

**Innovation Fund
Expert Group meeting
18 December 2019**

Agenda

Innovation Fund
Tour 2019

Basics

Project selection

Governance

How to calculate
GHG emissions
avoidance

How to calculate
relevant costs
and cost
efficiency

How to co-
finance projects

Preview of next
meetings

Slido

During the event, Slido will be used for:

- short surveys
- submit your questions and comments

TO JOIN:

1. Take out your smartphone, tablet or computer and open your browser
2. Go to [**Slido.com**](https://www.slido.com) and enter the event code **#IFEG**.
3. You can now ask questions, up vote questions and participate in polls.

Agenda

**Innovation
Fund Tour
2019**

Basics

Project selection

Governance

How to calculate
GHG emissions
avoidance

How to calculate
relevant costs
and cost
efficiency

How to co-
finance projects

Preview of next
meetings

Innovation Fund

Tour
2019



Steel, Chemicals, Waterborne, Paper, Cement, Solar, Wind, Ocean, Carbon Capture and Storage, Bioenergy, Refineries, Fertilizers, Carbon Capture and Use, Geothermal, Hydrogen, Ceramics, Circular Economy

Belgium (Leuven), Netherlands (The Hague), Austria (Vienna), Sweden (Stockholm), Slovenia (Ljubljana), Italy (Rome), Denmark (Copenhagen), Spain (Madrid), Ireland (Dublin), Czechia (Prague), France (Paris)

Overview of Projects

Tour
2019

Mitigation \ Sector Option	Energy Storage	Renewable Energy*	Cement & Lime	Refineries	Iron & Steel	Chemicals	Glass & Ceramics	Pulp & Paper	Hydrogen Production	Power Generation	Other Sectors*
Efficiency Improvement	5	21	4	1	10	6	3	7	12		2
Fuel Switch*			4	14	8	6	2	4	2		1
CCU			9	8	5	9					
CCS			1	3	1	2			1	4	
Circular			2	1	3	6			1		6
Other	1	6		3	2	2			2		1

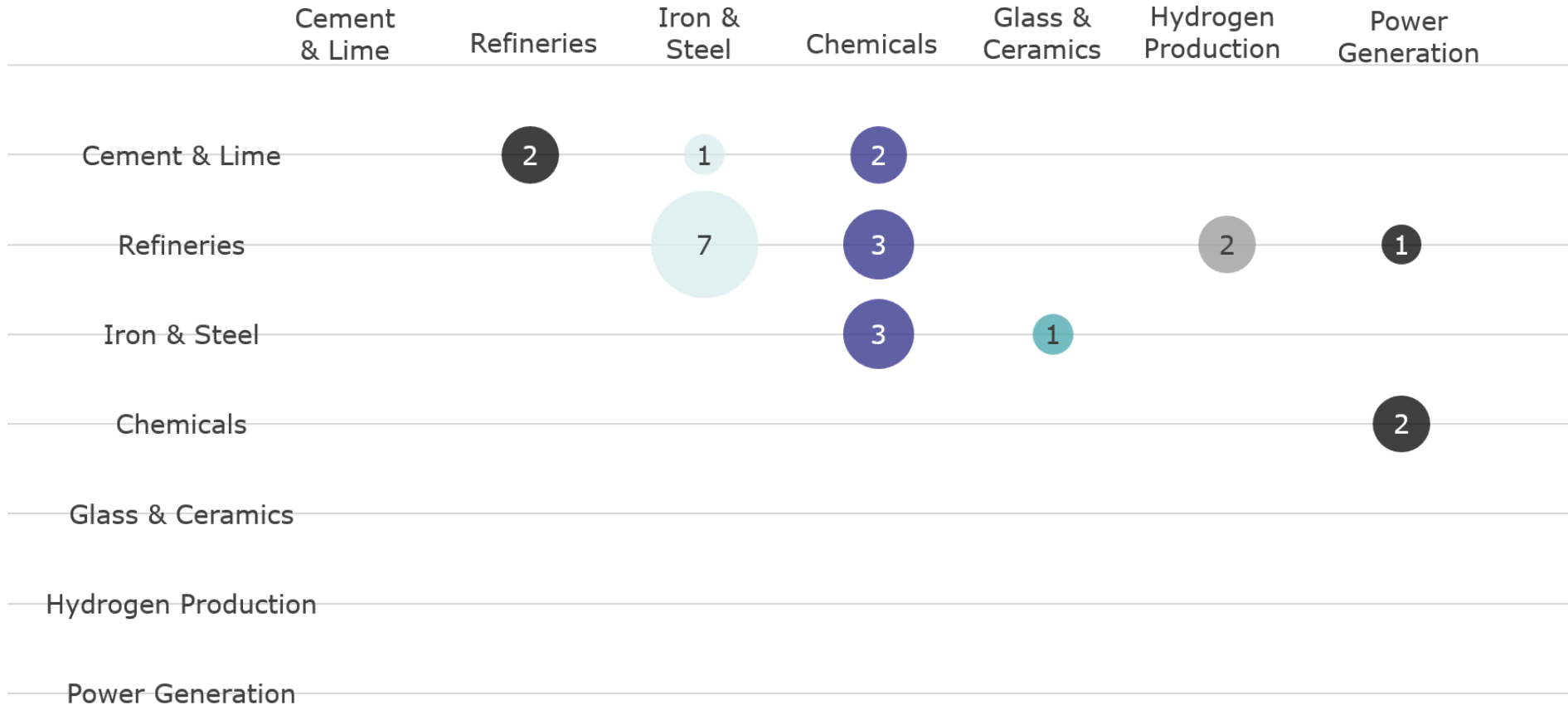
*Renewable energy: wind, solar, ocean, hydro, geothermal, bio

*Fuel switch: to renewable energy source (incl. RES H2, electricity, biogas)

*Other sectors: non-ferrous metals, mineral wool, gypsum

Industrial Cross-Sectoral Projects

Tour
2019



Agenda

Innovation Fund
Tour 2019

Basics

Project selection

Governance

How to calculate
GHG emissions
avoidance

How to calculate
relevant costs
and cost
efficiency

How to co-
finance projects

Preview of next
meetings

Key features

Basics

Volume of at least
EUR 10 billion at
current carbon
prices

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

Renewable energy
CCS and CCU
Industry
Storage

Financed from the
revenues of the EU
Emissions Trading
System

Support of
additional capital
and operating costs
(up to 10 years)

First call in mid-
2020

Selection process

Basics

Greenhouse gas
emissions avoidance

Degree of innovation

Project maturity

Scalability

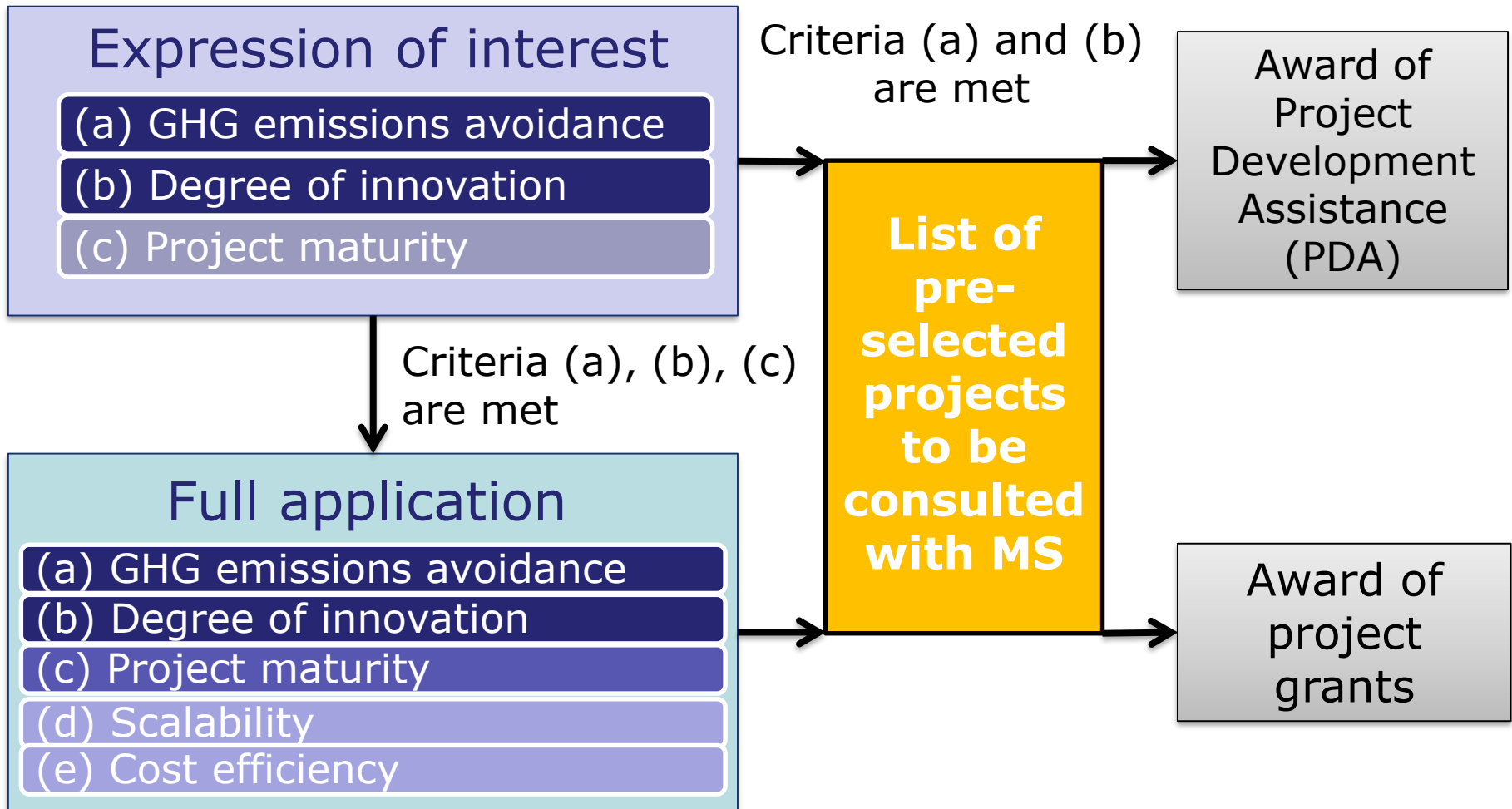
Cost efficiency



**Technical,
business,
financial
viability**

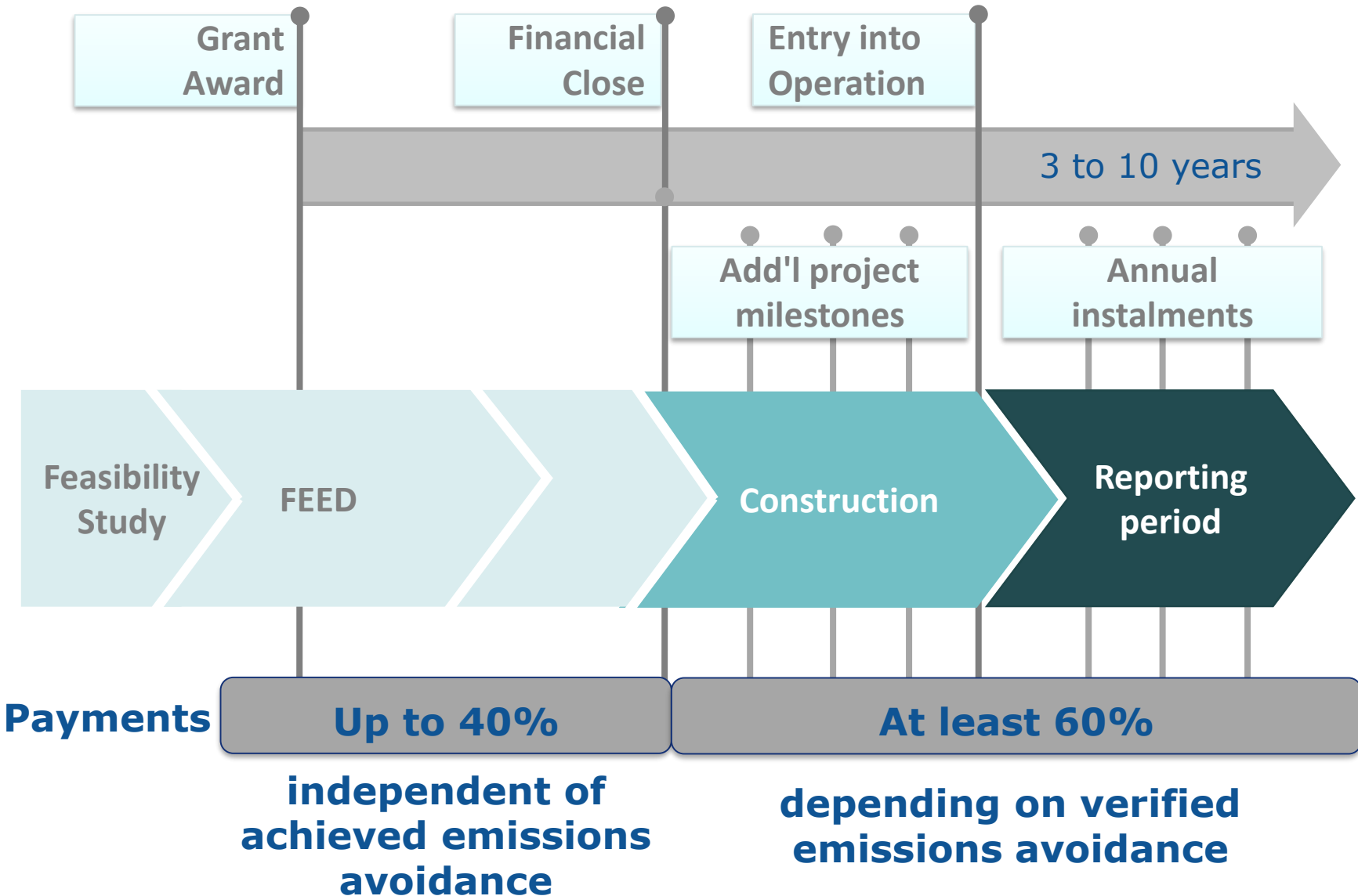
Selection process

Basics



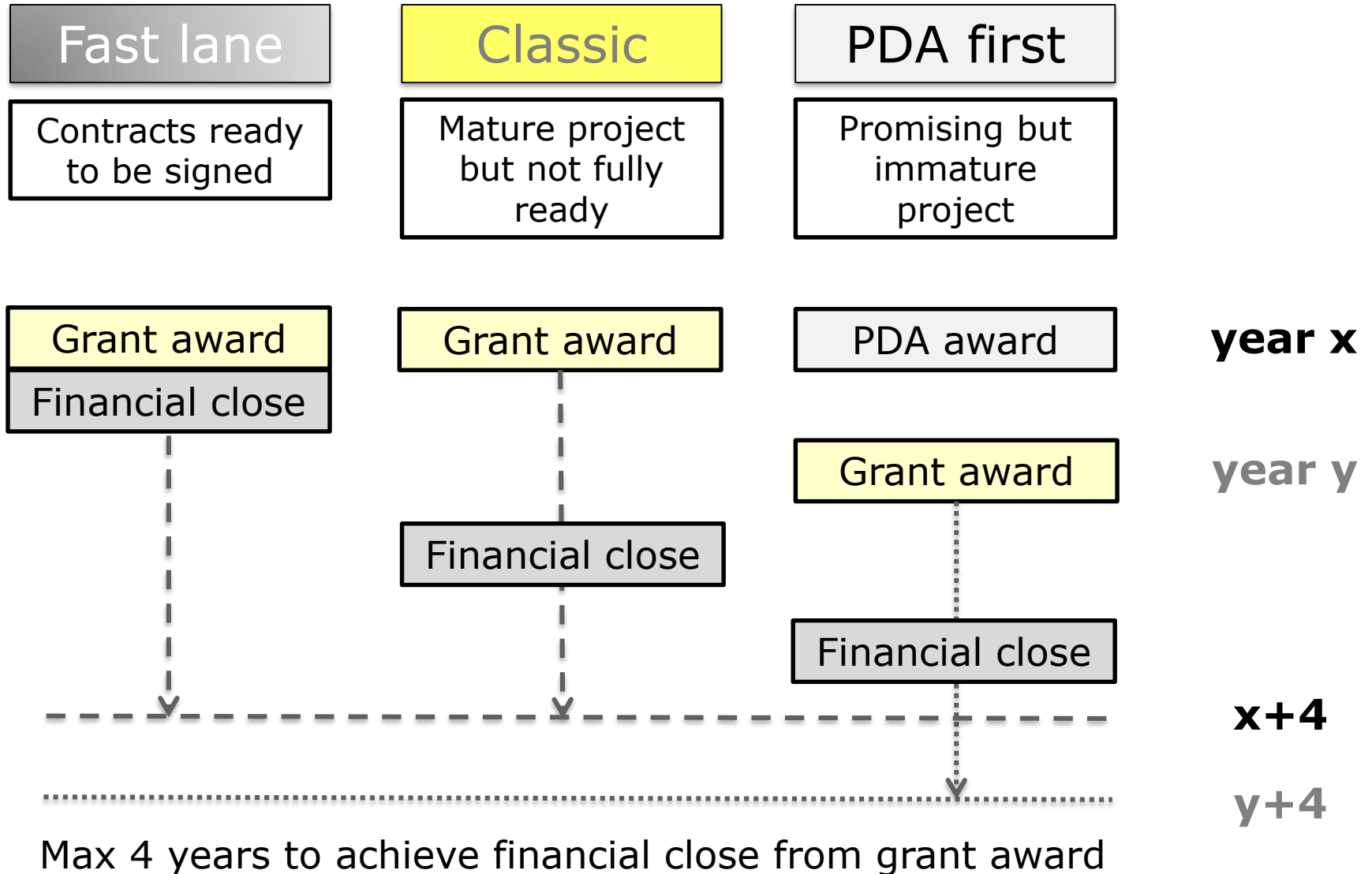
Grant disbursement

Basics



Choose your speed!

Basics



SLIDO poll

Basics

How fast will projects be implemented?
What are your expectations?

Fast lane

Classic

PDA first

Innovation Fund vs Horizon 2020

Basics

Innovation Fund		Horizon 2020
Build and operate large-scale industrial assets with breakthrough technologies	Objective	Research programme
Single entity, i.e. international consortia not required	Applicants	At least 3 legal entities from at least 3 Member States
Technical, business, and financial viability	Selection criteria	Focus on research
Lump-sum payments upon milestones and performance (verified GHG emissions avoidance)	Disbursement of grant	Upon final report and approval of the eligible costs
Contents and conditions of calls can be adjusted annually	Calls	Seven-year work programme

Agenda

Innovation Fund
Tour 2019

Basics

**Project
selection**

Governance

How to calculate
GHG emissions
avoidance

How to calculate
relevant costs
and cost
efficiency

How to co-
finance projects

Preview of next
meetings

First call in 2020

First ideas

Your views
please

Scope

- Projects with capital expenditure > EUR 7.5 million

Expected timeline (tbc)

First ideas

Your views
please

June 20

Launch of first call

Sep 20

Submission deadline for first
phase

Q1 21

Award of Project Development
Assistance

Q1 21

Invitation for second phase

Q2 21

Submission deadline for second
phase

Q4 21

Award of grant

Preparations for first call

First ideas

Your views
please

Expert group

18 December

- Start of final preparations for first call

Workshop

5-6 February

- Deep dive on calculations
 - GHG emissions avoidance
 - Cost efficiency

Workshop

2nd week
March

- Deep dive on project selection, co-financing, and grant management

Expert group

April

- Summary of technical work



Technical experts



Financial experts

First-phase selection criteria

Expression of interest

First ideas

Your views
please

GHG emissions avoidance

- To be delivered during first 10 years of operations

Degree of innovation

- Breakthrough technologies
- Consistency with 2050 climate-neutrality vision
- Quantitative indicators

Project maturity

- Readiness to invest
 - *1 = feasibility study*
 - *100 = "conditional investment decision"*

GHG emissions avoidance

First ideas

Your views please

Renewables (2 options)

- Amount of renewable energy produced (as NER300) **OR**
- Avoided GHG emissions

Energy intensive industry

- Emissions reductions compared to GHG emissions of ETS benchmark installation

Energy storage (2 options)

- Amount of energy stored **OR**
- Avoided GHG emissions

At least 75% need to be delivered to receive full grant

Degree of innovation

First ideas

Your views
please

Breakthrough technologies

- Technologies are innovative in relation to the state-of-the-art
- Technologies should not yet be commercially available

Consistency with EU policy objectives

- 2050 climate neutrality - "Clean Planet for all"
- SET-plan

Key performance indicators

- GHG emissions avoidance based on expected 2050 electricity mix
- Carbon intensity
- Resource and material efficiency

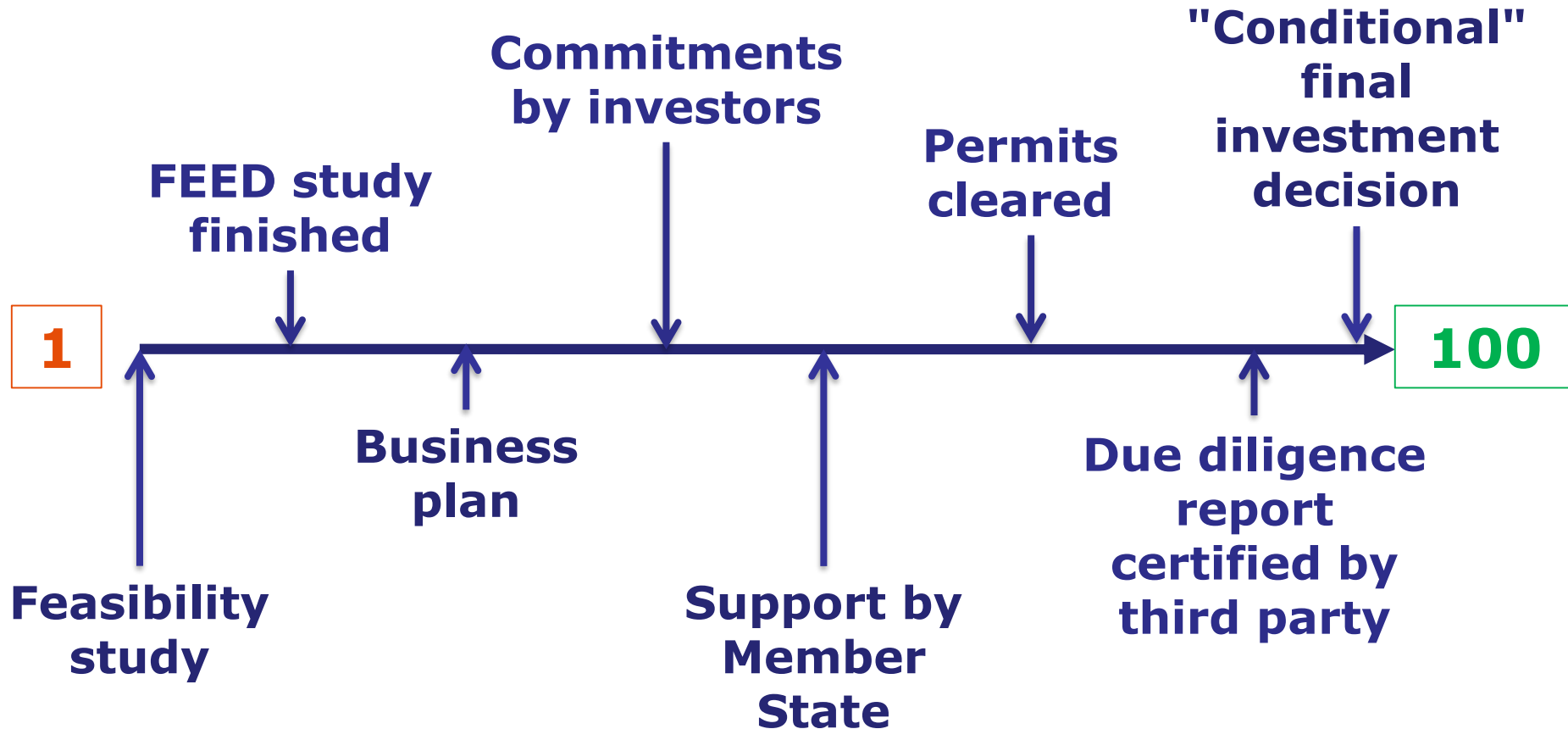


**Three
steps**

Project maturity

First ideas

Your views
please



Exemplary checklist – *to be further developed*

Stylized selection tree for 1st phase

First ideas

Your views
please

Is the
project
promising?

GHG emissions
avoidance

Degree of
innovation

Yes

Is the
project
mature?

Project
maturity

No

OUT

No

**Project
Development
Assistance**

Yes

**2nd phase –
Full
application**

SLIDO poll

First ideas

Your views
please

Which of the three selection criteria is most important for you?

GHG emissions
avoidance

Degree of
innovation

Project maturity

Questions

First ideas

**Your views
please**

How sophisticated should be the GHG emissions avoidance calculations?

What are good (quantitative) indicators for degree of innovation?

How to best judge project maturity? Which documents should be requested?

Two additional criteria for full application

First ideas

Your views please

Scalability

- Market potential in a 2050
 - *Number and scale of applications*
 - *Expected cost reductions*
 - *Resource availabilities*

Cost efficiency

- Requested grant in relation to promised GHG emissions savings

Cost efficiency

First ideas

Your views
please

Relevant costs

- Additional capital expenditure +
- Net present value of additional operating costs and benefits over 10 years after entry into operations

Benchmark for additionality

- Reference plant **OR**
- Price (e.g. LCOE)

Risks and costs calculations

- Weighted average cost of capital (WACC)
- Past average carbon price as conservative estimate

Cost efficiency =

First ideas

Your views
please

Requested grant
(up to 60% of
relevant costs)

=

Expected GHG
emissions
avoidance

How
aggressive or
conservative
do you want
to bid?

Second-phase selection process

Stylized step 1

First ideas

Your views
please

GHG emissions avoidance

• VV points

Degree of innovation

• WW points

Project maturity

• XX points

Scalability

• YY points

Cost efficiency

• ZZ points

**Ranking of projects within a sector based on
(weighted) sum of points**

1st

2nd

3rd

4th

..

Second-phase selection process

Stylized step 2

First ideas

Your views
please

Sector A

- 1st
- 2nd
- 3rd
- 4th

Sector B

- 1st
- 2nd

Sector C

- 1st
- 2nd
- 3rd

Which rule to apply to rank across sectors?

SLIDO poll

First ideas

Your views
please

Which of the five selection criteria is most important for you?

GHG emissions avoidance

Degree of innovation

Project maturity

Scalability

Cost efficiency

Second-phase selection Questions

First ideas

Your views
please

Can a cost calculation based on average carbon price (e.g. from past two years) be an effective means to reduce the carbon price risk?

What are good (quantitative) indicators for scalability (complementary to degree of innovation)?

Should the submission of a due diligence report by a third party (e.g. financial institution) be a binding requirement?

How to rank projects across sectors?

Agenda

Innovation Fund
Tour 2019

Basics

Project selection

Governance

How to calculate
GHG emissions
avoidance

How to calculate
relevant costs
and cost
efficiency

How to co-
finance projects

Preview of next
meetings

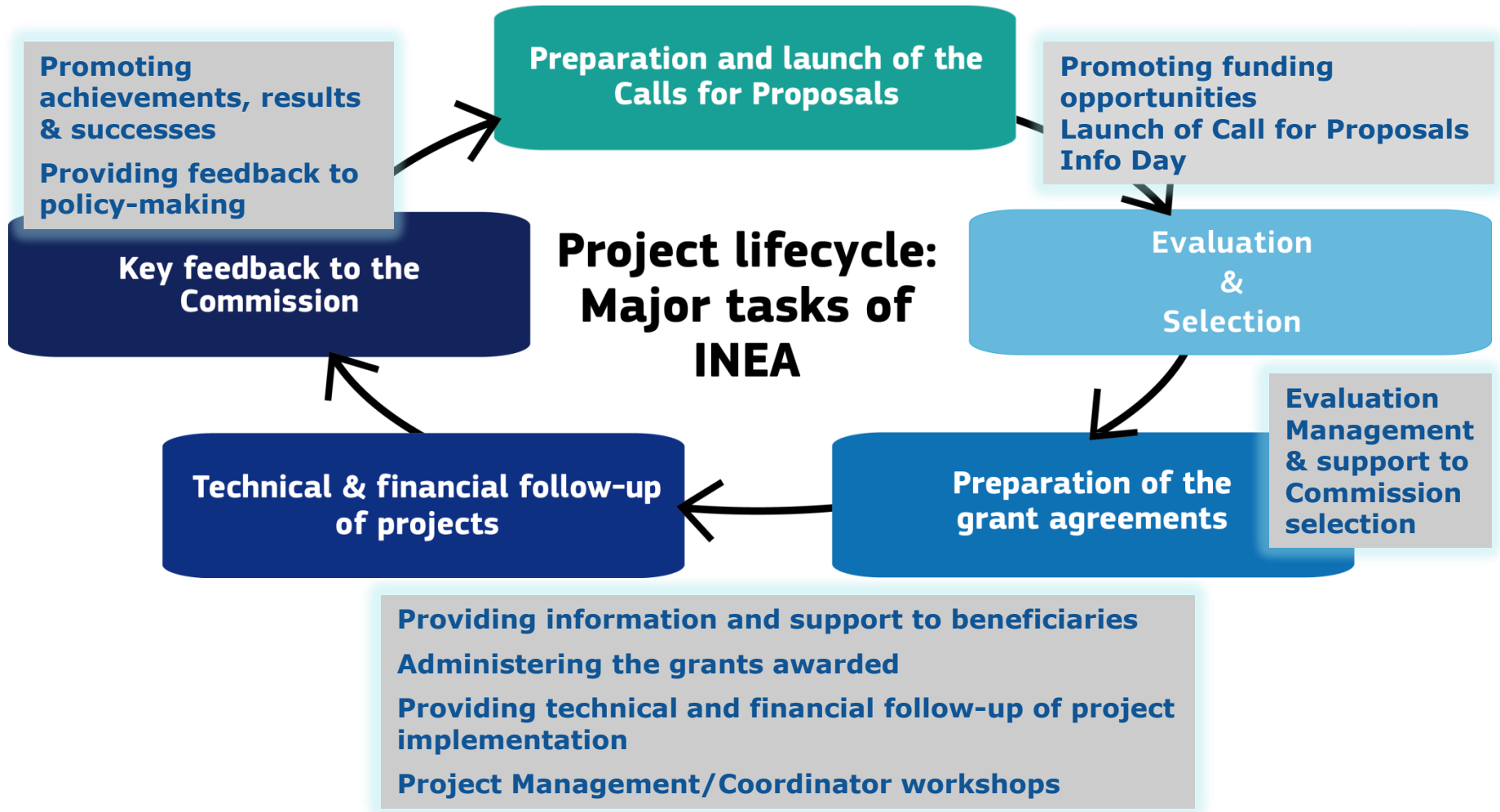
INEA's Programmes

- ✓ €33.9 billion
- ✓ 300 staff
- ✓ 1500+ ongoing projects

Horizon 2020



CEF
programme



External experts: bring your expertise!

PROFILES

- | | |
|-------------------|---|
| TECHNICAL EXPERTS | experience in engineering and innovative technologies in the sectors covered by the fund |
| FINANCIAL EXPERTS | experience in project finance, investment banking, financial analysis and risk analysis in the sectors covered by the fund. |

DESCRIPTION

A call for expressions of interest will be launched **to establish a pool of experts**

JOB DESCRIPTION

- **Evaluate innovative investment proposals;**
- Follow-up and support the **implementation of selected projects;**
- Provide **opinions and advice** in specific cases

EVALUATION SETTINGS:

- Individual and Team work: **remote phase** (individual evaluation) + **central meeting** in Brussels to agree on a consensus report (travel, accommodation and daily allowances included)
- Experts per proposal: **3-5 evaluators + 1 rapporteur drafting the report;**
- Effort required: **2-3 weeks/year** (flexible working time, dependent on number of projects);
- **Access to information** subject to **confidentiality and conflict of interest provisions in the contract.**

HOW TO APPLY

WHEN? LAUNCH OF THE CALL FOR EXPERTS EARLY 2020

WHERE? FUNDING & TENDER OPPORTUNITIES

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/work-as-an-expert>

EU ETS Innovation Fund: https://ec.europa.eu/clima/policies/innovation-fund_en

INEA: <https://ec.europa.eu/inea/en>

INEA recruits – join us!

PROFILES

PROJECT MANAGERS	experience in engineering and innovative technologies in different sectors.
FINANCIAL MANAGERS	experience in project finance, investment banking, financial analysis and risk analysis
LEGAL ADVISERS	expertise in EU law, with strong knowledge of EU programme management

DESCRIPTION

JOB DESCRIPTION

- Specific **expert teams following the covered sectors and led by senior project managers**
- Direct **outreach activities, contact with industry and market;**
- Organise the **launch of calls for proposals** and evaluation phases;
- **Negotiate grant agreements, manage the portfolio of projects** and support funded projects in a timely manner;
- Provide further assistance especially on **financial structuring;**
- **Monitor, communicate and exploit results.**

WHEN? LAUNCH OF THE VACANCY NOTICES EARLY 2020

WHERE?

<https://ec.europa.eu/inea/en/mission-objectives/job-opportunities>

HOW TO APPLY

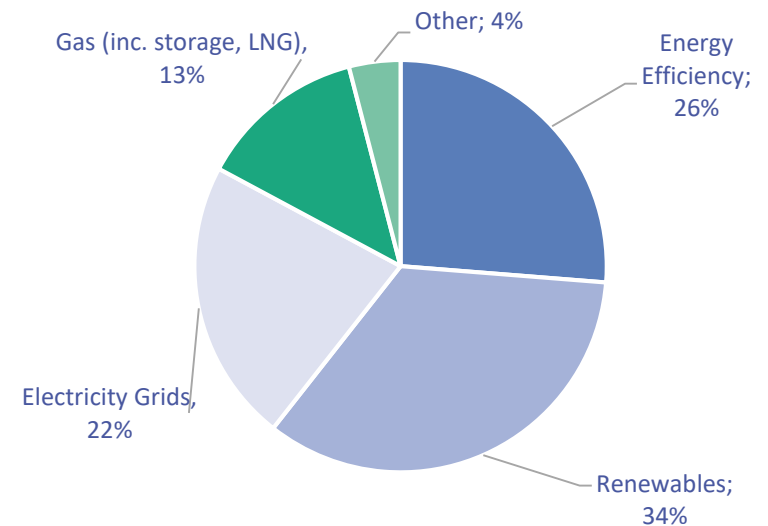
European Investment Bank – An overview

EU's long-term lending institution – a public bank with objectives driven by EU-policies



EIB lending to the energy sector

- EUR 13bn per year (2014-2018)
- Energy represented 18-20% of EIB lending
- c. 85% of energy lending inside EU



4 key priorities:

Innovation



€13.5bn

Environment



€15.2bn

Infrastructure



€12.3bn

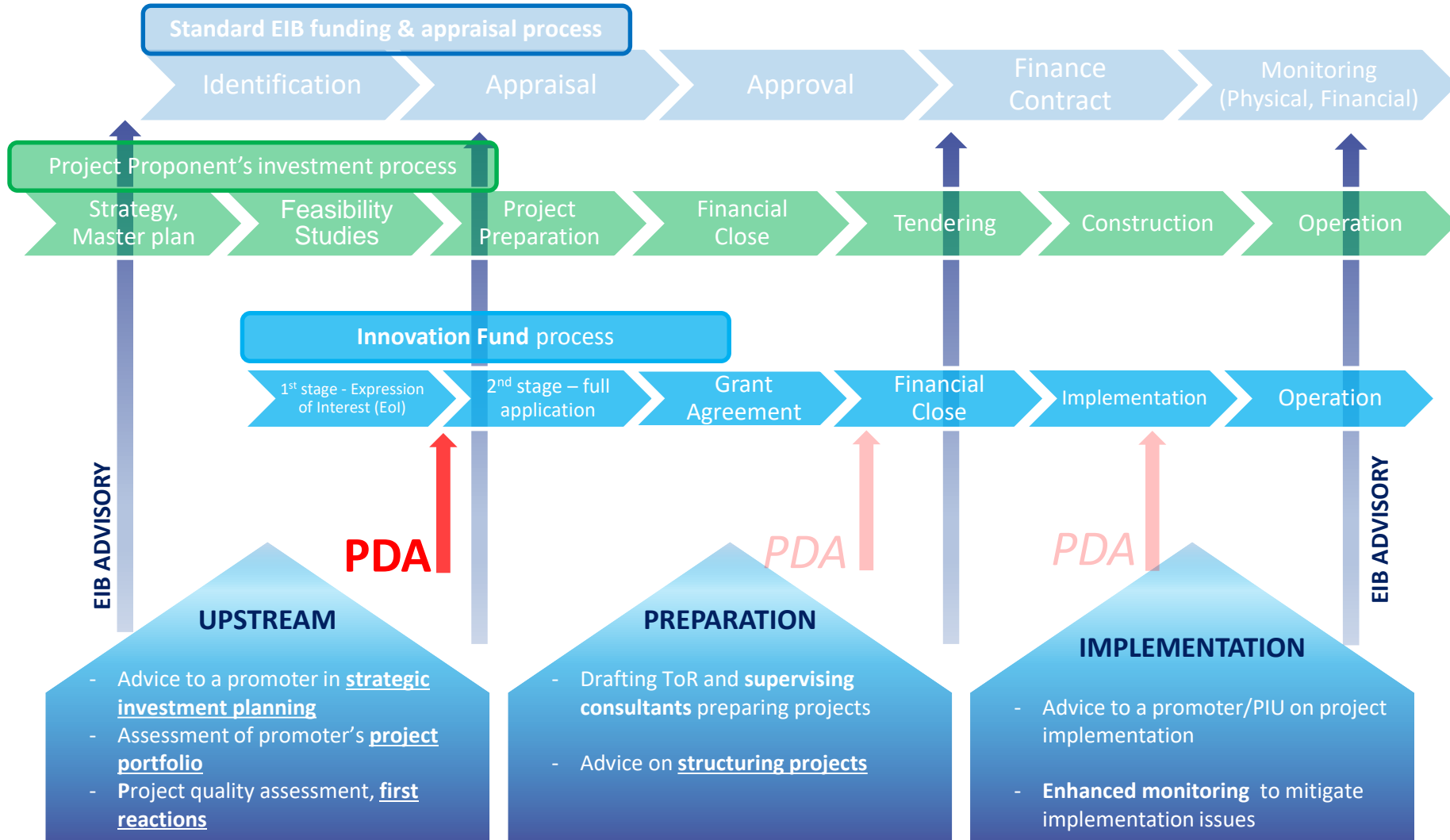
SMEs



€23.3bn

EIB's Value Added

Extensive expertise in financing and supporting complex infrastructure projects and their investors throughout the project cycle



Examples of EIB's advisory expertise

Energy sector

NER300

€ 2.2 bn

- technical and financial due diligence, project selection, ranking
- 110 highly innovative, complex projects assessed
- 42 awarded



InnovFin Energy Demo Projects EU Finance for Innovators

€ 300 mn

- Closing funding gap
- financial and technical assistance to improve the bankability
- >300 projects assessed

InnovFin EDP

Carbon capture and storage and use

Energy storage including batteries for both e-mobility and stationary storage

Renewable energy technologies such as: solar photovoltaic, concentrated solar power, wind energy, bioenergy, geothermal, ocean, hydropower, renewable heating and cooling, renewable fuels

Smart energy systems, including smart grids

Manufacturing processes for innovative technologies

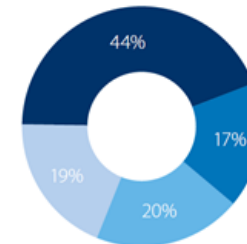
ELENA

European Local Energy Assistance

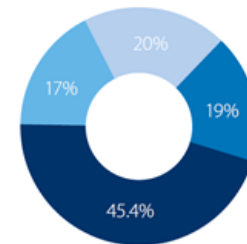
€ 150 mn

- Technical assistance and grants to support public and private entities to prepare their energy saving investment programmes
- 85 projects assessed, energy efficiency measures, building integrated renewables

ELENA contribution
€150 million



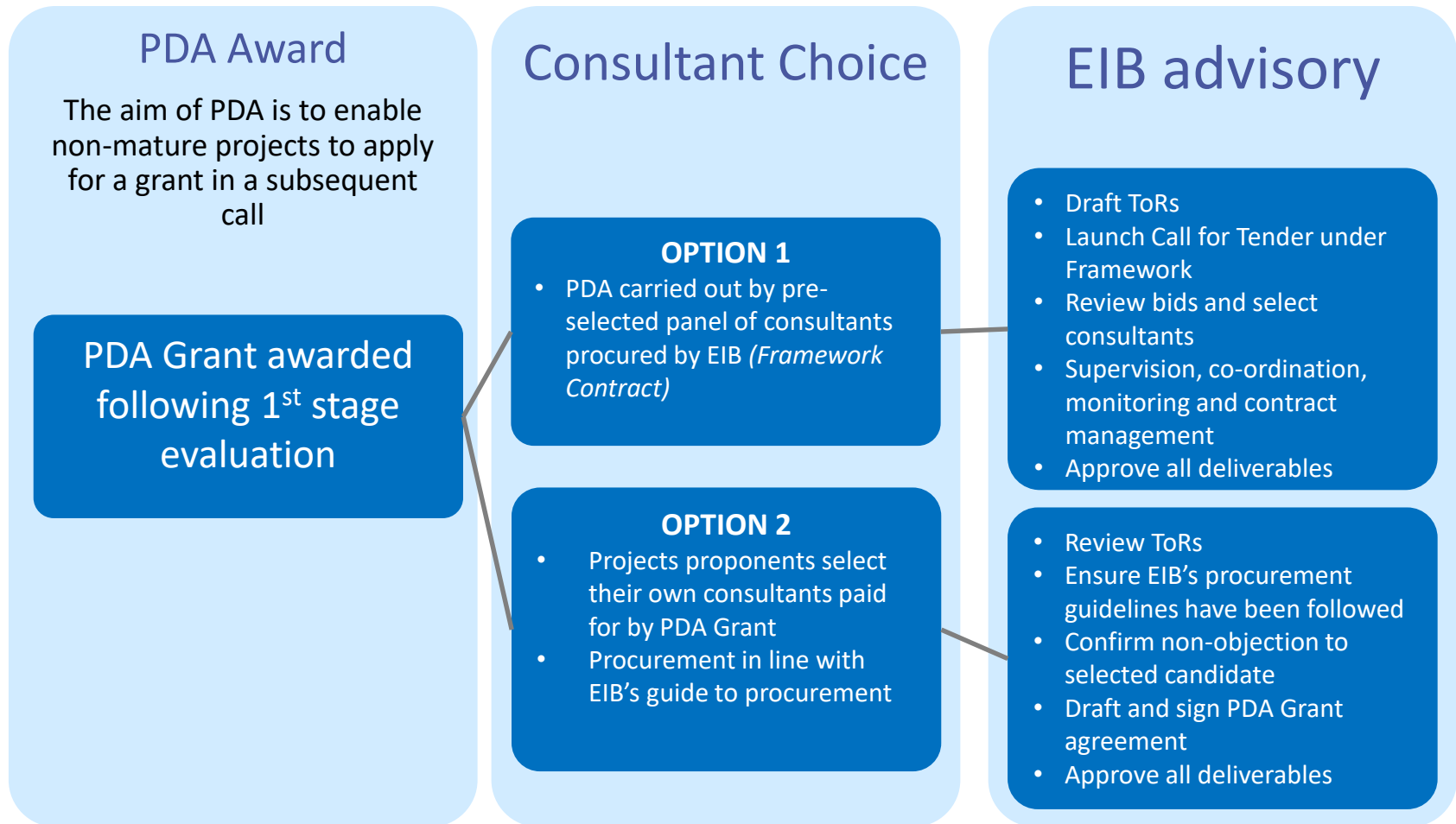
ELENA investment
€5.6 billion



■ Western Europe ■ Southern Europe ■ Central Europe ■ Northern Europe

Project Development Assistance (PDA)

For non-mature projects



Agenda

Innovation Fund
Tour 2019

Basics

Project selection

Governance

**How to
calculate GHG
emissions
avoidance**

How to calculate
relevant costs
and cost
efficiency

How to co-
finance projects

Preview of next
meetings

GHG emissions avoidance

First ideas

Your views
please

Energy intensive industry

- Avoided GHG emissions compared to GHG emissions of ETS benchmark installation

Renewables *(2 main options)*

- Amount of renewable energy produced (as NER300)
OR
- Avoided GHG emissions: 3 options: detailed, simplified or within project boundaries

Energy storage *(2 main options)*

- Amount of energy stored **OR**
- Avoided GHG emissions: 3 options: detailed, simplified and simplified but based on EF of energy charged

Carbon capture and Storage

- Avoided GHG emissions: 3 options: detailed, simplified or within project boundaries

How to calculate
GHG emissions
avoidance?

JRC presentation

How to calculate
GHG emissions
avoidance?

ICF presentation

Agenda

Innovation Fund
Tour 2019

Basics

Project selection

Governance

How to calculate
GHG emissions
avoidance

**How to
calculate
relevant costs
and cost
efficiency**

How to co-
finance projects

Preview of next
meetings

Relevant cost calculation

First ideas

Your views
please

Relevant costs

- Additional capital expenditure +
- Net present value of additional operating costs and benefits over 10 years after entry into operations

Benchmark for additionality

- Reference plant **OR**
- Price (e.g. LCOE)

Risks and costs calculations

- Weighted average cost of capital (WACC)
- Past average carbon price as conservative estimate

- How to calculate relevant costs?
- State aid considerations

ICF presentation

Agenda

Innovation Fund
Tour 2019

Basics

Project selection

Governance

How to calculate
GHG emissions
avoidance












How to calculate
relevant costs
and cost
efficiency

**How to co-
finance
projects**

Preview of next
meetings

EU Programmes beyond 2021

EU Energy Transition Funds: From Lab to Market (2021-2027)

	Proof of concept	Pilot	Demo	Scale up	Roll out
Target Beneficiary  Start-ups  SMEs  Large companies  Public bodies	Horizon Europe ●●● ○European Research Council (Proof of Concept) ○European Innovation Council ○Pillar II: Climate Energy and Mobility; Digital and Industry ○EIT: InnoEnergy, Climate KIC, KIC Raw Materials ○Breakthrough Energy Ventures Europe 				
	Innovation Fund ●● ○CCUS ○Energy Intensive Industries ○Renewables ○Storage and Grid 				
	CEF Energy & Transport Infrastructure  ●				
	Invest EU ●●●● ○Sustainable Infrastructure ○Research, Innovation and Digitalisation ○SMEs ○Social Investment and Skills 				
Type of funding ● Loan ● Grant ● Equity ● Advisory	LIFE Mitigation Projects  ●				
	ERDF & Cohesion Fund A greener, carbon free Europe  ●				

How to co-finance Innovation Fund projects

InnovFin EDP

Innovative demonstration projects at (pre-)commercial scale

- Scope**
- Renewable energy
 - Smart energy systems
 - Energy storage
 - Carbon Capture Utilisation & Use

Incl. manufacturing plants

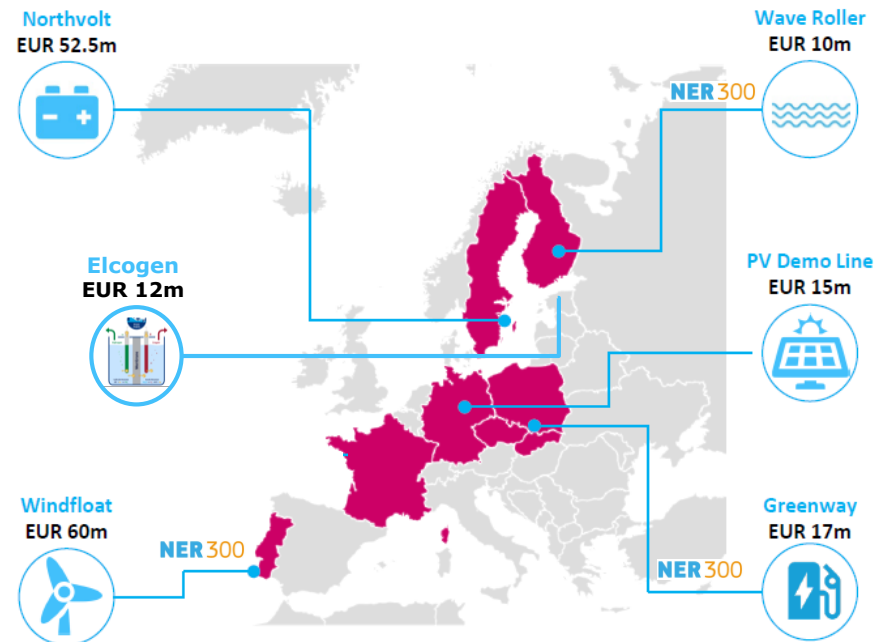
- Portfolio**
- 6 projects
 - €171m EU support (loan/equity-type)
 - €353m project costs

Budget
Up to € 700 million

InnovFin Energy Demo Projects

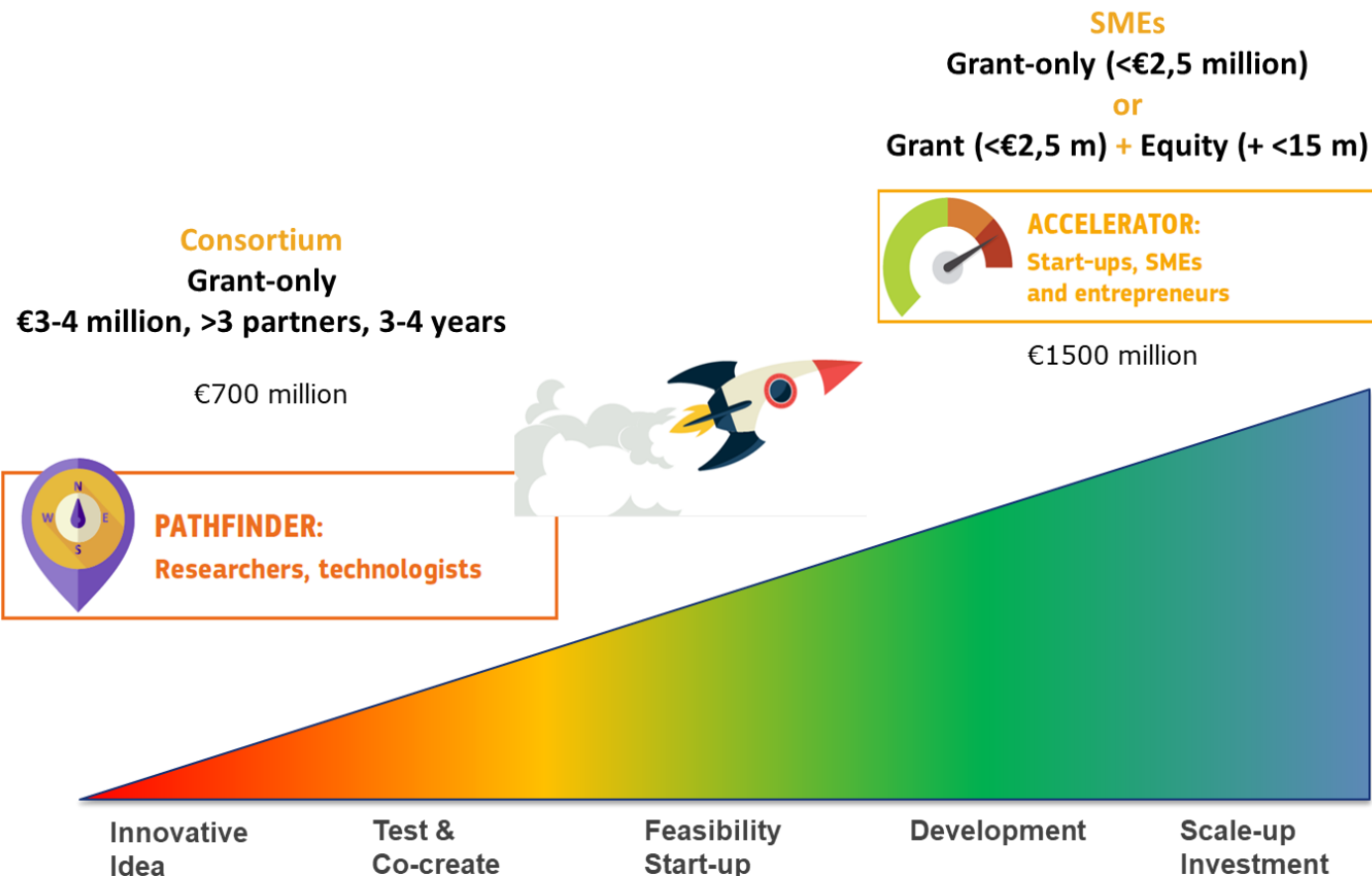
NER300

Use of unspent NER300 funds



How to co-finance Innovation Fund projects

European Innovation Council



Coaching, mentoring and business acceleration services for all SMEs

How to co-finance Innovation Fund projects

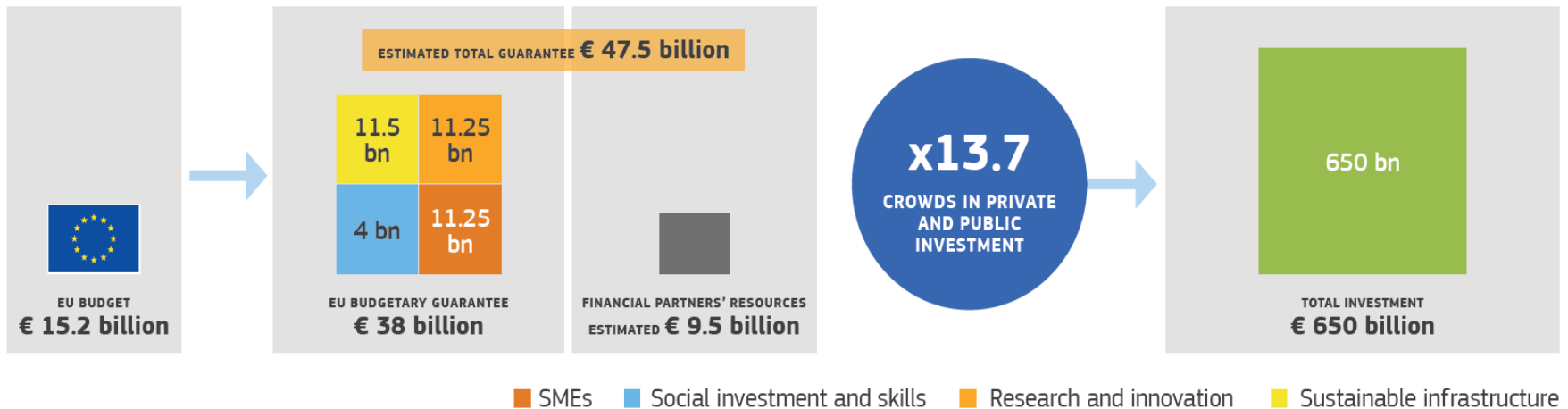
Breakthrough Energy Ventures

- €100 million fund
 - 50+50 *pari passu* between the Commission and BEV
- Targets European companies developing breakthrough **innovations on climate mitigation**
- Sectors: energy, transport, buildings, industry, agriculture
- Possibly open to additional investors after first closing
- Expected launch: Q1 2020



How to co-finance Innovation Fund projects

InvestEU – how does it work



- EUR 38 bn EU budgetary guarantee to be used for debt and equity financing for bankable investments
- Four thematic policy windows
- Specific financing products geared to level of risk
- Up to 95% FLP coverage possible for very risky projects, in justified cases possible to start with 100% coverage

Windfloat project

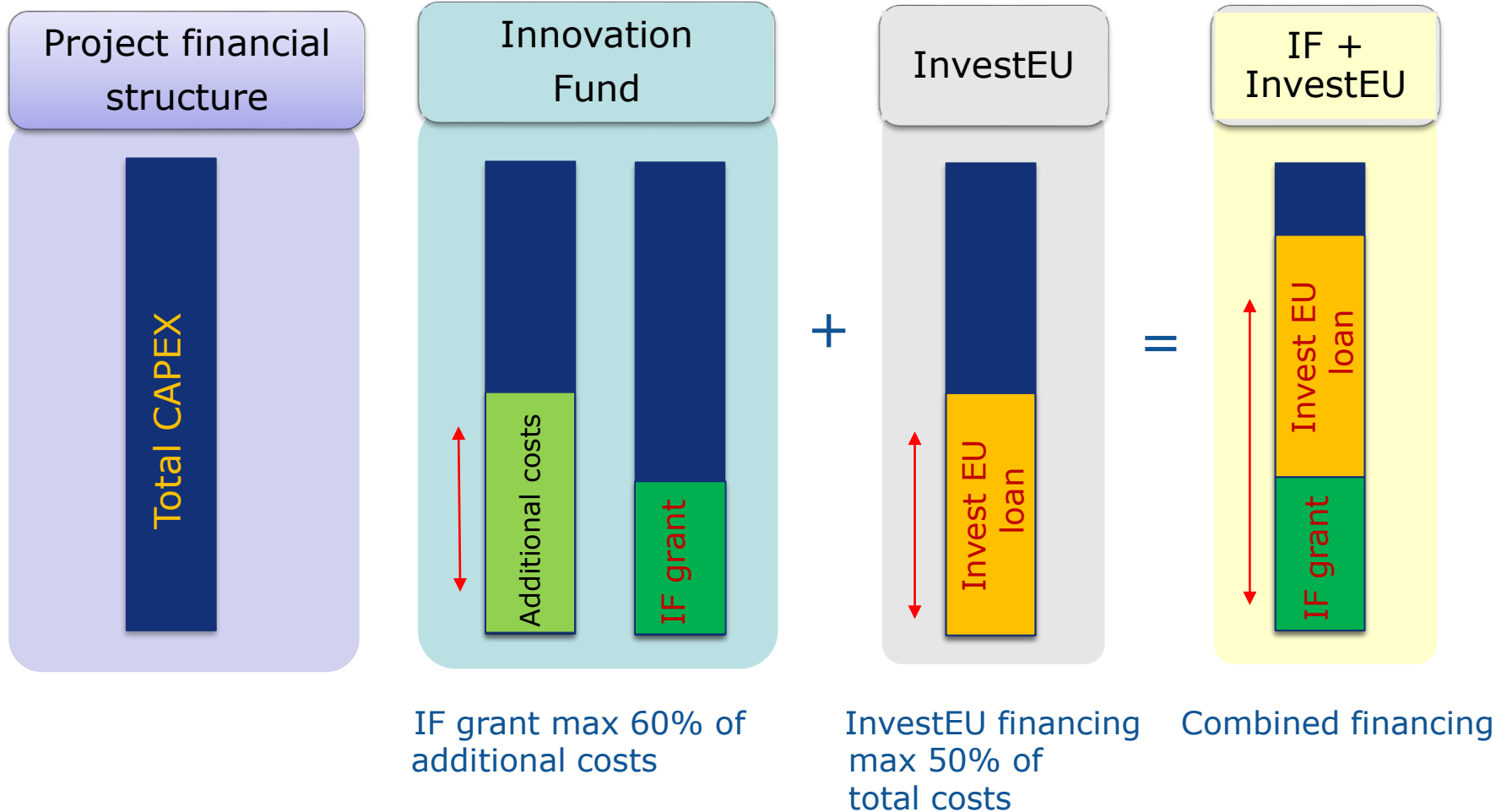
Combination of NER300 grant and InnovFin EDP loan

<https://www.youtube.com/watch?v=PiKa6steniw>

- 
- A large offshore wind turbine with a yellow floating platform is shown in the ocean. The turbine has three white blades and a white tower. The platform is yellow and has a complex structure with several legs. The ocean is blue and the sky is clear. In the background, a coastline with buildings and hills is visible.
- NER300 grant: EUR 30 million
 - InnovFin EDP loan: EUR 60 million
 - Portuguese carbon fund: EUR 6 million
 - Additional FIT/state aid

25MW floating offshore wind farm around 20km off the coast of Portugal in 85-100m water depth

Innovation Fund grant + InvestEU loan (stylized example)



Questions

First ideas

Your views
please

What additional type of funding would you seek to financially close your project?

Would you need specific assistance with financial structuring of your investment? Any other assistance needed?

How could Member States help best?

Agenda

Innovation Fund
Tour 2019

Basics

Project selection

Governance

How to calculate
GHG emissions
avoidance

How to calculate
relevant costs
and cost
efficiency

How to co-
finance projects

**Preview of
next meetings**

Next meetings

Workshop

5-6 February

- **Deep dive on calculations**
 - GHG emissions avoidance
 - Cost efficiency

**Technical
experts**

Workshop

2nd week
March

- **Deep dive on project selection,
co-financing, and grant
management**

**Financial
experts**

Expert group

April

- **Summary of technical work**

Deep dive on calculations

Workshop 5-6 February

Topics

- GHG emissions avoidance
- Relevant costs and cost efficiency
- Exemplary calculations for projects

In-depth discussions in break-out groups with technical experts

- Concept paper to be published two weeks in advance
- Each stakeholder should nominate at max two technical experts

Plenary session

- Open through web-streaming and Slido to all – no limit of participation
- Report back from break-out groups
- Q&A session

Deep dive on project selection

Workshop in 2nd week of March

Project selection

- How to evaluate technical, business, and financial viability?
- What is the value of a due diligence report?
- How to best check the criteria of innovation and scalability?

Co-financing and reaching out to financial institutions

- How do public and private investors evaluate projects?
- How to best team up with other investors and public authorities?

Grant management

- Definition of milestones for grant disbursement
- Knowledge sharing

Please support us to mobilize ...

Technical
experts

Workshop
"Deep dive on
calculations"

5 and 6
February

Financial
experts and
institutions

Workshop
"Deep dive" on
project
selection, co-
financing, and
grant
management"

2nd week of
March

Technical and
financial experts

Experts for
project
evaluation

Project
managers at
INEA