



# CO<sub>2</sub>GeoNet: past, present and future

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# CO<sub>2</sub>GeoNet is a Network of Excellence

- NOT a research project
- NoEs: New instrument under FP6 designed to overcome the fragmentation of European research by integrating the **critical mass** of resources and expertise needed to provide **European leadership** and to be a **world force**
- The aim is to create a progressive and **durable integration** of the network partners, while, of course, advancing knowledge



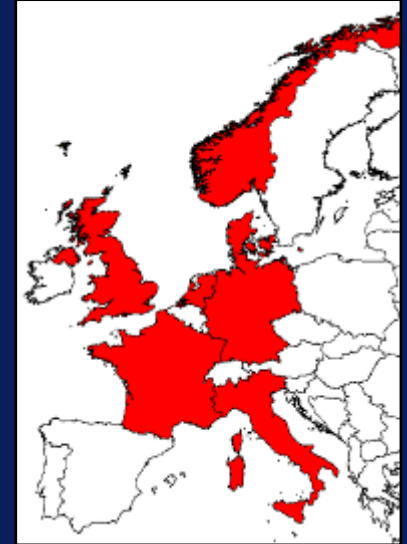
# Activities and 'products' of NoEs

- **Balanced spectrum of joint activities:**
  1. Developing joint programmes for research activities towards a common research agenda
  2. Pooling scientific equipment, joint use and/or development of research infrastructures
  3. Providing a favourable environment for young researchers
  4. Offering transnational integrated advanced education and training activities
  5. Ensuring a science policy interface, including societal involvement and public awareness
  6. Supporting European and international visibility and competitiveness, representing Europe 'with one voice'
- **Main products are not research results, but activities promoting / facilitating / supporting research and its dissemination**



# CO<sub>2</sub>GeoNet – the European Network of Excellence on the geological storage of CO<sub>2</sub>

Integration of 13 research institutes over 7 countries, more than 300 researchers



Denmark: **GEUS**  
France: **BRGM, IFP**  
Germany: **BGR**  
Italy: **OGS, URS**  
Netherlands: **TNO**  
Norway: **NIVA, RF, SPR**  
UK: **BGS, HWU, IMPERIAL**



# CO<sub>2</sub>GeoNet integrated community of researchers

- **Multidisciplinary expertise:**
  - geology, geophysics, geochemistry, geomechanics, hydrology, microbiology, reservoir engineering, oceanography, and psycho-social science
- **Masters every facet of CO<sub>2</sub> storage:**
  - site selection and characterization, modelling and monitoring CO<sub>2</sub> fate and site behaviour, risk assessment (including possible local impacts on humans and ecosystems), and safety protocols
- **Field experience gained from:**
  - the pioneer CO<sub>2</sub> storage sites (Sleipner, Weyburn, In-Salah, K12B, Ketzin, Kaniow...)
  - natural analogues (Montmiral, Latera, Ciampino, Laacher See, Tyrrhenian sea...)



# CO<sub>2</sub>GeoNet's six unique research infrastructures

## Marine natural field laboratories

based on natural CO<sub>2</sub> seepage areas

## Terrestrial natural field laboratories

based on natural CO<sub>2</sub> fields and seepage areas

## Marine experimental and monitoring facilities

to study CO<sub>2</sub> leakage at sea bottom and bioimpacts

## Terrestrial monitoring facilities

to study CO<sub>2</sub> leakage at ground surface and bioimpacts

## Remote sensing facilities

for CO<sub>2</sub> surface detection

## CO<sub>2</sub>-fluid-rock Interaction desk laboratories

with experimental and modelling facilities

- 12 natural field laboratories, to study trapping and leakage mechanisms, test monitoring tools, measure local environmental impacts
- usefully complement the 10-12 large-scale demos of the EU Flagship Programme

- Tested and cross-calibrated in our natural field labs
- Ready to be deployed at any storage site in Europe

- To work on various samples taken from current or planned CO<sub>2</sub> storage sites



# CO<sub>2</sub>GeoNet's Joint Programme of Activities and successful achievements



- Partial alignment of Partners' internal research programmes
- Sharing & development of research infrastructures
- Internal workshops and joint field work
- Staff exchange for short periods
- Creation of a **legal entity**

- A vehicle for integration

- Website
- Secretariat (single entry point)
- Training courses & internships
- Conferences & workshops
- Media



# CO<sub>2</sub>GeoNet's major dissemination events (1)

- Annual CO<sub>2</sub>GeoNet Open Forum in Venice (from 2005)
- Participation of CO<sub>2</sub>GeoNet to CO2NET annual seminars
- Co-organisation of IEA-GHG Summer schools on CCS (since 2007)
- Europe's invited body at METI/IEA-GHG Workshop on how to build confidence in CCS, Tokyo, 24-25 January 2007
- CO<sub>2</sub>GeoNet Workshop and Booth at EAGE Conference, London, June 2007
- CO<sub>2</sub>GeoNet Training & Dialogue Workshop on CO<sub>2</sub> geological storage, Paris, 3 Oct. 2007
- Training Course '*Modelling Chemical Reactivity during CO<sub>2</sub> storage*', Orléans, (1<sup>st</sup> edition on 15-20 October 2007)
- Co-organisation of a CO<sub>2</sub> Capture and Storage Training Course (a UK-Italy initiative), Erice, Sicily, 1-7 November 2007
- Invited presentation at the Clean Coal Technology Conference, Krakow-Katowice, 17-18 March 2008

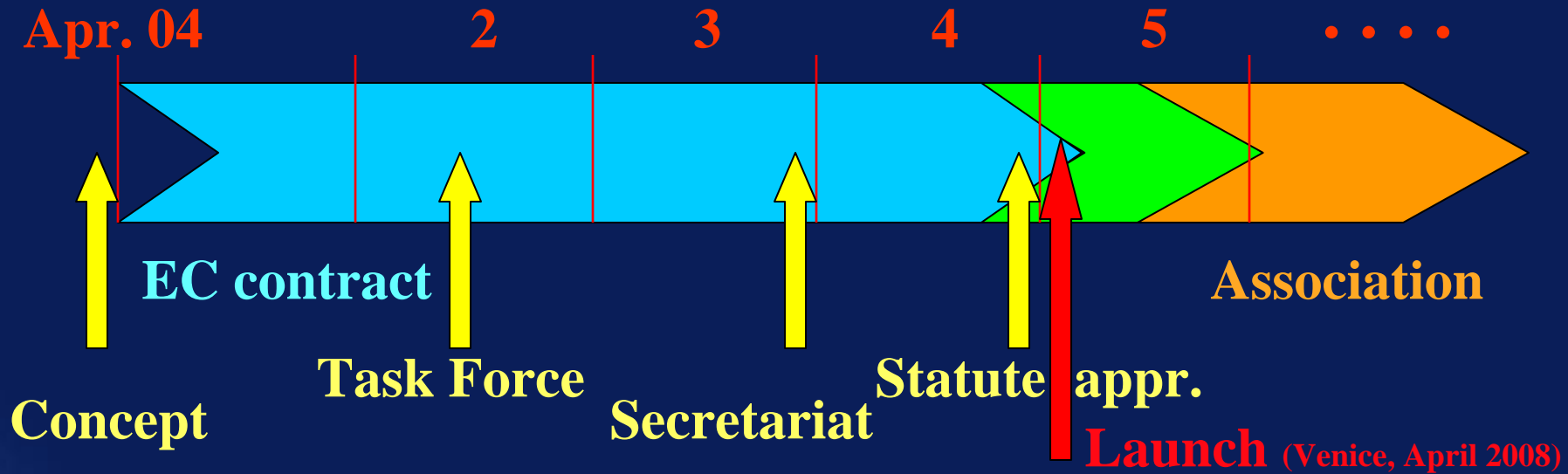


# CO<sub>2</sub>GeoNet's major dissemination events (2)

- CO<sub>2</sub>GeoNet at **ESOF 2008** (European Science Open Forum) – a big event to promote science in society, Barcelona, 18-22 July 2008
- Co-organisation of **Romanian Workshop** '*Promoting CO<sub>2</sub> capture and storage in Romania*', Bucharest, 11-12 September 2008
- Publication of **CO<sub>2</sub>GeoNet brochure** '*What does CO<sub>2</sub> geological storage really mean?*', September 2008
- Co-organisation of **IEA GHG CO<sub>2</sub> Storage Modelling Workshop**, Orléans, 10-12 February 2009
- Invited presentations at **CO<sub>2</sub>NET-East Workshop**, Bratislava, 3-4 March 2009
- Co-organisation of a **CCOP Training course on CO<sub>2</sub> storage**, Bangkok, 22-26 June 2009 (Committee for Geoscience in E-SE Asia)
- Organisation for the European Science Foundation of a **ESF Research Conference** '*CO<sub>2</sub> geological storage: latest progress*', Austria, 22-27 November 2009



# From EC contract to Association



EC initial support for 5 years  
(6 million €, April 2004 – March 2009)  
Additional €3m+ from partner institutes




# CO<sub>2</sub>GeoNet Association

- Non profit **Scientific Association** governed by the French law of 1901, registered in Orleans, publication in “Journal Officiel” on 5/07/08

- **Activities:**

- Joint research
- Scientific advice
- Training
- Information and communication



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Annonce(s) contenant le ou les mots : CO2GeoNet  
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Association : **CO2GEONET - RESEAU D'EXCELLENCE EUROPEEN SUR LE STOCKAGE GEOLOGIQUE DE CO2.** No d'annonce : **848**  
Paru le : **05/07/2008**  
Identification WALDEC : **W452005608**

No de parution : **20080027**  
Département (Région) : **Loiret (Centre)**  
Lieu parution : **Déclaration à la préfecture du Loiret.**  
Type d'annonce : **ASSOCIATION/CREATION**

Déclaration à la préfecture du Loiret. **CO2GEONET - RESEAU D'EXCELLENCE EUROPEEN SUR LE STOCKAGE GEOLOGIQUE DE CO2.** *Objet :* permettre le développement du réseau de recherche créée par le biais du réseau d'excellence CO2GeoNet, financé par le programme UE-FP6, de manière à traiter collectivement des problématiques européennes d'intérêt commun en matière de stockage géologique de CO2. Etablir un organisme scientifique européen spécialisé dans le stockage géologique du CO2, qui oeuvre durablement afin de permettre le déploiement efficace et sûr de la technologie de captage et de stockage du CO2 (CSC) de manière à atténuer les effets du changement climatique et de l'acidification de l'océan. Poursuivre le processus d'intégration en cours entre les membres afin de constituer un établissement européen virtuel, par un échange permanent d'informations sur les activités menées, l'alignement des programmes de recherche, l'échange de personnel, le partage des infrastructures et des DPI existants et ultérieurement acquis, en évitant les efforts de recherche redondants. Identifier les lacunes dans les connaissances et mettre au point de nouveaux projets et outils de recherche en vue de les combler. Rechercher des financements extérieurs dans le cadre de programmes industriels et nationaux européens, afin de diversifier, d'étoffer et consolider le portefeuille d'activités de recherche partagées. Soutenir la mise en oeuvre de programmes de recherche communs tant parmi les membres qu'avec d'autres établissements de recherche européens. Promouvoir la formation des générations futures de scientifiques qui seront nécessaires pour un déploiement à grande échelle de la technologie visée. Etre une source impartiale d'informations scientifiques et techniques sur tous les aspects du stockage de CO2, avec le concours d'une communauté scientifique intégrée forte d'une expertise multidisciplinaire. Conseiller l'Union Européenne et les Etats Membres sur des questions d'ordre scientifique, réglementaire et politique. Rechercher les meilleurs moyens à mettre en oeuvre pour diffuser les informations et appuyer des actions de



# Conclusion

## Europe now has a scientific authority on CO<sub>2</sub> storage

*As an independent and multidisciplinary scientific body, CO<sub>2</sub>GeoNet has the key role of building trust on CO<sub>2</sub> geological storage and supporting wide scale CCS implementation*

**International recognition:**

- CSLF-endorsed network
- MoU with IEA GHG



# Acknowledgements

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  - Alla Shogenova (Tallinn Univ., Estonia)
  - Bruno Saftic (Univ. of Zagreb, Croatia)
  - Charlotte Griffiths (UNECE, Switzerland)
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- **CO<sub>2</sub>GeoNet scientists**

