

# How well can BECCS overcome barriers to enable a large-scale CCS deployment?

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**BioEnergy Carbon Capture & Storage** technology which combines **biomass power generation** and **carbon underground storage** is increasingly called by experts to **reduce global warming**. However, **both components** are very **controversial** and **the first attempts** to deploy CCS **did not encounter the expected success**. Now, its socio-economic attributes have **changed** and **major new deployment attempts** are **underway** for CCS with BE

## Territorial integration

CCS deployment depends on the location chosen for the underground geological storage

**On-shore storages** are cheaper and easier but trigger disputes among local inhabitants

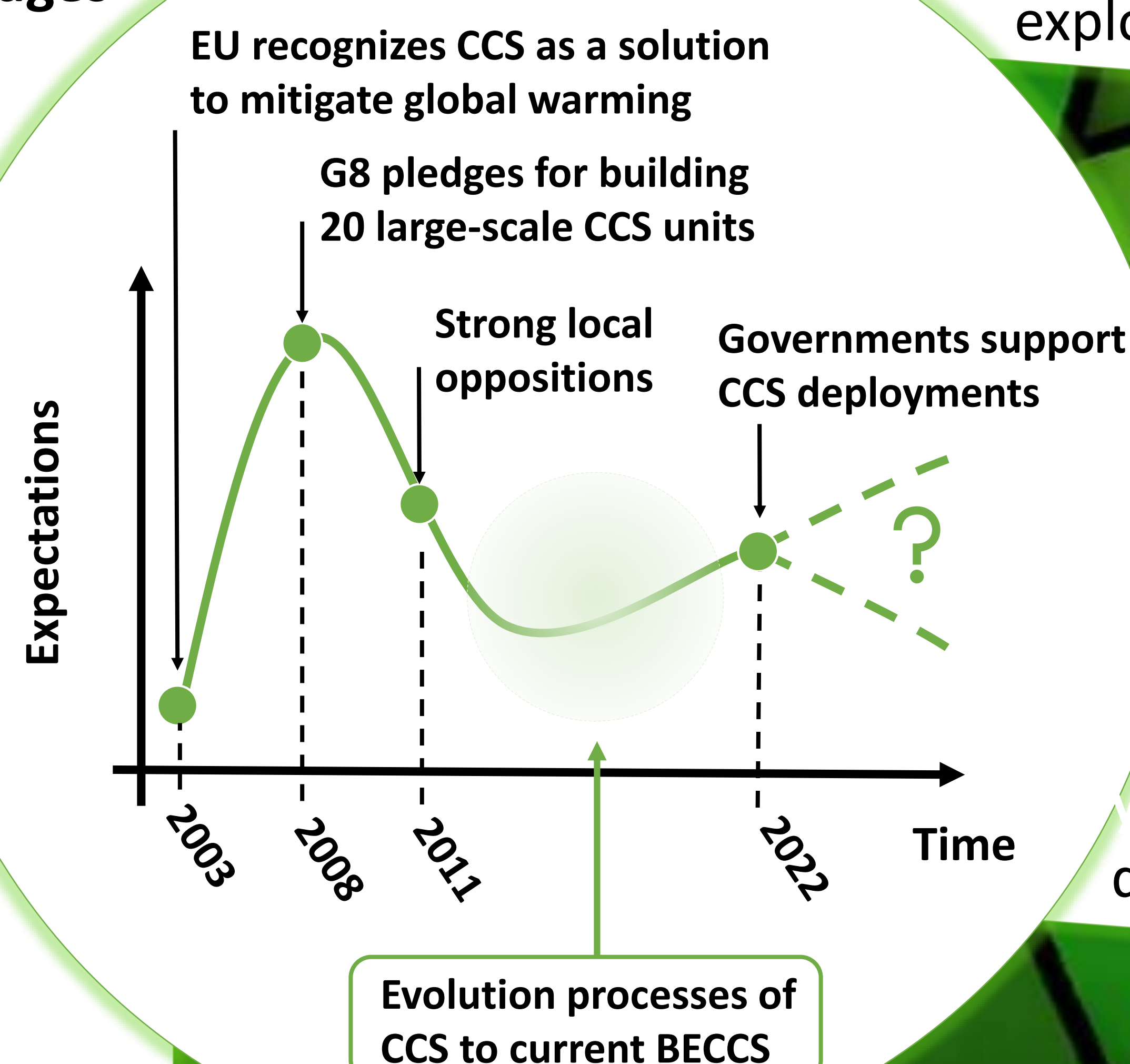
**Off-shore storages** are expensive but don't involve inhabitants

## Industry combination

CCS deployment depends on the type of emitting industry

**Bio Energy** suppliers, disputes on negative impacts of large scale biomass exploitation

**Fossil Energy** suppliers, disputes on fossil fuel economic lock-in (gas or coal-fired power plants)



## Political support

CCS deployment depends on the portfolio and extent of policies

**Supportive policies** encourage business development

**Coercive policies** give public confidence

## Business aspects

CCS deployment depends on the type of cross-chain risks

**Standalone CCS integration** involves a huge amount of risks for single investors (revenues guarantees, partners trust, ...)

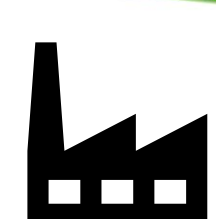
**Mutual CCS infrastructure** lessens the investment risks for multiple stakeholders

## Techno landscape

CCS deployment depends on the type of technology it is compared with

**Carbon neutral technologies** are numerous and efficient

**Carbon removal technologies** are rare and still in development



### Drax Power Plant, United Kingdom

- 2030 carbon injection target : 8 MT CO<sub>2</sub>/year
- Coal-fired power plant converted to BECCS
- Biggest BECCS power plant : 24 000 GWh/year



- Anchor tenant for zero carbon cluster with off-shore storage

## 2 case studies



### KVV8 Combined Heat & Power Plant, Sweden

- 2030 carbon injection target : 800 kT CO<sub>2</sub>/year
- 36% of cost supported by European Commission
- Biggest BECCS heat&power plant : 1,700 GWh/year heat and 750 GWh/year electricity

- Plant is located in Stockholm with off-shore storage

