

ACCESSING EU INSTRUMENTS TO FINANCE BECCUS PROJECTS

CO₂ Capture, Storage & Reuse
16th of May 2023 Copenhagen

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LOCAL ROOTS GLOBAL PERSPECTIVE

Born in Denmark with offices in Copenhagen, Aarhus, Stockholm, Malmo, Gothenburg, Oslo, Zurich, Munich, Hamburg and Raleigh, NC. With 900 consultants, multinational clients and worldwide projects, we offer expertise with a global perspective.

We believe that great organisational impact leads to great impact for humanity. Implement was created to help make true expertise turn into real change.



Founded in **1996**



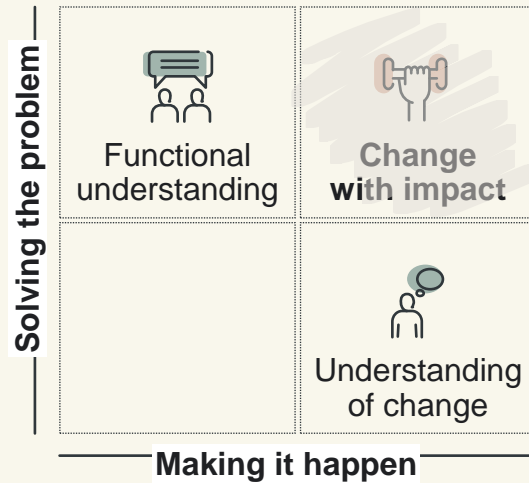
Average CAGR of **20%**



Employee-owned



Working **globally**



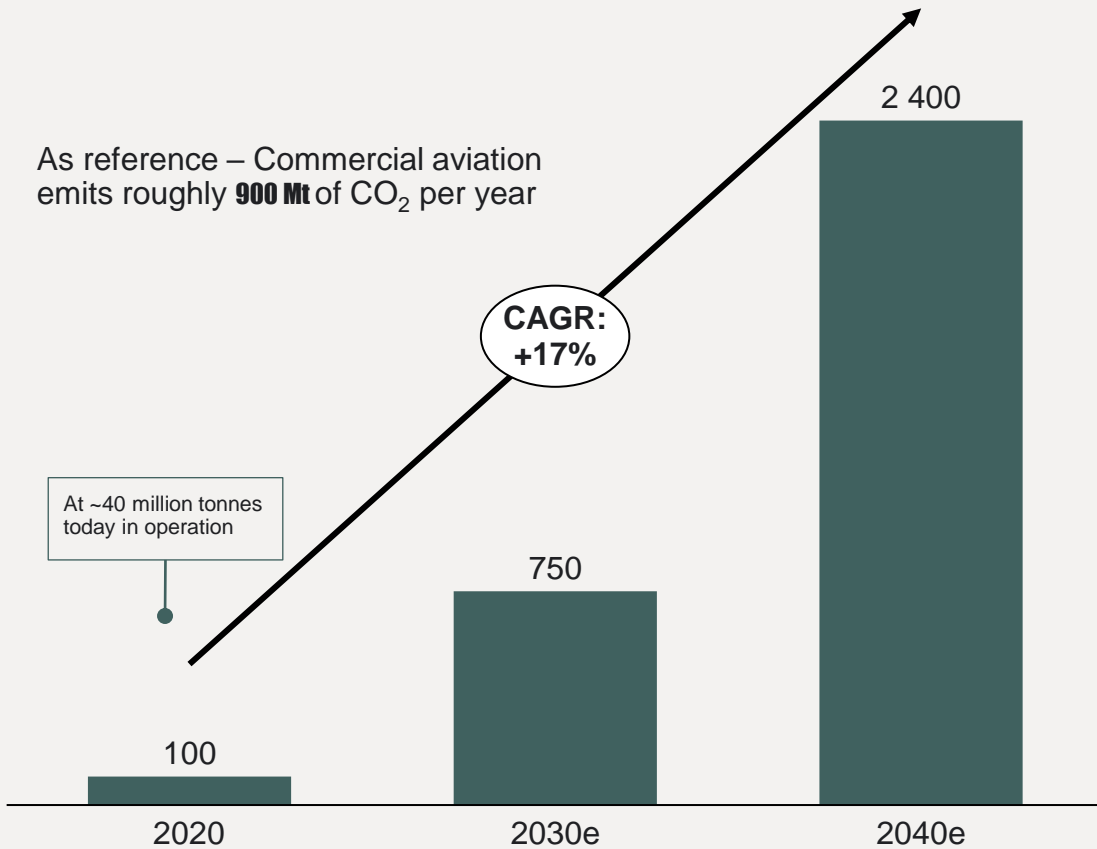
THE FINANCIALS OF BECCUS PROJECTS



Carbon capture plays an important role in mitigating climate change and will act as a key lever to reduce global CO₂ emissions

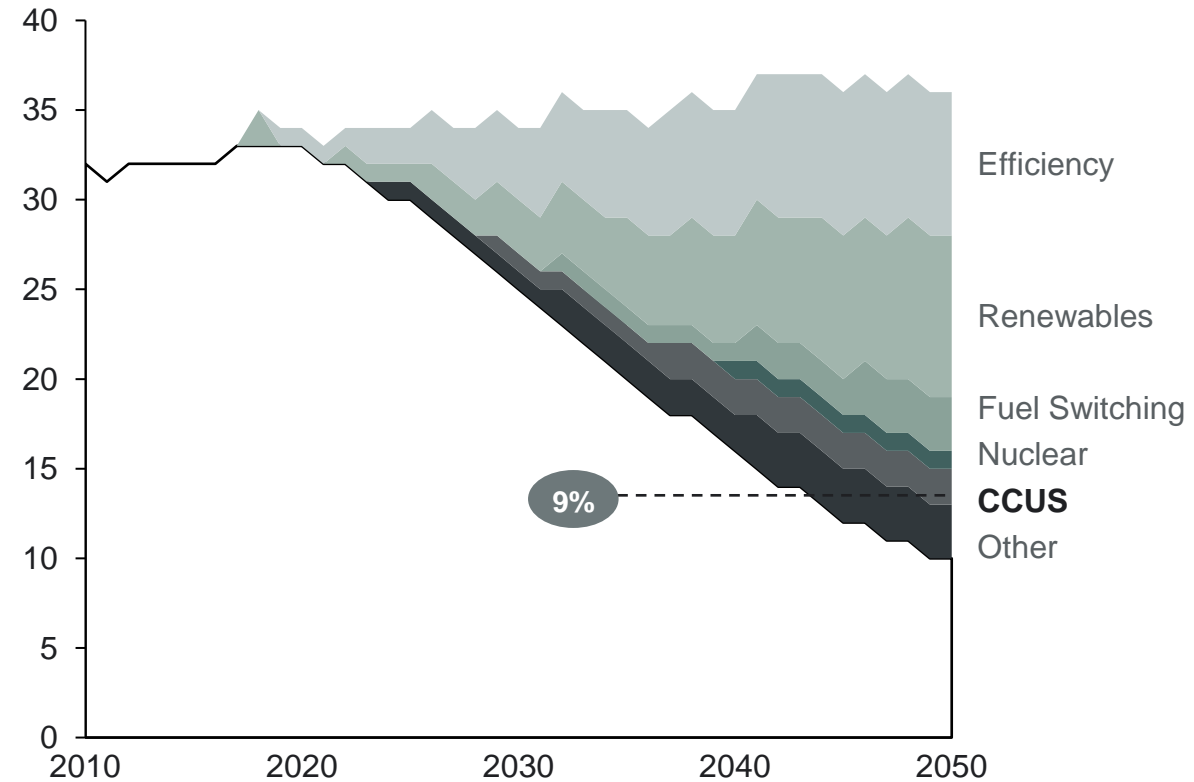
Carbon capture capacity of 2 400 million tonnes / year is needed by 2040 to meet Paris Agreement of 1.5 degrees

Carbon capture capacity to meet Paris Agreement, million tonnes



9% of all CO₂ reductions to reach Paris Agreement is expected to come from CCUS according to IEA¹

CO₂ emission reductions, in Gt CO₂



Source: IEA, ICCT, Implement analysis
 (1) CO₂ emissions reductions by measure in the Sustainable Development Scenario relative to the Stated Policies Scenario, 2010-2050

What are instruments to finance 2.4 Gt/a BECCUS capacity by 2040?

FOSSIL SHARE



BIOGENIC SHARE/(DAC)



EU ETS AND OTHER CO₂ PRICES



Incentive to reduce fossil-based carbon emissions, e.g. through CCS.

National CO₂ taxes will supplement or add to the incentives created by the ETS.



PUBLIC FUNDING



The EU Innovation Fund's key source of public funding to CCS projects (provided funding for 6 CCS projects the past two rounds – 11 projects with CC).

National schemes underway, e.g. in Sweden (reverse auction) and Denmark (direct subsidy).



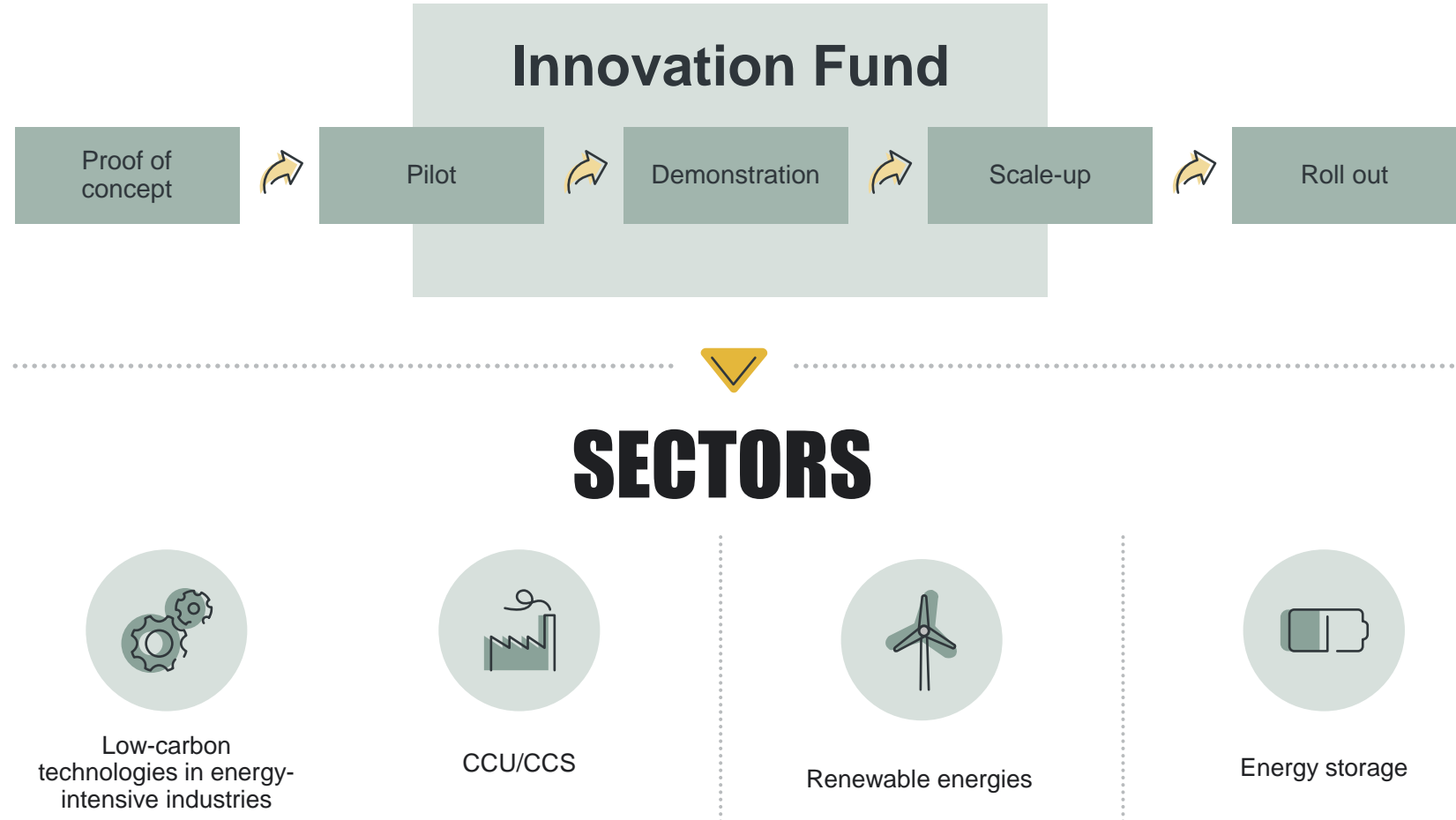
VOLUNTARY CARBON MARKET



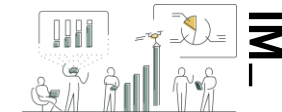
A marketplace for voluntary trades in climate projects.

The EU Innovation Fund assist BECCUS with CapEx and OpEx support

- The EU Innovation Fund supports highly innovative technologies and industrial solutions to the market for **decarbonizing Europe**
- The focus is on funding the **first industrial implementation of innovative low-carbon technologies** that are not yet commercially available
- The scheme targets legal entities in Member States, associated countries (incl. Norway and Iceland) and third countries – as long as the project is implemented on **European territory**
- The maximum budget for this year is of **3 billion euros** for the LS call, with a 20% flexibility clause



A look at the projects funded in the first three rounds

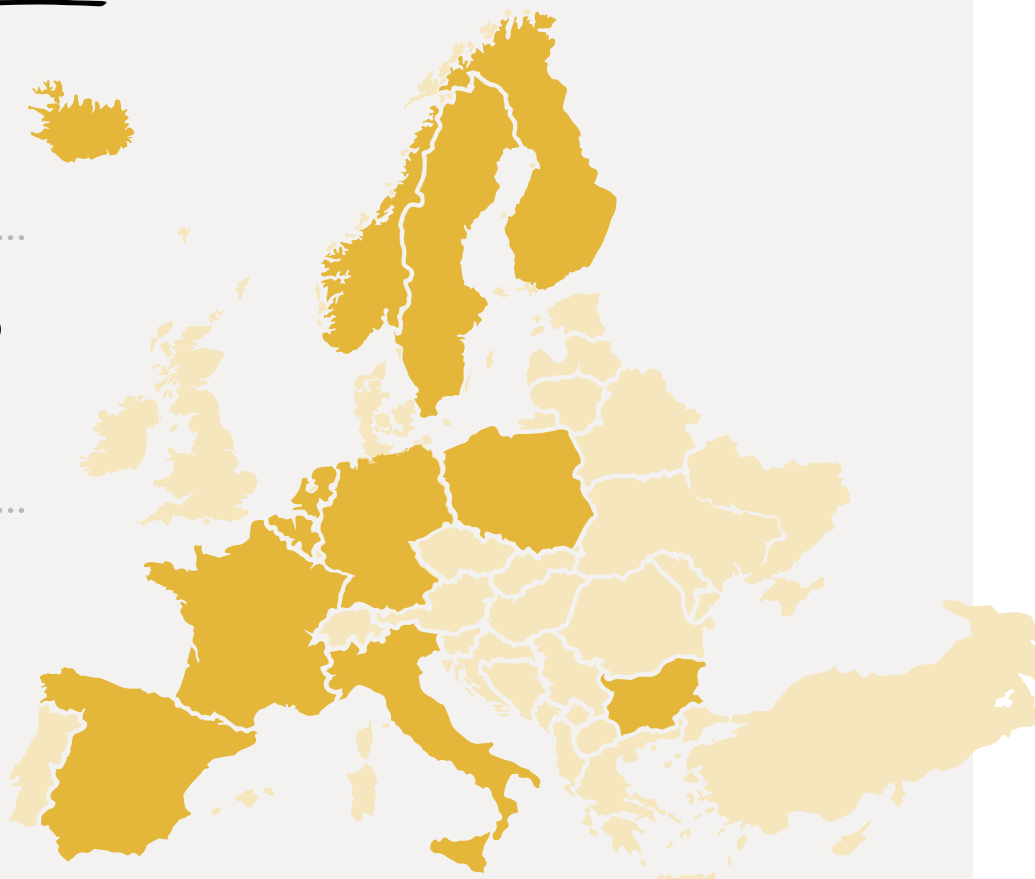


2020 and 2021 Edition

24
projects

**From 2.3Mt to
27,6 Mt CO₂**
avoidance potential

€ 3bn
Total distributed



Key characteristics



Heterogeneity in terms of geographical coverage, sector and technology



Strong representation of EILs and CCS



Several products output – multi-sided business models

	LSC1 (2021)	LSC2 (2022)	LSC3 (2023)
Average grant request	€ 157m	€ 106m	€ 75m
Average CO₂ avoidance (first ten years of operation)	10,4 MtCO _{2e}	8 MtCO _{2e}	10, MtCO _{2e}
Cost efficiency	€ 15,1/tCO _{2e}	€ 13,2/tCO _{2e}	€ 7,5/tCO _{2e}

It is sourced from ETS revenues and increased consistently over the years



The EUIF started at a CO₂ price around **EUR 20/ton**



Right now the EUIF has a total committed budget of **EUR 40** with high likelihood to increase further to EUR 50bn

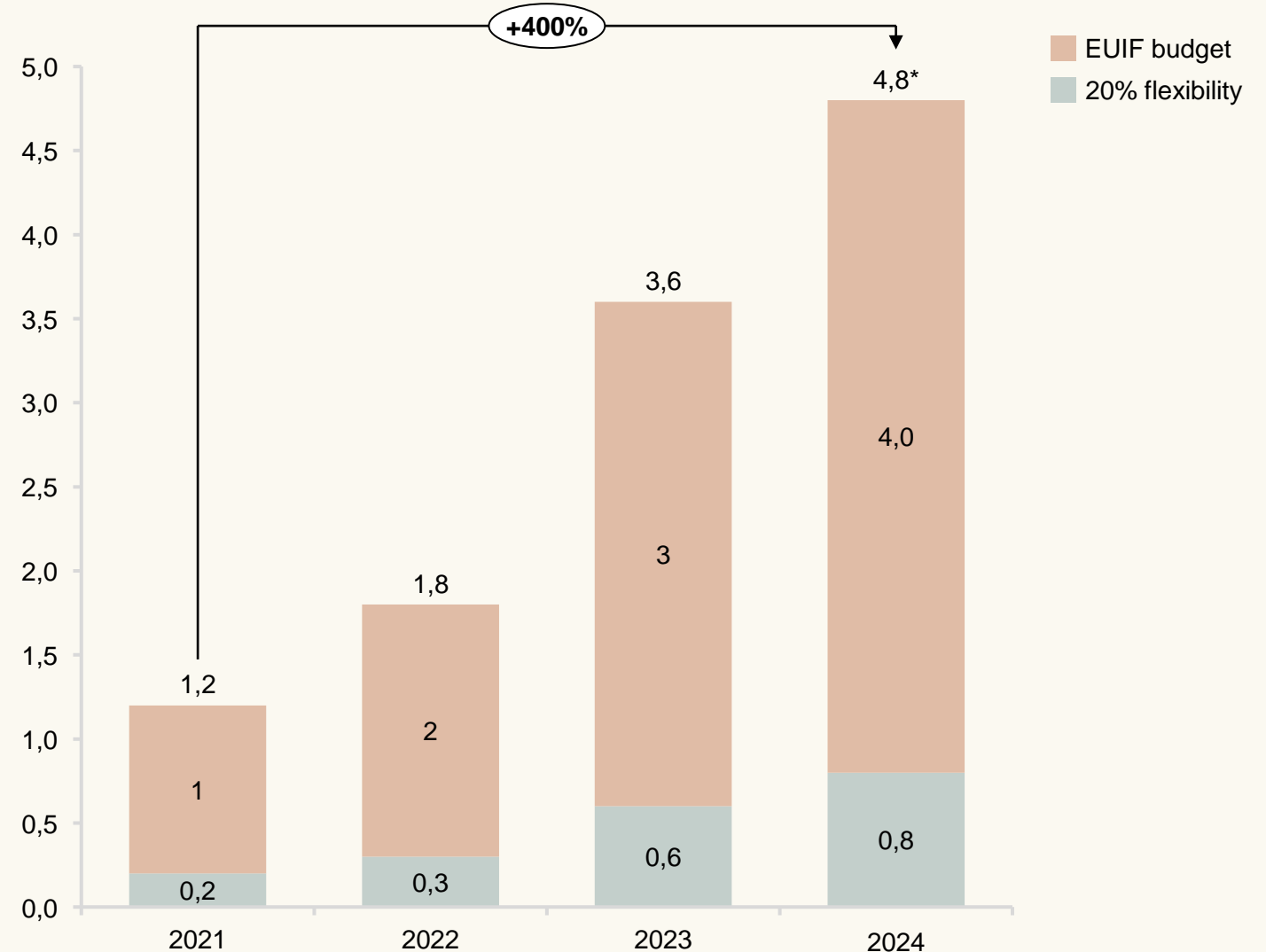


Key hypotheses:

- The budget will keep expanding
- There will be room for bigger projects

*estimate

EUIF budget evolutions (2020-2023) (b€)



11 out of 24 projects granted under the EUIF had a CCS component!

Technologies covered under the EUIF

Examples of negative emissions



Forestation



Enhanced weathering



Biochar

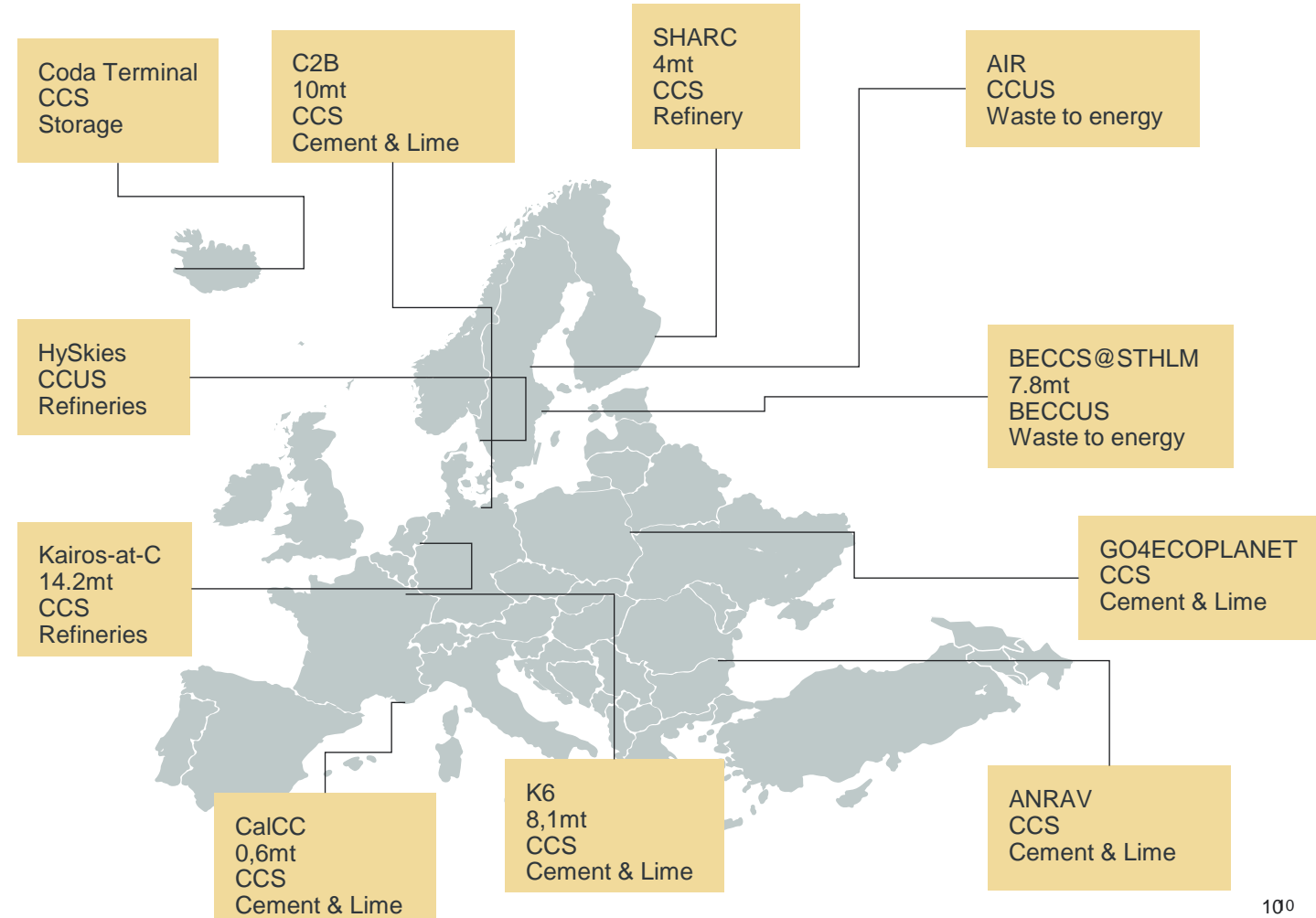


Bio-energy carbon capture and storage (BECCS)



Direct air capture and storage (DACCS)

Pipeline of upcoming BECCUS projects granted under the EUIF
















HOW TO ACCESS THE EU INNOVATION FUND

The EU Innovation Fund is focusing on mature technology

NEW:

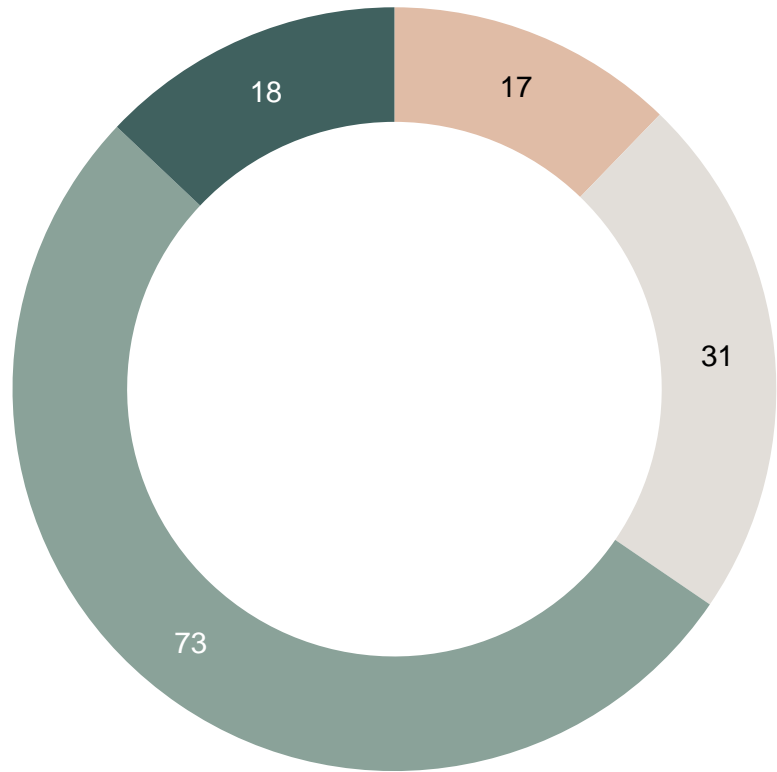
- New sector: e.g., Maritime
- H2 Pilot Auction

It will depend on...

	General decarbonisation 	Electrification & Hydrogen 	Manufacturing 	Pilots 
Activity 	<ul style="list-style-type: none"> • Low-carbon technologies in ETS sectors • CCU • CCS • Construction and operation of innovation RE and ES technologies <div style="display: flex; justify-content: space-around; font-size: small;"> <div> Low-carbon technologies in energy-intensive industries</div> <div> CCU/CCS</div> <div> Energy storage</div> <div> Renewable energies</div> </div>	<ul style="list-style-type: none"> • Innovative direct electrification of industry • Innovative hydrogen production combined with application or storage 	<ul style="list-style-type: none"> • Production of components for RE installations • Production of components for electrolysers and fuel cells • Production of components for energy storage solutions • Heat pumps 	<ul style="list-style-type: none"> • Construction and operation of pilot projects to validate disruptive or breakthrough technologies • Across all EUIF sectors
Grant size 	Average 100-150M€			Max. 40 M€
TRL 	Up to TRL 9			Up to TRL 7 - 8
Evaluation impact 	<ul style="list-style-type: none"> • Equal evaluation across criteria • Up to 75 points 	<ul style="list-style-type: none"> • Weighting applied on maturity • Up to 90 points 	<ul style="list-style-type: none"> • Weighting applied on Degree of Innovation AND maturity • Up to 105 points 	<ul style="list-style-type: none"> • Weighting applied to Degree of Innovation • Up to 90 points
Example 	Carbon Capture and sequestration	Production of green hydrogen and hydrogen storage	Electrolyser manufacturing	Novel electrolysis process technologies (e.g. super critical water gasification)

The programme is highly competitive – in terms of quality and volume of applications

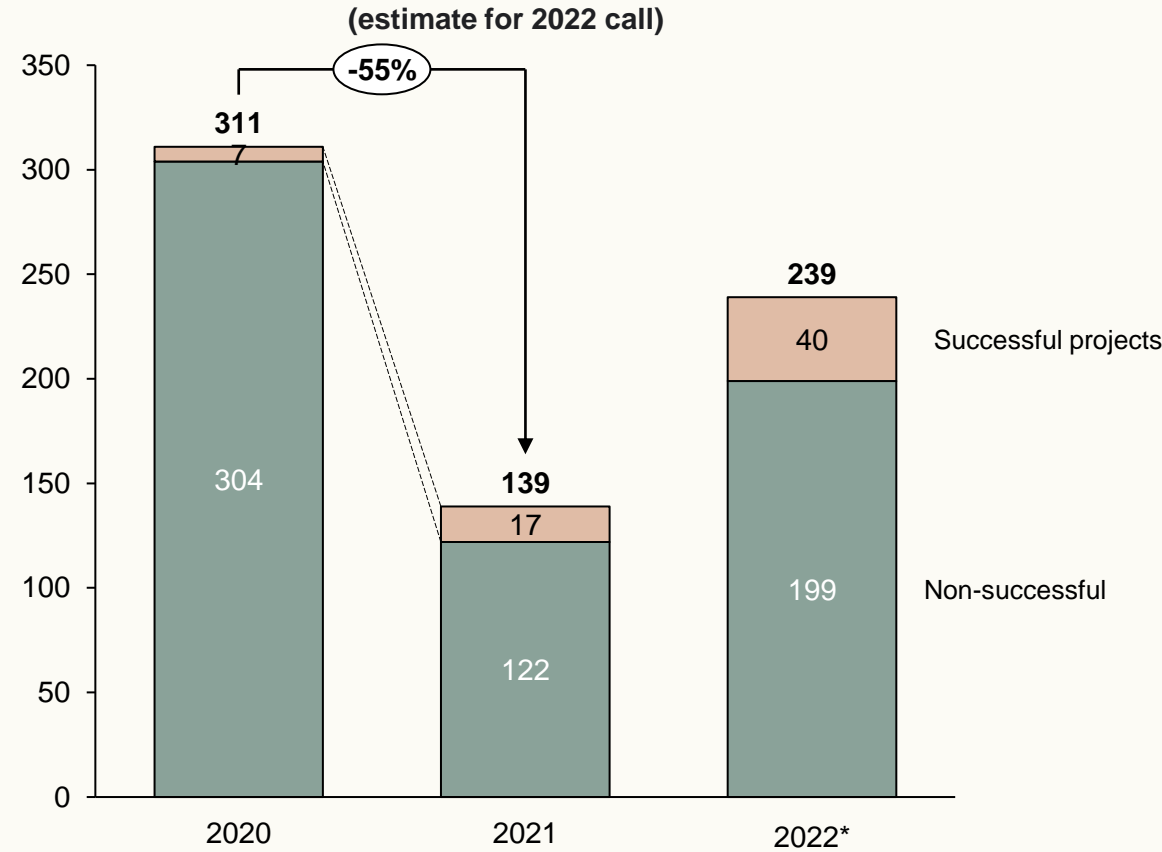
Breakdown of second-stage applications of the second call of the EUIF (2021)



- Awarded
- above threshold but not awarded
- below threshold (failed)
- ineligible

*estimate

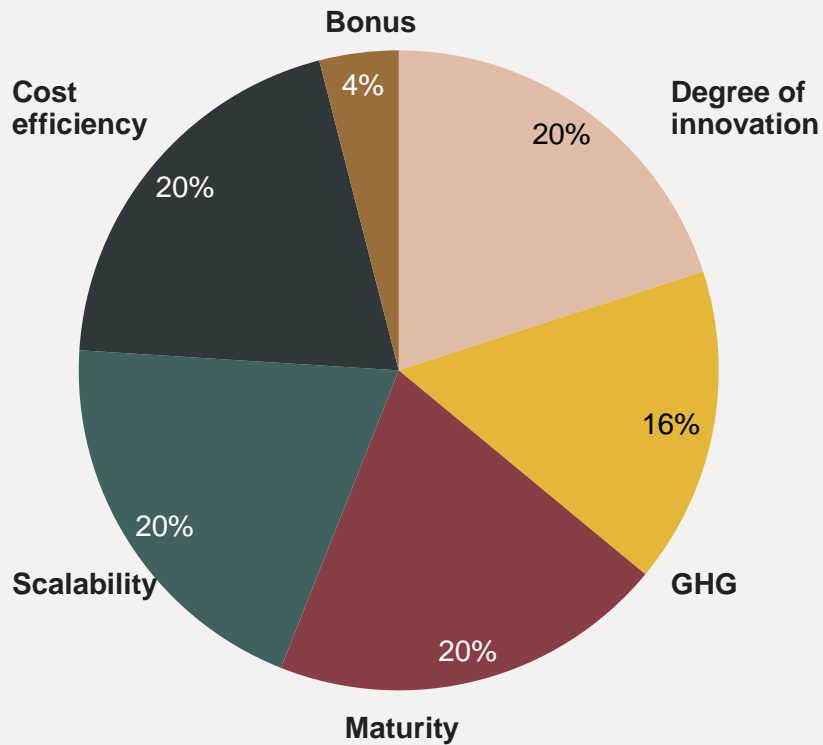
Applications received and granted in the first two calls of the EUIF 2020-2022



The scoring depends on the window of application chosen



Overview of the scoring weighting for the general window



GENERAL WINDOW

Degree of innovation [15 pts]	Innovation in relation to the state-of-the-art [9/15]		
GHG emissions avoidance [12 pts]	Absolute GHG [2]	Relative GHG [5]	Quality of calculations, min. requirements [3/5]
Maturity [15 pts]	Technical [3/5]	Operational [3/5]	Financial [3/5]
Scalability [9/15 pts]	Efficiency gains	Further technology or solutions deployment	Quality of KSP
Funding efficiency [15 pts]	Cost efficiency ratio [12]	Quality and credibility of cost calculation [3]	
Bonus points [3 pts]	Net carbon removals [1]	Other GHG savings [1]	Additional RE [1]

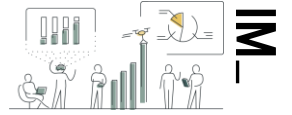
→ To be in a striking range, you need to aim to get 90% points, i.e. a score of **67,5 points out of 75**

New criteria:

- Better geographical balance
- Multiple environmental impacts

Max of 75 points

The evaluation criteria require different deliverables



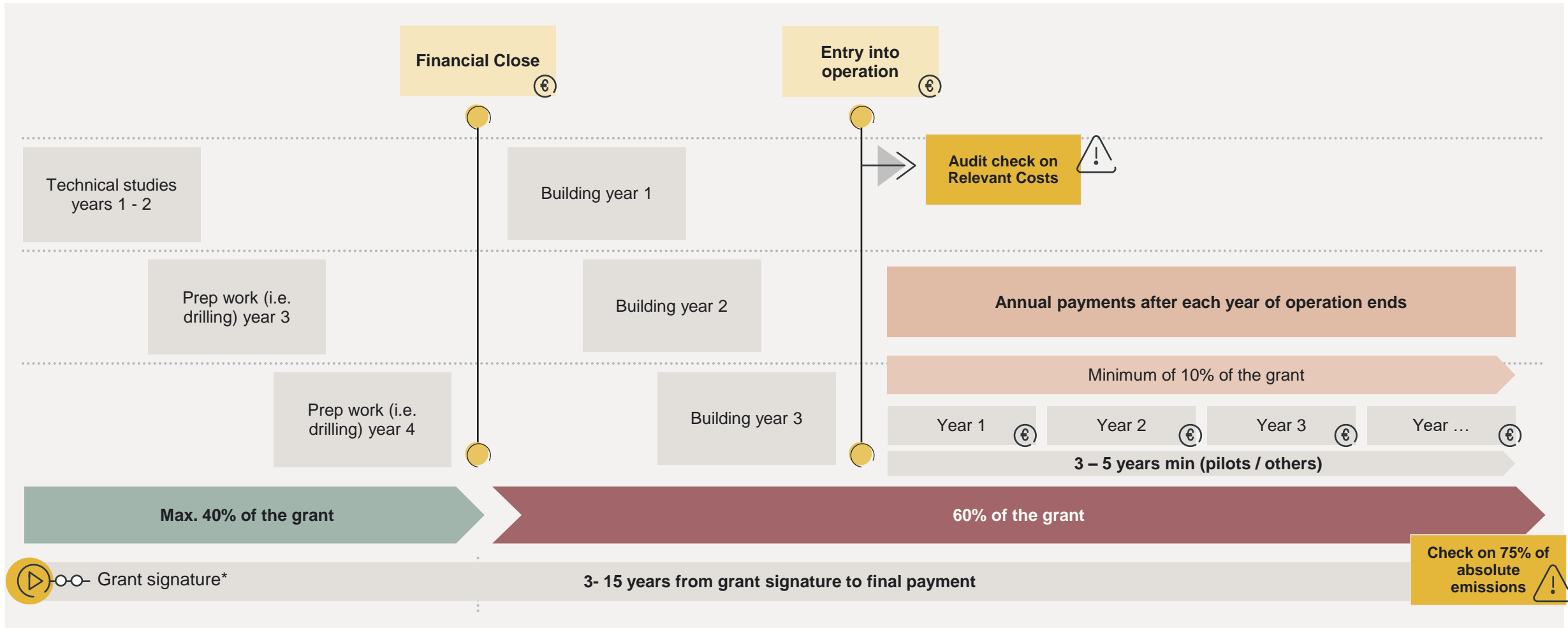
		EVALUATION CRITERIA						
		GHG emissions avoidance potential	Degree of innovation	Maturity			Scalability	Funding efficiency
				Technical	Financial	Operational		
DELIVERABLES	Part B (80 pages)	☑	☑	☑	☑	☑	☑	☑
	Knowledge Sharing Plan (60 pages)						☑	
	Business Plan (60 pages)				☑			
	Detailed budget table / relevant cost calculator + detailed financial model sheets							☑
	Participant information (incl. CVs and previous projects)					☑		
	Feasibility Study (60 pages)	☑	☑	☑				
	GHG emissions calculator	☑	☑				☑	☑
	Timetable / GANTT chart					☑		
	Existing due diligence reports, permits, licenses, authorisations, agreements and LOIs/LOSs	☑	☑	☑	☑	☑		



- The total required documentation is **well above 300 pages**
- Maturity only represents **20% of the score** but is split across three demanding sub-criteria, each of which require extensive documentation
- The audits requirements are gone (at application stage!)



The grant is disbursed in line with specific rules and in accordance with the work package resource intensity



*The project starting date can be prior to grant signature but not earlier than proposal submission date

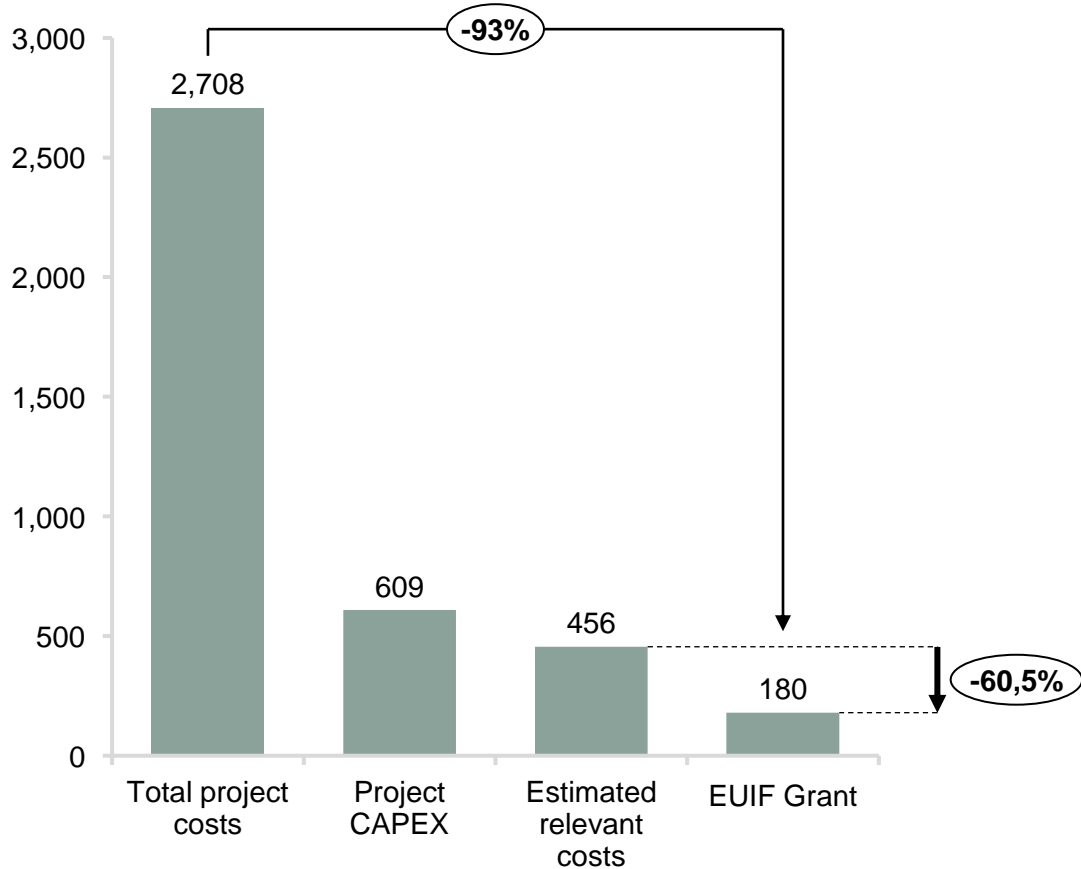
The grant covers the additional costs associated with the highly innovative and risky nature of the project investments

NEW:
Relevant cost will be simplified

The grant covers only a fraction of the total project costs...

Breakdown of the funding structure for project BECCS

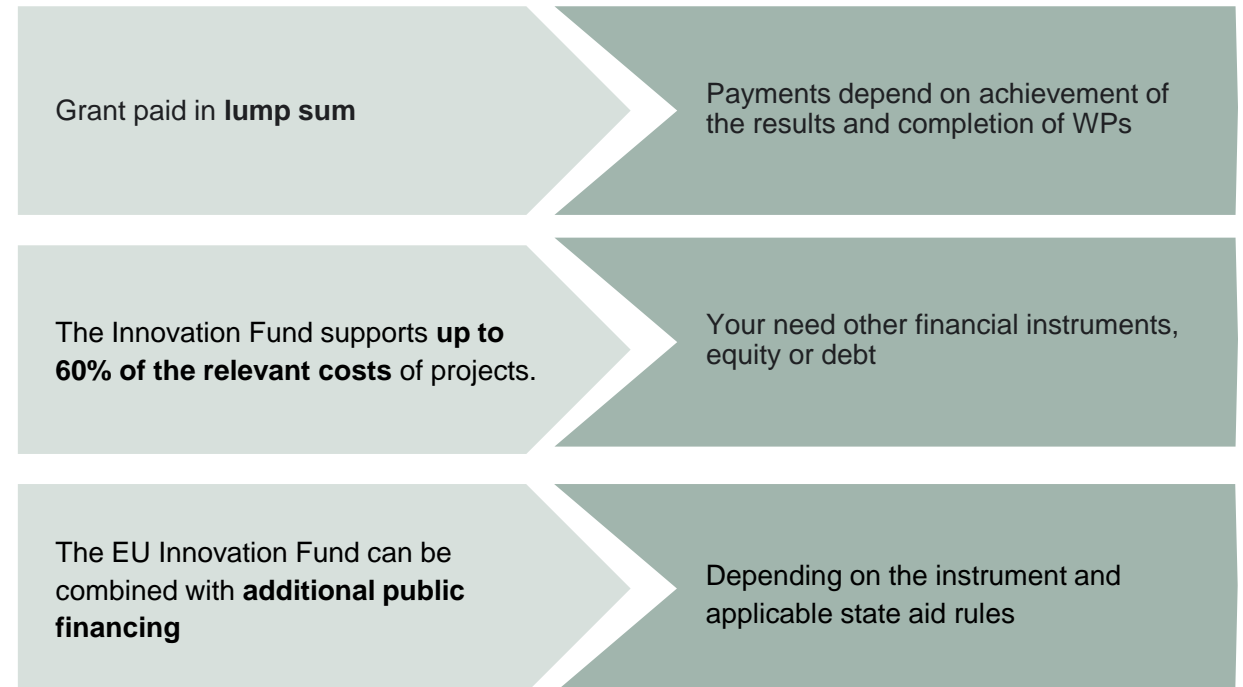
Million €



...and is defined based on the relevant cost basis

“The relevant costs shall be the additional costs that are borne by the applicant as a result of the application of the innovative technology related to GHG emissions avoidance.

They shall be calculated as the difference between the best estimate of the total CAPEX, the NPV of OPEX and benefits arising during 10 years after the entry of 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.”



**WHAT DOES YOUR
PROJECT NEED TO
MAXIMISE CHANCES OF
SUCCESS?**



Before you engage with the EU Innovation Fund, be aware that...:

remember



The total required documentation ranges between **300 – 500 pages**



Technical and financial **maturity** of the project are key to success



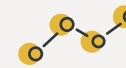
Allocate resources and budget to the project and start early



Identify **critical deal breakers** in the project



Compare with benchmarks, specifically on funding efficiency



Ensure financial security of the project and income streams

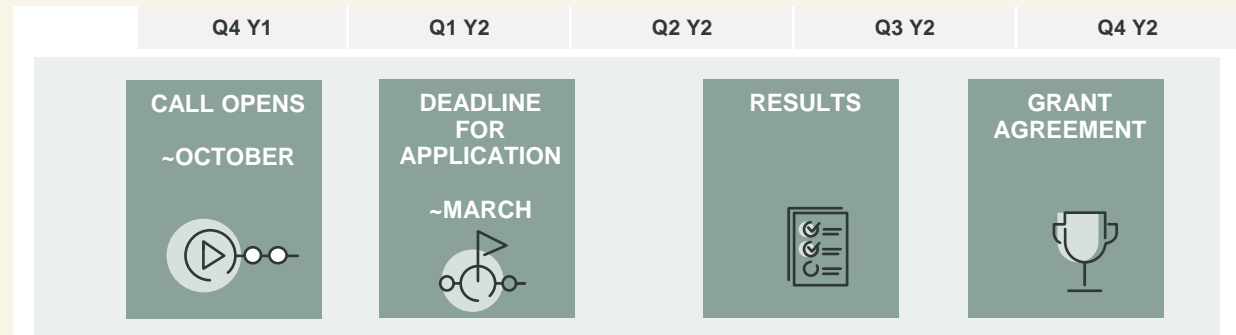


Find the “**sweet spot**” between innovation and maturity

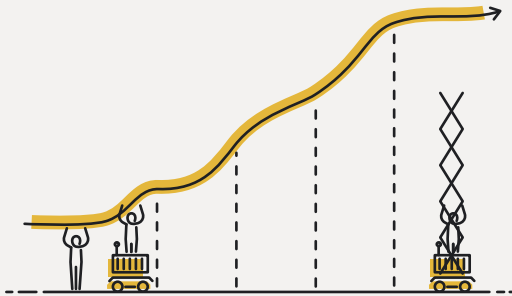


Get **board/CEO approval** early on

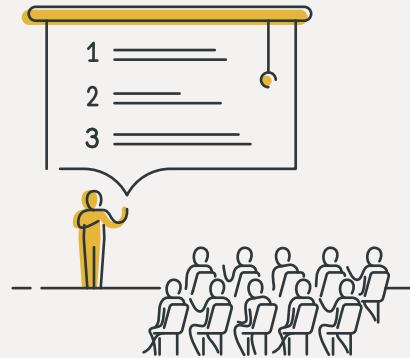
Timeline



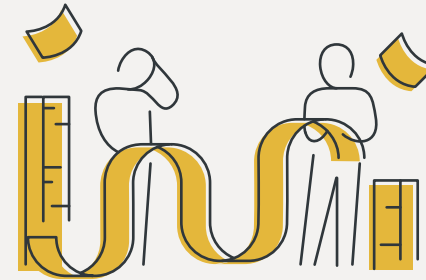
Some tips to build a competitive edge



Be strategic and position your project well in your relevant sector – you should be able to stand the comparison – also to other CCUS projects



Be very clear on the proposed legal and organizational structure of the project (e.g. the possibility to include or create an SPV) and how your project makes “**business sense**”



Be realistic in your assumptions and calculations and ensure consistency of claims and numbers across your documentation (Peer reviews of material is a must)



Make sure **that parties** upon which the project implementation depends are fully in line with the proposal and **provide explicit support** (e.g. permits, buy-back rights, licences, additional funding etc.)

CHRISTIAN JUSSEN



10 years' experience

Christian is driven to make the transition towards a clean energy system a success by unlocking the true power of innovative ideas. He works at the intersection of technology and economy and thrives in complex collaborative environments with many mindsets from different disciplines. One of Christian's specialties is to finance innovation in the power and utility sector and the energy-intensive industry through public funding.



Areas of expertise

- Cash grants
- Public funding
- Energy efficiency
- Project management
- Energy transition
- Renewable energy
- Innovation management

Experience

Implement Consulting Group, Senior Consultant (2020-) // Ernst & Young, Senior Manager (2019-2020) // Ernst & Young – Copenhagen, Denmark, Manager (2017-2018) // Ernst & Young Wirtschaftsprüfungsgesellschaft – Hamburg, Germany, Senior Consultant (2014-2016) // Investitionsbank Schleswig-Holstein, Project Manager (2011-2013)

Education

Industrial Engineer in Energy and Environmental Management, Europa-Universität Flensburg (2011)

Selected projects

Enova (0921-1024): Expert Technical Assistance for Applicants in a Scandinavian country to the EU Innovation Fund

Energy and climate (0921-1021): EU Innovation Fund project viability assessment

Energy and climate (0720-1220): Obtaining EUR 120 m EU funding from the Innovation Fund for Carbon Capture and Sequestration Infrastructure

Energy and climate (0521-0623): EU Innovation Fund viability assessment

Energy (0519-1219): Smartquart

Energy (0318-0619): RealCoE – Developing the next generation of 12+ MW offshore wind turbines for competitive and clean electricity

Energy (0118-1218): Lean DER – Setup of a multi-modal LNG infrastructure as flagship project in the Duisburger port area

DAVID MORA



15+ years' experience

David is experienced on the promotion of sustainable energy systems. His focus has been on the energy economics and business attractiveness of clean technologies: A suitable business model and capital strategy can create attractive business cases and trigger final investment decisions that also combat climate change. David has helped diverse energy actors mainly with sourcing public funding for large corporation and SMEs.

Areas of expertise

- Public Funding
- Project Finance
- Investment models
- Energy Economics
- Renewable Energy



Experience

Implement Consulting Group, Partner, Energy & Climate (2022-) // EY, Senior Manager Climate Finance, Funding and Sustainability (2018-2022) // Technical University of Denmark, Post-doc researcher Energy Economics and Regulation (2016-2018) // Conergy Global Solutions, Director Project Finance (2015-2016) // Commerzbank AG, Project Manager (Vice-president) (2009-2014) // Europa University of Flensburg, Research Fellowship (2003-2008)

Education

PhD in Economics, Europa University of Flensburg (2013) // M.Sc. Sustainable Energy Systems and Management, Europa University of Flensburg (2003) // Mechanical Engineering, Universidad de America (1998)

Selected projects

Energy and climate (2022): Advised and completion of IPCEI notification for hydrogen and e-fuels. EC Notification (> EUR 150 m). Full application and advise rounds with European Commission.

Energy and climate (2020-2022): Advised on EU Innovation Fund program, full application, financial engineering and grant agreement preparation (> EUR 50 m)

Energy and climate (2021-2022): Advise on auditing of funding gap methodologies for EU programs. Financial Due Diligence.

Energy and climate (2021-2022): Advise on hydrogen supply chain development for state aid notification for two projects under IPCEI/CEEAG hydrogen/e-fuels (total of > EUR 500m funding) and national application process.

Energy and climate (2020-2022): EU Innovation Fund proposals for energy intensive industries Advised on strategic setup and elaboration of the funding proposal