CO_2GeoNet

The European network of excellence
on the Geological Storage of CO_2

CO_2GeoNet update

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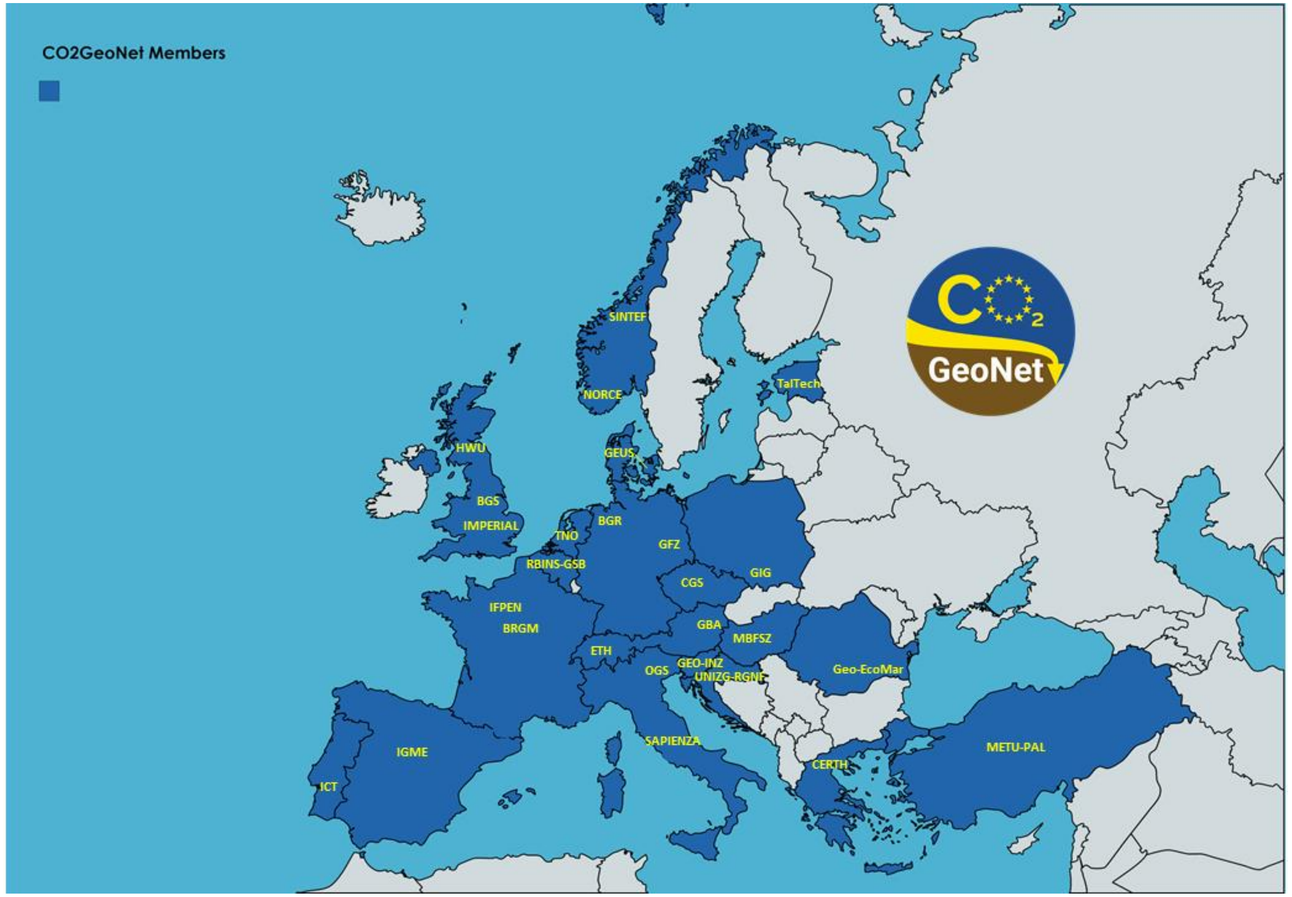
CSLF Technical Group, December 2021

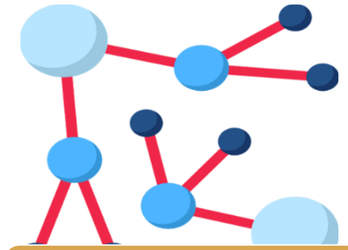
CO_2GeoNet: a growing European Network of Excellence on CO_2 geological storage

- ✓Created as a EU **FP6 Network of Excellence** 2004-2009 became an **Association** under French law in 2008
- ✓The Association continues to grow and now comprises **27 research institutes** from **21 countries**



www.co2geonet.com

Unites over 300 researchers with the multidisciplinary expertise needed to address all aspects of CO_2 storage



Research & networking

Scientific Advice & International Collaboration

Training & Capacity Building

Information & Communication

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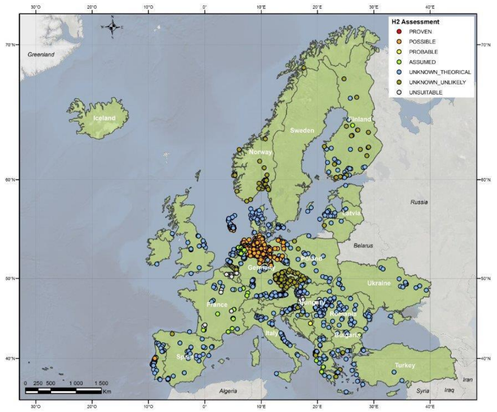
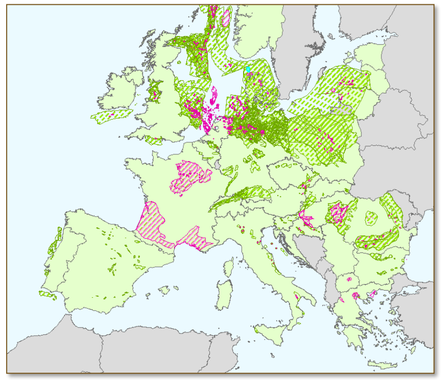
Hystories – CO2GeoNet compiling geological database to enable Hystories to assess opportunities for H_2 storage

Depleted fields and aquifers: building on previous CO_2GeoNet Member work

ESTMAP



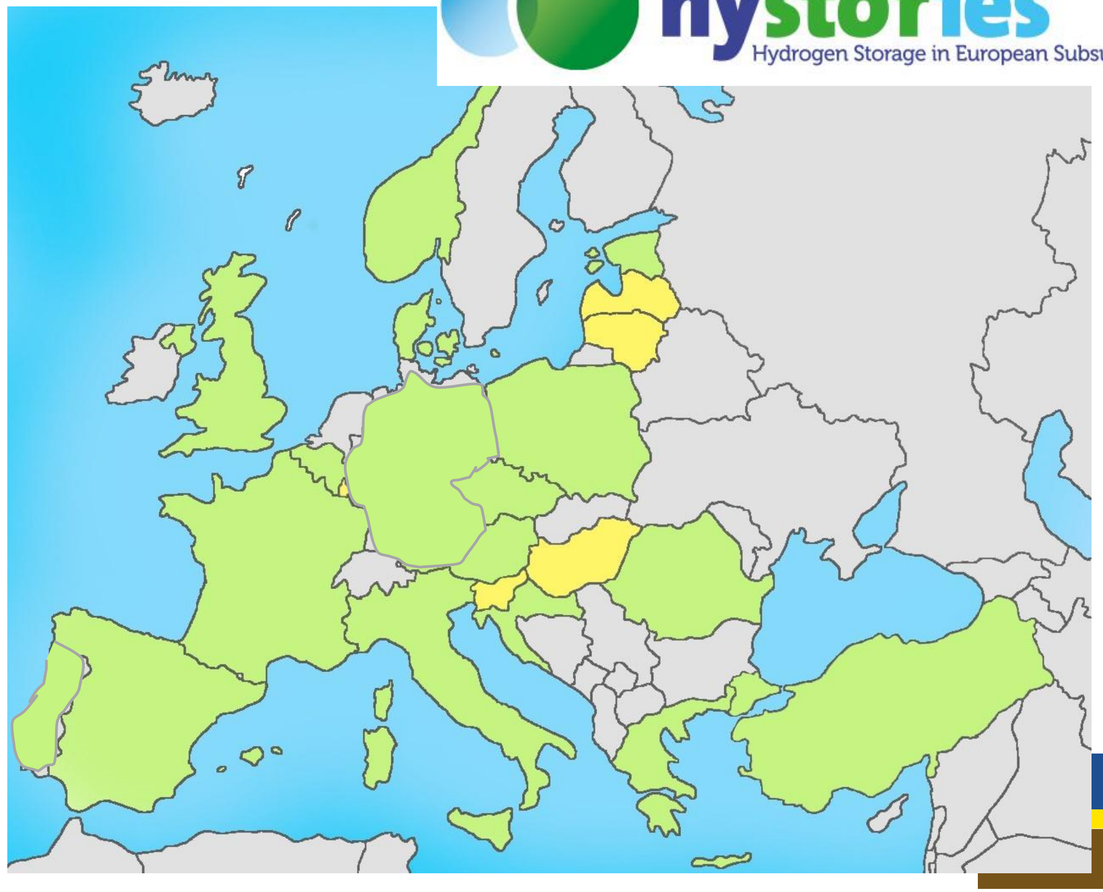
CO_2StoP



Salt deposits: no update, but use of SMRI-financed work (Horvath et al., 2018)

Hystories: 17 countries covered by partners in-country, plus 5 additional neighbouring countries

hystories
Hydrogen Storage in European Subsurface



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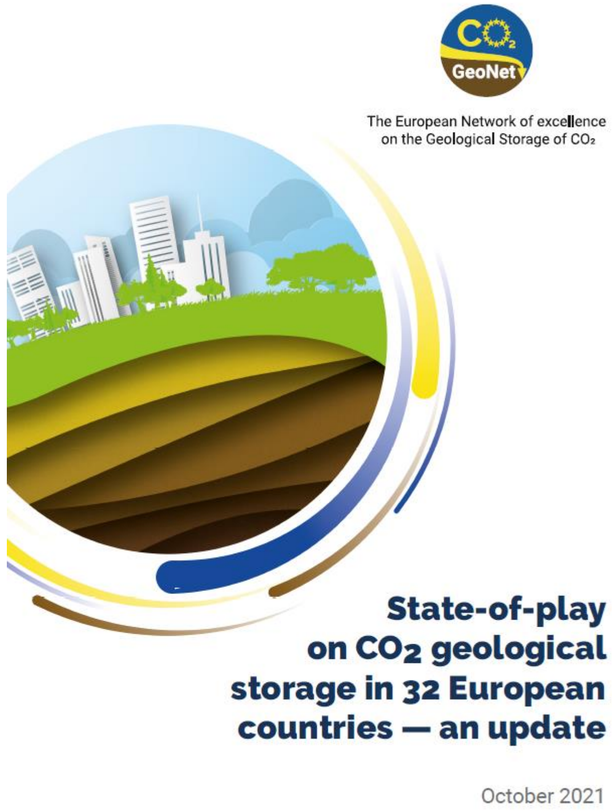
https://hystories.eu/

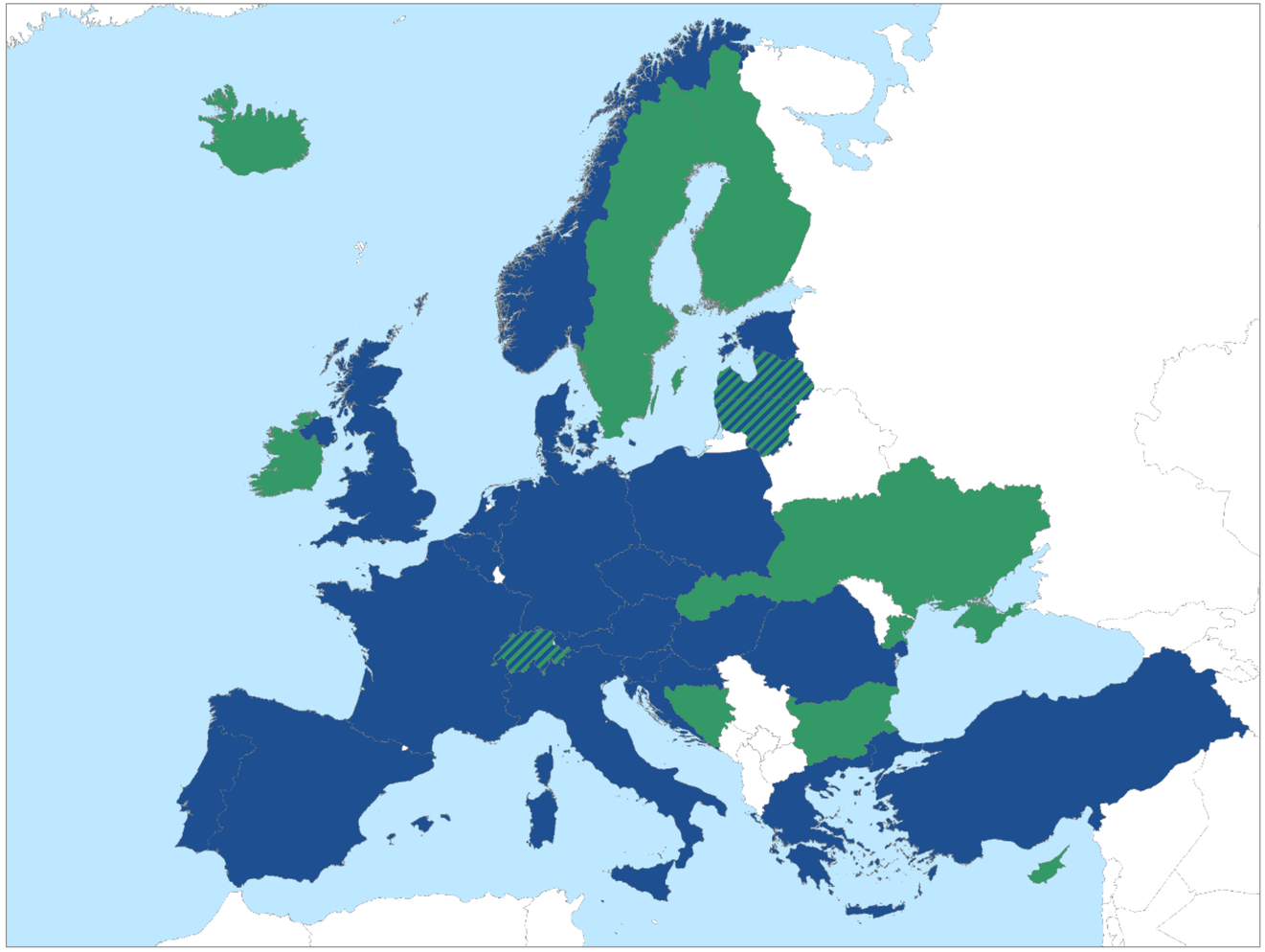
State of Play on geological storage in Europe (1)

- National policies and climate-protection strategies;
- National legislation and regulations;
- National storage options, potential and capacity;
- Large-scale and demonstration CCS projects, pilot and test sites for CO_2 capture, transport and storage;
- Research activities with respect to CO_2 storage;
- National actors driving CCS forward, public awareness and engagement.



State of Play on geological storage in Europe (2)

- Report summarises information provided by national experts from across Europe
- Detail on country by country basis in the Annex
- Session keynote at 2nd EAGE Geoscience and Engineering for the Energy Transition Conference on 24/11/21



http://www.co2geonet.com/media/73745/co2geonet_state-of-play-in-europe_2021.pdf

International Master Course on CO2 Geological Storage

CO_2GeoNet invites candidates with a relevant MSc to apply for this specialist course. Applications to be sent to Sabina Bigi (sabina.bigi@uniroma1.it) with the subject line 'ENOS MSc course 2021'.

Applications must be received by January 17th, 16:00 UK time. The school organisers will then select from the applications.

SAPIENZA UNIVERSITÀ DI ROMA

The European Network of excellence on the Geological Storage of CO_2

University of Zagreb FACULTY OF MINING GEOLOGY AND PETROLEUM ENGINEERING

International Master on «CO2 Geological Storage»

TAL TECH DEPARTMENT OF GEOLOGY

The call of the second edition of the International Master on CO2 geological Storage is open. The deadline for application is 17th of January 2022. Accordingly, lessons will start in February 2020. The Course lasts one year.

This postgraduate specialist university course is offered jointly by the University of Rome and University of Zagreb, and includes the participation of professors from the Tallinn University of Technology (TalTech), Heriot-Watt University (HWU), Geological Survey of Denmark and Greenland (GEUS) and CO2Geonet, The European Network of Excellence on the Geological Storage of CO2.

HERIOT WATT UNIVERSITY

NORCE

The programme will cover all aspects of the geological storage of CO2 so that the students can both understand the work of all specialists who will be involved in CCS projects such as reservoir engineers, geologists, geophysicists, geochemical modelers, economists, regulators, etc.

GEUS

Candidates are required to have a MSc degree in Earth Sciences or Petroleum Engineering according to the European Qualification Framework.

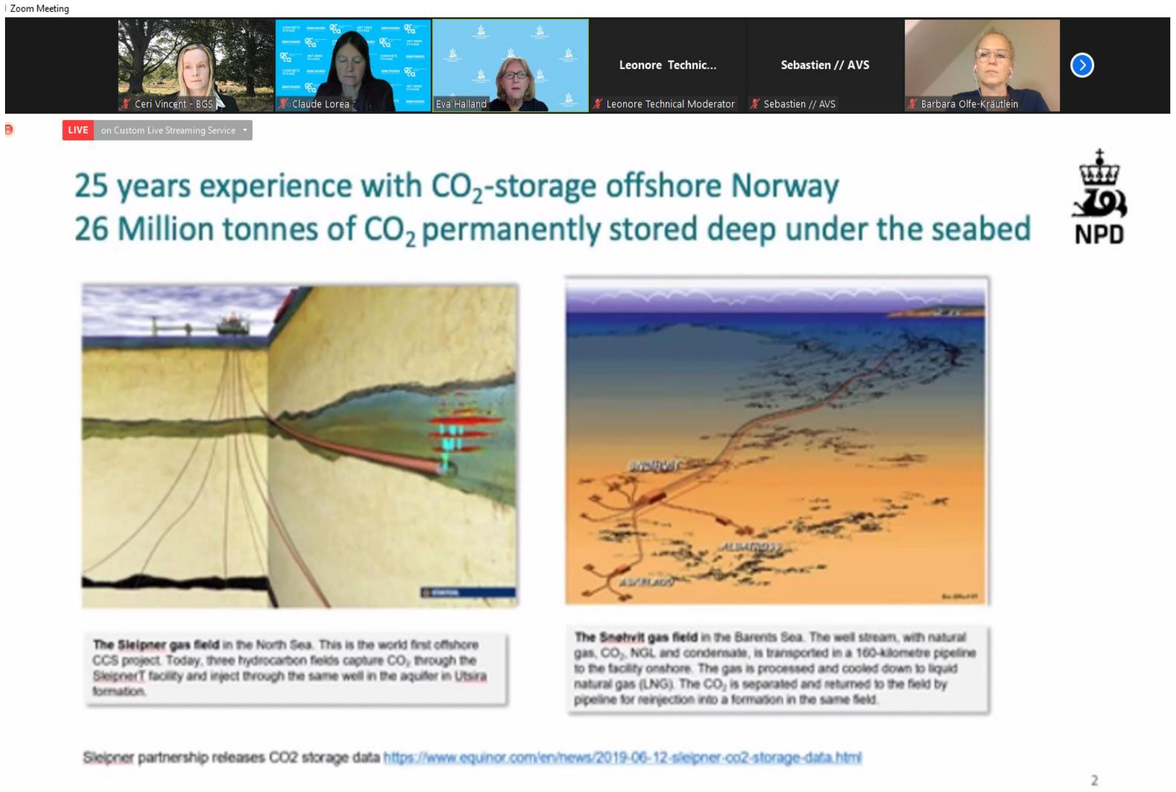
https://web.uniroma1.it/masterco2/en/course-description

COP26 – online events

- Exhibit - We need CO_2 capture and storage (CCS & CCUS) to meet the Paris Agreement targets

- EU pavilion - Meeting our Sustainable Development Goals through an integrated carbon management approach (CO_2GeoNet, GFZ, IASS)

- UNFCCC side event - Accelerating along the transformative pathway to net zero with large-scale carbon dioxide removal and storage (C2G and CO_2GeoNet)



Key messages from EU pavilion event (1)

Meeting our Sustainable Development Goals through an integrated carbon management approach

- Achieving our SDGs and pathways for 1.5°C require rapid and large-scale reduction of and negative CO_2 emissions;
- Nature-based solutions and CO_2 capture and storage (CCS) are **essential and complementary options to tackle the climate challenge**;
- **CCS is already safely storing millions of tonnes of CO_2 every year** and can enable negative emissions;
- There is **abundant geological capacity** to safely store CO_2 captured from sources such as industrial and energy-intensive processes where CCS is the only option to cut emissions;
- CCUS can be accelerated and upscaled through the provision of, and access to, **large scale transport and storage infrastructure**;

Key messages from EU pavilion event (2)

- CCU can offer long-term storage opportunities and help **make CCS investable;**
- Life cycle analysis is essential to **ensure projects reduce emissions and support relevant SDGs**;
- **Adapted carbon accounting** could support CCUS by providing fair recognition of all relevant technologies;
- **Nature-based climate solutions can offer up to 1/3 of the emission reductions** needed between now and 2030 to achieve the Paris Agreement targets;
- **Nature-based climate solutions have a high acceptability by local communities** and offer many ecosystem services essential for achieving SDGS and climate goals;
- **Policy support and demand for low carbon activities** is needed to enable these options to achieve their full potential in tackling the climate challenge.

CO_2GeoNet Autumn webinars – 20 & 21 Sept

- **Keynote from DG CLIMA on EU Green Deal and CCS strategy**
- **Status of European/ international forerunner projects;** CTSCo Surat Basin, Northern Lights/Longship, new Canadian projects
- **Emerging CCUS technologies and new projects**; the Danish Greensands project, the ACCSESS project, Hydrogen in Portugal
- **Keynote on the need for change from EU Climate PACT Ambassador**
- **Recent progress in industrial CCS projects;** Longship CO_2 Capture from Oslo, CLEANKER, QUEST, Gorgon
- **Research - Contributions to MMV, storage potential and risk assessment;** FRS Canada, Hystories, State of play on CO_2 storage

CO_2GeoNet Autumn webinars (1)

My key takeaways:

- Data and tools needed that will enable projects to "**prepare for swift decisions**"
- **Dynamic, flexible approach needed** – buffer storage, CO_2 arriving from multiple locations…..
- Need for "Climate positive projects". **Important to calculate the overall CO_2 reduction for different technologies and feedstocks**
- We need to develop commercially viable chains for negative emissions. **CCS should be approached the same as for other large scale waste disposal needs.** CCS can't be driven by fossil fuels
- **CO_2 capture and transport challenge = cost. CO_2 storage challenge = risk**, but this reduces over time
- **Climate neutral hydrogen is key in the energy transition**
- **CCS on power is still needed!**
- Increased ambition in climate targets – Green Deal, ETS, Certificates etc to support. "**Ambitious but feasible**". **Europe is ready to store CO_2**!

CO_2GeoNet Autumn webinars (2)

My key takeaways:

- A **future Danish hub** (Greensands project) for European CO_2 storage is emerging
- **Portugal is not looking for blue hydrogen** but will CO_2 capture be needed to blend with the grid gas supply?
- **CO_2 capture is ready to go in Oslo** (Fortnum Oslo Varne, Norway - awaiting full funding decision). Plastic is still a problem for recycling and much is burned through WTE
- Ready to form **Baltic CCUS clusters**. Ready to produce low carbon cement
- **Gorgon (Australia) installed wells to tackle site specific challenges**; CO_2 injection, reservoir surveillance, water producers, water injectors
- Canadian Field Research Station draws together international expertise and multiple approaches to consider '**what is the smallest amount of CO_2 we can detect?**'

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Thank you for your time

Information: www.co2geonet.com **Contact: info@co2geonet.com**

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