

SASKPOWER'S ENERGY MIX



151,000 KM OF TRANSMISSION LINE

4,181 MW AVAILABLE GENERATING CAPACITY



SASKATCHEWAN, CANADA EPICENTRE OF CCS EXPERTISE





SASKPOWER DECISION FACTORS

- SaskPower: Crown Corporation obligation is to customers
- Lowest electricity costs over <u>long term</u> while meeting high standards for reliability, environmental performance and affordability
- Conventional coal no longer an option
- Diverse power generation fleet has been a proven strength
- External economic considerations

FIRST OF A KIND BUSINESS CASE

- Unique project characteristics
 - High capital cost
 - Government financial support
 - Non-electricity revenue
 - Additional engineering/hardware to minimize new technology risk
 - Older unit requiring SOx/NOx emissions control
- Baseload generation cost competitive alternative was Natural Gas Combined Cycle
- Significant economic benefits outside of SaskPower

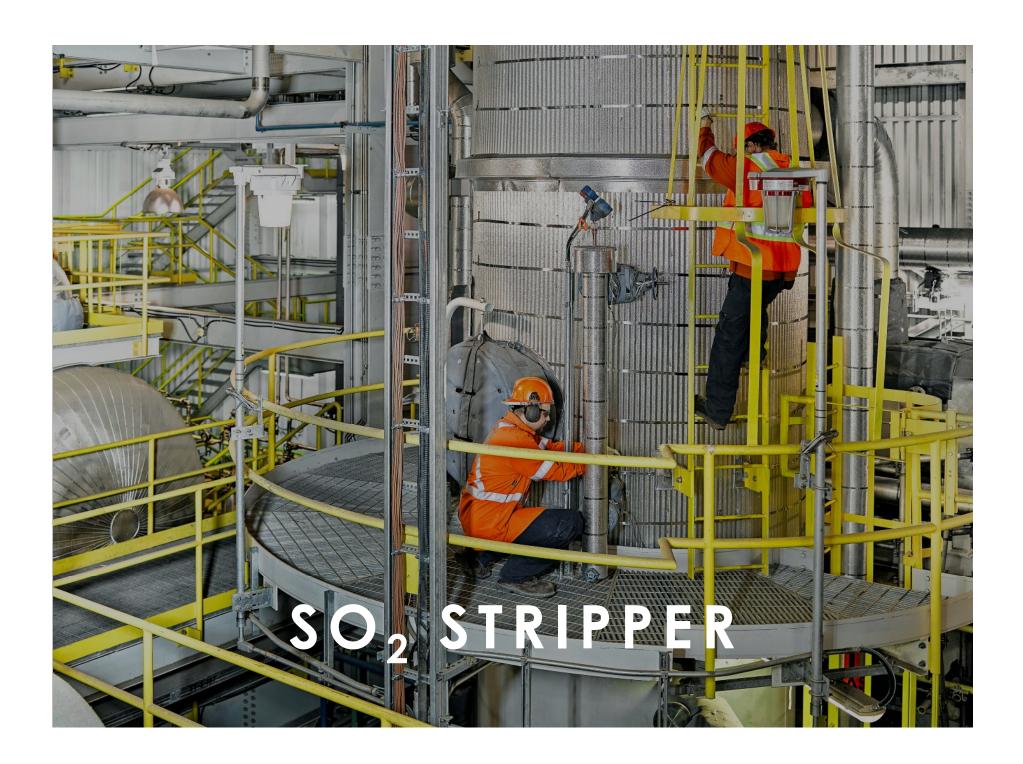




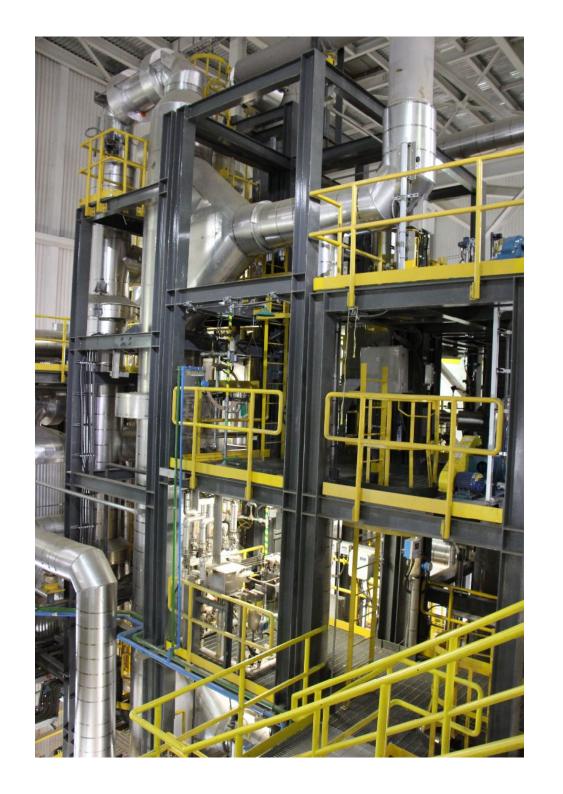
CO2 ANI ABSORI BERS

CO₂ STRIPPER



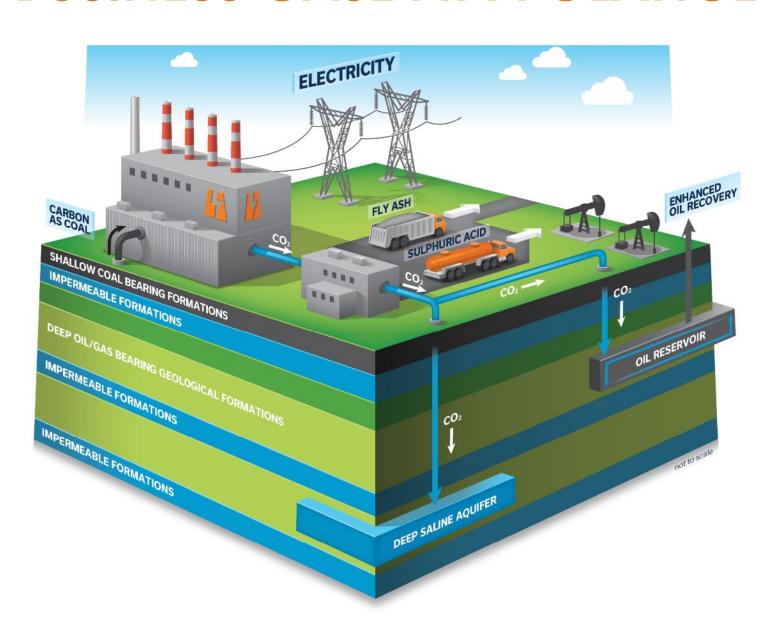


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BUSINESS CASE AT A GLANCE





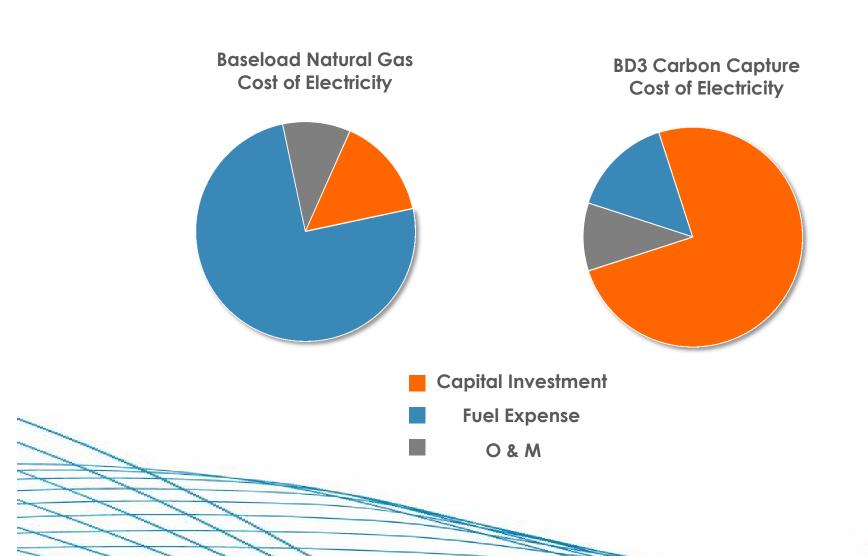
WHY IS CCS IMPORTANT TO SASKPOWER?

- Deliver affordable electricity
- Sustainability
 - Refurbishing aging Infrastructure
 - Environmental obligations
- Portfolio diversification
- Unpredictable natural gas prices

ENVIRONMENTAL OBJECTIVES

Performance	Pre-CCS	Post-CCS	Change
CO ₂	1,139K	112K	90%
SO ₂	7K	0	100%
NO	2.4K	1.05K	56%
PM10	190	15	92%
PM2.5	65	7	70%

COMPARING COSTS



THE EQUIVALENT OF:















TAKING ALL THE CARS OFF THE ROAD IN REGINA, SK (POP. 220K)















+ CAPTURING ALL CO₂ FROM HEATING/COOLING OF EVERY HOME















+ KEEPING THE LIGHTS ON IN HALF OF THE CITY.

400,000 TONNES

OF CO₂ CAPTURED SINCE START-UP - OCT 1, 2014

CAPABLE OF 90% CO₂ CAPTURE AT FULL EFFICIENCY

120 MWh NET TO GRID

ESTIMATED 110 MWh

99.9%

CO₂ PURITY WE'RE EXPERIENCING

COSTS TO DATE

OVERALL PROJECT TOTAL	\$1,467M
CANADIAN FEDERAL GOVERNMENT PAID AMOUNT	\$239.6M
NEST COST TO SASKPOWER	\$1,227M

*Approx. an 18% increase

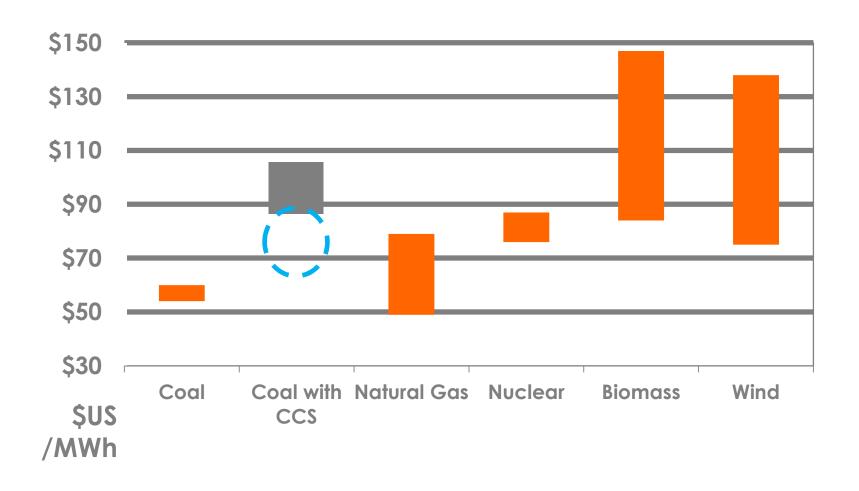
CCS FACILITY
CONSTRUCTION COSTS
\$905M

POWER PLANT REFURBISHMENT \$562M

*Most of cost increase was in power plant rebuild IE: "Brown field" work

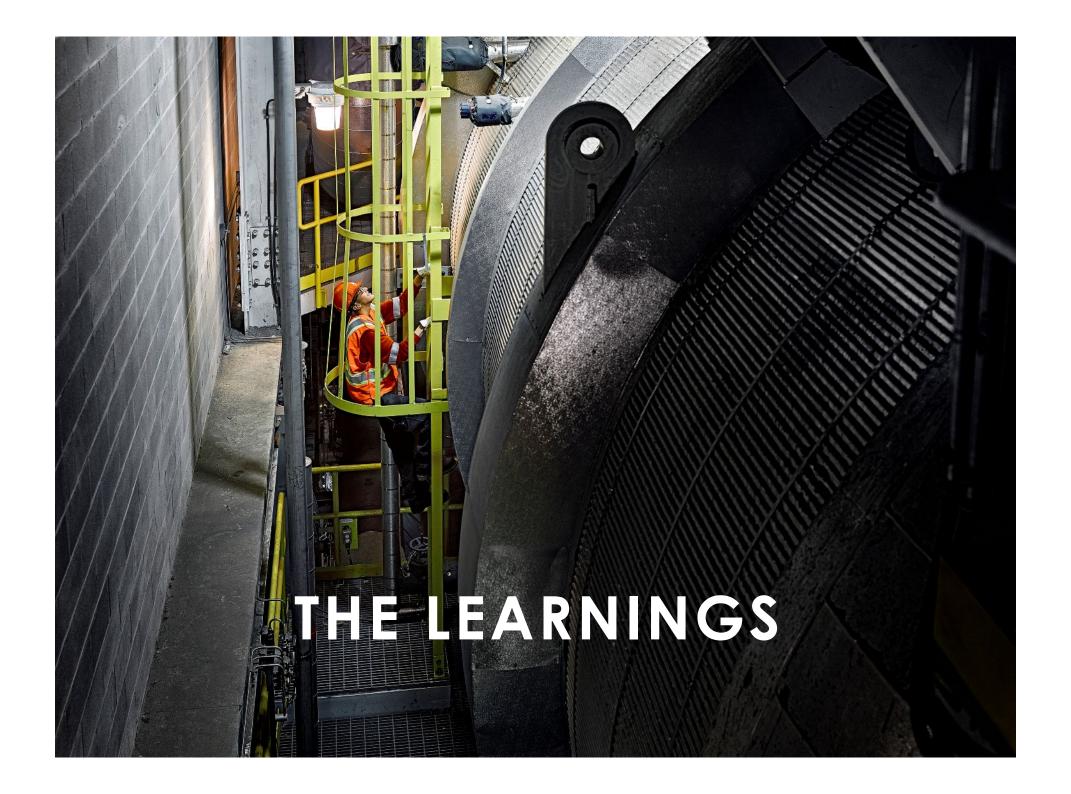
As with any major infrastructure project, we are still finalizing outstanding financial arrangements with some vendors.

GENERATION COSTS



MANAGING THE DETAILS

- Construction Management
- Change Management
- Safety Management
- Risk Management
- Permitting
- Knowledge Building
- Onboarding and Training
- Unfamiliar Processes and Equipment
- Transition to Operation



BE FOCUSED

Priority #1

Stable, Cost-effective Power Supply

Priority #2

Carbon Capture and By-Products

BE BOLD

Choose a technology sufficiently close to commercial viability to be successful

BE ENERGIZED BY CHALLENGES

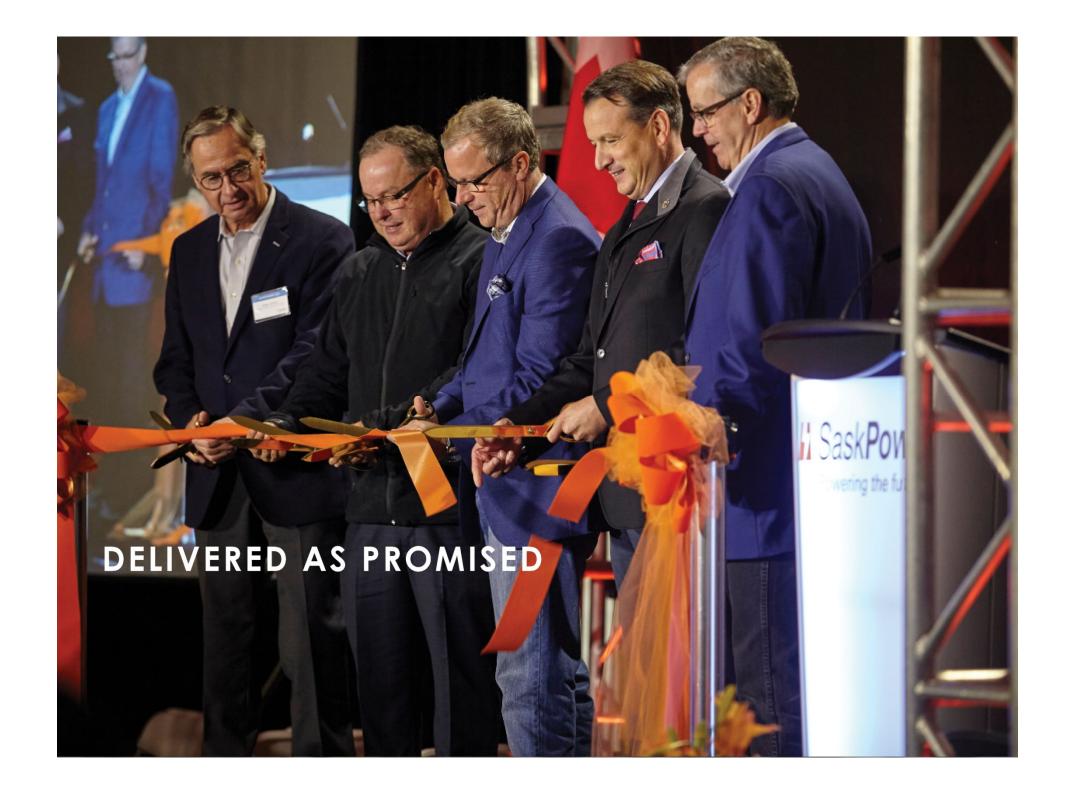
The team navigated many changes such as equipment choices, corporate policy changes, construction hurdles, third-party review

BE COMMITTED

Overworked but determined to deliver as promised

BE SAFE

During the 4.5 million person hours of construction time there were no lost-time injuries



COLLABORATION

- The key to SaskPower's success
 - past, present and future
- The way <u>you</u> can learn from SaskPower

