

Accelerating CCS Technologies

ERA-NET Cofund on CCS

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The Research Council of Norway
Coordinator of ACT - www.act-ccs.eu

Co-funded by the
European
Commission within
the Horizon 2020



ERA-NET Cofund under Horizon 2020

(Call for proposals: Competitive low-carbon energy, Dec. 2014)



- **Low Carbon Technologies**

"It is important to develop and bring to market affordable, cost-effective and resource-efficient technology solutions to decarbonise the energy system in a sustainable way, secure energy supply and complete the energy internal market.

- Our response to the Call:
 - **Cofund on CCS - ACT (Accelerating CCS technologies** as a new low-carbon energy vector)
 - Initiative by Norway in cooperation with Germany
... invitation to other member states to join....



What is an ERA-NET Cofund



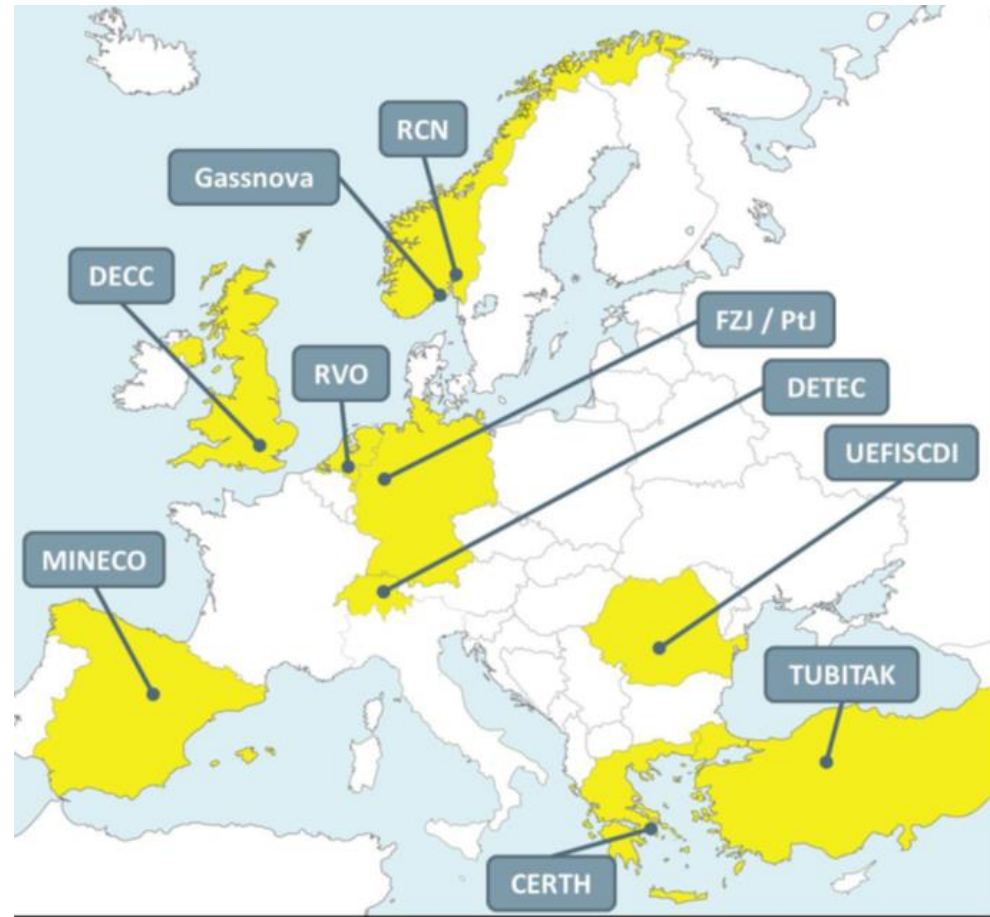
- Several MS in a consortium (ministries/funding agencies) that establish one or several **common calls** with top up financing from EC
 - EC finances 50% of the MS total budget.
- Focus on **demonstrating and validating solutions.**

ACT:

Emphasis will be placed on pre-commercial CCS technologies and solutions aimed at accelerating the move towards commercialisation and competitive deployment

Partners of ACT– commitments to 1st Joint Call

NO	RCN (coordinator)	3 M€
NO	Gassnova	3 M€
DE	FZJ/PtJ	6 M€
NL	RVO	4 M€
CH	DETEC	4 M€
UK	DECC (4M£)	5.5 M€
RO	UEFISCDI	1 M€
TR	TUBITAK	2 M€
ES	MINECO	0.35 M €
GR	CERTH	0
EC	contribution	12.8 M€



Total budget for projects, 1st call: 41.2 M€

ACT – kick-off in Madrid 22-24.02.2016



All ACT-partner countries, except UK, in front of MINECO



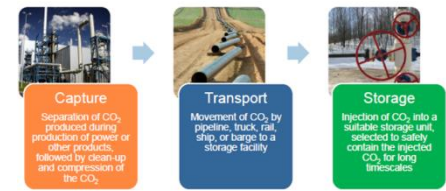
Brian Allison, UK
signing the CA

Site visit at Hontomin/Cuiden



Thematic areas of the 1st Call

(focus on demonstrating and validating solutions)

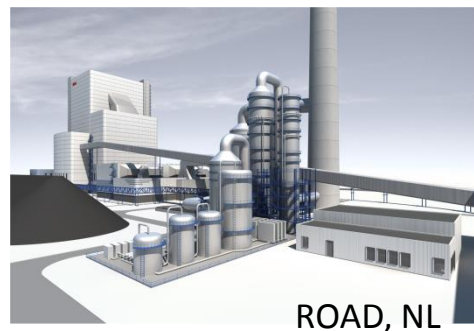
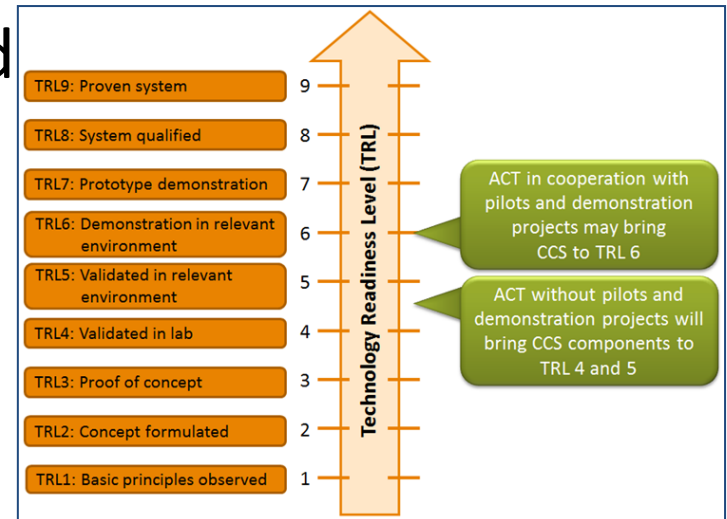


Thematic areas	Aim	Maximum funding per project (M€)
Chain integration	Addressing RD&D gaps in the full CCS chain, including CO ₂ capture, transport, and storage, incorporating related case studies for social acceptance.	up to 20
Capture	Capture techniques emphasizing efficiency, competitive cost and flexible operations including carbon negative solutions like Bio-CCS and other technologies. Advanced technologies aiming at a higher operational flexibility and energy efficient capture	up to 10
Transport	Transport options aimed at early operations of European CCS projects.	up to 10
Storage	Measurement, monitoring and verification (MMV) at relevant storage sites and the surrounding geosphere emphasizing tools and methodology for a safe and cost effective CO ₂ storage in general and an increasing storage efficiency in principle.	up to 10
Utilisation	CO ₂ utilisation including prospective revenue streams and related business models as a vehicle to make CO ₂ capture and storage viable. CCU which can substantiate comparable storage efficiency to that of geological storage and lead to reduction of the CO ₂ environmental footprint.	up to 10
TYPE A: Indicative budget in total for up to 5 large projects:		33
TYPE B: Indicative budget in total for up to 5 small projects (each < €3 million):		8.2

ACT in cooperation with pilots

- Connect to existing pilots/other big projects
- Collaborate with other CCS initiatives

New innovations can be achieved by an iterative process between demonstration plants and pilot tests at one hand, coupled with comprehensive R&D.

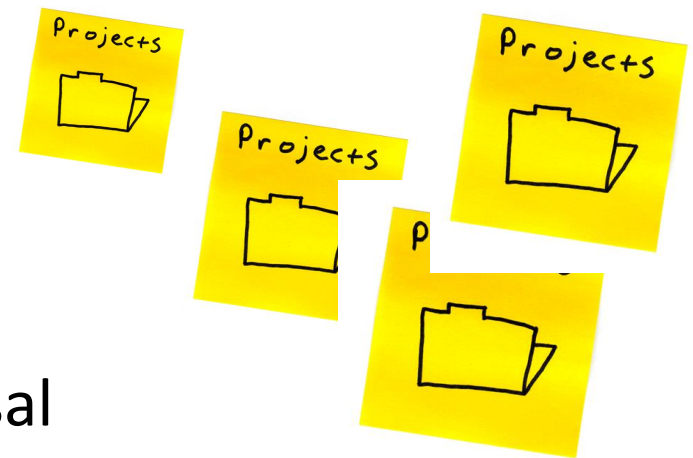


Timeline

- **February 2016:** Preannouncement of the call.
- **7th June 2016:** Call text to be published.
- **7th September 2016:** Due date for proposals, stage 1. Only sketches of how the projects will look like are required.
- **September 2016:** Invitation to second stage for all application passing stage 1
- **16th January 2017:** Due date for proposals, stage 2. Full proposals are required.
- **July 2017:** Evaluation of proposals completed
- **July 2017:** Signing contracts with new projects
- **July 2020:** Projects closing
 - Additional calls planned in 2018 and 2020

The 1st Call – 7th June 2016

- Transnational call
- The national institutions must be prepared
- The industry must be prepared – and also NGOs
- **2 step evaluation**
 - Pre-proposal (5-10 pages)
 - Screening on national basis
 - Invitation to provide full proposal
 - External reviewers (3 experts pr. project)
 - Binding ranking list (Excellence, Impact, Quality)



Splitting the budget



Total budget for projects: 41.2 mill Euros

- Ca 80% to big projects (up to -> 20 mill Euros)
- Ca 20% to smaller projects (< 3 mill Euros)
- Each country fund own partners.
- Non-ACT-members welcome to join in projects, but they will need 100% own money.
 - Cofund from EC can not be shared with project partners from non-ACT-members

Challenges

- Getting **industry** interested
- R&D institutions to respond to industry needs
- Address questions that are of national value, but also international interest
- Transnational work (no less than 2 member states involved in each project)



Outreach of ACT

ERA-NET Cofund ACT – Accelerating CCS Technologies

What is ACT?

ACT aims to accelerate and mature CCS technology by making available funds for innovation and research activities. Ten partners and the European Union work together in an ERA-NET Cofund towards that aim, with the Netherlands Enterprise Agency (EVO.nl) as the Dutch partner. The ERA-NET Cofund is in the grant agreement stage.

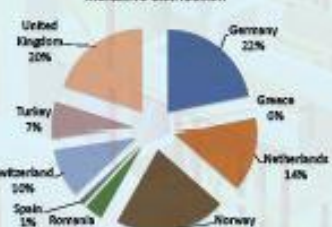
What will ACT do?

Early 2016, ACT will publish a joint call for proposals with a budget of 41 million euros, for large-scale transnational projects that facilitate the incorporation of CCS in the energy and industrial sectors. In the Netherlands, a significant industrial participation of 50% is sought. In 2018 and 2020, there will be additional calls.

Stay informed!

Provisionally, the call will be published March-April 2016. There will be a two-stage selection process. Information on a final timing will be available through Gerdi Breesbroek@EVO.nl, the website www.ACT-CCS.eu (now only a domain name) and www.ccs-euro.org.

Indicative distribution



Provisional thematic areas in ACT

Thematic area	Aim	Start date
Chain integration	Addressing R&D gaps in the full CCS chain, including CO ₂ capture, transport, and storage, incorporating related case studies for social acceptance.	Q3 2016
Capture	Capture techniques emphasising efficiency, competitive cost and flexible operations. Advanced technologies aiming in a higher operational flexibility and energy efficient capture.	Q3 2016
Transport	Pipelines and ship transport aimed at early operations of European CCS projects for power generation.	Q3 2016
Storage	Measurement, monitoring and verification (MMV) at relevant storage sites and the surrounding geosphere emphasising tools and methodology.	Q3 2016
Utilisation as an integral part of the energy case	Optional CO ₂ utilisation via e.g. enhanced oil recovery (EOR) including prospective revenue streams and related viable business models, as a vehicle to make CO ₂ capture viable.	Q3 2016

Picture courtesy of E.ON

Picture courtesy of E.ON

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Department
of Energy &
Climate Change

ERA – Net Cofund (ACT) – Accelerating CCS Technologies

What is ACT?

Act aims to accelerate and mature CCS technologies by making available funds for innovation and research activities. Ten partners and the European Union work together in an ERA-NET Cofund towards that aim, with the Department of Energy and Climate Change as the UK partner.

What will ACT do?

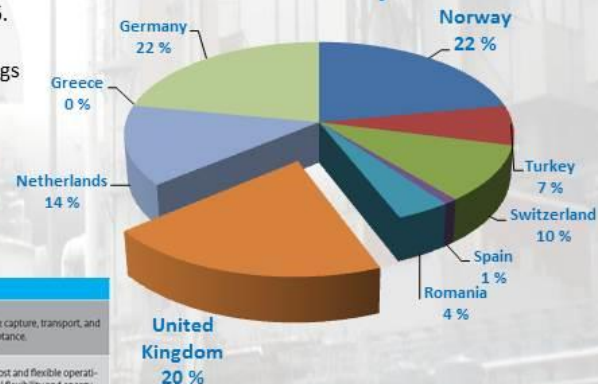
ACT will publish a joint call for proposals with a budget of €41m, for large scale transnational projects that facilitate the incorporation of CCS in the energy and industrial sectors. In the UK, a significant industrial participation is sought.



Stay Informed!

The call will be published June 2016. There will be a two stage selection process. Information on actual timings will be available via the ACT website www.ACT-CCS.eu

Indicative Distribution by Contribution



Brian Allison
Department of Energy and Climate Change
brian.allison@decc.gsi.gov.uk

Picture Courtesy of ROAD

www.act-ccs.eu

Co-funded by the
European
Commission within
the Horizon 2020



Opportunities for every one in CCS

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Major opportunities for Norwegian players

The major announcement that will kick the development of CCS technology into high gear is coming in February. The European Commission and nine member countries are adding NOK 400 million to the pot in ERA-NET Cofund CCS.

28.03.2015 15:42 |



Photo: Stykk Fjærtøft Trondsen

And best of all: Large projects will be prioritised.

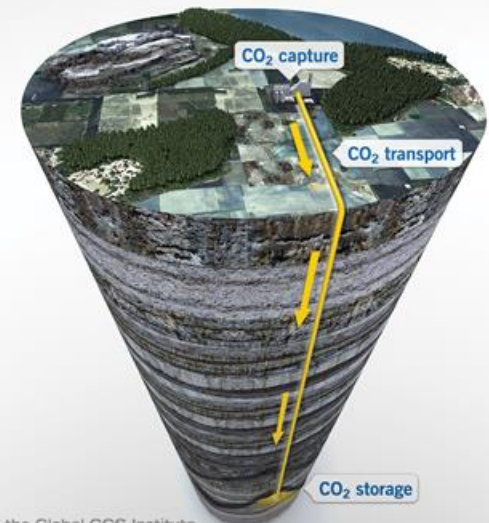
This is the first time CCS (carbon capture and storage) has received a programme in [ERA-NET Cofund](#), a new financing scheme where member countries and the EU split costs. In the new initiative, Accelerating CCS technologies as a new low-carbon energy vector (ACT), nine countries will contribute EUR 28.8 million and the European Commission will provide EUR 12.8 million. Norway and Germany are the largest contributors with EUR 6 million each.

*ACT is an incredibly important instrument for getting started with industrial use of CCS, both within power production and

Tags

[ERA-NET Cofund CCS](#)

[The European Commission](#)



Provided by the Global CCS Institute

"It is very clear that we now need to shift into a higher gear if CCS is to play its full part in addressing climate change"

Hoesung Lee,
Chairman of the Intergovernmental Panel on Climate Change (2015)



Learnings – and thanks

- Don't underestimate the legal issues of the consortium – it takes time....
- Don't underestimate the financial aspect to understand
- Thanks a lot to :
 - **Sergio** Persoglio for active participating in writing- the-proposal-to EC-group already for day 1 (we are all sorry for Italy not participating in ACT – this time....)
 - **EC-people**; Joerg Niehoff, Luis Valentin, Vassilios Kougionas (project officer) + EraLearn group.
 - ...and finally to the whole **ACT-group** for inspiring discussions and input to deliverables to EC (necessary for achievement of the EC money !)
 - Internal group at RCN



Summing up

- ACT is here (www.act-ccs.eu)
 - Has substantial amount of money
 - Has ambitious partners
- Matchmaking
 - R&D-projects to match the industry needs
 - Collaboration with ECCSEL and other infrastructures
 - the ultimate toolbox !
- ACT will stimulate to projects accelerating the deployment of CCS in
 - Energy sector
 - **Energy intensive Industries**
- The climate challenges MUST find it's solution and CCS is a valuable and natural part of it.

ECCSEL-partners





Thank you for your attention !

www.act-ccs.eu