Carbon Capture and Sequestration
Proposal for
San Juan Generating Station
Prepared by Acme Equities, LLC
February 2019
Carbon Capture & Sequestration (“CCS”) is Proven Technology

$625 million Petro Nova plant in Texas has been operating commercially since January 2017,
   Designed and Constructed by Mitsubishi Heavy Industries
   NRG was project manager
   Hilcorp managed the EOR project
   Funded by $190 million DOE Grant and $250 loan from Japanese Bank for International Cooperation
   Final Report prepared by DOE is Available

CCS removes 90% of CO2 from flue gas.
   CO2 is compressed, shipped by pipeline to West Texas and Southeast New Mexico, where it is permanently injected into partially depleted oil wells

Clean Air Task Force estimates 45 CCS retrofits will be installed on 10,000 MW of power plants by 2030
Schematic for Petro Nova CCS Project

W.A. PARISH POST-COMBUSTION CO₂ CAPTURE AND SEQUESTRATION PROJECT

Topical Report
Final Public Design Report

Award No. DE-FE0003311
CFDA Number 81.131

Prepared for
U.S. Department of Energy
Office of Major Demonstrations
National Energy Technology Laboratory

Prepared by
Petra Nova Parish Holdings LLC

For the Period
July 01, 2014 to December 31, 2016
NRG Energy, JX Nippon complete world’s largest post-combustion carbon capture facility on-budget and on-schedule

- EPC consortium award July 2014
- Construction start September 2014
- Performance tests completed December 2016
- Commercial operation January 2017
- 2017 – Power Magazine “Plant of the Year”
- October 2017 – 1M tons of CO₂ captured
- Capture system continues to meet performance targets

Notes/Refs:
3) https://www.netl.doe.gov/research/coal/project-information/fc0003311
4) https://www.energy.gov/fe/articles/doe-supported-petra-nova-captures-more-1-million-tons-co2
5) For further information see project final report to DOE: https://www.osti.gov/biblio/1344080
San Juan Generating Station with CCS retrofit is least costly alternative for New Mexico

- Solar with Storage costs between $36 and $45 per MWh according to Sierra Club/Synapse report
- PNM IRP estimates new Wind would require a PPA at $47 per MWh
- PNM IRP estimates new Gas-Fired generation will cost $47 per MWh
- SJGS with CCS and new coal contract can provide clean power at 10% to 30% discount to Solar, Wind, or Gas-fired

We agree with Sierra Club:

Require a Transparent Process for Replacement Power and let SJGS bid in the RFP

Result:

SJGS will provide the lowest cost Replacement Power and Save Jobs
San Juan Generating Station with CCS retrofit is the Third most environmentally friendly alternative for New Mexico

- CCS retrofit will reduce 90% of CO2 emissions from SJGS
- SJGS with CCS generates less CO2 per GWH than Wind when you add emissions from gas-fired peakers
- Only Solar with Storage and Hydro produces less CO2

<table>
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<tr>
<th>Plant Name</th>
<th>Fuel</th>
<th>CO2 Tons/GWH</th>
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<tbody>
<tr>
<td>Current San Juan Generating</td>
<td>Coal</td>
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<td>Four Corners Generating</td>
<td>Coal</td>
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<td>Reeves Generating</td>
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<td>New Mexico 2030 EPA Goal</td>
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CCS is expensive but can be financed through sale of CO2 to Oil Industry and 45Q Tax Credits

- Retrofit will cost between $400 million and $800 million.
- Mitsubishi Petro Nova project manager formerly worked for New Mexico Department of Environment and believes cost of SJGS retrofit could be 30% less than Petro Nova.
- Project can receive financing and grants from DOE as there is strong political interest in demonstrating the Administration is helping the Coal Industry.
- Project can be financed by selling the CO2 to the oil industry and by monetizing the tax credits.
Meet ENCHANT ENERGY CORPORATION

Enchant Energy Corporation

Enchant Solar
- 40 MW PV Solar Farm
  - Built adjacent to SJGS
  - Sells power under PPA to PNM from replacement power RFP

San Juan Generating Station ("SJGS")
- Low-cost 847 MW coal-fired power plant
  - Ownership transferred to Enchant effective 6/30/2019
  - After 2022, sells merchant power at Palo Verde Hub
  - After 2025 start up of CCS module, SJGC becomes most climate-friendly fossil-fueled power plant in Western USA

Enchant Clean Coal Company
- Develop state-of-art CCS plant adjacent to SJGS
- Buys electricity and processes flue gas from SJGS
- Sells CO2 to EOR projects through Cortez Pipeline
- Total cost $400 million - $1.2 Billion can be financed
- Front end costs funded by Federal Clean Coal grants
- Benefits from 45Q tax credits

Enchant Storage
- 100 MW 4 hour Storage
  - Stores excess cheap off-peak power generated by SJGS
  - Releases power in peak late afternoon period when Solar is not generating

San Juan Coal Company ("SJCC")
- Low-cost, high quality coal mine supplying 3.25 million tons of coal to SJGS annually from adjacent mine
- New contract will align Mine and Power Plant economics

Note:
- Additional CO2 contracts for power plant
For Further Information,
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