

Underground Spatial Planning – Legal and Planning Settings for Managing Underground Projects

spa-ce.net Network of Spatial Research and Planning in Central, Eastern and South Eastern Europe

**Network Conference 2012, Kecskemét (Hungary),
25-26 October 2012**

The Role of Renewable Energy for Regional Development

Prof. Dr. jur. Gerold Janssen

**Leibniz Institute of Ecological Urban and
Regional Development Dresden (Germany)**



Outlines

1. Introduction
2. Geological aspects
3. Planning aspects
4. Legal settings
5. Conclusions

1. Introduction

- General climate and energy policy
- CCS-technology as a „bridging technology“ (DIRECTIVE 2009/31/EC on the geological storage of carbon dioxide)
- Need for a comprehensive and seamless underground planning
- Lack of geological knowledge
- Terrestrial orientated planning instruments
- Missing regulations
- Comparison to Maritime Spatial Planning

2. Geological aspects

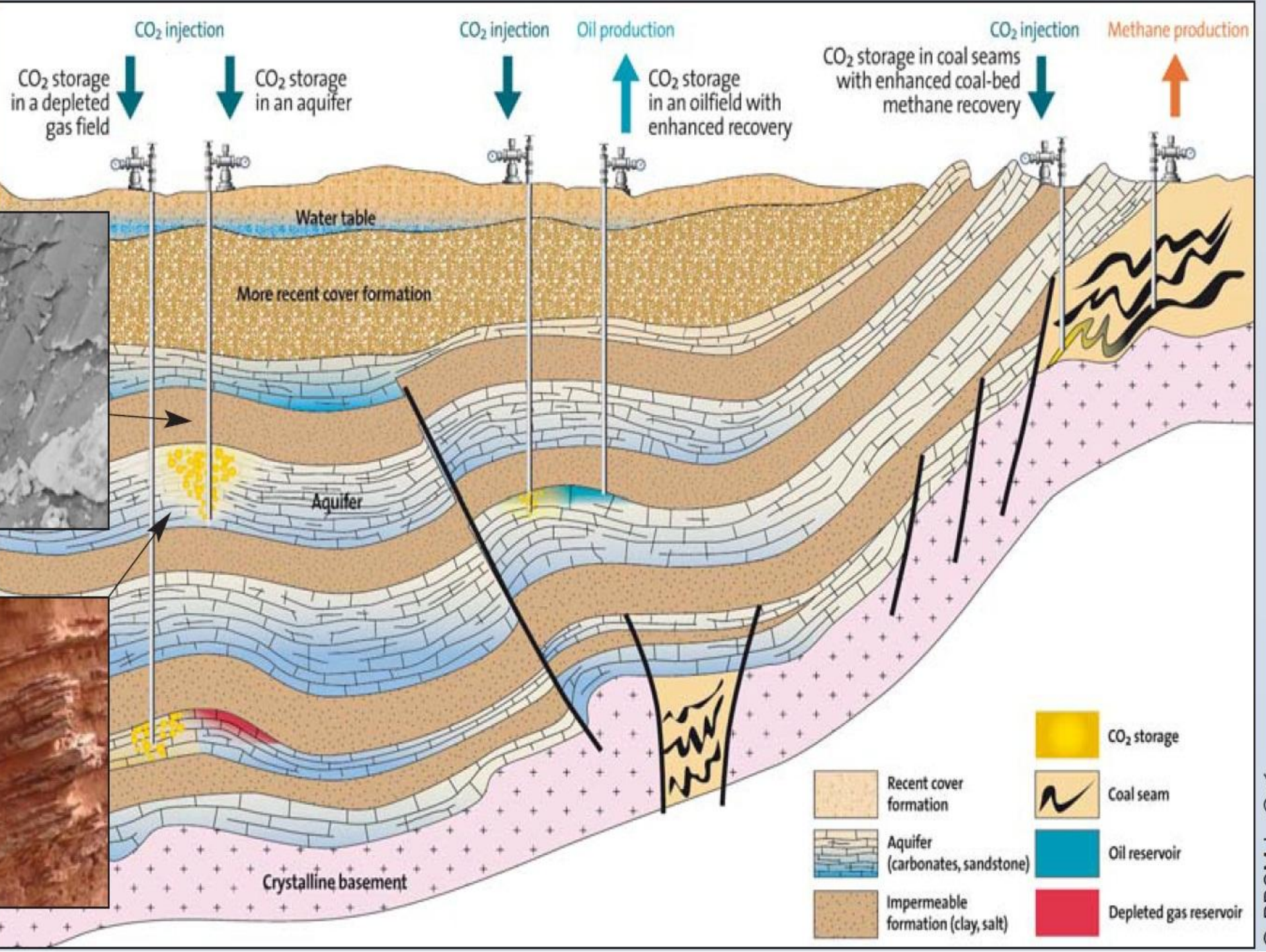
The following activities are possible:

Primary interest:

- storage of energy derived from renewable energy sources
- Geothermal energy

Competing exploitations:

- groundwater exploitations,
- use of thermal water,
- storage of natural gas,
- extraction of raw materials, including unconventional natural gas production,
- Underground waste disposal
- Underground uses in the exclusive economic zone,
- CCS - storage of CO₂ - the influence of CO₂ on disposal of other options for use.



Capture

Boat

Buffer storage facility

Transport

Pipeline

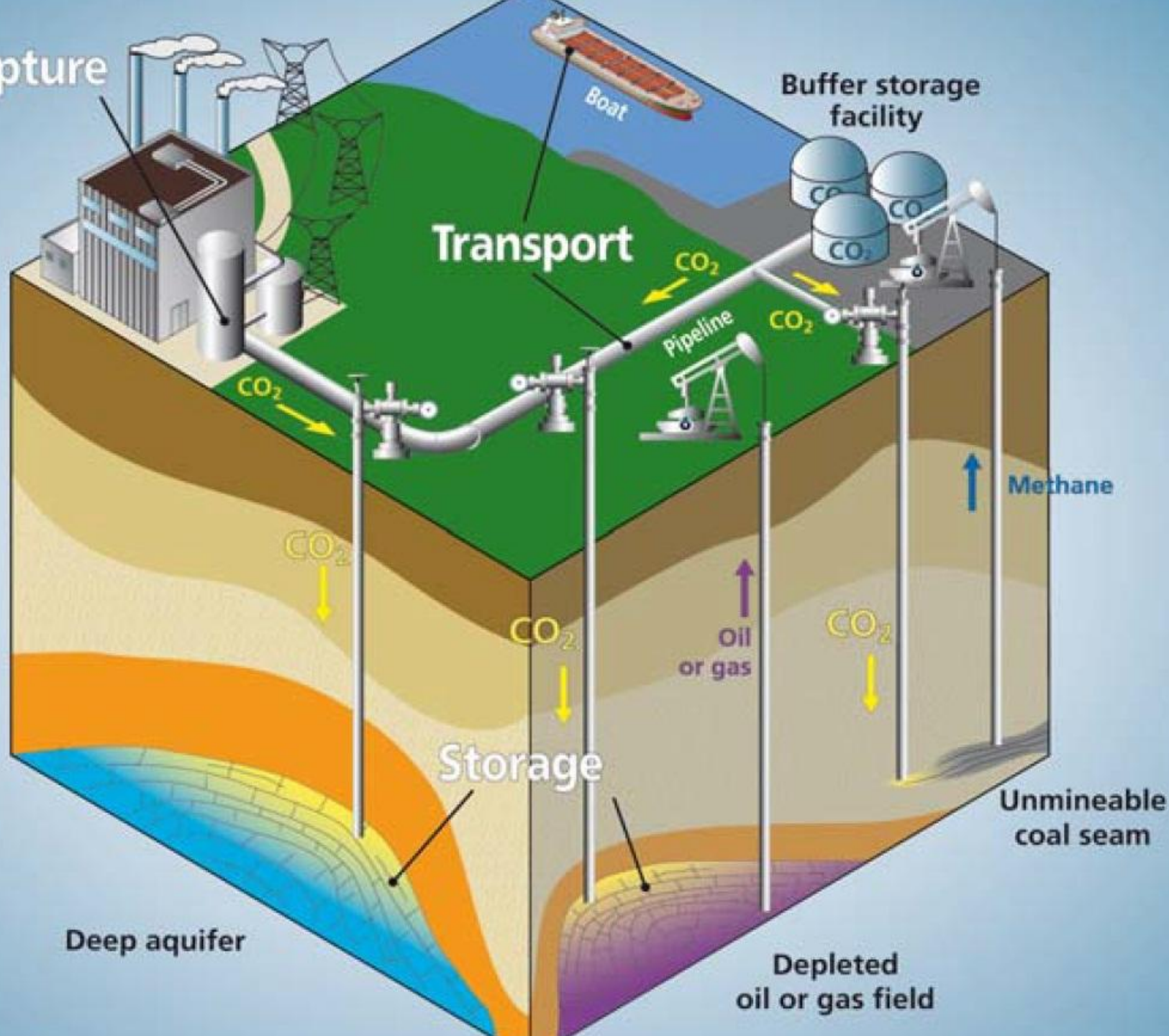
Methane

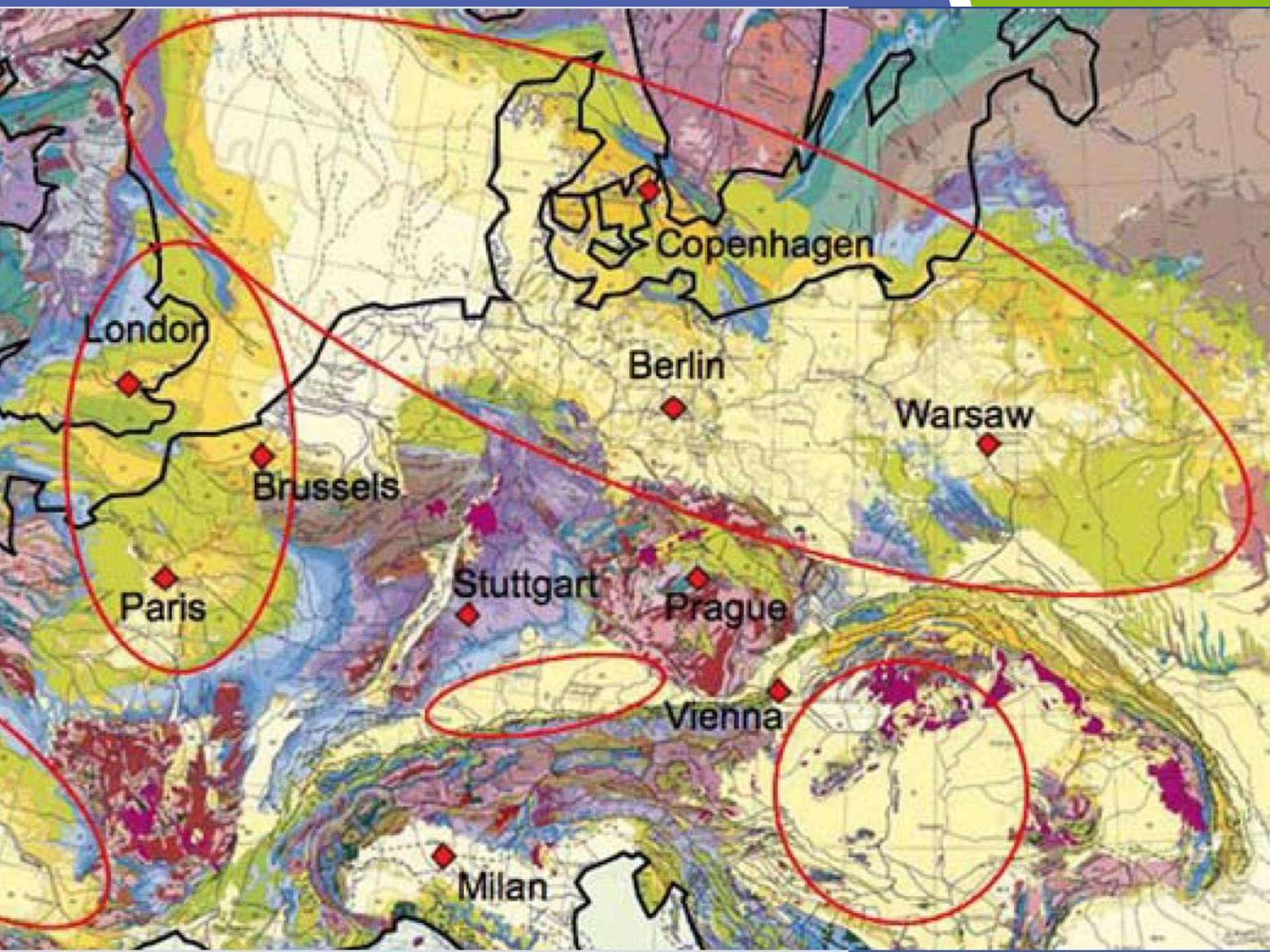
Storage

Unmineable coal seam

Deep aquifer

Depleted oil or gas field





Copenhagen

Berlin

Warsaw

London

Brussels

Paris

Stuttgart

Prague

Vienna

Milan

3. Planning aspects

- Are the existing spatial planning instruments and land-use planning regulations in Germany suitable to control the expected above-ground and underground using conflicts?

3. Planning aspects

- three-dimensionality
- no private property
- irreversibility of interventions / impacts
- uninhabited space
- non dynamic processes (question of development?)
- role of small-scale planning?
- missing (chemical and biological) knowledge

3. Planning aspects

- In general the **extention** of surface terrestrial spatial planning to the underground is suitable.
- This includes the **urban** land-use planning, because here the concrete measure has to be regulated and planned (for the permission).
- At the **federal** level the principles of comprehensive spatial planning according to section 17 undersection 1 of the Spatial Planning Act and the regulations of the Exclusive Economic Zone according to section 17 undersection 3 of the Spatial Planning Act can be used as Planning instruments in the use of underground space.

3. Planning aspects

- The **existing** spatial planning instruments and land-use planning regulations are suitable to control the expected above-ground and underground using conflicts.
- Especially the space related instruments are suitable. Section 8 undersection 7 of Spatial Planning Act specifies that spatial structure plans define **priority** areas, **reserved** function areas, **suitable** areas for development and combination areas (priority areas with the effect of suitable areas for development).

4. Legal settings

- Should adaptation of the regulation be provided principally in the field of sectoral planning?
- Should the federal land use planning be extended for an underground spatial planning?
- Should there be an underground spatial planning fixed at the level of *Länder* or at the level of small-scale regional planning?

4. Legal settings

- Spatial Planning Act can be applied in the underground space; the existing legal instruments for spatial planning are a suitable framework. The sectoral planning has to be improved (e.g. land scape planning)
- Since 18.08.2012 the Act for the storage of CO₂ is implemented in Germany. There a sectoral planning and a register are foreseen.
- In the case of the Mining Act this regulation has to be adopted because there is no explicit clause of spatial planning (≠ spatial impact assessment).

5. Preliminary conclusions

- Improvement of the above- and underground information base.
- Design of planning instruments and sustainable solution to conflicts of use.
- Lessons learned from marine spatial planning.
- Adaptation of regulations mainly in the field of mining law.
- The transfer of terrestrial approaches to underground conditions is possible - a new area of duty is born for planners!

Thank You very much for Your attention!

Prof. Dr. jur. Gerold Janssen
g.janssen@ioer.de

