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MEETING DOCUMENT

From: General Secretariat of the Council
To: Delegations

Subject: Innovation Fund - presentation by the European Commission

Delegations will find attached an expanded version of the presentation on the Innovation Fund given by the European Commission at the 21 February 2022 meeting of the AHWP CBAM.



Innovation Fund

21 February 2022


DG Climate Action



Innovation Fund

Production and use of
Renewable energy

*including manufacturing plants for
components*

Carbon Capture Use and
Storage

Scaling up clean tech

Energy-intensive
industries

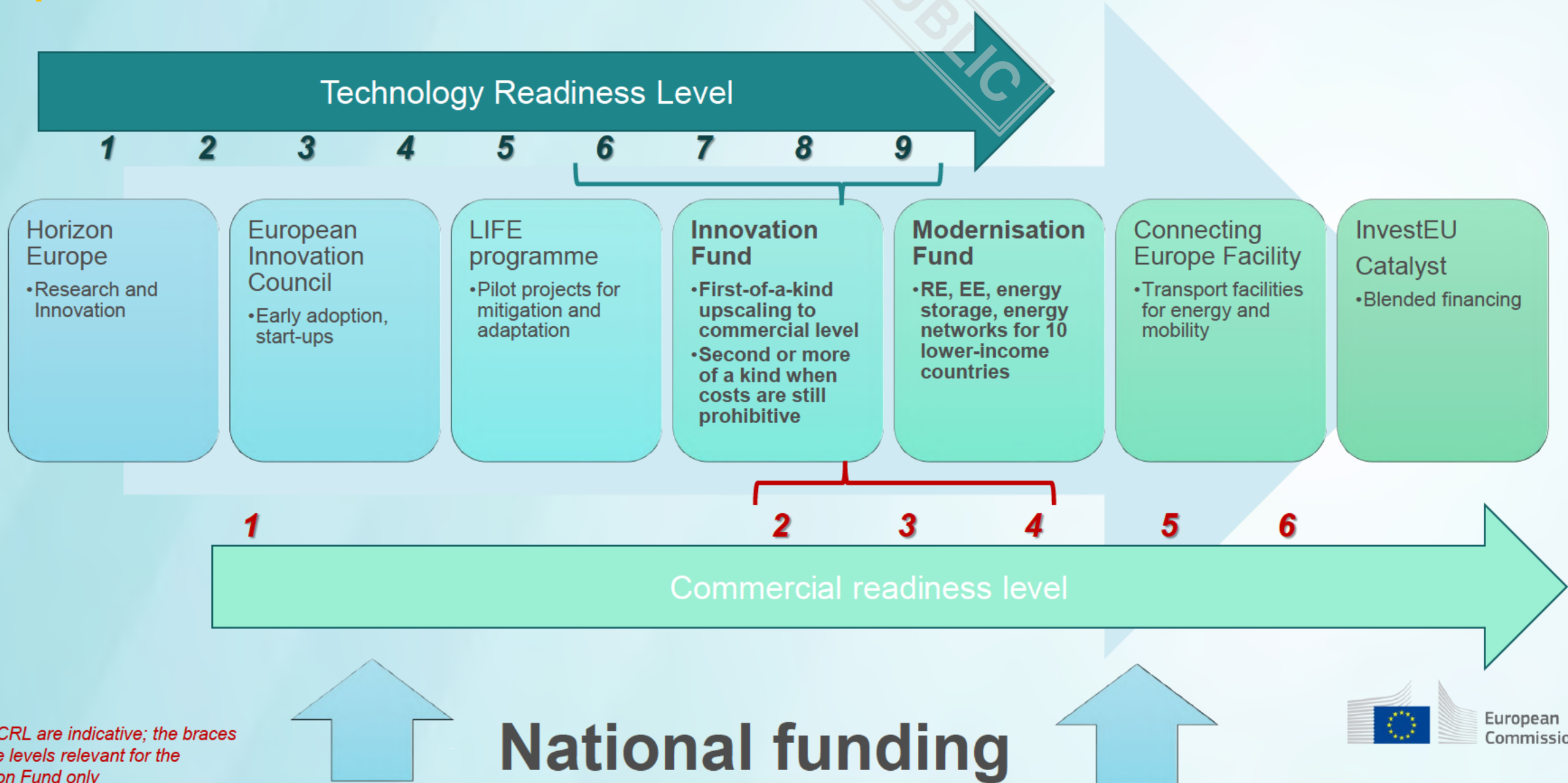
including substitute products

Energy storage

*including manufacturing plants for
components*

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EU Funding Programmes



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

Key features

Financed from the revenues of the EU Emissions Trading System

450 m EUA for 2021-2030
+ unspent NER300 funds

Volume: EUR 25 billion* until 2030 (depending on carbon price)

*at EUR 50 / tCO₂

Grants: Large projects
CAPEX >€7,5M:
Support of up to 60% of additional CAPEX and OPEX

Grants: Small projects
Between €2,5 and € 7.5M CAPEX
Support up to 60% of CAPEX

Grants: Up to 40% of grant disbursed before financial close

Grants: Up to 60% of grant disbursed during construction and 10-years operating period against GHG emission avoidance

Small scale projects – shorter 3-years period

Grants: Annual calls for large-scale and small-scale projects

Single applicant or consortium
Projects must be implemented in the EU, NO and IC

Project development assistance

InvestEU: Green Transition Investment Facility: top-up of blending operations

Award Criteria

DEGREE OF INNOVATION

- Beyond state-of-the art*
- **Only for LSC:** Contribution to EU policy objectives: EE, RE, circularity

GHG EMISSIONS AVOIDANCE*

- Absolute emissions avoidance
- Relative emissions avoidance
- Quality of calculation
Net carbon removals
Other GHG savings

PROJECT MATURITY*

- Technical maturity
- Operational maturity
- Financial maturity

SCALABILITY*

- Market potential
- *Project & regional level*
 - *Sector level*
 - *Economy level*

COST EFFICIENCY

EU contribution requested per tCO₂ avoided

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

Results of first calls

Call for large-scale projects



Grants of EUR 1145 million for seven projects



Project development assistance for 15 projects

Call for small-scale projects



Grants of EUR 109 million for 30 projects



Project development assistance for 10 projects

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First call for large-scale projects (2020 LSC)

Project overview

Overall results from 2020 call for Large-Scale projects

311 proposals were submitted at 1st stage (Oct 2020) requesting in total **€21.7 billion** with the potential to avoid **1.2 GtCO₂e** over 10y

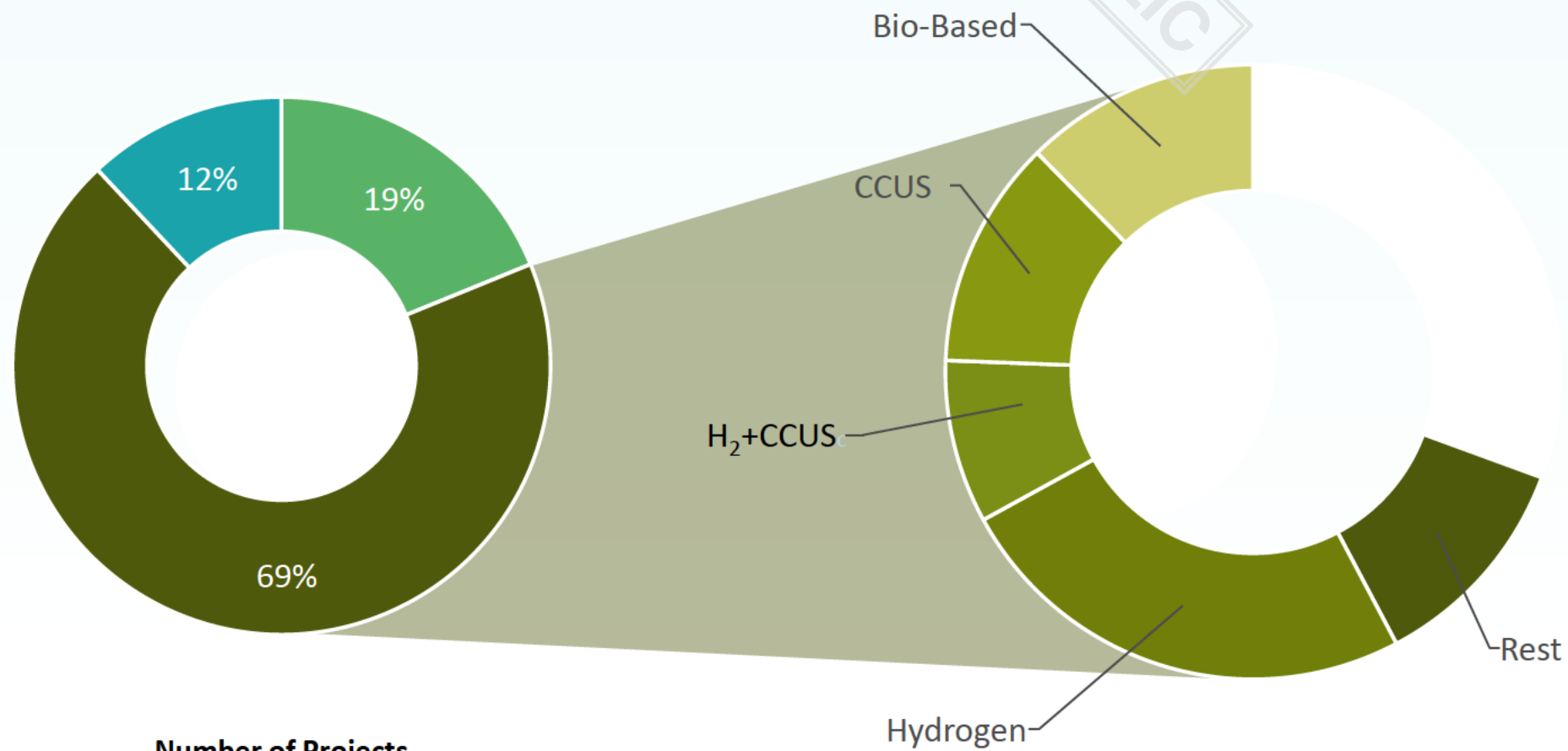
292 proposals were deemed admissible and eligible
117 proposals passed all minimum thresholds

70 proposals were invited to 2nd stage (Mar 2021) requesting **€6.7 billion**
with potential to avoid **402 MtCO₂e** over 10y

66 applications were submitted, **65** were assessed
48 proposals met minimum requirements

7 top-ranked projects pre-selected for grants requesting **€1.145 billion**
with potential to avoid **72.8 MtCO₂e** over 10y

Zoom-in 1st stage energy intensive industry



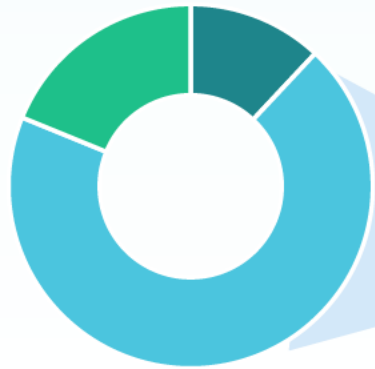
Number of Projects

Projects invited to 2nd stage cover all technologies

stable share of projects per pathway

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Eligible projects 1st stage by category

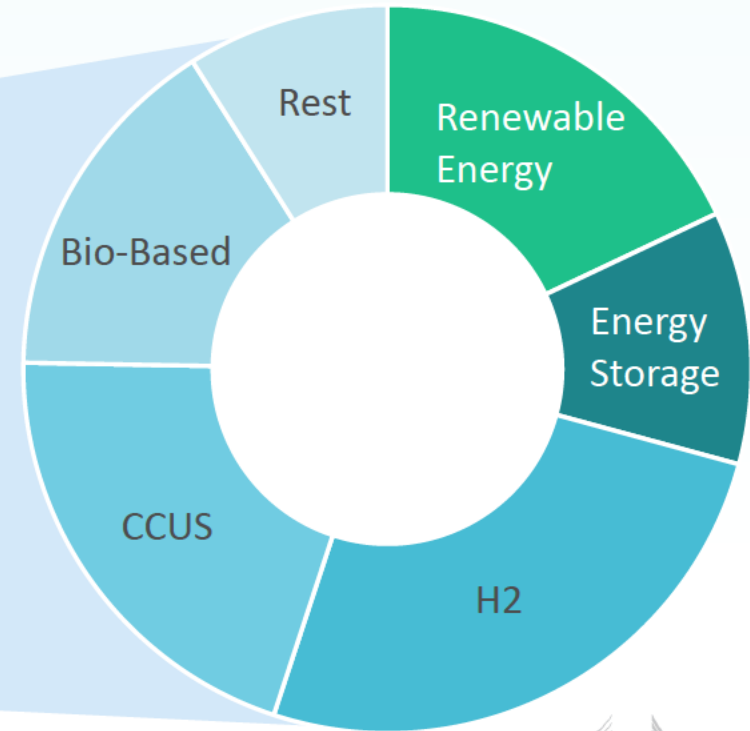


- Energy storage
- Energy Intensive Industry
- Renewable Energy

Projects invited for 2nd stage by category



Breakdown by technological pathway



Many projects invited to 2nd stage produce multiple products

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MORE THAN 30% of PROPOSALS DELIVER >1 FINAL PRODUCT



Electricity



Hydrogen



Chemicals



Heating/
Cooling



Fuels



Construction
Materials













Ethanol, methane,
methanol, maritime and
aviation fuel, bio-gas

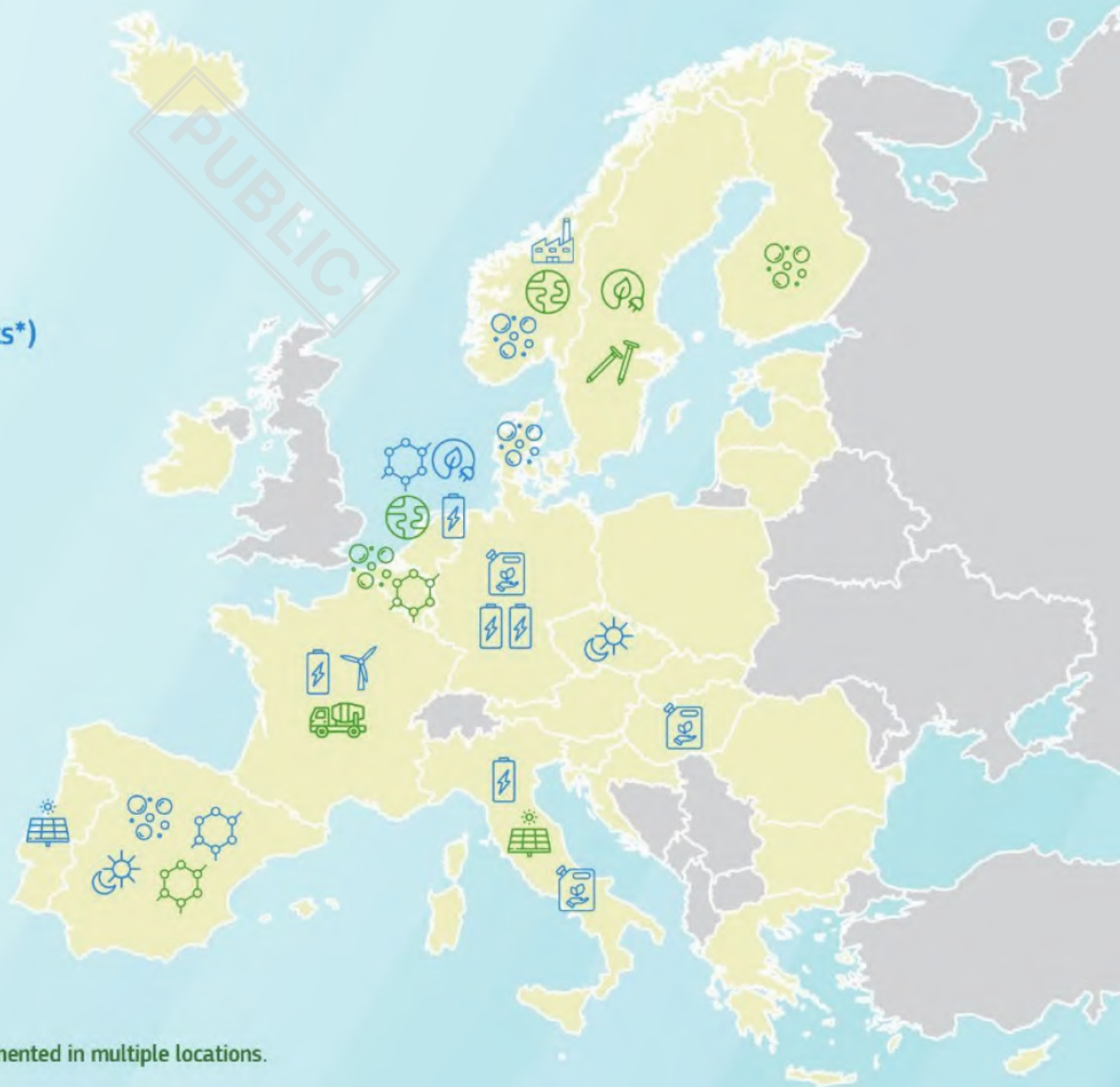
metals, cement,
insulation materials, lime
clinker

Innovation Fund Large-scale projects

Green: Projects pre-selected for a grant (7 projects*)

Blue: Projects awarded project development assistance (15 projects*)

- | | |
|--|---|
|  Biofuels and biorefineries |  Other energy storage |
|  Chemicals |  Bio-electricity |
|  Planned CO ₂ storage location |  Pulp and paper |
|  Hydrogen |  Refineries |
|  Intra-day electricity storage |  Renewable heating/cooling |
|  Iron and steel |  Solar energy |
|  Non-ferrous metals |  Wind energy |
|  Glass, ceramics and construction material |  Cement and lime |



*The number of symbols is higher than the number of projects, as some projects are implemented in multiple locations.

Innovation Fund grants of € 1145 million for seven first-of-a-kind projects

Kairos-at-C - Port of Antwerp (BE)

- Carbon capture from hydrogen, ammonia and ethylene oxide production and storage in North Sea, innovative shipping

BECCS Stockholm (SE)

- Bio-energy carbon capture at a combined heat and power plant and storage in North Sea – negative emissions

K6 (FR)

- CCUS at cement plant with storage in North Sea and carbon use for concrete production

SHARC (FI)

- Green hydrogen from water electrolysis and blue hydrogen with CCS, storage in North Sea

Hybrit (SE)

- Hydrogen-based direct reduction for steelmaking, including electrolyser

ECOPLANTA (ES)

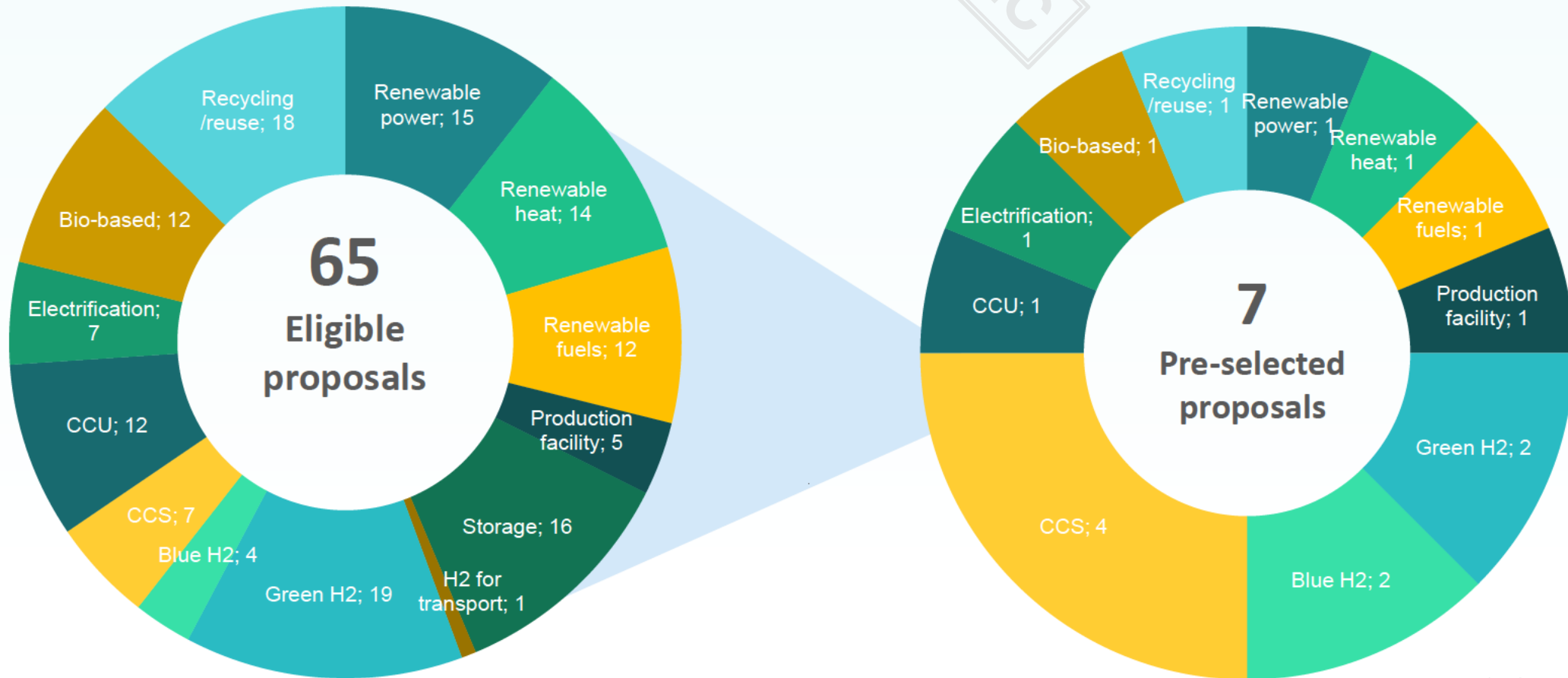
- Bio-based methanol from municipal waste

TANGO (IT)

- Bifacial heterojunction photovoltaic cells production at GW scale

2020 LSC: TECHNOLOGICAL PATHWAYS COVERED BY PROPOSALS

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



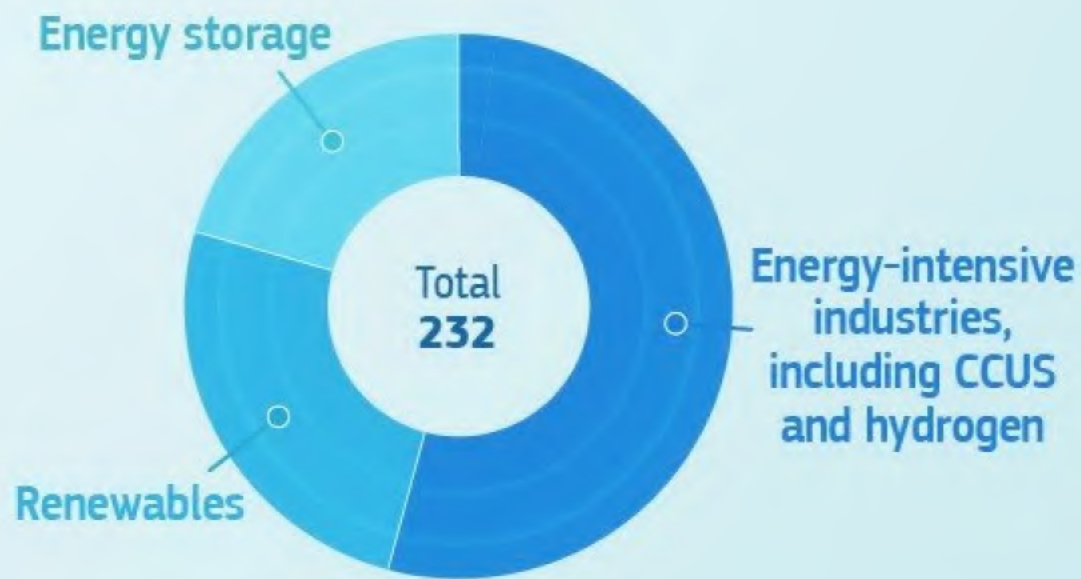
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First call for small-scale projects 2020 SSC

Project overview

Applications to first Innovation Fund small-scale call

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Applications per activity
of which some are cross-sectoral applications



Overall results from 2020 call for Small-Scale projects

232 proposals were submitted in March 2021

175 proposals were deemed admissible and eligible

38 proposals passed all thresholds



32 proposals were selected for grant preparation
requesting **€118.4 million**

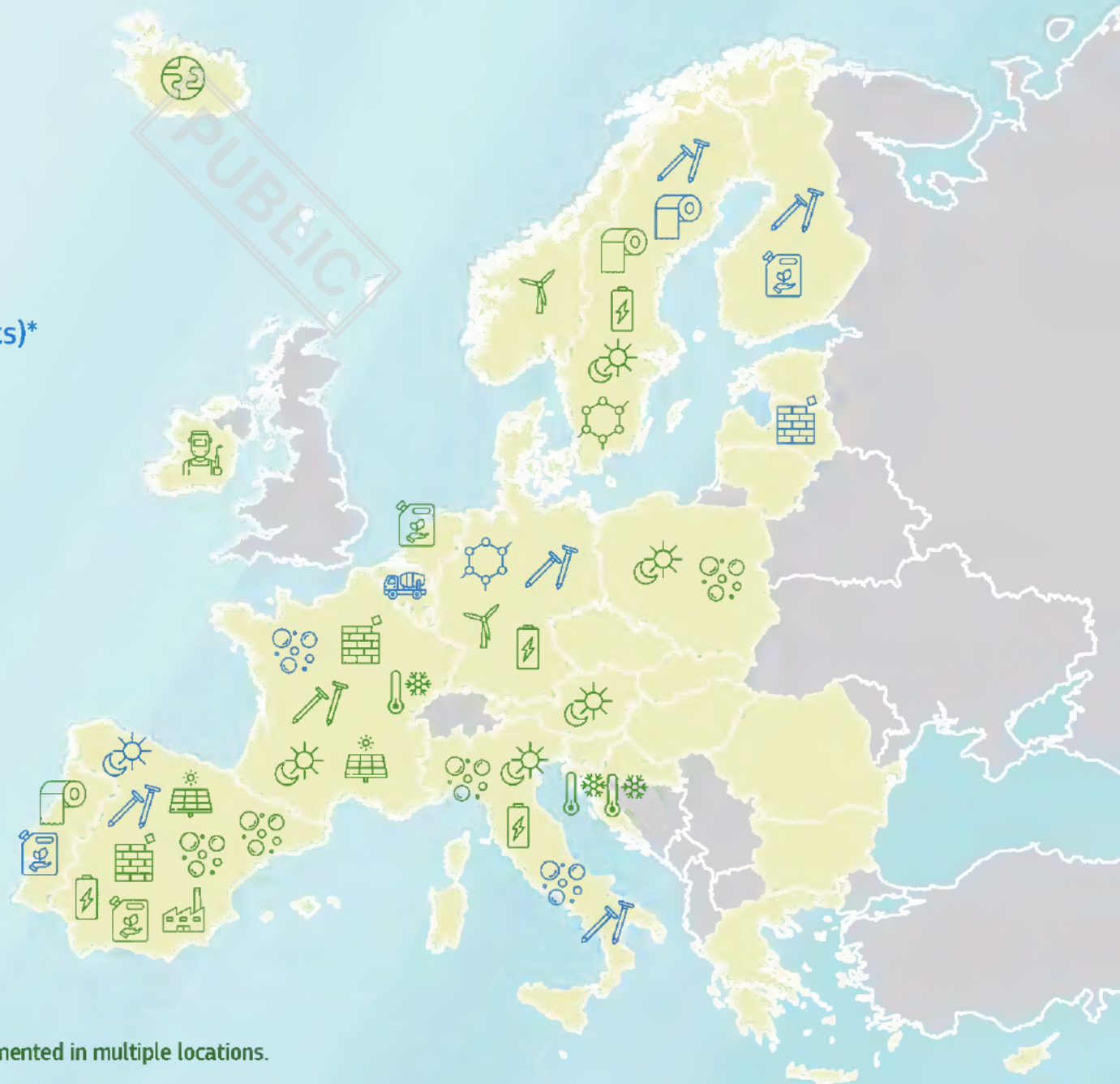
30 projects awarded with **€109 million**

Innovation Fund Small-scale projects

Green: Grant agreements signed (30 projects)*

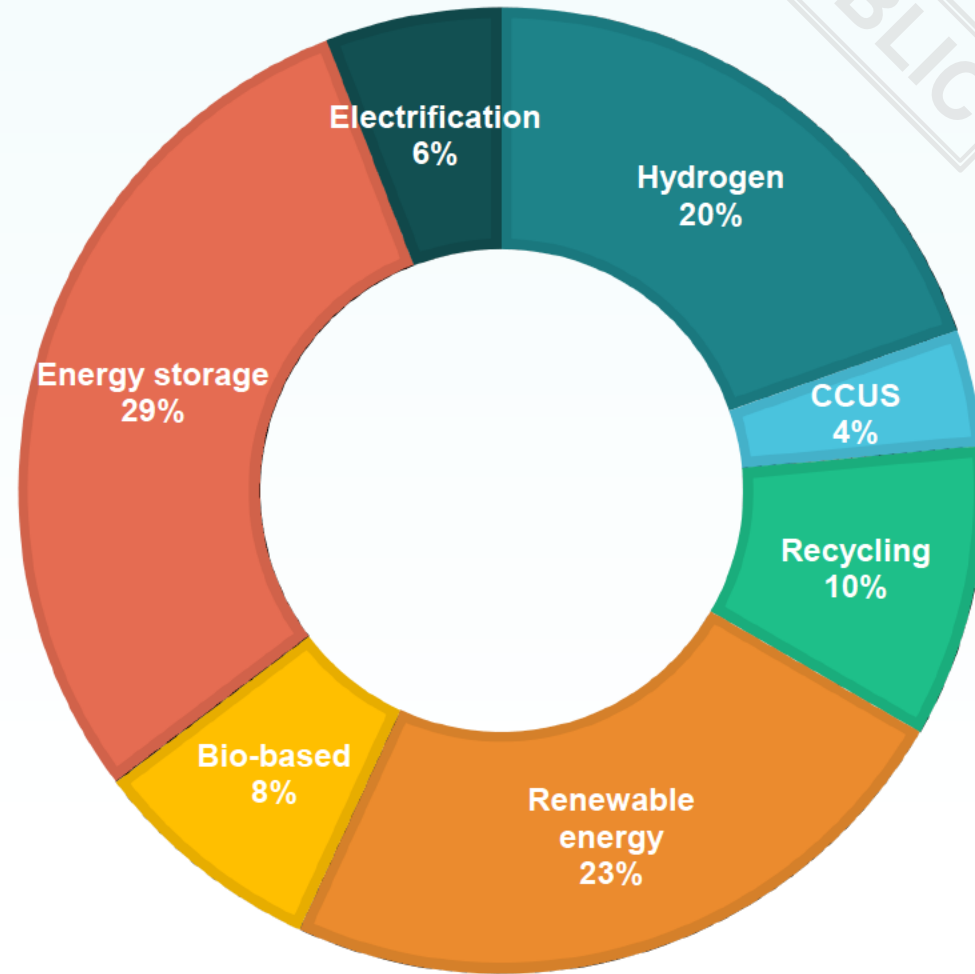
Blue: projects awarded project development assistance (10 projects)*

 Biofuels and biorefineries	 Other energy storage
 Chemicals	 Bio-electricity
 CO ₂ transport and storage	 Pulp and paper
 Hydrogen	 Refineries
 Intra-day electricity storage	 Renewable heating/cooling
 Iron and steel	 Solar energy
 Non-ferrous metals	 Wind energy
 Glass, ceramics and construction material	 Cement and lime



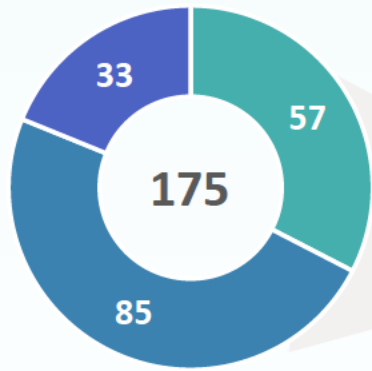
*The number of symbols is higher than the number of projects, as some projects are implemented in multiple locations.

32 successful small-scale projects



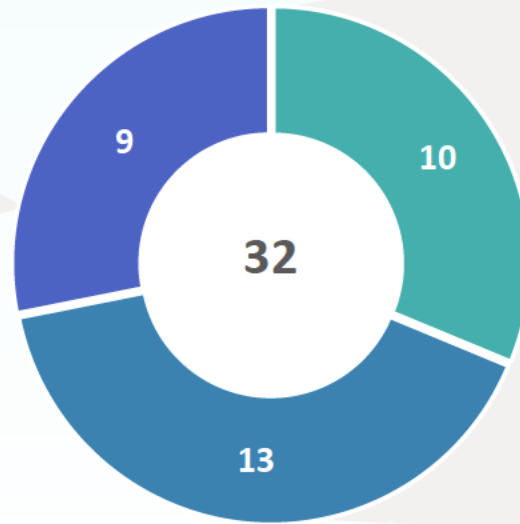
2020 SSC: representation per category and technology pathway

Eligible projects by category

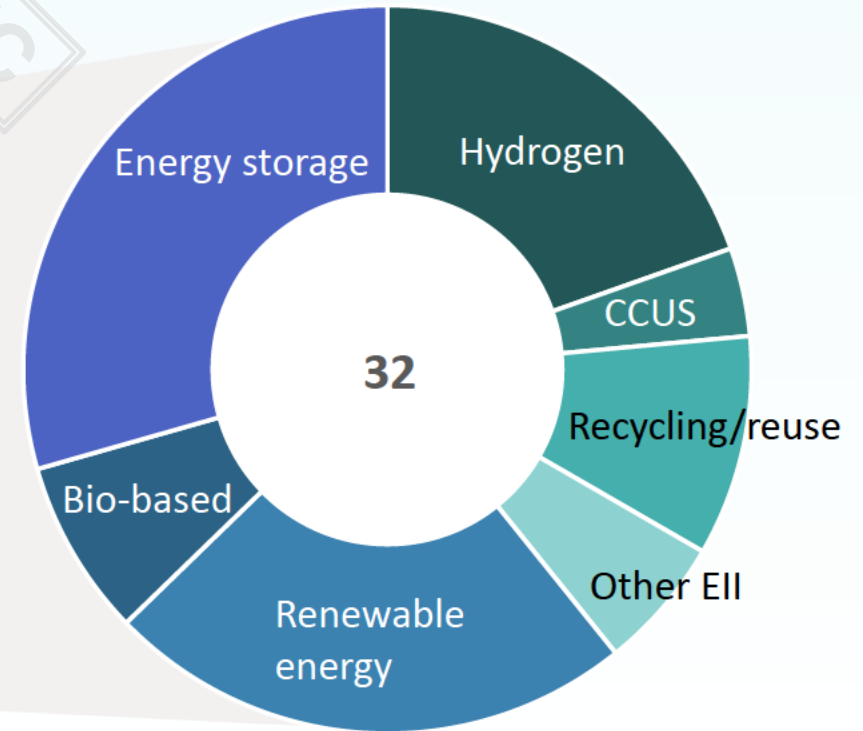


- Renewable Energy
- Energy Intensive Industry
- Energy Storage

Selected projects by category



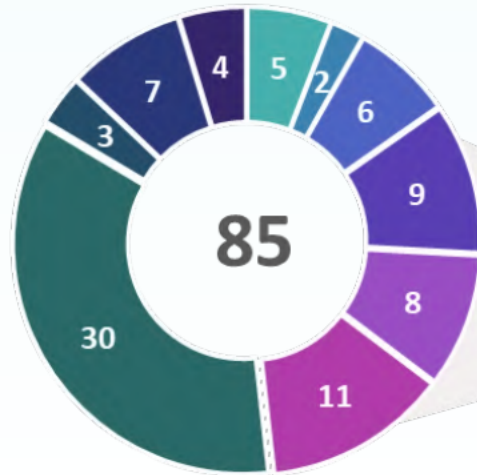
Breakdown by technological pathway



Legend: High-level screening of applied technological pathways. Classification of projects can be overlapping. Other Energy intensive industries (EII) = New process/product and Electrification

SSC 2020: Energy intensive industry: many sectors represented

Eligible projects



Projects selected for grant preparation

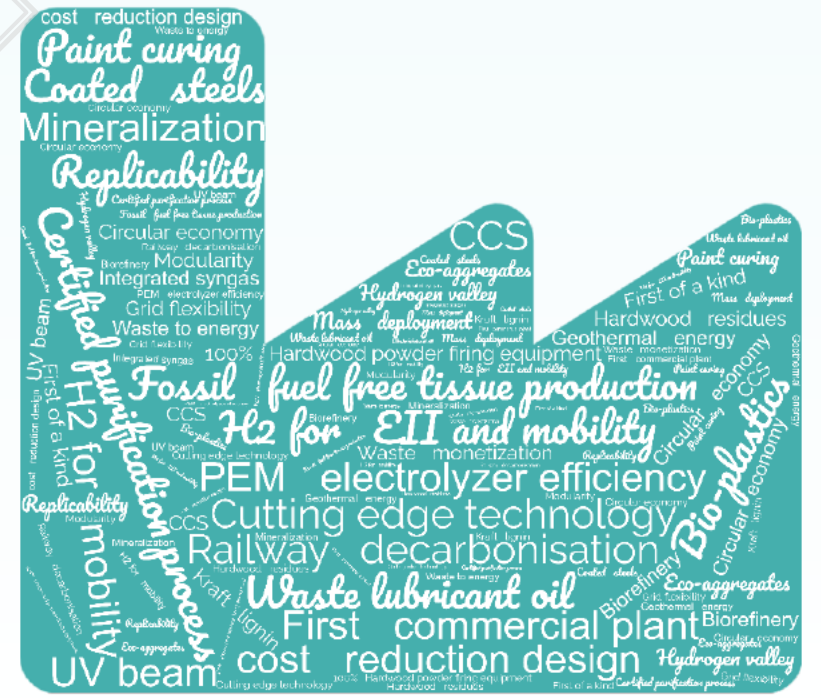
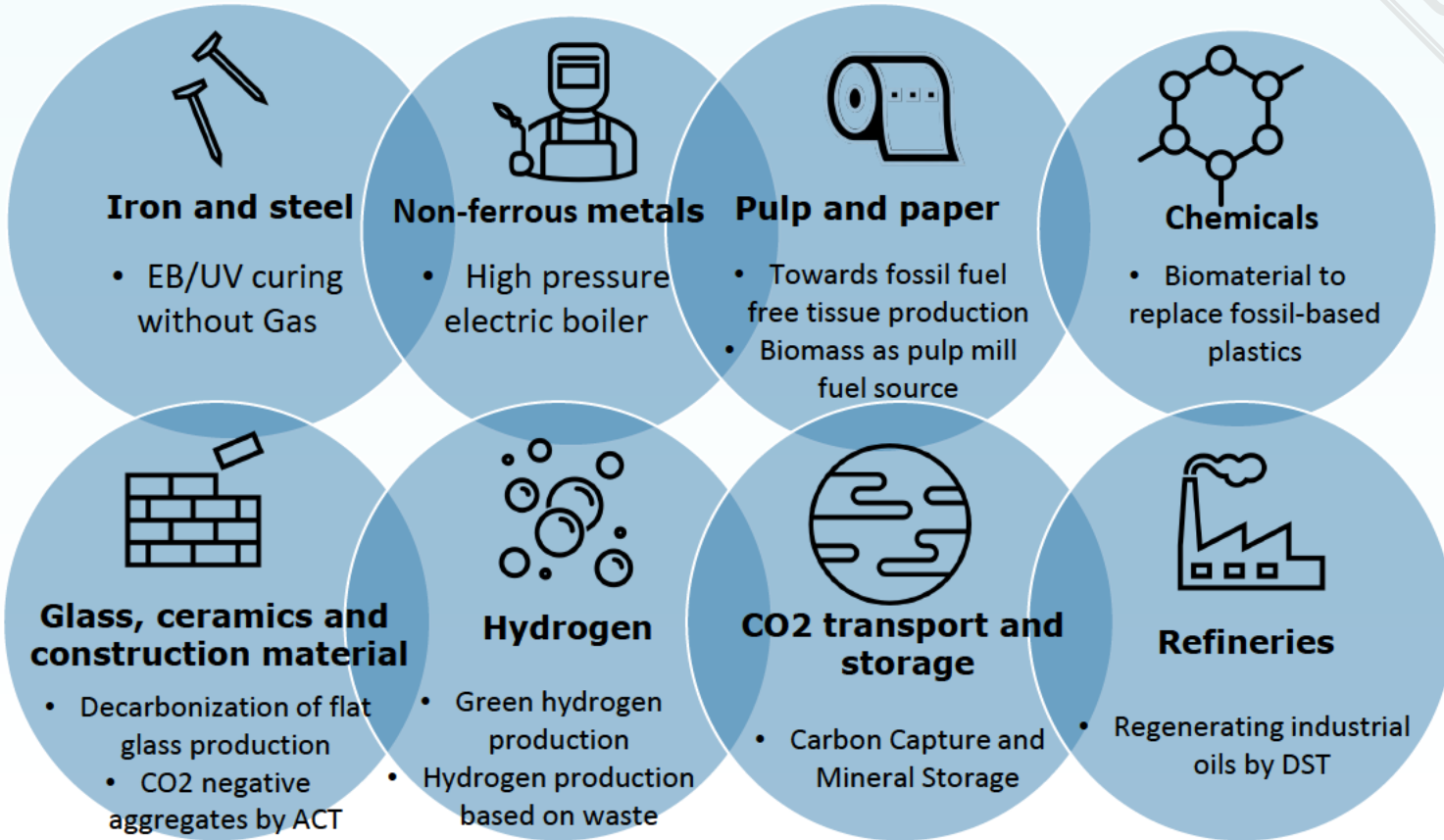


- Iron and steel
- Pulp and paper
- Chemicals
- Hydrogen
- Other sector(s)
- Non-ferrous metals
- Cement and lime
- Glass, ceramics & construction mat
- CO2 transport and storage
- Refineries

- Sectors with more selected projects cover **hydrogen, chemicals, and glass, ceramics & construction material**
- All eligible projects in **cement & lime and other sectors** failed either minimum requirements or minimum thresholds

Energy intensive industry projects & their contribution to the green deal

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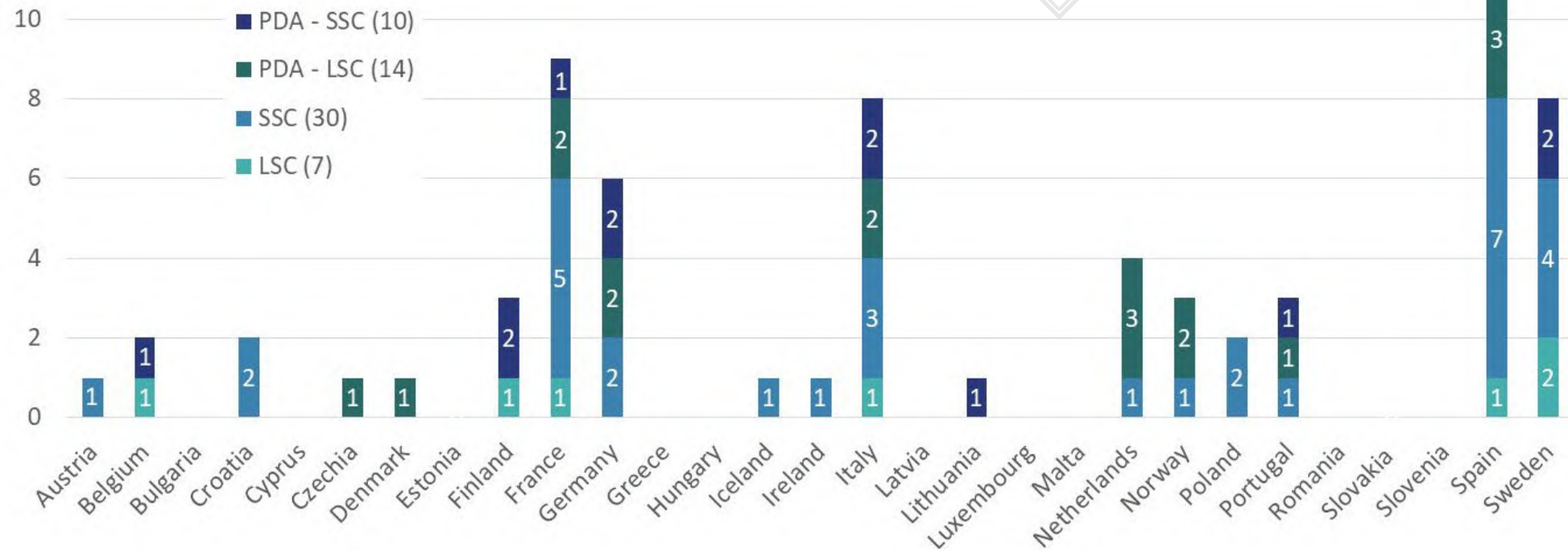
EB/UV = Electron Beam/Ultra-Violet
 ACT = Accelerated Carbonation Technology
 DST = Double Separation Technology

Full list of projects available on https://ec.europa.eu/clima/eu-action/funding-climate-action/innovation-fund/small-scale-projects_en



OVERALL IF PROGRAMME IMPACT BY LOCATION

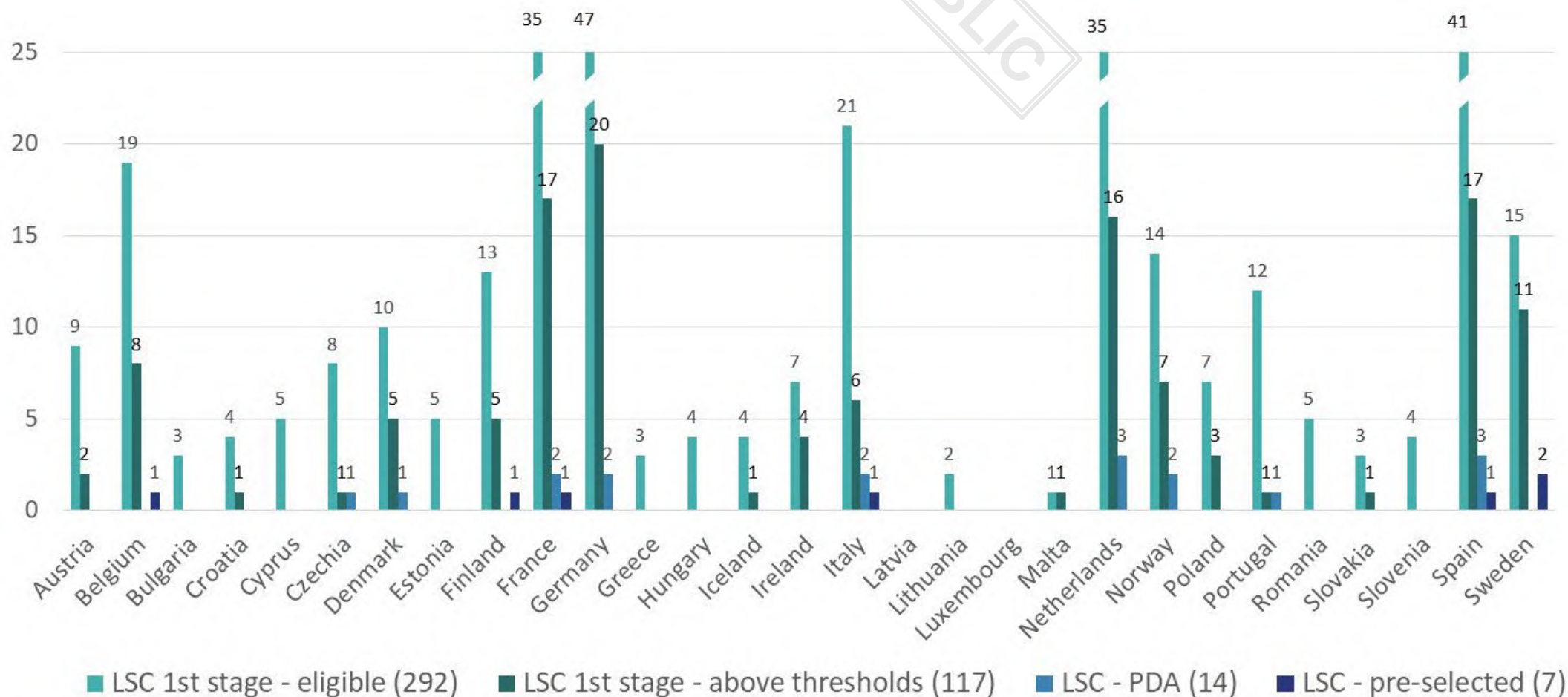
(Pre-) Selected proposals per European country*



*Some proposals are located in more than one country

2020 LSC PROPOSALS BY COUNTRY

Large-scale call proposals per European country*



Innovation Fund – 2nd call for large-scale projects

**Grants of EUR
1.5 billion**

50% increase
compared to first call

Project development
assistance available
for 20 promising
projects

**Call text
largely similar
to first call**

Only targeted
improvements based
on feedback from first
calls

Easy resubmission
for the projects which
were not selected in
the 1st call

Stable documents to
allow better guidance
for new applicants

Already open

Launched on 26
October 2021

Submission deadline
on 3 March 2022

Results from single-
stage evaluation
expected for Q3 2022

KEY / NEXT EVENTS / CALLS

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13 January 2022

[Large Scale call 2020 -
Lessons learned](#)

12 October 2021

[Small-scale call 2020 –
Lessons learned](#)



3 March 2022

Deadline for the 2nd Large-scale call

31 March 2022

Launch of the 2nd Small-scale call

6 April 2022

Info Day 2022 SSC



August 2022

Deadline Submission 2nd Small-scale call

September 2022

Expected evaluation results 2nd Large-scale call

Q4 2022

3rd Large-scale call

ETS Directive revision proposal

Article 10a(8) – Innovation Fund and carbon contracts for difference

Extended scope

Sector coverage:

- Annex III (buildings and road transport) sectors - *new*
- Maritime and aviation sectors - *new*
- Special attention to CBAM sectors – *new*

Design changes:

- Competitive tendering mechanisms with up to 100% support such as carbon contracts for difference – *new*

Scope of the Innovation Fund, Article 10a(8)

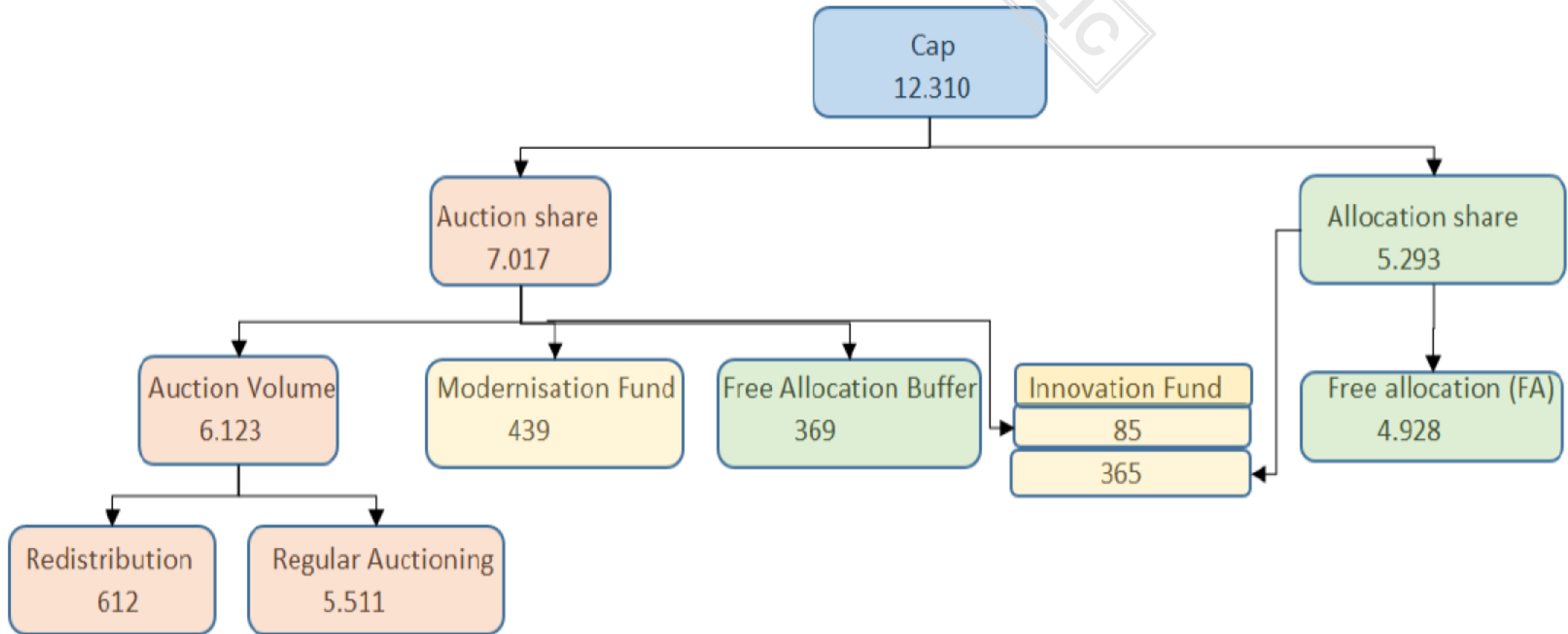
- The Innovation Fund shall cover the sectors listed in Annex I and Annex III, including environmentally safe carbon capture and utilisation (“CCU”) that contributes substantially to mitigating climate change, as well as products substituting carbon intensive ones produced in sectors listed in Annex I, and to help stimulate the construction and operation of projects aimed at the environmentally safe capture and geological storage (“CCS”) of CO₂, as well as of innovative renewable energy and energy storage technologies in geographically balanced locations. [current]
- The Innovation Fund may also support break-through innovative technologies and infrastructure to decarbonise the maritime sector and for the production of low- and zero-carbon fuels in aviation, rail and road transport. [new]
- Special attention shall be given to projects in sectors covered by the [CBAM regulation] to support innovation in low carbon technologies, CCU, CCS, renewable energy and energy storage, in a way that contributes to mitigating climate change. [new]

Article 10a(8) – Innovation Fund and carbon contracts for difference

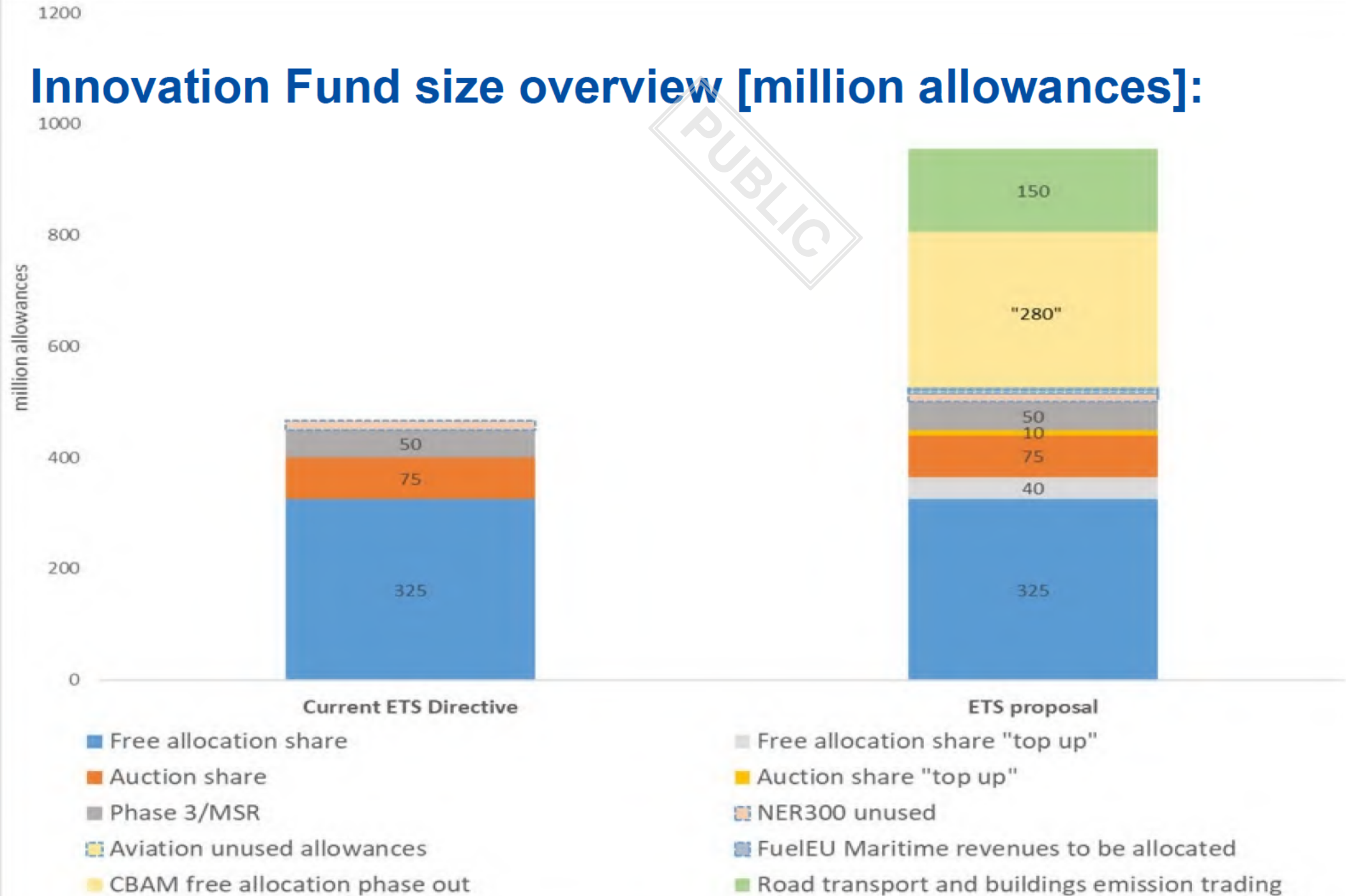
Changes in volume

- **365 M** from the allowances to be allocated for free (325 M previously)
- **85 M** from auctioning (75 M previously)
- Aviation unused allowances from closures
- FuelEU Maritime revenues to be allocated
- 150 M from the road transport and buildings emission trading, Art30d (3)
- Allocation not granted to CBAM sectors

ETS cap distribution tree (indicative based on 2024 update)



Innovation Fund size overview [million allowances]:

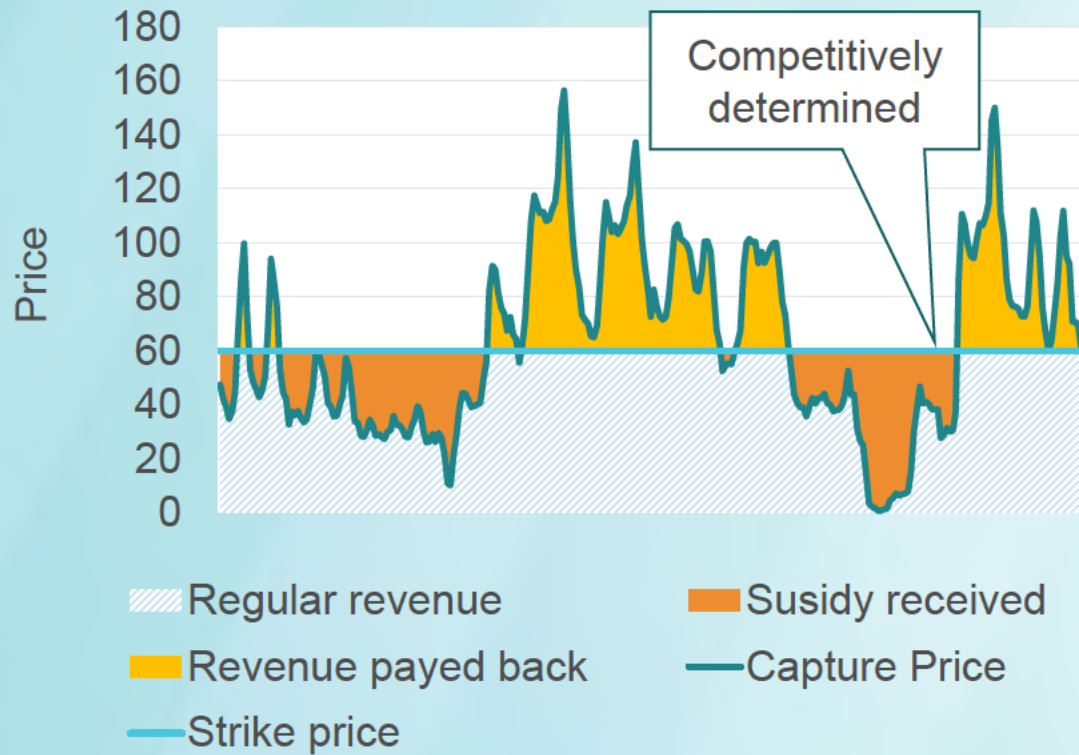


Competitive bidding / Carbon contracts for difference

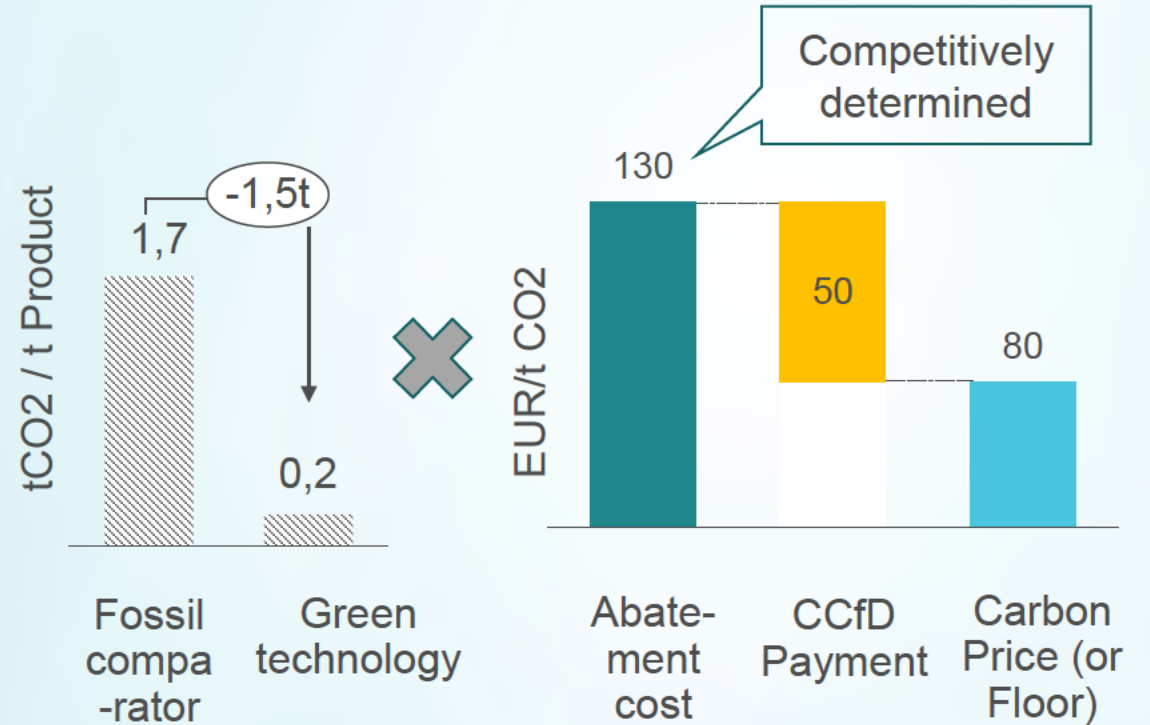
- ETS Directive revision proposal creates the basis for “competitive bidding” mechanisms of “up to 100%” of relevant costs*
- In combination with increased revenues for IF, it can further foster initial deployment of innovative low carbon technologies in industry and enhance competitiveness across the EU through innovation
- Market-based mechanisms such as C(C)fD:
 - Allocate risk more efficiently between the public and private sector
 - Increase the cost efficiency of subsidies by inducing competition and leveraging private sector capital
 - Integrate neatly into the existing carbon pricing signal

Exemplary CfD and CCfD

Exemplary Contract for Difference



Exemplary Carbon Contract for Difference



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>



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Modernisation Fund

Scope under current EU ETS Directive

	Priority investments	Non-priority investments
Scope	<ul style="list-style-type: none"> • Generation and use of renewable electricity • Energy efficiency improvements • Energy storage • Modernisation of energy networks • Just transition in carbon-dependent regions 	<ul style="list-style-type: none"> • Any other investment in line with the objectives of the Modernisation Fund • Solid fossil fuels not eligible (except efficient and sustainable district heating in BG and RO)
Maximum funding	Up to 100% of relevant costs* (State aid rules)	<ul style="list-style-type: none"> • Up to 70% of relevant costs* (State aid rules) • Remaining costs by private legal entities
Fund allocation	At least 70% of the Fund	At most 30% of the Fund
Types of investment	Individual investments Multiannual schemes	Individual investments Multiannual schemes

Proposal for a revised Article 10

- **Proposal for revised size:**

- **2% cap of total ETS allowances as Modernisation Fund endowment = maintained**
 - Same 10 beneficiaries as under current rules (same distribution key)
- **Additional 2.5% of the cap (scope: existing ETS only)**
 - Top-up distributed across 12 Member States (+ Greece and Portugal)
- Possibility to transfer additional allowances granted for solidarity purposes is maintained

- **Proposal for revised scope:**

- Alignment of investments with the objectives of the European Green Deal and the European Climate Law
- No more support to energy generation facilities that use fossil fuels;
- Increase in the percentage to be invested in priority investments (from 70% to 80%)
- Heating and cooling based on renewables eligible as a stand-alone priority investment
- Inclusion of support to low-income households to address energy poverty and to modernise their heating systems eligible under priority investment.

Modernisation Fund proposal details:

MF	2% MF	2,5% (top up) MF
Elegibility period	2013	2016-18
Application period	2021-30	2024*-30
Size (indicative) [million allowances]	246	193
	share [%]	
BG	5,84	5
CZ	15,59	12,9
EE	2,78	2,2
EL		10,3
HR	3,14	2,3
LV	1,44	1,1
LT	2,57	1,9
HU	7,12	5,9
PL	43,41	34,8
PT		8,8
RO	11,98	9,9
SK	6,13	4,9

Modernisation Fund distribution overview [in million allowances]:

