Texas Clean Energy Project
A 400MW Power/Polygen Project
With 90 percent carbon capture

Pittsburgh Coal Conference

October 6th, 2015

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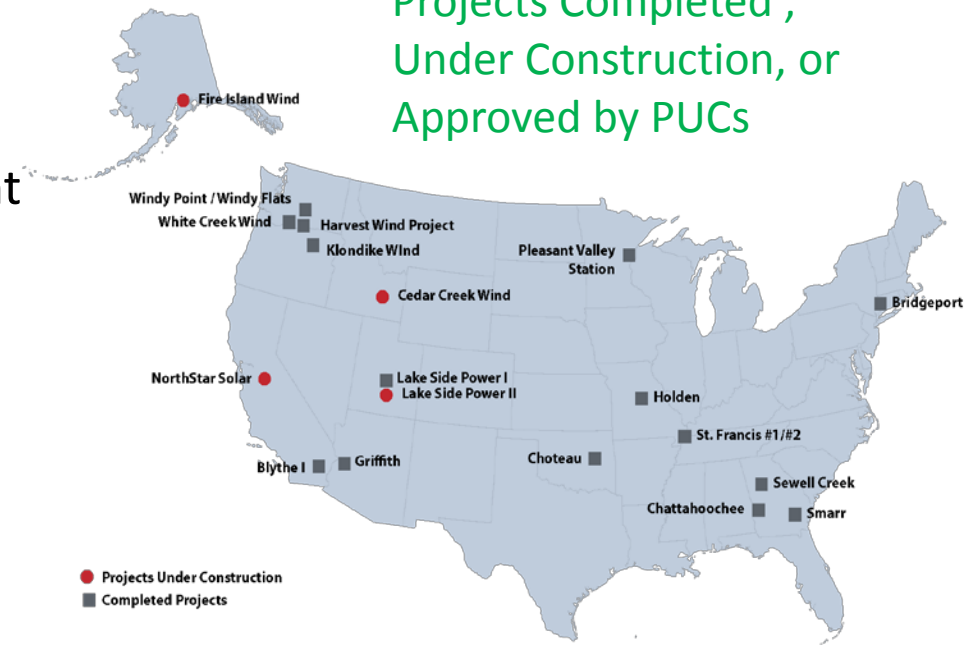
Summit Power

- Summit Power Group is a Seattle-based developer of clean energy projects
- Founded 23 years ago by former U.S. Secretary of Energy Don Hodel & COO of Department of Energy Earl Gjelde
- Summit's projects:
  - Over 7,000 MW completed
  - Over 2,500 MW in development
- Summit's principal project types:
  - Wind power
  - Solar power
  - Natural gas-fired power plants
  - Carbon capture projects

Projects Completed , Under Construction, or Approved by PUCs



Texas Clean Energy Project (TCEP): A 400 MW “polygeneration” plant

High Hydrogen Power Turbine

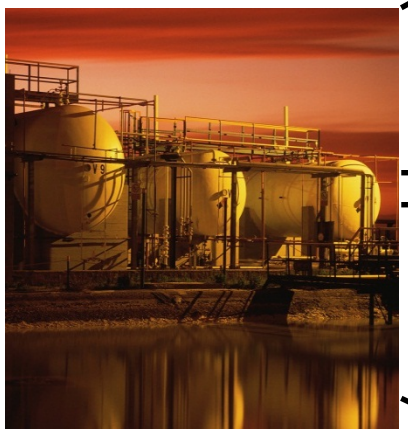
Low carbon power delivered to City of San Antonio

Syngas

Wyoming Coal via Railroad

Coal

Coal Gasification and Gas Cleanup



Ammonia/Urea Complex

Syngas

CO2

Granulated urea delivered to Fertilizer Company

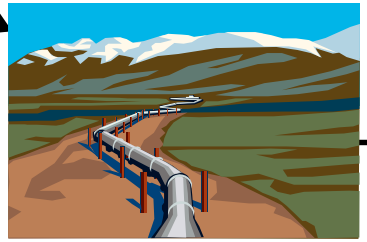
Non-drinkable Water

Steam

Coal and Steam Input, Main Outputs are Syngas (Hydrogen and Carbon Monoxide) and Pure CO2

CO2 Delivered to Oil Fields via Pipeline

CO2



CO2 delivered to Oil Companies

Five Siemens gasifiers of TCEP-type on line in China

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The Siemens gasifier

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TCEP financing readiness & shovel-readiness

- All key permitting is now complete:
  - Record of Decision from US DOE on 9/29/11 (completes NEPA/EIS process)
  - Air permit issued 12/28/10 (no opposition/request for hearing)
- Off-take agreements completed & signed:
  - 100% of power sold to CPS Energy for 25 years
  - 100% of CO2 sold for 30 years (two investment-grade offtakers)
  - 100% of urea sold for 20 years (confidential – to be announced)
- EPC Team Updating FEED (front end engineering + design) 1stQ 2015
  - EPC Team Members: China Huanqui Contracting & Engineering Corp. (HQC) + US partner in place (to be announced), Siemens, and Veolia
  - Anticipated 2015 financial closing and groundbreaking
  - All of debt to be provided by the Export-Import Bank of China (Chexim)

Where is the Project?

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Site Location and Infrastructure

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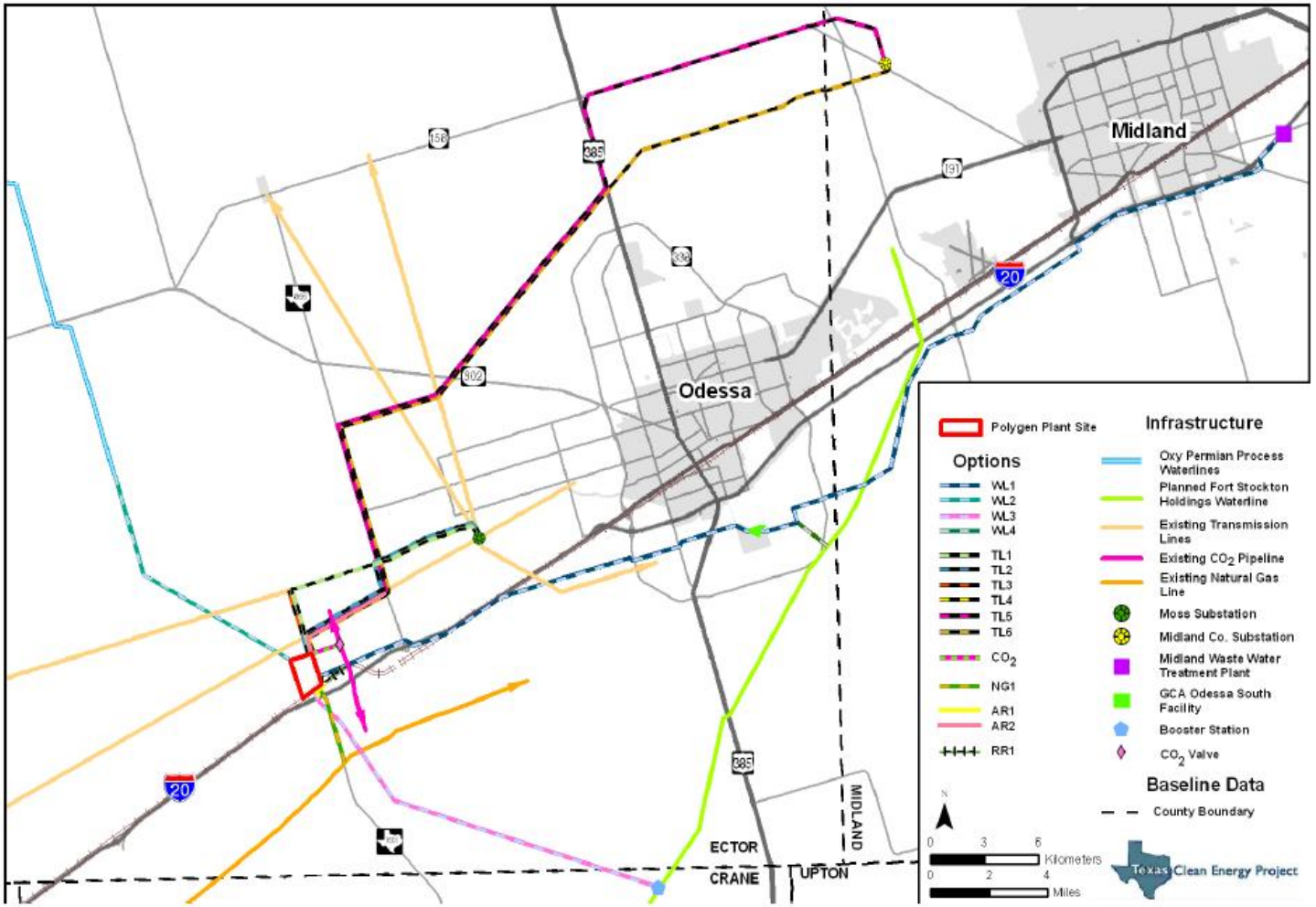

Figure 2.1. Polygen plant site and associated linear facilities.

The 600-acre site (after a rain)

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2013 – 2015 Update

1. **2013 result; plant too expensive, contract structure needs enhancement, returns of project too low**
2. **Reduce cost**
   - **Replace 2-SFG500's gasifiers with 1-SFG850**
   - **Change F-class turbine to H-class**
   - **Input lessons learned**
   - **Reduce redundancy**
   - **Optimize, modularize, value engineer in FEED**
3. **Change contracting plan**
   - **Single EPC**
   - **Single constructor**
   - **Address labor**
   - **Reset O&M**

Plot Plan Improvements

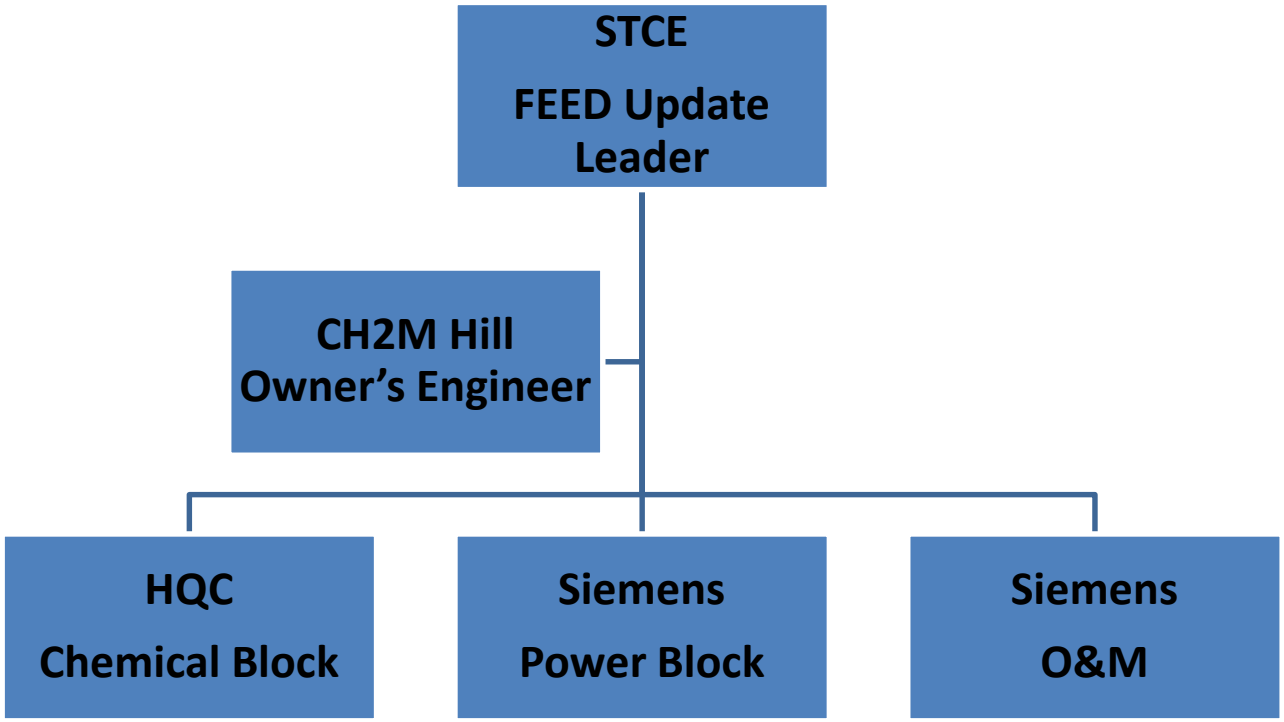
Cost Savings;

- Terraced landscape using natural elevation of site, reducing soil processing
- Reduced coal pile by 15 days
- Re-orientated buildings and process units
  - ASU, AMM/UREA, H2SO4, Cooling Tower, Aux Equipment
  - Raw water processing, wastewater processing
  - Results in pipe, steel, concrete, construction savings
  - Building placement optimized
- Coal handling optimized, saving conveyance
- Rail; deleted one shoofly track and double track throughout
- Work around an existing well
- Evaporation pond sizing and use
- Road routing at south entrance
- Drainage ditch sizing

FEED Update - Goals & Objectives

1. Update the 2010-2011 FEED using the new plant configuration and verify assumptions of cost, schedule and performance
2. Optimize the design compared to the prior FEED, in regard to value engineering, modularization, and overall size of the project
3. Complete licensor PDP's, and leverage more engineering in order to sharpen costs
4. Identify all commodities with certainty including concrete, soil, steel, pipe, etc., and construction manhours
5. Prepare a FEED Update cost estimate, and convert to a LSTK price with provision to manage construction volatility

FEED Update Organization



FEED Update Results

1. Cost estimate results in significantly lower CAPEX
2. Feed stock savings result from utilizing less coal, and higher power block efficiency
3. Revenue streams to offtakers maintained
4. Overall plant economics enhanced in relation to 2013

EPC/O&M Contracts

- **STCE is completing EPC contract negotiation; HQC/US Partner (CB), and Siemens (PB), Veolia (WTR)**

- **STCE is negotiating an O&M contract with US partner for a 20 year term**

Contact information

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