How To Develop Storage Near & Around Existing Infrastructure

4th International Workshop on Offshore Geologic CO2 Storage

11 February 2020 – 11:35am to 11:50am

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How To Develop Storage Near & Around Existing Infrastructure

Agenda

1. CO2 Storage Development - Requirements & Ground Rules
2. Developing CO2 Storage Around Existing Infrastructure
3. Developing Acorn CCS Around Existing Infrastructure
4. Summary

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CO2 Storage Development – Requirements & Ground Rules

- **Regulatory** - Need to meet all regulatory requirements via parallel storage & petroleum licences. Close interface management required.
- **Business Model** - Support CO2 storage BM development with Government
- **Value Proposition** - CO2 storage likely a low margin business
- **MECS** - Adopt a “Maximising Economic CO2 Storage” Strategy (c.f. MER)
- **Minimise Cost Base** - O&G cost base not compatible + infrastructure re-use at no cost (defers abandonment + part of “License To Operate” post Net-Zero commitment)
- **Maximise Injectivity & Storage Volume** - Optimum well type + maximise CO2 trapping (Structural + Residual + Solubility + Mineralisation)

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Developing CO2 Storage Around Existing Infrastructure

No.	Pros (Opportunities)	Cons (Risks)
1	Likely Lower Costs	High O&G Costs vs Low CCS Margins
2	Faster Development Likely	Slow Commercial Negotiations
3	Better Reservoir Characterisation	Slow or Limited Access To Data
4	Re-Use – Defers Abandonment	Limited Re-Use Life + Legacy Well Leaks
5	Possible Supply Chain Synergies	Secondary access to Supply Chain
6	Possible Simops Synergies (eg O&M)	Simops Risks (eg Seabed + Subsurface)

Plan To Realise **Plan To Mitigate**

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Developing Acorn CCS Around Existing Infrastructure

- **Cost**: Acorn CCS – Given A Cost challenge
- **Re-Use**: Infrastructure Re-Use ~£750m savings
- **Infrastructure**: Most appropriate identified
  (low use pipelines + well charact. reservoirs + poorly abandoned legacy wells minimised)
- **Acorn CCS** – Infrastructure led development
  (Infrastructure interfaces ID and managed)
- **Demand** – Low Cost Infrastructure achieved
- **Supply** – A number of emitters (E) identified to help develop cost-effective infrastructure
- **First Injn** – Quickest Route To First Injn

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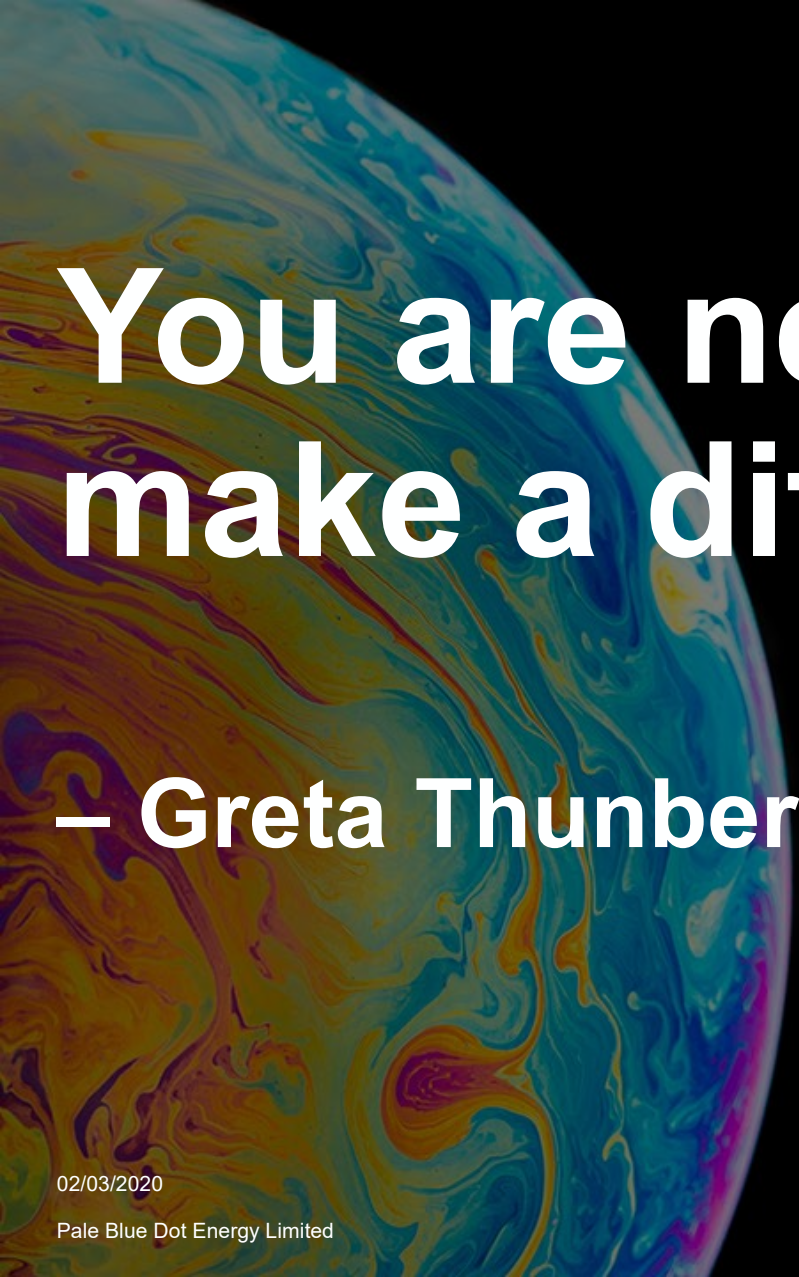
Summary

No.	Assessment Criteria	Brownfield Development	Greenfield Development
1	Description	Near Existing Infrastructure	Far From Existing Infrastructure
2	E&A Costs + Duration	Likely Minimal	Likely Significant
3	Store	Larger Dataset Better Reservoir Characterisation Lower Pressure	Smaller Dataset Poorer Reservoir Characterisation Higher Pressure
4	Capex + Opex	Lower	Higher
5	Commercials	Possibly Slower	Possibly Faster
6	First Injection	Likely Earlier	Likely Later
7	Supply Chain	Synergies possible	Synergies unlikely
8	Simops + Simdev	Significant Infrastructure Interface Mgt	Minimal Infrastructure Interface Mgt
9	Legacy Wells	Leaks More likely	Leaks Less Likely

Overall: Brownfield CO2 Storage likely more attractive if possible legacy well leaks can be cost-effectively mitigated + infrastructure interfaces managed effectively + commercial negotiations held in an effective and timely manner



You are never too small to make a difference

– Greta Thunberg

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