



# What is different about Offshore CO<sub>2</sub> storage?

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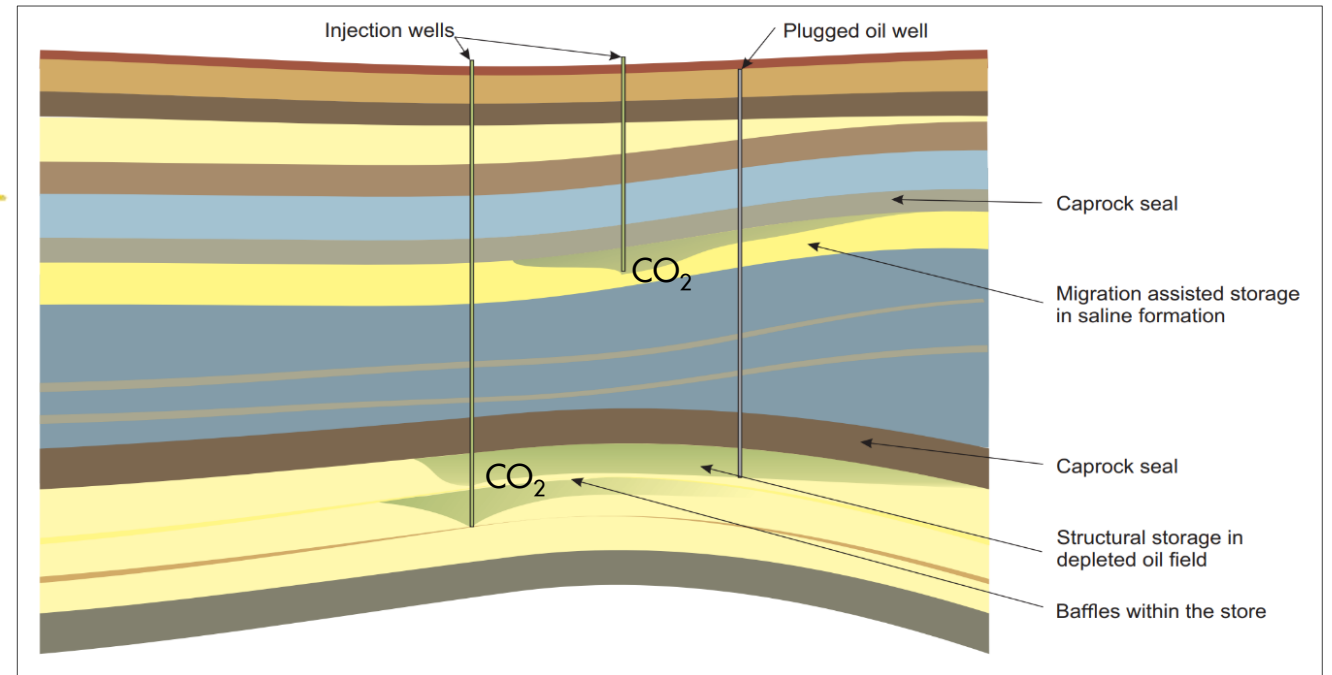
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# Moving to offshore – same fundamentals

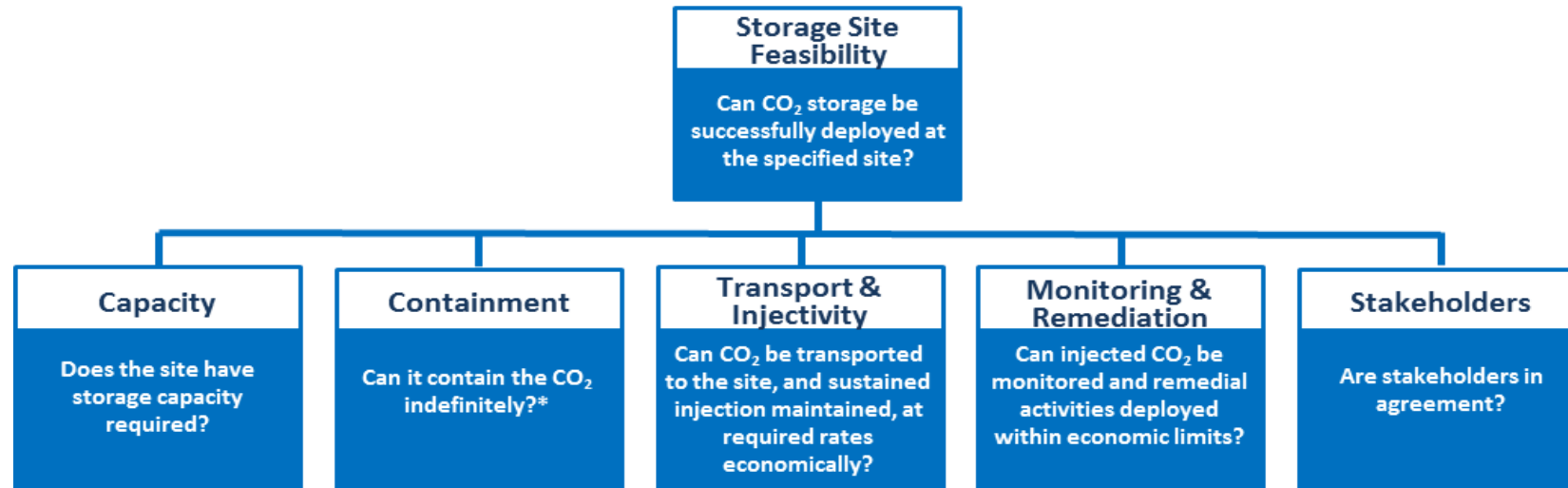


- Geological targets, depleted fields or saline formations, remain the same
- Costs, other users, and monitoring differ markedly

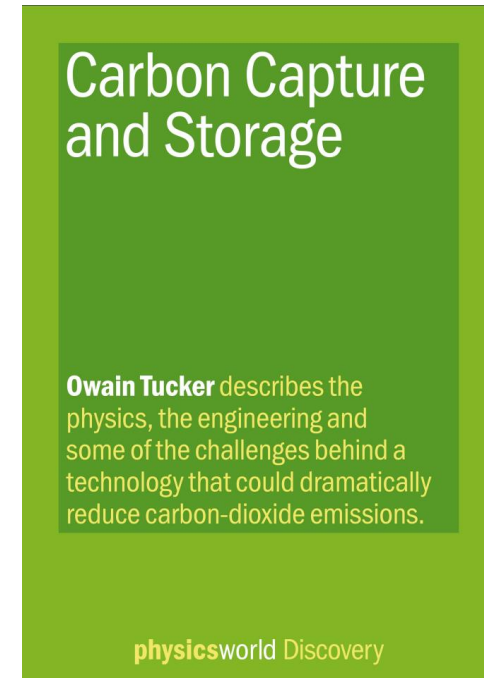




# The “five pillars of CCS” apply but there are differences



- Capacity to store contractual commitments
- Ability to contain CO<sub>2</sub> over significant time periods (bow-tie assessment)
- Confidence that promised injection rates can be maintained
- Storage security and conformance can be demonstrated
- Stakeholders in aligned



More details our 2018 book  
on CCS: ISBN 978-0-7503-1581-4

# Challenging and higher cost operating environment



# Stakeholders

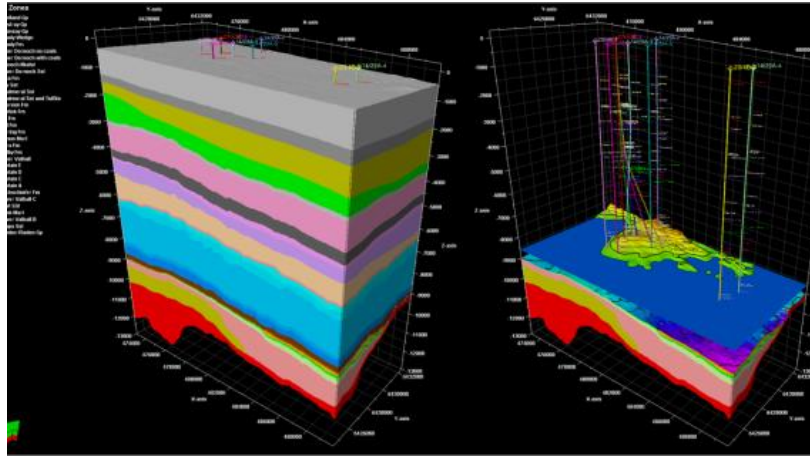
- No residents or towns
- Generally no drinking water
- Marine environment is shared by many users
  - Seismic surveys
  - Drilling rig access
  - Fishing fleets
  - Marine animals
  - Wind
  - Cables





# Monitoring for containment, conformance, & confidence

- Bubbles ...
- New technologies developed, ETI MMV and STEMM-CCS projects
- Seismic surveying simpler and often better than onshore
- Well bores, as onshore, require special attention



# Activity is ramping up ... advantages

- Benefits from large sedimentary basins, many of which are petroliferous
- Countries that border seas appear to have more public support for offshore storage than onshore
- Pore space is generally owned by the states so there are limited royalty opportunities for local land owners
- Competitive licencing is becoming common – value for the resource owner

