

**Toward democratic assessment and decision-making  
processes on CCS**

**Some lessons to be learnt from the example  
of the nuclear industry**

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**From Demonstration to Deployment – Obstacles and Bilateral Solutions**

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## Introducing Comments: an exploratory analysis

### Remarks based on **professional experience**

as independent expert on energy and on nuclear issues  
involved in assessment/decision-making processes on nuclear projects

- **Personal ideas rooted in the recollection of debates and some conclusions drawn by observers (including CNDP)**
- **Highlights rather than thorough analysis starting points for discussion and further thinking**

### Two questions to discuss:

- **Relevance and limitations of a CCS / Nuclear energy parallel**
- **Potential lessons for CCS from the nuclear experience**

## CCS / Nuclear Energy: some similarities

- **As potential solutions in the face of climate change, similar **standpoint**: technical options on the supply side**  
As such, potentially seen as “conservative utopia” that might serve for escaping the issue of societal changes needed on the demand side  
**Similar **questioning** from outsiders on the capacity to deliver**
- **Comparable **structure of support**: mostly the industry itself and some States supporting their industry**  
No active support of other groups in the society
- **Same problem of linking **global stakes** and **local implementation****  
The choice of “candidate” sites would rely on a mix of technical criteria (feasibility) and socio-economic context (acceptability)
- **Relative likeness of **schedules****  
Industry push for projects and urgency to act  
but time needed to demonstrate new technologies then to spread them

## CCS / Nuclear Energy: some differences

As potential solutions in the face of climate change:

**CCS:** direct link between the “problem” and the “solution”

vs. **Nuc.:** substituting one global threat to another

(+ somehow opposite attitude of the scientific community regarding the risk)

| <b>CCS</b>  | <b>Nuclear energy</b>   |
|---|---|
| <b>local project, only local risks</b>                  | <b>potential regional/worldwide impact</b>                              |
| <b>no historical background</b>                         | <b>long record of projects and problems</b>                             |
| <b>no military connexion</b>                            | <b>original sin of Hiroshima<br/>permanent proliferation threat</b>     |
| <b>no manichean opposition</b>                          | <b>yes/no stance,<br/>ideological burden on players</b>                 |
| <b>no specific regulation<br/>(ongoing development)</b> | <b>specific laws and specific control bodies<br/>(Euratom, IAEA)...</b> |

## CCS / RadWaste: further comparison

**CCS:** only one link in the chain of fossil-fuel based energy  
**vs. Nuc.:** includes every step of the fission based energy production

CCS could also be compared to a single link of nuclear energy  
e.g. **radioactive waste management** (especially geological disposal)  
[one could also draw a parallel with Generation IV technology]

- **Similar issue with siting:**  
transaction between benefit/burden at global and local scales  
(and parallel in specific issues such as long term, transboundary transfers...)
- **Similar characteristics** of carbon and radwaste as “unavoidable”  
and similar need to separate them from biosphere as “harmful”
- **But major differences** in terms of risks and perceptions:
  - carbon “natural” vs. radwaste “artificial”
  - carbon harmful to global environment vs. radwaste to individuals

## Lessons for CCS: on the processes

- **Start openness from the onset**  
Ex. : The lack of debate before the launch of the French nuclear programme  
*Every closed step taken will hamper openness in the following steps*
- **Announce and apply clear and accepted rules**  
Ex. : The decision passed in law before public debate on EPR-Flamanville  
*Players need to perceive the process as meaningful to get involved*  
*There should be a visible impact of the process in the outcome*
- **Guarantee real access to information**  
Ex. : The security and commercial secret one of the main issues in EPR debate  
*Access to information is a necessary mean for a credible process*  
Opposite dynamics of raising the principle in the law (Aarhus, etc.)  
and raising obstacles in practice (competitive and security stakes)  
The contradiction can be solved in part through dedicated processes

## Lessons for CCS: on the roles and stakes

- **Interlink local/national/international levels**  
Ex. : Second lab (granite) passed in 1991 law could not be sited. Also ITER  
*Need to find a way so that national decision is not:*
  - *only taken through local process on local grounds (respectively national)*
  - *or taken at national level then blocked because of local problems*
- **Give adequate visibility to proponents**  
Ex. : Respective roles of EDF and French government in the EPR debate  
*When arguments in favor of the project mix different levels the process should clearly identify corresponding proponents (e.g. energy policy by authorities and industrial strategy by operators)*
- **Give a real role to criticism**  
Ex. : The “contradictory analysis” asked by CNDP in the radwaste debate  
*The process needs competent opponents or critical analysts and dedicated means to benefit from their input*

## Lessons for CCS: on the scope and the issues

**General rules:** - going public will modify (broaden) the scope of debate,  
- agreement on decision-making process is a prerequisite

- **CCS could not be separated from its context**  
i.e. need to address CCS as a technology and as part of fossil fuel energy
- **Need to identify all issues** (e.g. energy, industry, risks, economy, regulation...) and address them both separately and in terms of their relationships
- **Open discussion to alternatives and their assessment as key for justification**
  - technical options vs. CCS,
  - broader options vs. “fossil+CCS” package
  - not only conclusions of assessments but also their methods
- **Discuss the impact of CCS projects on other “solutions”**  
capture of resources and potential distortion of competition

## **Summary: comparison brings food for thought**

The **parallel** between CCS and nuclear energy shows:

- **Similarities in stance, support and constraints that make comparison sensible**
- **Differences that are meaningful and could make it easier to achieve an open assessment / decision-making process on CCS**

The **experience** of debates on nuclear energy / nuclear projects shows basic principles could be distorted but recent developments are **food for thought** in the following areas:

- **Conditions in terms of rules / processes to build credibility**
- **Key features to establish clarity and equity between stakeholders**
- **General rules for broadening and structuring the debate**