deepCstore

Enabling Transboundary CCS in the Asia Pacific

Presentation for "CCS International Symposium" hosted by Japan's Ministry of Environment

25th March 2025

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- Why transboundary CO_2 storage in Australia?
- Why deepC Store?
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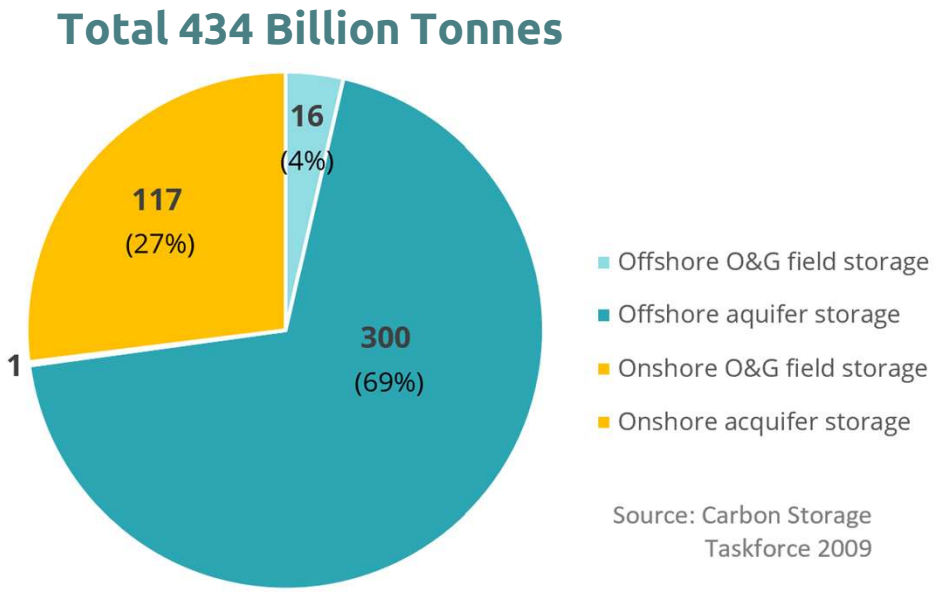
Why transboundary CO_2 storage in Australia?

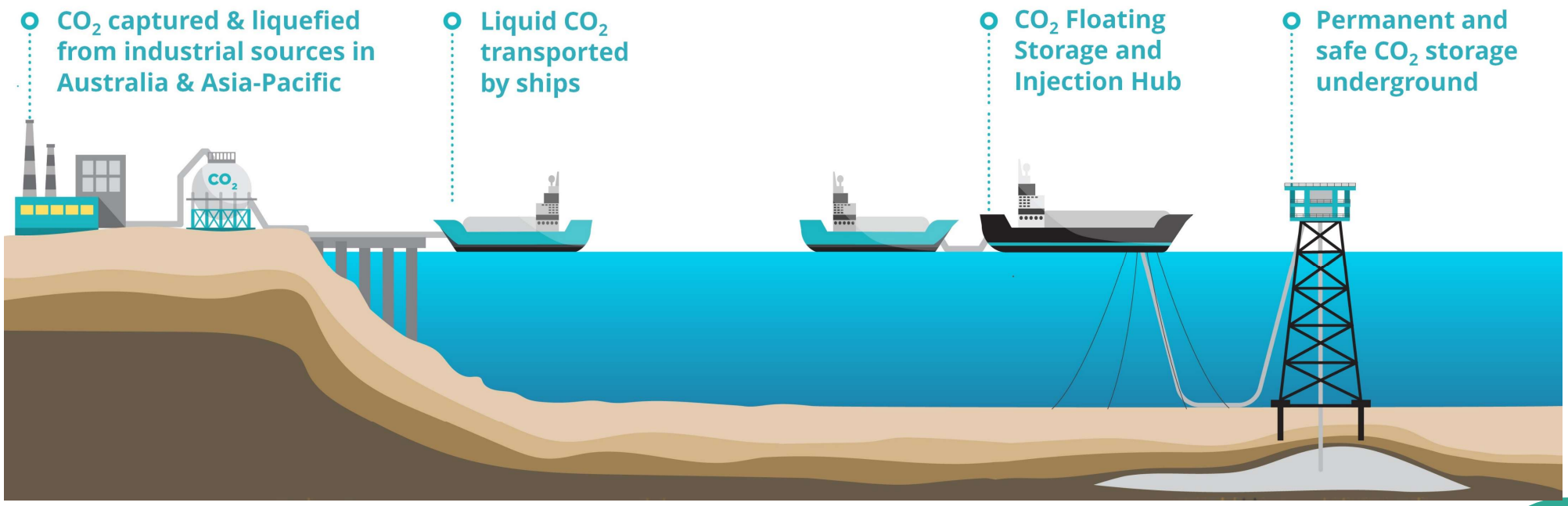
- Australia has ~870 years* worth of storage.
- CO_2 storage acreages accessible, with abundant technical information.
- Australia is a party to the London Protocol, with well established CCS legislation and regulation.



* Australia's 2020 net emissions was ~500 million tonnes CO_2-e as per "Australia's NDC Communication 2022" (Commonwealth of Australia)

Why deepC Store ("dCS")?

- dCS is a CCS developer business.
- dCS offtakes CO_2 from industrial emitters in Australia & APAC region, obtains CO_2 storage acreages and deploys ~ 3 MTPA commercial scale floating CCS hub,**"CStore1"**

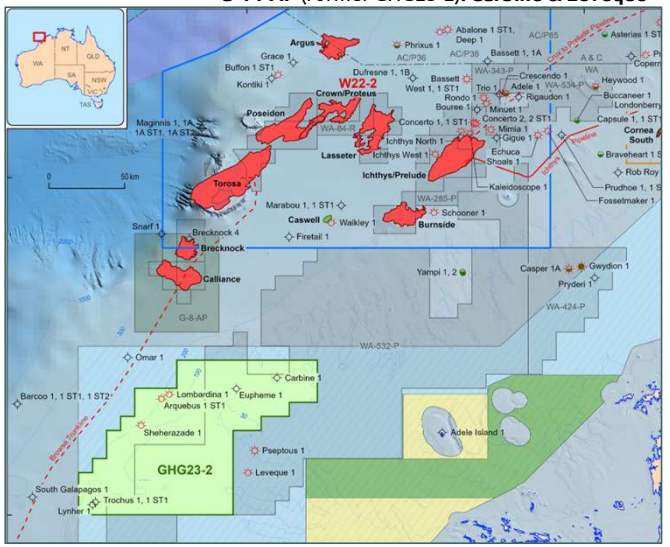


dCS's Australian offshore CO_2 storage acreages

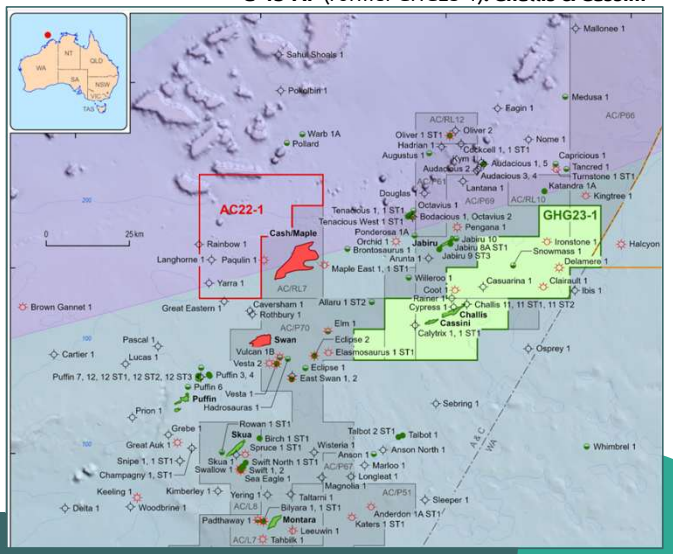
- **dCS awarded 2 CO_2 storage acreages that cater to multiple CStore1s.**
- **dCS, with Azuli and J-Power, aim to achieve "FID ready" status by 2027 & commence operations by 2030.**

Acreage	G-14-AP	G-13-AP
Acreage Size	**~ 9,500 km²**	**~ 1,500 km²**
CO_2 Storage Capacity	**> 1 billion tonnes**	**~ 80 million tonnes**
Data	Good well control, extensive 2D and some 3D seismic coverage	Good well control, extensive 2D and 3D seismic coverage
Storage targets	Saline aquifers	Depleted fields and underlying saline aquifer

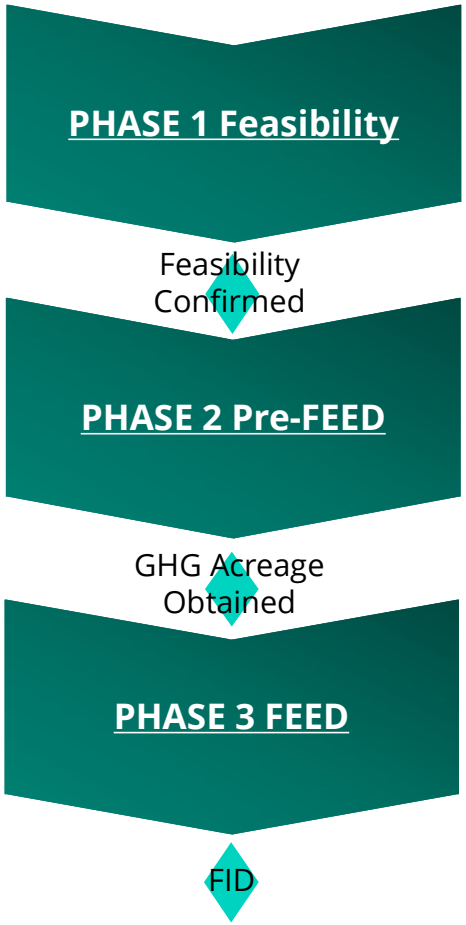
G-14-AP (former GHG23-2)**: Carbine & Leveque**



G-13-AP (former GHG23-1)**: Challis & Cassini**



CStore1 Development Status



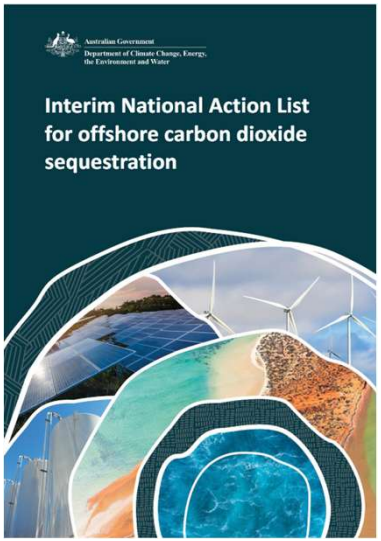
- **Identified supply sources of up to ~15 MTPA of CO_2 from Japan to underpin several CStore1 development.** Agreement executed with KEPCO (Japan's 2nd largest power utility) to consider up to 10 MTPA of CO_2 offtake, and with NSC (Japan's largest steel producer) to consider up to 5 MTPA of CO_2 offtake
- **Awarded 2 GHG storage acreages in offshore Australia with Azuli. Agreement with J-Power (Japan's largest wholesale power producer) to become a significant JV participant.**
- **Agreements executed with MOL and T.EN for Pre-FEED, FEED, EPCI, O&M services for CStore1 facilities**
- **Completed low pressure LCO_2 transportation R&D with FEnEx CRC, LETA, ENEOS Xplora, MOL & OG**

We are here

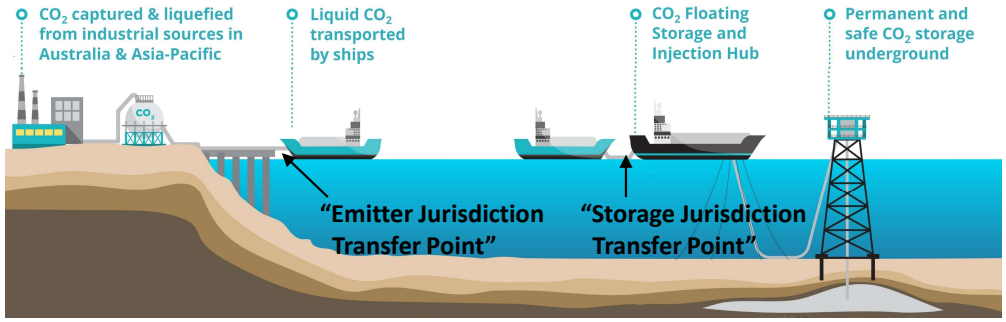
dCS aims for FID by 2027 and operation start by 2030

What challenges do we address together?

- **Harmonisation of regulation across transboundary CCS value chain***
  - National Action List (CO_2 specification)
  - Physical point(s) to subtract CO_2 emissions ("Transfer Point")
  - Attribution of carbon credits
  - Methodology to calculate quantity of CO_2 emissions reduced
  - Data sharing for CO_2 emissions reduction & carbon credits
  - CO_2 MRV
- **Improved social acceptance of transboundary CCS**
- **R&D for CCS unit cost reduction**



Example of Ship-transportation CCS "Transfer Point"



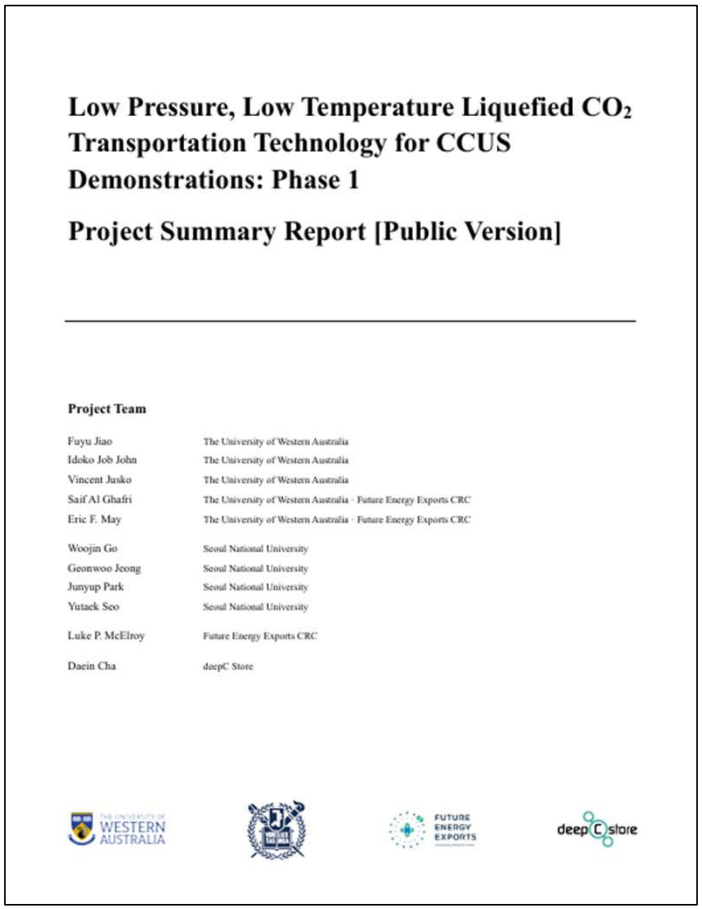
* Courtesy to CCUS Network Australia for highlighting key matters to address in bilateral agreements / arrangement and to aim harmonizing in APAC.

What challenges do we address together?

- Lab-scale R&D to store & handle LP LCO_2 completed in Feb 2025.
- Feedback throughout R&D provided by ENEOS Xplora, Low Emissions Technology Australia, Mitsui O.S.K. Lines & Osaka Gas.
- **No technical showstoppers caused by LP LCO_2 were identified.** Valuable knowledge gained to inform design and operation of LP LCO_2 ships and CCUS projects.
- FEnEx CRC publicly released a summary report: https://www.fenex.org.au/resources/reports/

Site visit by Consulate General of Japan in Perth

R&D Showcase to Korean CCUS Industry in Seoul



Low Pressure, Low Temperature Liquefied CO_2 Transportation Technology for CCUS Demonstrations: Phase 1

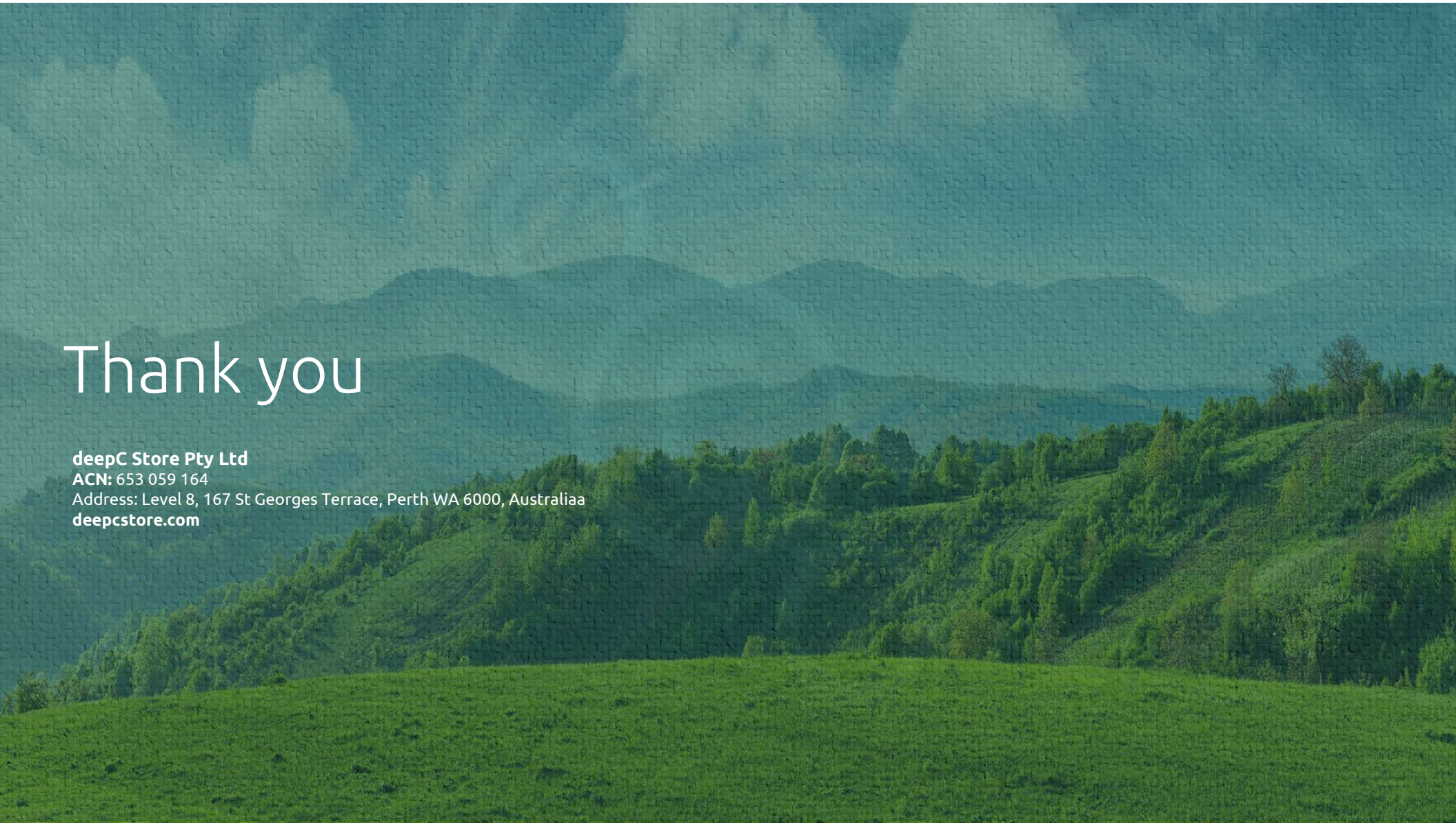
Project Summary Report [Public Version]

Project Team

Fuyu Jiao	The University of Western Australia
Idoko Job John	The University of Western Australia
Vincent Jusko	The University of Western Australia
Saif Al Ghafri	The University of Western Australia · Future Energy Exports CRC
Eric F. May	The University of Western Australia · Future Energy Exports CRC
Woojin Go	Seoul National University
Geonwoo Jeong	Seoul National University
Junyup Park	Seoul National University
Yutaek Seo	Seoul National University
Luke P. McElroy	Future Energy Exports CRC
Daein Cha	deepC Store

Summary

- Australia is an attractive jurisdiction for CO_2 storage.
- dCS is developing large-scale CO_2 storages in Australia for enabling transboundary CCS in APAC
- Challenges to collaboratively address are:
  - harmonisation of regulation;
  - improved social acceptance; and
  - R&D for CCS unit cost reduction



Thank you

deepC Store Pty Ltd
ACN: 653 059 164
Address: Level 8, 167 St Georges Terrace, Perth WA 6000, Australiaa
deepcstore.com