



INTERNATIONAL
CCS KNOWLEDGE
CENTRE



**Carbon Capture and Storage
Canada Update**

February 2020

The International CCS Knowledge Centre is a non-profit organization founded by BHP and SaskPower.

Mission:

To accelerate the understanding and use of carbon capture and storage as a means of managing GHG emissions

- Staff are available to provide experience-based considerations for CCS projects.
- Guidance for planning, design, construction and operation.
- Active engagement with financiers, decision makers, and business case partners.



BOUNDARY DAM 3 CCS Facility

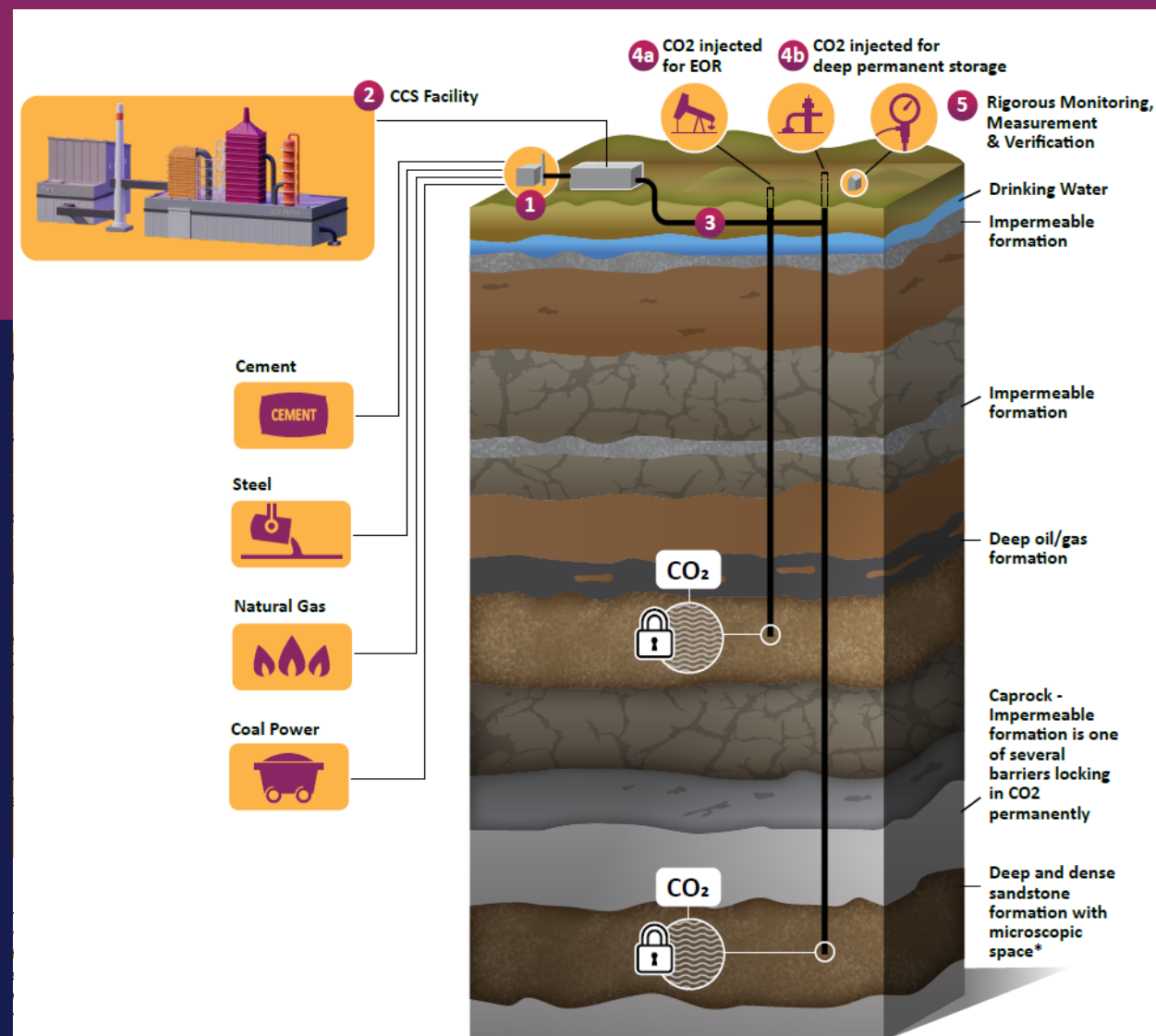
**THE LEARNING STARTS HERE
WORLD'S 1ST LARGE SCALE POST-COMBUSTION CCS FACILITY**

Over 3 million tonnes of CO₂ captured & stored since 2014

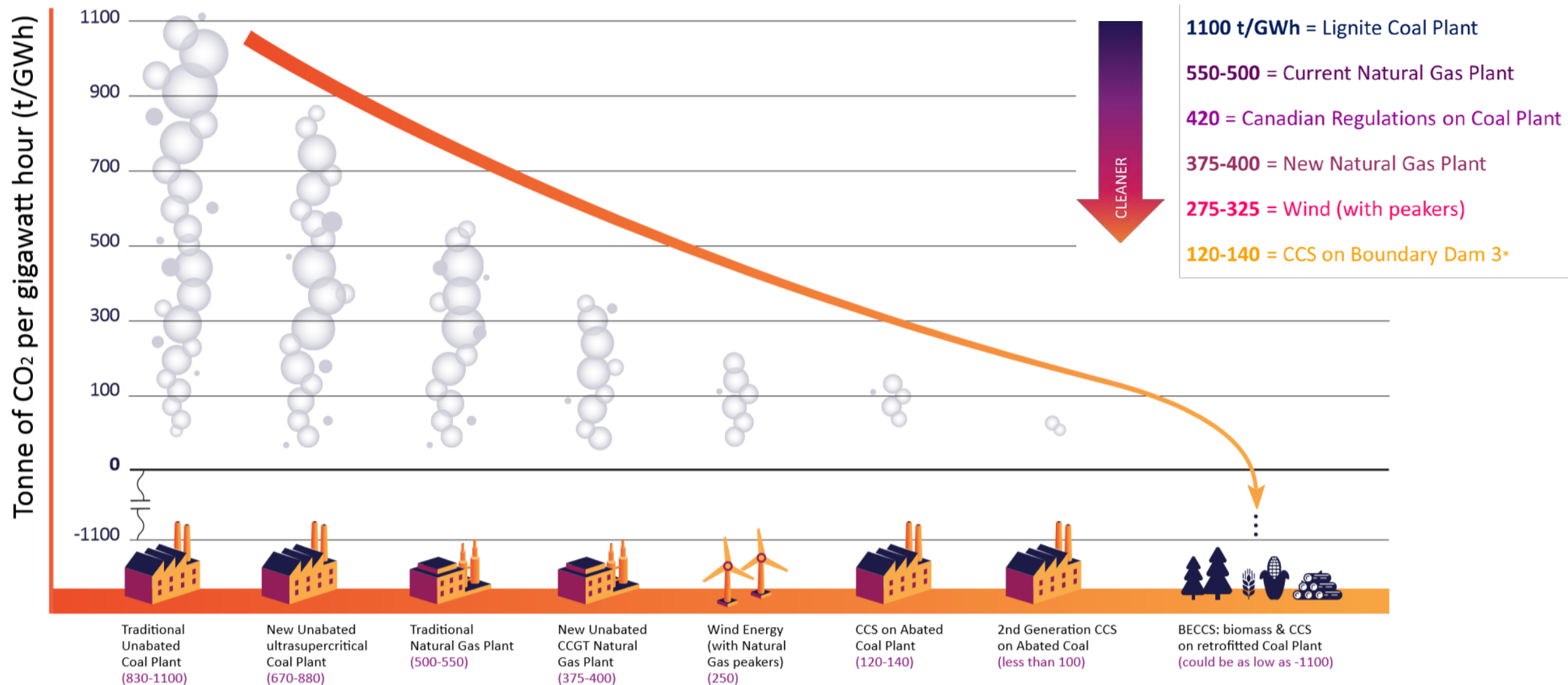
Saskatchewan Lessons Learned

Full Chain Experience for carbon capture and storage

- Retrofitted existing coal unit
- Capture CO₂ and other particulates
- Transport via pipeline
- Sale & use of CO₂ for enhanced oil recovery
- Sale of other by-products
- Storage site for CO₂ at Aquistore
- Regulation, policy and royalty structures



Performance: Exceeding Standards

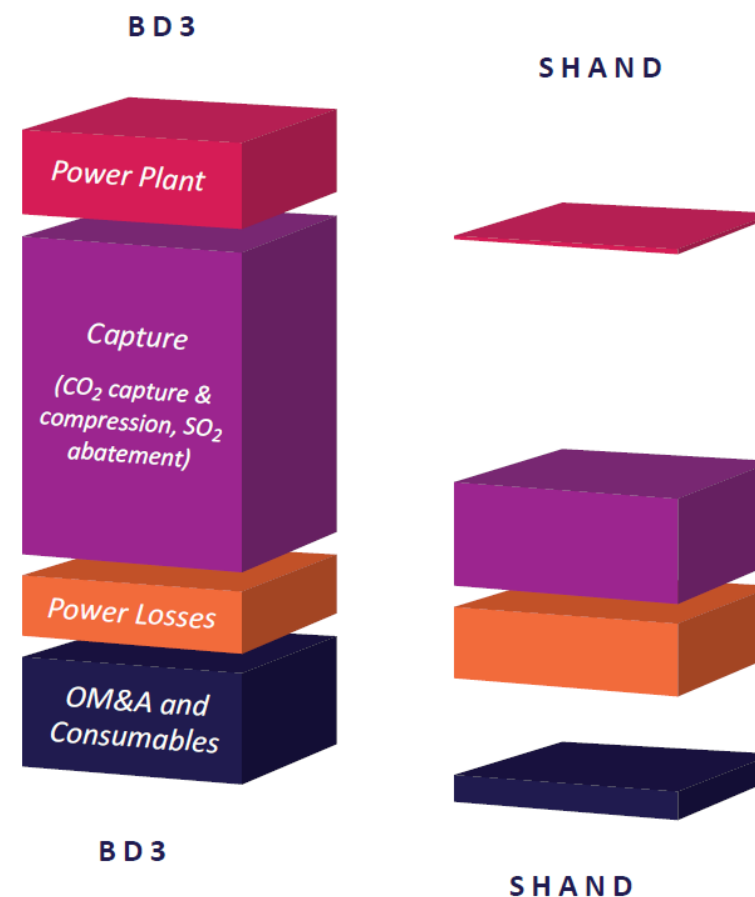


About the Shand Feasibility Study

Key findings of feasibility study evaluates the economics of CCS on a 300MW coal-fired power plant in Saskatchewan.

- Projected capture capacity of **2Mt/yr**
- Capital cost to be **67% less** per tonne of CO₂ captured
- Cost of capture at **\$45US/t CO₂**
- Capture rate can reach **up to 97%** with reduced load (i.e. renewables on grid)
- Fly ash sales can further reduce CO₂ (potential 125,000t CO₂/yr reduced)

Cost Comparison of BD3 & Shand CCS Facility



Canada Current CCUS Activities

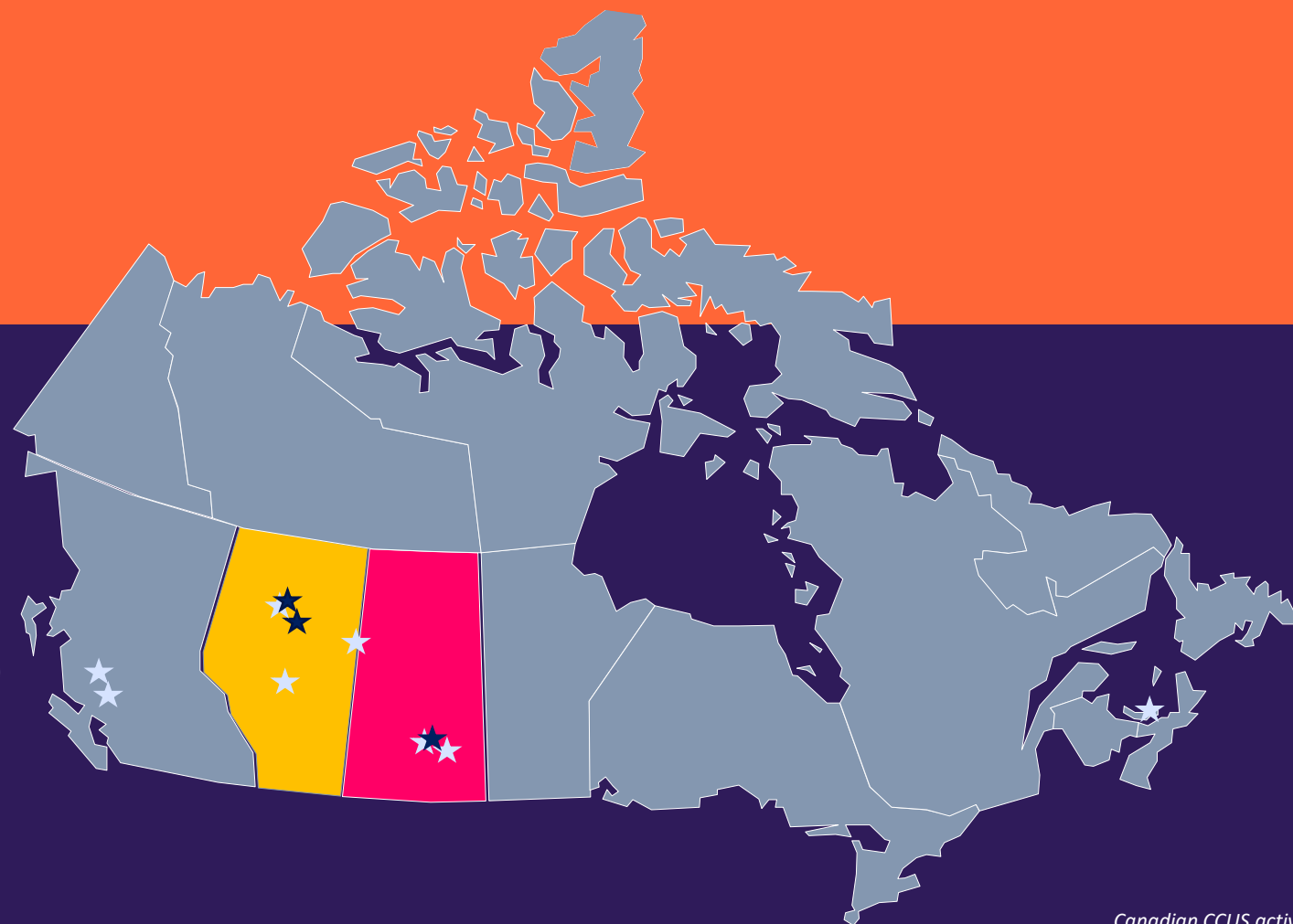
Boundary Dam, Shell Quest and two Alberta Carbon Trunk Line projects are notable large-scale CCS actions in Canada.

Other large-scale CCS in Canada:

- Weyburn EOR operations (SK)
- Lehigh Cement feasibility study (AB)

Some small-scale CCS projects in Canada:

- Direct Air Capture – Carbon Engineering (BC)
- Lafarge CCU operations (BC)
- Svante-Husky testing (SK)
- Carbon Capture Test Centre (SK)
- XPRIZE (AB)
- Carbon Cure (NS)



Thank You



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