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# “CO<sub>2</sub> GeoNet” European Network of Excellence on Underground CO<sub>2</sub> Storage

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## Project Objectives & Significance

- Form a durable integration and alignment of CO<sub>2</sub> storage research between the network members
- Grow the network
- Train the next generation of scientists
- Europe's CO<sub>2</sub> storage lab R&D infrastructure
- Strengthen the European Research Area
- Collaborate internationally
- Provide excellent scientific advice and information to stakeholders
- First of its kind



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## 13 Research Partners

### Denmark

Geological Survey of Denmark and Greenland –GEUS

### France

Bureau de Recherches Geologiques et Minieres- BRGM  
Institute Francais du Petrole –IFP

### Germany

Federal Institute for Geosciences and Natural Resources –BGR

### Italy

Istituto Nazionale di Oceanografia e di Geofisica Sperimentale-OGS  
Università di Roma “La Sapienza” -URS

### Netherlands

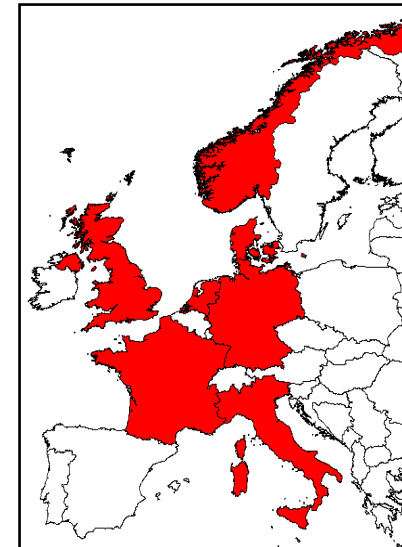
Netherlands Organisation for Applied Scientific Research –TNO

### Norway

Norwegian Institute for Water Research –NIVA  
Stiftelsen Rogalandforskning-RF  
SINTEF Petroleumsforskning AS –SPR

### UK

Natural Environment Research Council-British Geological Survey-BGS  
Heriot-Watt University –HWU  
Imperial College of Science, Technology and Medicine-IMPERIAL





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## Why CO<sub>2</sub> storage ?

Storage is the critical path to CO<sub>2</sub> capture and storage (CCS)

- without storage capture is useless

(capture is already possible –cost reduction & widespread commercial application are the most prominent issues)

In the CCS chain: storage is of most concern to policymakers, regulators and the public

Europe has led the way on CO<sub>2</sub> storage R&D since 1991 (Joule 2) (the core group of research partners forms a critical mass of established joint research activity upon which the existing and newer R&D entrants can develop)

Open public-domain dissemination of R&D on storage is more likely to be achieved earlier than capture; as it is commercially less sensitive than developing capture technologies



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## Resourcing

Launched April 2004

Budget over 5 years

EC Contribution- €6million

Network Partners and external funding- €3million

Beyond 2009 the Network has to be funded  
independently of the EC

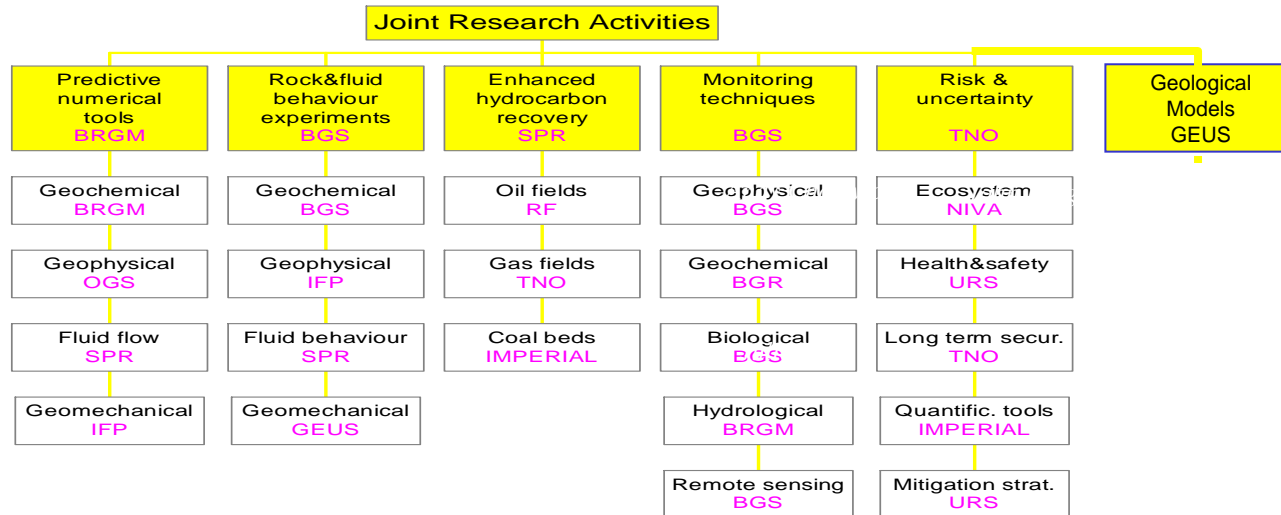


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# Generic R&D responsibilities





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# Scientific Programme 2005-7

		RESEARCH AREAS AND SUB-AREAS																					
		MODELLING				EXPERIMENTS				EHR			MONITORING					RISK					GM
		Geochemical	Geophysical	Fluid flow	Geomechanical	Geochemical	Geophysical	Fluid	Geomechanical	EOR	EGR	ECBM	Geophysical	Geochemical	Biological	Hydrological	Remote sensing	Ecosystem	Health/Safety	Lon term security	Quantification	Mitigation strategy	Geolog. Model.
		JR1				JR2				JR3			JR4					JR5					JR6
		JR1-1	JR1-2	JR1-3	JR1-4	JR2-1	JR2-2	JR2-3	JR2-4	JR3-1	JR3-2	JR3-3	JR4-1	JR4-2	JR4-3	JR4-4	JR4-5	JR5-1	JR5-2	JR5-3	JR5-4	JR5-5	JR6
WORK PACKAGES months 13-30	JRAP-1	Cap rock seal capacity for CO2 storage																					
	JRAP-2	Creation of a conceptual model of gas migration in a leaking CO2 analogue																					
	JRAP-3	Development of advanced seismic modelling capabilities																					
	JRAP-4	Ecosystem responses to CO2 leakage - model approach																					
	JRAP-5	Geochemical monitoring for onshore gas releases at the surface																					
	JRAP-6	Integrating risk assessment tools for CO2 storage performance assessment																					
	JRAP-7	Interaction of CO2 with host rocks: experiments and models																					
	JRAP-8	Monitoring of submarine CO2 fluxes and ecological impact																					
	JRAP-9	Seal properties database																					
	JRAP-10	Testing remote sensing monitoring technologies for potential CO2 leaks																					
	JRAP-11	Unlithified seal deformation																					
	JRAP-12	Application of tracers for monitoring CO2 storage																					
	JRAP-13	CO2 storage in virgin seams and in coal seams stimulated by UGC																					
		5	1	4	3	3	2	4	3	-	1	1	2	6	2	1	1	3	3	6	3	-	3



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## Some Challenges

- True integration, not just collaboration
- Form a legal entity
- Institutional & departmental inertia
- CO<sub>2</sub> storage R&D is only a part of each institutes R&D portfolio
- Durability

THANK YOU!