



SUMMIT POWER

DEVELOPING OUR ENERGY FUTURE



Texas Clean Energy Project

A Project of the Summit Power Group, LLC

US – China Clean Energy Workshop

Sasha Mackler, Vice President of Summit Carbon Capture

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- Seattle-based developer of clean energy projects
- Founded 21 years ago by former U.S. Secretary of Energy Don Hodel & COO of Department of Energy Earl Gjelde
- Flexible Development Model from fee-based, to build/own/transfer, to asset ownership/management
- World class, international development team
- Over 7,000 MW in operation and over 2,000 MW in development
- Summit's capabilities include development, financing, and asset management of
 - Wind and solar plants
 - High efficiency natural gas fired plants
 - Large scale gasification facilities
 - CO2 capture for EOR

Project Map



Summit Carbon Capture



- Summit Carbon Capture (SCC) is a business of Summit Power Group (SPG)
- SCC is a vertically integrated developer of CO2 assets – specializing in the capture of CO2 from industrial sources for use in enhanced oil recovery

SCC Areas of Focus -

- Large-scale gasification facilities with CO2 capture
- Natural gas fired power plants with post combustion capture of CO2
- Retrofits of existing coal plants for CO2 capture
- CO2 EOR projects

SCC Competitive Advantage -

- Strong partnerships with leading global firms
- Sophistication and flexibility in key areas of finance, policy, stakeholder relations

Texas Clean Energy Project



- Chemical & Power Polygen facility
- Financing nearly completed
- Fully permitted – zero opposition to any permit
- Fixed price, turnkey EPC contracts with Sinopec and Siemens
- \$450 Million Federal Grant received from US DOE
- 100% of revenue fully contracted with creditworthy counterparties (15-25 year term)



Texas Clean Energy Project - PolyGen



PRB Coal via Railroad



Coal
1.8mm tpy

Brackish Water
Purified via Reverse
Osmosis



Water

Air Separation Unit



Oxygen

Coal Gasification and
Gas Cleanup



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

2/3 of
Syngas

1/3 of
Syngas

1/6 of
CO₂

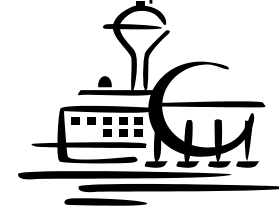
5/6 of
CO₂

High Hydrogen Power
Turbine



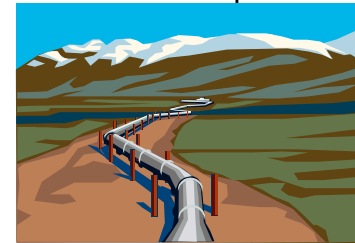
195 MW low
carbon power
delivered to City
of San Antonio

Ammonia / Urea
Complex



710,000 tons/yr
delivered to
CHS Inc.

CO₂ Delivered to Oil
Fields via Pipeline



2.5mm tons per
year delivered
to Oil
Companies

Bankable Offtake Contracts



Power

- 400 MW Gross Output
- 195 MW net to grid
- ERCOT demand 68,379 MW

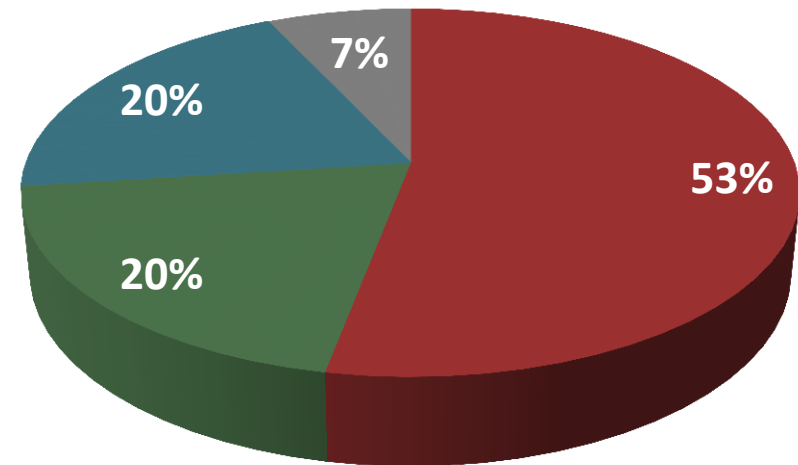
Urea

- 710,000 tons/year
- US demand is 10 M tons/year
- US imports 7 M tons/year

CO2

- 2.5 M tons/year
- 90% capture rate
- 37 M tons/year annual demand

Revenue



■ Urea ■ Power ■ CO2 ■ Other

TCEP Status



•Site acquired & permitting

- Record of Decision from US DOE on 9/29/10 (completes NEPA / EIS process)
- Air permit issued 12/28/10 (no greenhouse gas emissions limits)

•FEED study

•Water rights

•Offtake agreements

- 100% of power sold to CPS Energy for 25 years
- 100% of CO₂ sold for 30 years (three different buyers; market very strong)
- 100% of urea sold to CHS (Blue Chip Fertilizer / chemical company)

•Engineering, Procurement & Construction contracts

- Two contracts work together to ensure integrated, complete, high performance plant
- lump-sum, fixed-price, turnkey

•O&M agreement

- Provides 15-year warranties for project performance, reliability, availability and pollution control
- Joint venture full plant operations by Linde and Siemens

Strategic Alliance with Sinopec



- Enormous mutual benefits in partnering with Sinopec
 - technical, financial, strategic
- Executed EPC agreement with Sinopec Engineering Group for Chemical Block EPC
- Gateway for China EXIM to provide 100% of long term project debt
- CFIUS filing required
- Siemens remains as the Power Block EPC contractor for the same scope
- Linde and Siemens remain as operators



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