COP24 - Katowice
Applying Operational Experience on CCS
- Poland and Industrial Sources -

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MISSION:
Accelerate the understanding and use of CCS as a means of managing GHG emissions.

Sharing lessons learned from hands-on operations ensures for experienced-based decision making.
LEARNING STARTS HERE:
WORLD’S 1ST INTEGRATED LARGE-SCALE POST-COMBUSTION CCS FACILITY

BOUNDARY DAM
Operational Understandings: Exceeding Federal Regulations

- **1100 t/GWh** = Lignite Coal Plant
- **550-500** = Current Natural Gas Plant
- **420** = Federal Regulations on Coal Plant
- **375-400** = New Natural Gas Plant
- **300-325** = Wind (with peakers)
- **120-140** = CCS on Boundary Dam 3*

*Name plate capacity*
• Designed to capture 2Mt
• 67% capital cost reduction (per tonne CO2)
• Cost of capture at USD$45/t CO2
• Can capture up to 97% while integrating with renewables
• Fly ash sales can further reduce CO2 – net-negative emissions
• No new water
Coal-fired power provides 80% of Poland’s electricity

Over 100,000 Polish jobs are related to coal

But coal-fired power plants are aging:
• 60% of the system is more than 15 years old
• 40% is more than 20 years old

Storage studies have been conducted and show Poland has vast storage capacity (deep saline formations and some offshore)
Industrial CO$_2$ emissions represent 24% of global CO$_2$ emissions at 8.3 Gt CO$_2$ (2014)

- Similar flue gas characteristics enable application to industrial emission sources
- Size and layout / integration are key considerations

**Costs can be saved with:**
- CO$_2$ infrastructure hubs
- cost recovery with EOR
- modularization and
- byproduct sales decisions
CCS technology is proven; so de-risked deployment can occur.

Reliable and affordable energy with reduced emissions are imperative for energy security.

Driving Future Opportunities:
- Cooperative approaches
- Reduce Administrative Burden
- Incentives & Financing

Operational insight drove greater: cost reductions, complexity reductions, emissions reductions.