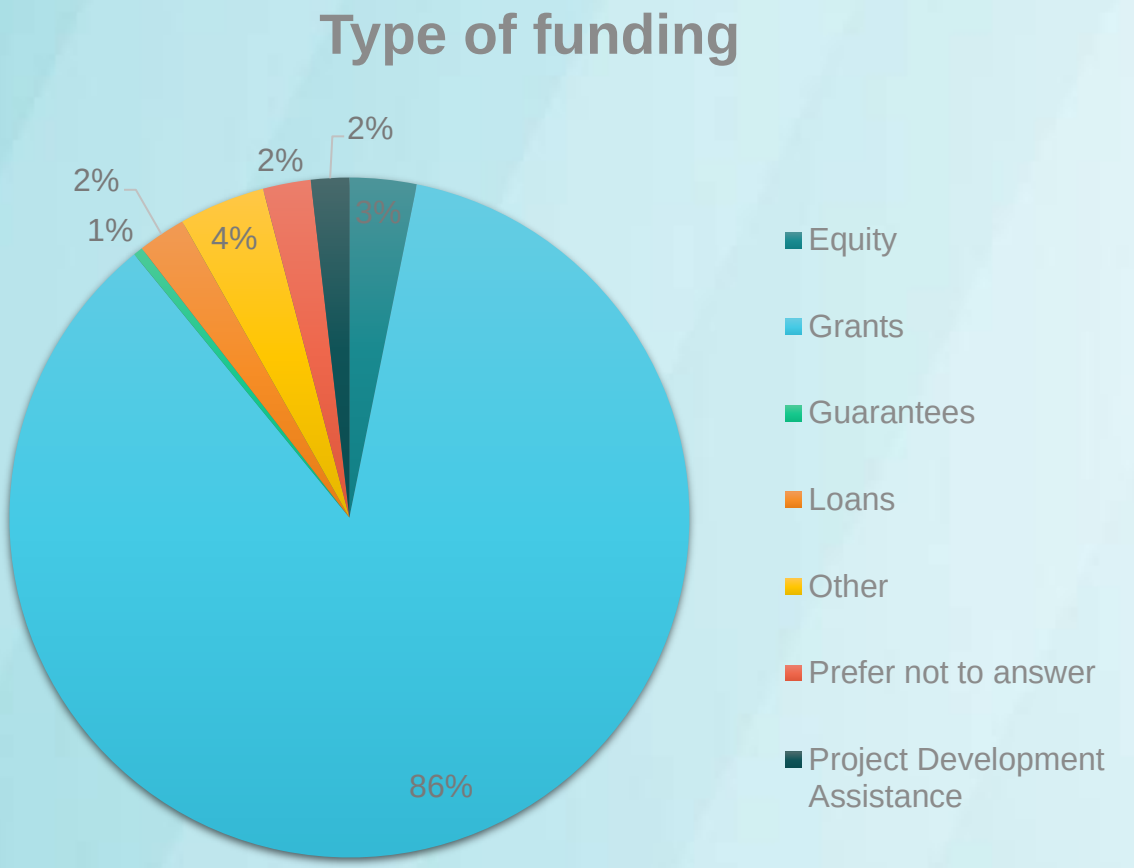
106 Mid-size pilots

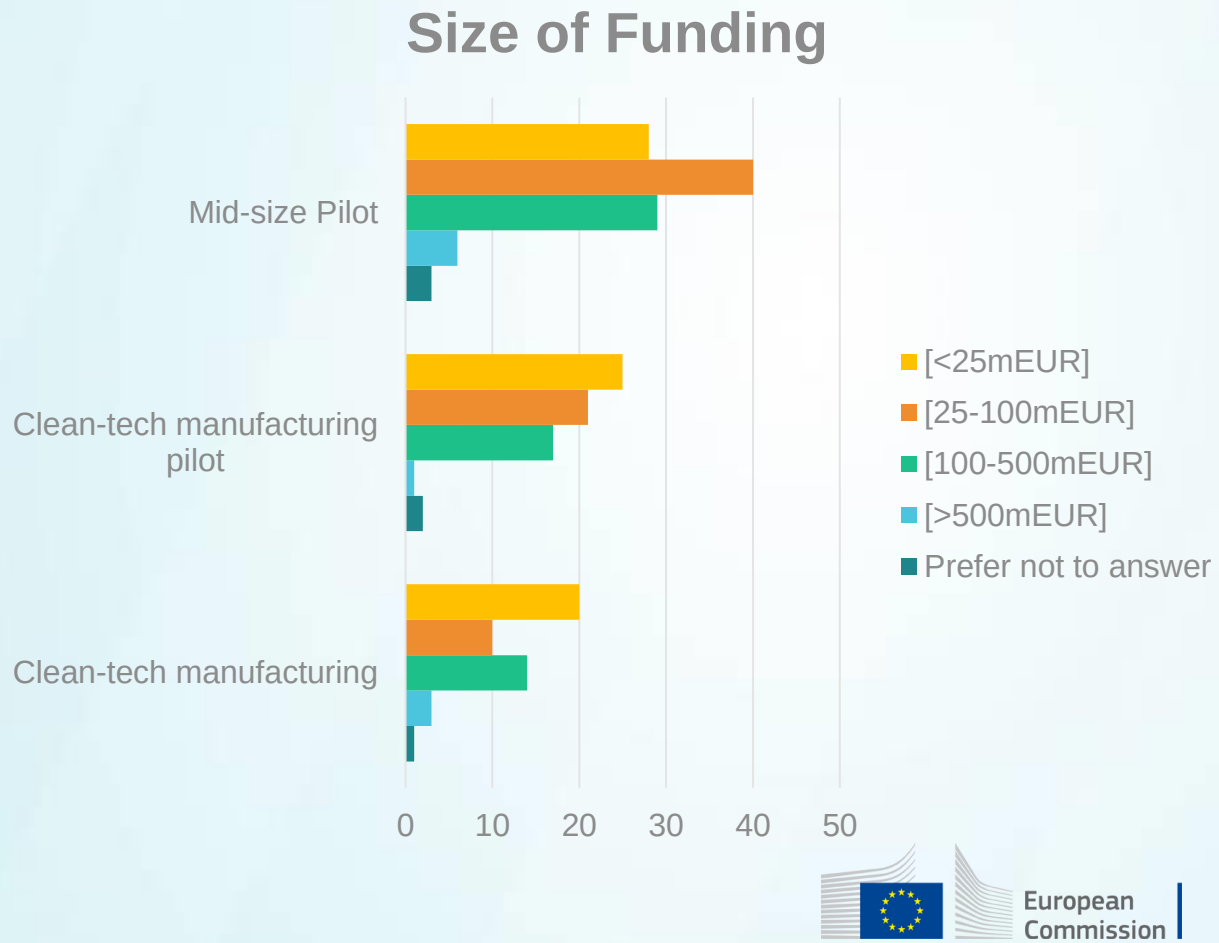
* Many projects selected several areas resulting in a higher number of data points than answers

European Commission

SURVEY RESULTS

Majority of projects need grants with a size smaller than €25M for clean-tech manufacturing and between €25 and €100M for pilots





European Commission

3. Questions on the design of the clean tech window (cont'd)

6. **Scalability criterion**: what is the size of the potential market of the products (final, intermediate, by-products)?

7. **Degree of Innovation criterion**: Should the degree of innovation be determined at the level of the Member State, European or global level?

8. **GHG emissions calculation methodology**:

The current GHG methodology excludes certain emissions from the **scope of the calculation** (such as emissions from manufacture of machinery and equipment, emissions due to the manufacturing process in manufacturing of components plants, transport of raw materials, upstream emissions due to fossil fuel extraction). Projects can present GHG emission savings from these emission sources as an **additional calculation**. Are any of these that would merit consideration by default?

Are there any elements of GHG calculation that could have default values?

3. Questions on the design of the clean tech window (cont'd)

9. Relevant Costs calculation methodology:

- Are the conventional production costs easy to estimate with confidence? Alternatively, is there a conventional, commoditized, product that can be used as a comparator ?
- What are the key variable factors determining the financial gap? Are there any elements of Relevant Costs calculation that could have default values?
- What are the financial risks and how best they can be evaluated?

10. Knowledge-sharing requirements

- What type of technical, economic, project management, regulatory and permitting information will be useful to share with other projects from the sector and to advance the regulatory environment without at the same time compromising the legitimate IP rights and the first-mover advantage?
- What types of knowledge-sharing activities and tools that would be useful for the market?

Discussion of questions at the workshop. Additional written input can be shared with organisers. Consolidated input welcome by DG CLIMA.

Where to find more information?

All (past) call documents available on the Funding and Tenders Portal including:

- ✓ Guidance and calculation tools on GHG emissions and relevant costs
- ✓ Frequently asked questions

https://europa.eu/!QB67by

Further info, planning of new calls, recorded webinars and videos available on the IF Website:

https://europa.eu/!rx34Dt

Innovation Fund - YouTube

https://bit.ly/2WxK8w7

European Commission

NER 300 Financial Advisory support

Eligible sectors:

1. **RENEWABLE ENERGY**
2. **CARBON CAPTURE USE AND STORAGE**
3. **SMART ENERGY SYSTEMS AND ENERGY STORAGE**

WHAT PROJECTS ARE ELIGIBLE

- Projects can cover various technologies and sectors, including **wind, solar power, geothermal, ocean, hydropower, bioenergy, battery storage, smart energy distribution systems, renewable fuels or heating and cooling** (please refer to the pre-assessment questionnaire for an exhaustive list of eligible sectors)
- Projects that are based in the European Union or the European Economic Area.
- All projects must have the **potential to significantly reduce greenhouse gas (GHG) emissions** and aim to reach a **commercial scale** within the European Union.
- The projects should be validated through **previous testing**, with reasonable expectations for successful demonstration.
- Projects already benefiting from the Project Development Assistance under the Innovation Fund are not eligible.

EXAMPLES OF PROJECTS RECEIVING SUPPORT

21 PROJECTS APPROVED by EC

- Pumped hydro energy storage
- Floating wind and wave device with hydrogen production and storage capability
- High-Temperature Energy Storage in the Food Industry
- On-shore carbon capture and storage project in cement industry
- Carbon neutral E-fuel and wax based on synthetic hydrocarbon

WHEN IS THE SUPPORT AVAILABLE

- Advisory support is available **immediately**
- Any request can be sent to the email below
- Project beneficiaries supported on a first-come first-served basis

Contact: ner300finadvisory@eib.org

European Investment Bank The EU bank

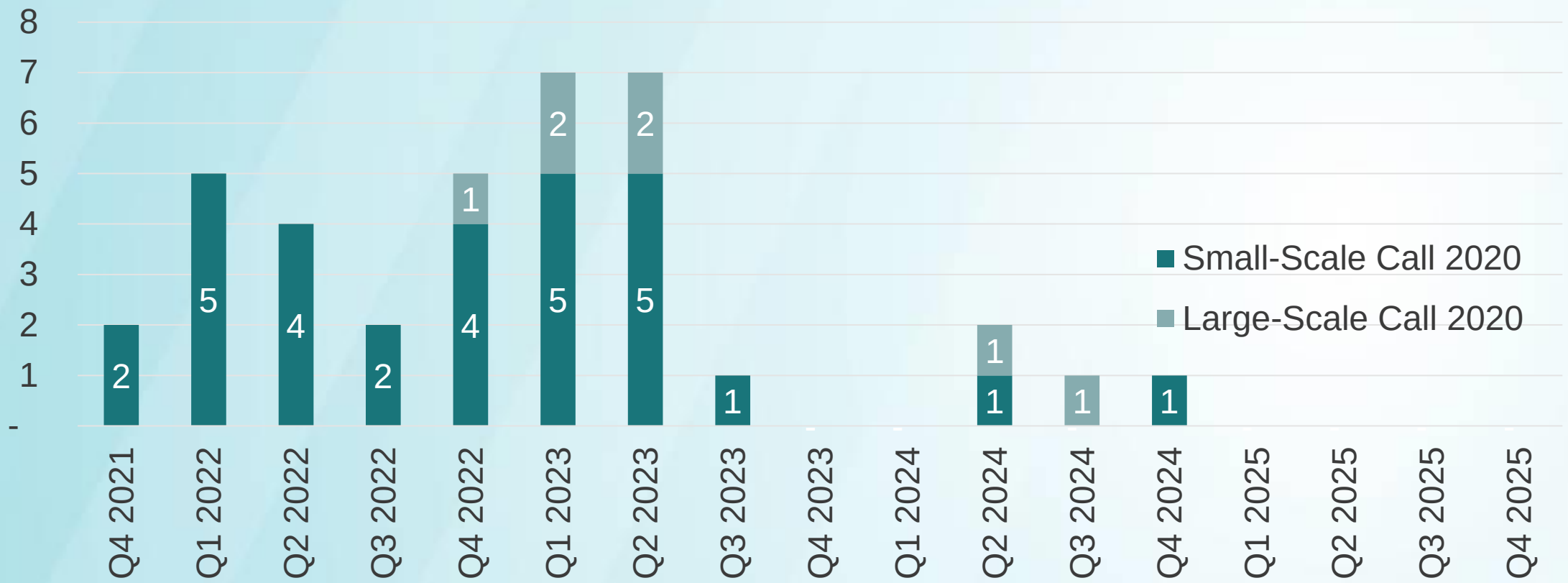
European Commission

BACK- UP slides

European Commission

Q3: FC and EiO: the IF funds business-ready, mature projects

Planned Financial Close



European Commission

Q9: Relevant costs: key principles

Definitions

Relevant costs ("RC") = "difference between the best estimate of the CAPEX, the NPV of OPEX and operational benefits arising during 10 years after the entry into operation of the project compared to the result of the same calculation for a conventional production with the same capacity in terms of effective production of the respective final product."

CAPEX	Construction costs, site infrastructure costs, development costs and intangible assets of the project (please refer to glossary in Annex B)
OPEX	Operation and Maintenance cost, decommissioning costs (if in the first 10 years), they do not include depreciation cost of CAPEX !
Operational benefits	Any revenue received by the project from the sale of EU ETS allowances for reductions in CO_2 emissions, preferential tariffs or feed-in premia, or other market-wide regulatory support programs
Discount rate	Discount rate used for NPV calculations is the Weighted Average Cost of Capital (WACC) of the project

Q9: Relevant costs: key principles

Which methodology should applicants use?

Relevant costs are “additional costs” borne by applicants as a result of the application of the innovative technology related to GHG emissions avoidance

Methodologies

Levelised cost

1a 1b 1c

Levelised cost: for most projects RC should be based on the difference between the levelised cost of producing an output unit with the new technology compared to the cost of producing a reference product, using its current market price (“reference price”)

Reference plant

2

Reference plant: “fall-back” option in case the project includes processes generating intermediate or multiple products, or where market prices cannot be easily established and no substitute products exist and internal cost data deliver more reliable results

No reference

3

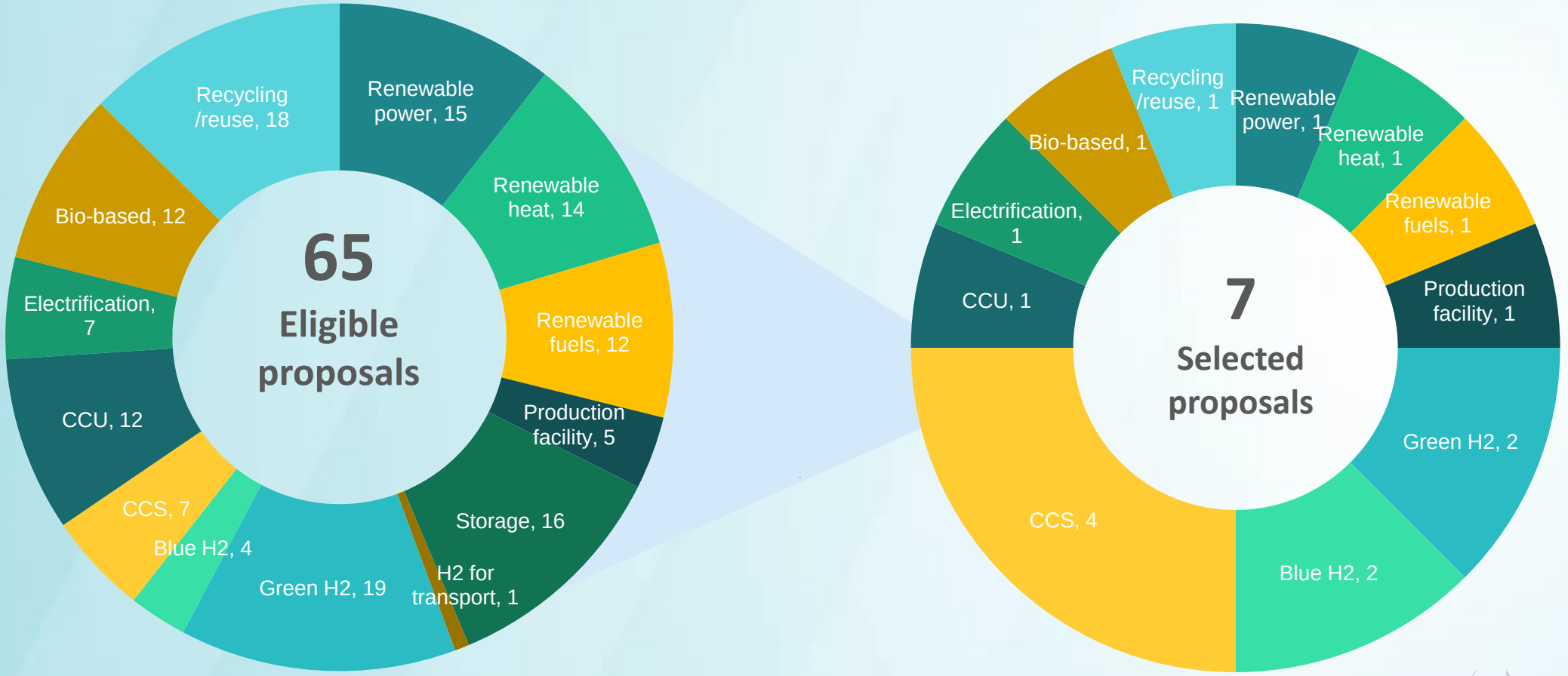
No reference scenario: “last-resort” option in exceptional cases if there is no reference product or conventional technology available as reference to compare the project with

Q10: knowledge sharing

- To ensure cost reductions and accelerated commercialisation of clean technologies across Europe, the Innovation Fund supports knowledge-sharing among projects and stakeholders on clean tech solutions.
- IF grant agreements conditional on knowledge sharing by the grant beneficiary.
- The project proponent is to submit a knowledge-sharing plan at the application stage covering the full project cycle.
- In 2020 and 2021: over 10 virtual events to support all stakeholders to understand better the current and potential developments of clean tech solutions in the EU

1. Innovation Fund introduction

EACH PROPOSAL CAN COVER MULTIPLE TECHNOLOGICAL PATHWAYS. THEY SHOW HIGH POTENTIAL TO REDUCE EMISSIONS IN THE IF SECTORS AND BEYOND



Legend: Based on Form C. Classification of proposals can be overlapping.