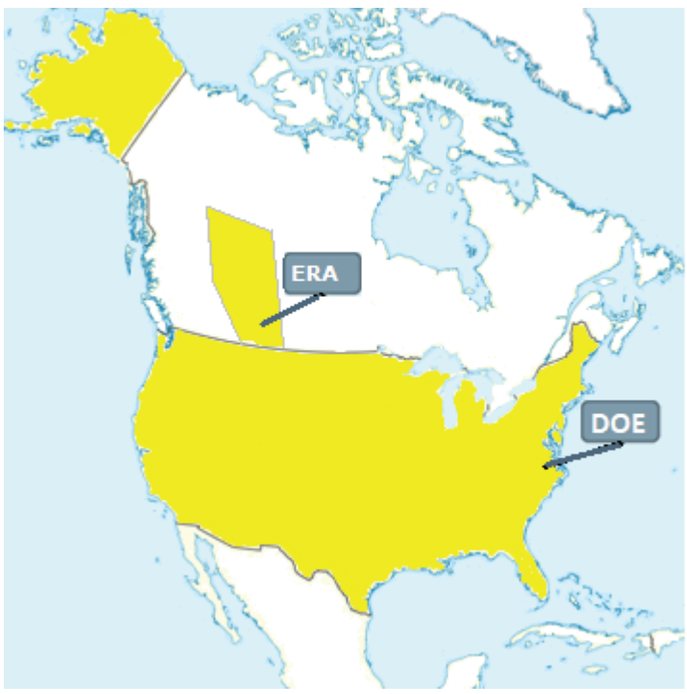
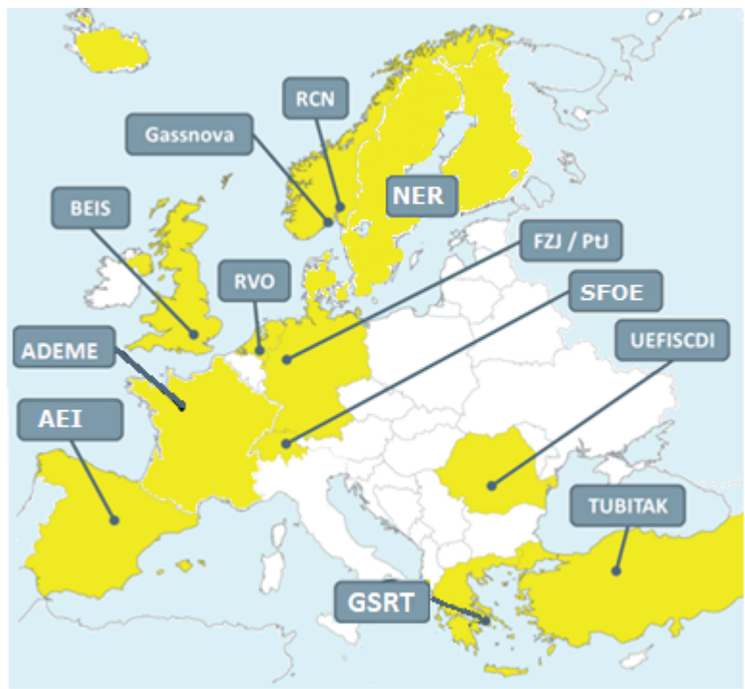
Accelerating CCS Technologies

This is ACT

ACT is an international initiative based on the Horizon 2020 European Commission funding scheme. Its aim is to accelerate and mature CCUS technology by making available funds for transnational research and innovation projects. Carbon Capture, Utilisation and Storage (CCUS) is a valuable and necessary part of the toolbox for combatting climate change.

ACT, coordinated by The Research Council of Norway, is a collaboration of research and innovation funding organisations in Europe (France, Greece, Germany, The Netherlands, Norway, Romania, Spain, Switzerland, Turkey, United Kingdom) and the USA. In addition, the Nordic Energy Research is a partner.





ACT's goal is to stimulate projects accelerating the deployment of CCUS in the energy sector as well as in energy intensive industries

ACT

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ACT Calls

ACT has launched two successful calls. For the first ACT Call, 9 European countries together with the European Commission made a total of € 36 M available for 8 high quality CCUS research and innovation projects for up to 3 years. The ACT funding has generated projects worth € 50 M. These projects in total cover all aspects of the CCUS chain. For the second ACT call, 12 new projects, with a combined budget of €31 million are due to commence autumn 2019. Some projects have included R&D partners from countries outside ACT such as: Sweden, Belgium, Iceland, Italy, Australia and Japan.

Detailed information about all the funded projects can be found on our web: www.act-ccs.eu – and on the following pages.

Ambitious Plans

With two successful Calls and projects underway, the ACT partners have established themselves as a new multilateral funding scheme for research and innovation dedicated to CCUS.

The ACT consortium organises the Knowledge Sharing Workshops (KSW) to ensure fruitful knowledge sharing and increase collaboration between the ACT funded projects and other CCUS initiatives. The 4th KSW is organised in Athens, Greece from 6 to 7 November 2019.

ACT is a fit-for-purpose, partner-driven, flexible, and an easy-to-join multi-national funding scheme that serves our ambition to make CCUS a commercially viable climate mitigation technology. We plan to launch additional Calls, with a third Call in 2020.

Funding agencies from new countries are welcome to join ACT!

The ACT Calls addresses the technological, environmental, social and economic challenges required to accelerate CCUS

Stay informed – make contact

Information on Calls and projects being funded are available at the ACT web site www.act-ccs.eu
Questions can be addressed to the ACT coordinator at the Research Council of Norway:
Ragnhild Rønneberg (rr@rcn.no)
Look at www.act-ccs.eu and find your national contact point.

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ACT-1 Projects

Project	Activities	ACT, M €	Norway	Netherlands	UK	Germany	Romania	Switzerland	Spain	Turkey
ALIGN	Chain integration, clusters	14,5	x	**X**	x	X	X			
ELEGANCY	Chain integration, hydrogen	8,9	**X**	x	x	X		x		
PRE-ACT	CO2 storage, pressure handling	4,5	**X**	x	x	X				
ACORN	Full chain CCS / infrastructure	2,0	x	x	**X**					
DETECT	CO2 storage, risk assessment	2,0		**X**	X	X				
ECOBASE	CO2-EOR SouthEast Europe	1,2	**X**	x			x			x
GASTECH	Gas switching technology	1,7	**X**	x			x	x	x	x
3D-CAPS	3D printed sorbents	1,5	X	**X**			x			

(X's indicates partners in the project. Highlighted X's indicate the country of the project leader)

Project	Activities	Coordinator
3D CAPS	Targets a productivity increase of an order of magnitude in two sorbent-based technologies for CCS. This will be achieved using the latest available techniques for materials production: additive manufacturing, commonly known as 3D-printing.	**TNO**
ACORN	The project has delivered a re-usable blueprint for the decarbonisation of NE Scotland, including an appraisal of subsea CO2 storage sites and options to re-use gas distribution assets. ACORN has been identified as an EU PCI project.	**Pale Blue Dot**
ALIGN-CCUS	A joint industry-led research initiative to accelerate the demonstration and implementation of the next-phase of European CCUS projects by addressing specific R&D gaps across the CCUS chain.	**TNO**
DETECT	Aims to significantly improve our ability to evaluate risks of leakage across faulted and fractured caprocks, so as to better inform operators, regulators and other stakeholders in their risk mitigation strategies.	**Shell**
ECOBASE	The project will develop revenue streams and business models for CO2-EOR in South-Eastern Europe and therefore supporting large scale CCUS deployment.	**NORCE**
ELEGANCY	The project addresses large-scale CCS infrastructure combined with infrastructure for the rapid introduction of H2 as an energy carrier. Focus on decarbonisation of heat and transport, commercial models, and public awareness.	**SINTEF Energy**
GASTECH	Investigate four gas switching technologies: combustion, reforming, water splitting and oxygen production. Accelerate the development of gas switching technologies by developing a business case for further technology scale-up.	**SINTEF Industry**
PRE-ACT	Develop pressure-driven decision support protocols which will be a cost-efficient system for reservoir monitoring that helps the operator maximize CO2 storage capacity and quickly turn monitoring data into corrective action.	**SINTEF Industry**

ACT-2 Projects

Projecs	Activities	ACT, M €	France	Germany	Greece	Netherlands	Norway	Romania	Spain	Switzerland	Turkey	UK	USA
AC2COM	Oxyfuel capture	3,0	x	x	x		x			x			
ACTOM	Offshore monitoring	1,5				x	x					x	x
ANICA	Carbonate looping	2,4		x	x							x	
DIGIMON	Storage monitoring	5,0		x	x	x	x	x				x	x
FUNMIN	CO_2 mineralisation	0,7	x						x			x	
LAUNCH	Capture in industries	5,1		x		x	x					x	x
MemCCSea	Membrane systems	1,7		x	x		x						x
NEWEST-CCS	Capture	2,2		x		x	x					x	
PRISMA	Capture	2,1					x			x		x	x
REX-CO2	Wells for CO_2 storage	2,5	x			x	x	x				x	x
SENSE	Storage monitoring	2,7	x	x			x		x			x	x
SUCCEED	Storage & geothermal	2,5				x					x	x	

Project	Activities	Coordinator
AC2COM	Conduct pilot-scale experiments and analytical studies to advance key components of oxyfuel cement plants with the aim of reducing the time to market of the oxyfuel technology in the cement sector.	**Universität Stuttgart**
ACTOM	Advance offshore monitoring of stored CO_2 by building a unique web-based toolkit designed to optimize monitoring programs for offshore geological storage sites.	**University of Bergen**
ANICA	Develop a novel indirectly heated carbonate looping (IHCaL) process for lowering the energy penalty and CO_2 avoidance costs for CO_2 capture from lime and cement plants.	**Techn. Univ. Darmstadt**
DIGIMON	Develop and demonstrate an affordable, flexible, and intelligent digital monitoring early-warning system, for monitoring any CO_2 storage reservoir and subsurface barrier system receiving captured CO_2.	**NORCE**
FUNMIN	Optimise the process of CO_2 mineralisation into Magnesite ($MgCO_3$) by combining simulation and experimental techniques to identify the key factors for catalysing the formation of $MgCO_3$ under mild, non-hazardous, and non-toxic conditions.	**University of London**
LAUNCH	Accelerate CO_2 capture technologies by establishing a faster and more cost effective method to predict and control the degradation of next generation solvents.	**TNO**
MemCCSea	Develop hyper compact membrane systems for cost-effective and flexible operation of post-combustion CO_2 capture in maritime applications such as on floating vessels used by the offshore oil and gas industry.	**CPERI/CERTH**
NEWEST-CCS	Accelerate the deployment of CCS in the European Waste to Energy (WtE) sector and develop guidelines for the selection of robust, fuel flexible technologies resistant to Municipal Solid Waste (MSW) impurities. The project will also and assess the size of the WtE CCS market to create regional roadmaps.	**University of Edinburgh**
PRISMA	Integrate molecular science and process engineering to develop a technology platform that allows for customized carbon capture solutions to optimal separation for a range of different CO_2 sources and CO_2 use/destination options.	**Heriot-Watt University**
REX-CO2	Develop procedures and tools for evaluating the re-use potential of existing hydrocarbon wells for CO_2 storage to help stakeholders make informed decisions on the potential of certain wells or fields for CO_2 storage.	**TNO**
SENSE	Utilise new technologies and optimized data processing to develop reliable and cost-efficient monitoring programs based on ground movement detection combined with geomechanical modelling and inversion techniques.	**Norwegian Geotechnical Institute**
SUCCEED	Research and demonstrate at pilot scale the feasibility of utilising produced CO_2 for re-injection in a geothermal field to maintain and enhance reservoir pressure and improve performance, while also storing the produced CO_2 that would typically be vented to the atmosphere under standard geothermal operations.	**Imperial College London**

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