Texas Clean Energy Project (“TCEP”)

Presentation To:

Pittsburgh Coal Conference

13 September 2011

Background: Inception

- **Summit maxim: Don't plan projects environmentalists will oppose**

- **In 2002, we asked Clean Air Task Force "What's an OK coal plant?"**
  - Mathematically, U.S. and world could not do without coal
  - CATF recommended IGCC & CCS – and later, Sustec technology

- **Goal: To help change our industry by using coal cleanly & acceptably**

- **Summit began working with Siemens, Linde & Fluor on IGCC**
  - Tried many technologies, configurations, by-products, & sites
  - Came to Texas at invitation of Environmental Defense Fund (EDF)
  - Learned Texas provides best current sites for CCS because of EOR
  - Picked Penwell site when FutureGen Alliance chose Illinois
  - Environmental support consistent, outspoken & gratifying

Summary of TCEP:

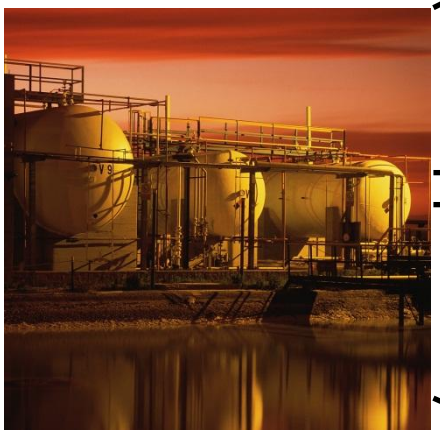
- **The Texas Clean Energy Project is an integrated coal gasification/combined cycle power project with 90% carbon capture**
- **Unique project benefits include:**
  - Integration of existing technologies (proven gasifier technology, Linde ASU, Linde Rectisol, Siemens “F” Class Turbine)
  - IGCC project with long-term O&M contract/warranties by EPC contractors
  - Multiple revenue streams: Electricity, Urea for fertilizer, and CO_2 for enhanced oil recovery
  - CO_2 sold into attractive existing market with extensive existing pipeline network (attractive revenue source instead of a “problem”)
  - Expected to be eligible for carbon credits through the American Carbon Registry and/or others
  - Project is a high priority for the U.S. Government (Dept. Of Energy, EPA, the Administration)
  - Support from both political parties and leading environmental groups

Summary of TCEP Technology:

Wyoming Coal via Railroad

Coal 2mm tpy

Coal Gasification and Gas Cleanup



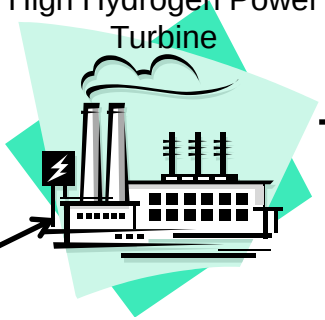
Coal and Steam Input, Main Outputs are Syngas (90% Hydrogen and 10% Carbon Monoxide) and Pure CO2

Non-drinkable Water

Steam

2/3 of Syngas

High Hydrogen Power Turbine



195aMW clean power delivered to City of San Antonio (30% of revenues)*

1/3 of Syngas

1/6 of CO2

Ammonia/Urea Complex

720,000 tons/yr delivered to Fertilizer Company (45% of revenues)*

5/6 of CO2

CO2 Delivered to Oil Fields via Pipeline

2.5mm tons per year delivered to Oil Companies (20% of revenues)*

** Remaining 5% of revenue from other byproduct sales*

Summary of the Project Partnerships

STCE Current Owners:	Summit Power Group, LLC CW NextGen, Inc. (a Clayton Williams Company)
Gasification & Combined Cycle Technology:	Siemens
EPC Contractors:	Linde/SK E&C for Chem Block. Siemens for Power Block. FEED completed July 2011
Consulting Engineers/Independent Engineer	CH2M/Hill and RW Beck(for Project); E3 is I.E. for Banks
Key Feasibility Reports	Blue Johnson (Ag Chem); ARI (CO2/EOR); Point Carbon (CO2 Credits); Blue Source (CO2 Credits)
CO2 Sales:	Blue Strategies, LLC (managing sales) to oil producers
Power Sales:	CPS Energy (municipal electric utility of San Antonio, Texas)
Urea Sales:	Investment-grade agricultural chemical company (executed)
Coal Transportation	Union Pacific Railroad
Debt Advisor:	Royal Bank of Scotland (RBS)
Tax Equity Advisor	Capstar (a division of BNP Paribas)
Overall Financial Advisor:	Wellford Capital Partners (w/ Wellford Energy Group, LLC)
Technical / Environmental Support:	Texas Bureau of Economic Geology, Natural Resources Defense Council, Clean Air Task Force

Summary of the Project:
Commercial Concepts Guiding Development

- **TCEP disciplined by the private project finance capital markets**
  - No deep pocket to absorb experimental technology (so none included)
  - No ability to pass through risks to public or ratepayers
- **Plant configured and designed for best availability**
  - Availability matters more than thermal efficiency for 1st-of-a-kind project financing
  - Contains no unproven, non-warranted technology
- **Integration risk is enough risk for Wall Street, hence technology risk eliminated first**
- **Strong off-takers with strong strategic interests in performing contracts**
- **Safety & limitation of commodity risk is more important than the last nickel**

USDOE: Tax & CCPI-3 benefits

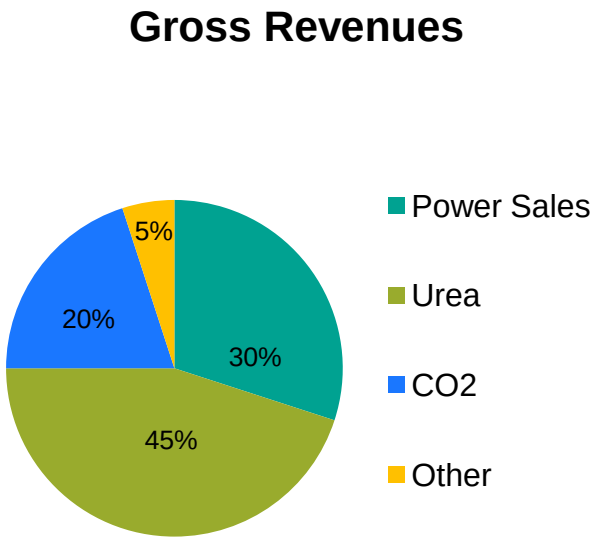
- **TCEP enjoys a CCPI-3 award ($450M), a Sec. 48A ITC ($313M), accelerated depreciation & Sec. 45Q sequestration credits**
- **Combination is apparently unique & requires optimization**
- **Additional financing help DOE has provided:**
  - 80/20 reimbursement rate for $211M of DOE funds
  - Willing to let loan proceeds & DOE funds be used first in each phase
- **TCEP financial model shows adequate DSCRs + Equity IRRs at estimated project costs and revenues**
- **But: (1) Project costs are not final, and (2) taxability of CCPI award will cost TCEP $157 MM if not fixed**

Project Financing:
Revenue Components and Contracts

- **Project will yield three major revenue streams (power, CO_2 and urea sales)**
- Power off-take arrangements:
  - 25- year power purchase agreement as baseload generation to CPS Energy (San Antonio municipal)
- CO_2 contracted sales will be 15-30 year contracts:
  - First contract signed with Whiting Petroleum; two others ready to sign now
  - Revenue from CO_2 sales does not depend on any new carbon or climate legislation
  - CO_2 contracts will cover TCEP's full output, with sales prices linked to WTI crude oil prices
- 15-year urea contract executed with major fertilizer market participant for full output of TCEP

Project Financing:
Revenue Components and Contracts

Power	• 400 MW gross output • Two major on-site commercial loads (urea plant & CO2 compressors) • ~195 MW net to external buyers • ERCOT peak demand 63,594 MWs
CO_2	• 2.5 M tons/year • 90% capture rate • Market is already 33 M tons annually & much higher demand exists locally • Will be qualified as Carbon Credits on American Carbon Registry and/or other registries
Urea	• 720k tons/year • US demand 8.5 M tons/year • US imports 5 M tons/year



Project financing

- **Revenues must be enough to service debt + yield attractive ROE**
- **Key constraint: debt service coverage ratio (DSCR)**
  - First layer of protection for project lenders (revenues exceed project costs)
  - DSCR level + assured revenues determine the maximum amount of debt
- **TCEP financial model uses market-required DSCR**
  - About $1.1 billion of debt to supplement $450 million USDOE grant, balance equity.
- **Revenues from power, urea, and CO2/EOR sales ≥ 95% of total**
- **Duration & quality of contracts affect rating & lenders' evaluation**
- **Significance of DOE award in this context: reduces product sales revenue required to meet DSCR & provide attractive ROEs, allowing output to be sold at market prices rather than production "cost"**

Project financing risks

- **Key concepts: (1) lenders don't take ANY risks; (2) all risks must be taken by others; and (3) the others must have deep enough pockets**
- **Completion costs & mechanical: use EPC contracts, warranties, "must fix" & liquidated damages (LDs), reserves for contingencies**
- **Operations & maintenance: need long-term warranties, LDs, some significant portion of costs fixed, some "must fix" provisions**
- **Project revenues vs. costs: Need "bankable" off-take contracts & secure supply contracts; ideally these should "track" each other; duration of contracts matters a lot (long term is better than short)**
- **Financial capital cost risks: things turn sour quickly if costs exceed revenues for long; not like running a company quarter-to-quarter; trap door opens under projects if DSC requirements not met**

Key Project Financing Issues and Approaches

Issue	Approach
Technology Risk	Plan for long production ramp; high “must fix” levels in contracts; contractor affiliate companies as investors
Acceptance/Completion	“Composite Test” for Chemical Block—holistic cash flow oriented test, rather than multiple piece-wise test
Two EPC Contracts	Rigorous tests on either side of fuel flow to Power Block—shortage of syngas or shortage of CCGT capacity are equivalent economic events
Commodity Risk	Fixed prices for some output; some pass-throughs; floors in certain contracts; natural hedges—inputs & outputs priced off same index
Not all contracts for life-of-plant	Low coverage during initial contracts, higher required coverage once contract renewal is faced (precedented)
Operating complexity—multiple operating “states”	Probabilistic evaluation of forced outages—model revenue impacts of operating in each “state”
Nascent revenue sources	Carbon Credits for EOR cannot be leveraged yet, but can be evaluated for equity return scenarios & play key financing role

More information

www.texascleanenergyproject.com = project website

www.summitpower.com = Summit website

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Thank you!