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The Barendrecht Case: CO₂ Storage and the Role of Public Participation

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- > Capture of CO₂ from Pernis refinery
- > Shell refinery produces 1 Mtonne pure per year. Currently:
 - 100 Ktonne for food industry (all year)
 - 450 Ktonne for greenhouses (summer)
- > Shell aims at storing remaining CO₂ in depleted gas fields around the town of Barendrecht



100 Kton CO₂

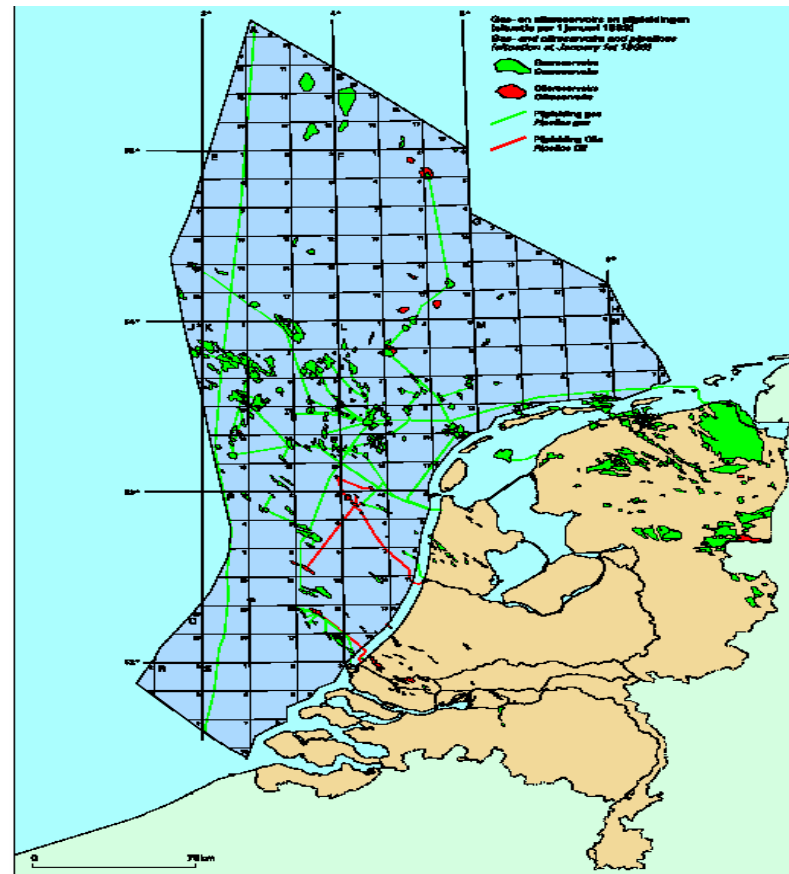
450 Kton CO₂

350 Kton CO₂





Barendrecht is a (depleted) onshore fields naar Rotterdam





- > Barendrecht consists of two fields:
 - Barendrecht (injection of 800 Ktonne during 3-4 years)
 - Barendrecht-Ziedewij (injection of 9.5 Mtonne during 25 years)
- > Barendrecht fields are considered suitable as:
 - Geological characteristics are well-known
 - Few wells (limited risks for leakage)
 - Close to source (limited transport costs/risks)
 - First field is small (learning opportunities, opportunity to go through whole process)



- >CO₂ (captured at Shell refinery) is stored in depleted gas field "owned" by Shell
- >NAM (Joint Venture of Shell and Exxon Mobil) holds production licence under Rijswijk concession awarded in 1955 (under Mining Act 1810). The Barendrecht fields are part of this concession area.
- >Licence (former concession) is awarded in perpetuity, but can be split and transferred to other operator.
- >Until now a storage licence could only be awarded to holder of production licence.
- >A storage licence is awarded by Minister of Economic Affairs (Minister) and requires a environmental permit, including an environmental impact assessment (EIA)
- >Local governments award necessary planning and/or environmental permits



- > National government is in favour:
 - CO₂ storage necessary in order to meet climate change goals (CO₂ reduction)
 - EIA is positive
- > Local government is opposed:
 - Local population strongly opposed to project, amongst others because of fear for leakage and decrease in property value
 - Therefore majority municipality also opposed
- > In general poor (government) communication



- > Construction of upstream pipelines and subsoil storage are part of "National planning coordination law". Under this law National government can overrule local government
- > By letter to Parliament of 3 March 2010 Minister agreed not to undertaken any irreversible action as to CO₂ storage (= award storage licence will depend on consent of Parliament)
- > Upper House of Parliament agreed on 18 March 2010 that CO₂ storage is part of Crisis and Repair Act, i.e. Minister may decide about storage without appeal from municipality



Conclusion:

- Barendrecht case is example of vertical integrated CCS chain: Shell is responsible for capture and storage. Transport= partnership with Ocap (existing CO₂ transport company)
- Shell has major advantage when applying for storage licence (priority right when applying for licence and holds all available know how)
- Poor communication between (local) government and population
- Minister has final decision making powers but is Minister willing to act against Parliament's wishes?