United States Energy Association
Virtual CCUS Roadshow

CCUS Project Developments and CCUS Insights

Cindy A. Crane, CEO
Enchant Energy

August 19, 2020

ENCHANT ENERGY
CORPORATION

Enchant Energy Strategy and Team

Enchant Energy Corporation and Management Team

- **Formed in 2019 to Develop Decarbonization Projects for Coal-Fired Power Plants**
- **Jason B. Selch, Co-Founder and Chairman of the Board**

  Company founder with thirty years of experience investing in the energy industry, at Weisser Johnson & Co., Columbia Wanger Asset Management, Equity Group Investments, Helios Advisors, Iroquois Capital and AmTrust Financial Services. Founding investor in Robertson Onshore Drilling, Kuwait Energy PLC, and Eland Energy PLC. Former Chair of Audit Committee of Kuwait Energy PLC and Board member of MB Financial Bank, N.A. BA in Political Science 1982 and MBA in Finance and Accounting 1988; both from University of Chicago.

- **Cindy A. Crane, Chief Executive Officer**

  Former President and CEO of Rocky Mountain Power, she had a 27-year career at PacifiCorp, a subsidiary of Berkshire Hathaway, and brings broad energy and electric utility experience across thermal electric generation, wind generation, nuclear energy, coal mining, and hydroelectric generation. While at Rocky Mountain Power, she was responsible for 9,000 megawatts of thermal generation in seven western states. She also serves as the Chair of the School of Energy Resources at the University of Wyoming, and Chair of the Salt Lake City, Utah Olympic Games Committee.

- **Peter Mandelstam, COO and Chief Development Officer**

  Thirty years of experience as the founder and or CEO of several wind and non-profit solar project development companies including GRID Alternatives Tri-State Inc., Green Sail Energy LLC, Bluewater Wind LLC, and Arcadia Windpower Ltd. AB in Government; 1983 Harvard University.

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Strategic Forces Driving Company

- Opportunity Drivers
  - Numerous opportunities for addition of carbon capture technology at coal-fired power plants
  - Proven and increasingly effective and cost-efficient amine-based carbon capture technology
  - Improved 45Q tax credits which expands financing opportunities for projects
  - Change in regulatory incentives and risks for existing coal-plants, creating opportunities to acquire coal-fired power plants at favorable prices (no undepreciated asset burden)
  - Location of plants relative to transmission and markets
- Enchant Energy plans to develop 3-6 additional carbon capture project in North America representing over $5 billion investment-strategy
  - Independent developer model will allow the remaining power plant owners to decarbonize their power and will facilitate the exit of some owners so that their share of power can be used in the carbon capture process
  - Repeatable model for project development reduces overall risk, lowers costs and is attractive to investors
- Our Post-Carbon-Capture model is simple:
  - Three revenue streams (45Q tax credits, carbon dioxide sales and electricity sales)
  - CO_2 sales and 45Q tax credit MORE than fund the Carbon Capture Island and associated CO_2 pipeline
  - Carbon capture entity becomes “anchor customer” for coal-fired power plant, lowers plant costs (not parasidic load)
  - Power Plant markets remaining output = low-carbon power = lower prices than pre-carbon-capture
- Result is economic model that encourages plant to run much more than under cost of service utility model
- Ability for investors to earn attractive risk adjusted rates of return

CCUS Insights

Carbon Capture Development Opportunities

- Great Plains Institute/University of Wyoming has identified 58 coal-fired and 60 gas fired power plants that are suitable for decarbonization with proven carbon capture technology. If 20% of these targets install carbon capture, there will be approximately $10 billion of EPC work and $10 billion of tax equity and project financings

- Plants in states with existing CO_2 pipelines and oil fields using EOR such as Texas, New Mexico, Colorado, Wyoming, Montana, and North Dakota are most likely to be developed

- The DOE has commissioned feasibility studies for carbon capture retrofits on several of these plants, but the projects have not developed as utilities are risk averse, have no experience financing projects in tax equity markets, and do not have an appetite for 45Q tax credits. In addition, many plants have multiple owners some of which are being forced to divest or abandon their interests due to Renewable Portfolio Standards or limits on imports of high carbon intensity power

Cost and Risk of CC Technology has Decreased

- Cost of CO_2 Capture has decreased by 30% since Petra Nova and 65% since the Boundary Dam Carbon Capture Project
- When Cost of Capture is less than $50 per ton, retrofit projects can be fully financed using 45Q Tax Credits
- 45Q tax credits were upgraded in the Bi-Partisan Tax Bill of 2018 and provides for $35 per metric tonne for CO_2 used in Enhanced Oil Recovery (“EOR) and $50 per metric tonne of CO_2 immediately stored in a non-EOR reservoir. Plan A is EOR, Plan B is immediate storage.
- CO_2 sold to EOR produces $13-23 per metric tonne in additional cash revenues

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Potential Projects Widely Dispersed

Figure i. Emitting facilities: 45Q Eligibility and near-term capture opportunities

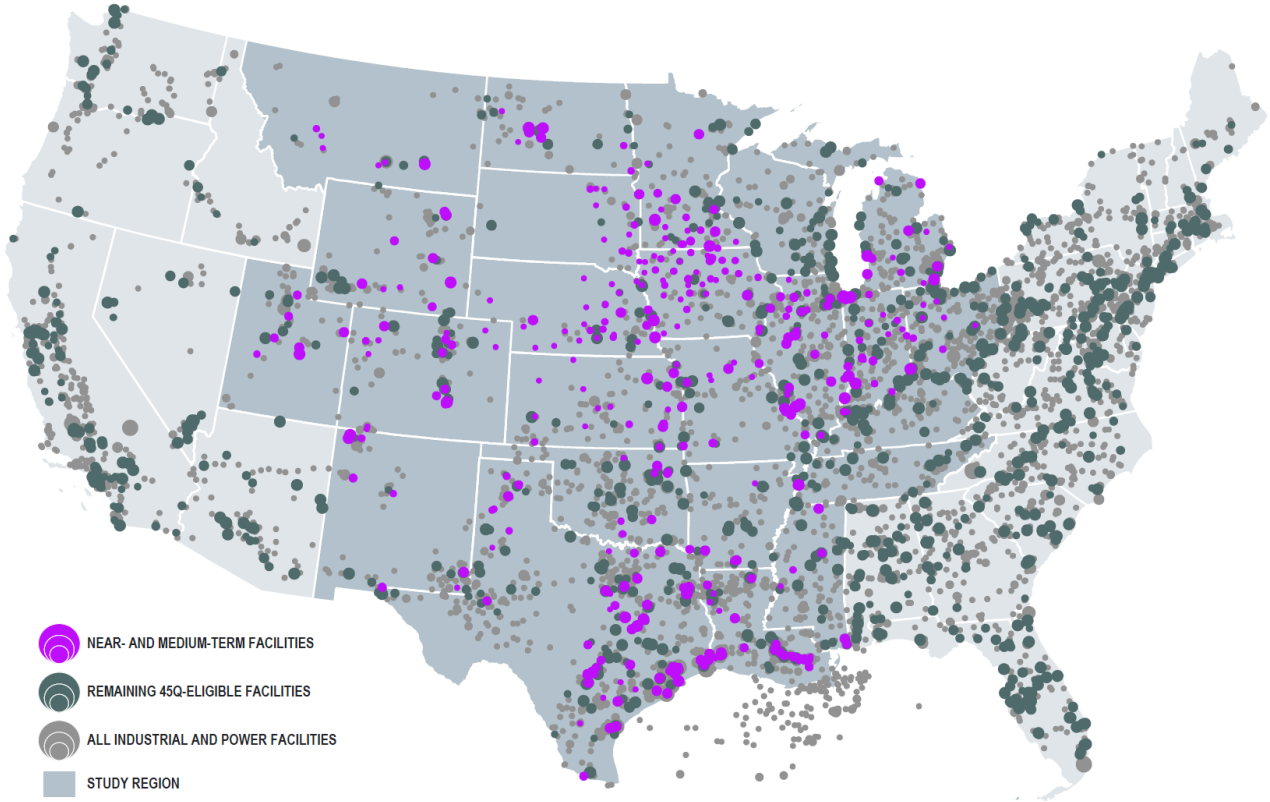

Figure authored by GPI based on data from EPA FLIGHT 2018.

Source: Transport Infrastructure for Carbon Capture and Storage "WHITEPAPER ON REGIONAL INFRASTRUCTURE FOR MIDCENTURY DECARBONIZATION" Authored by Elizabeth Abramson and Dane McFarlane Great Plains Institute, Jeff Brown University of Wyoming, JUNE 2020

CITY OF FARMINGTON NM

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Coal Power Plants are Leading 45Q Opportunity

Table i. 45Q-Qualifying facilities and emissions by industry

Industry	Number of Facilities	Share of 45Q-Eligible Facility Emissions	CO_2	Biogenic CO_2	Methane	Nitrous Oxide
Coal Power Plant	308	53.8%	1,269.6	0.3	3.0	6.2
Gas Power Plant	571	23.8%	565.4	0.7	0.4	0.4
Refineries	78	6.9%	163.3	-	0.6	0.4
Cement	135	3.7%	88.8	0.9	0.1	0.2
Hydrogen	57	2.7%	64.3	-	0.1	0.1
Steel	31	2.3%	54.0	-	0.2	-
Ethanol	173	1.3%	31.0	8.97	0.1	0.1
Ammonia	21	1.2%	25.1	0.0	0.0	4.1
Petrochemicals	30	1.1%	26.0	0.1	0.4	0.1
Metals, Minerals & Other	37	0.9%	19.5	-	0.4	-
Gas Processing	40	0.9%	19.9	-	0.7	-
Chemicals	16	0.8%	8.7	-	0.0	10.4
Pulp & Paper	18	0.4%	7.8	25.5	2.4	0.1
Waste	2	0.1%	0.8	1.2	0.6	-
Grand Total	**1,517**	**100%**	**2,344.2**	**29.3**	**9.1**	**22.1**

All emissions are in million metric tons.

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Authored by Elizabeth Abramson and Dane McFarlane Great Plains Institute, Jeff Brown University of Wyoming, JUNE 2020

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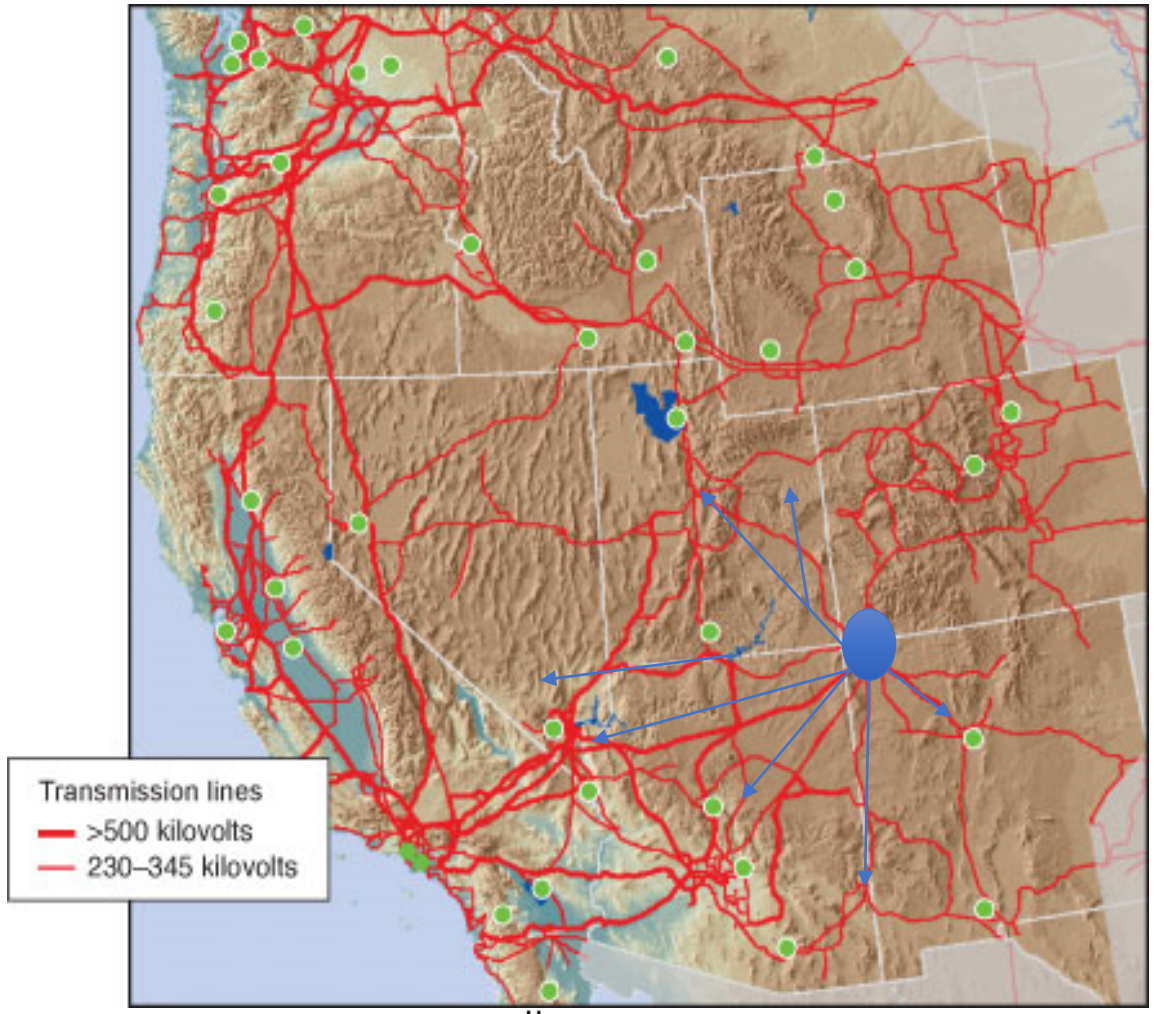
Initial Project
San Juan Generating Station (SJGS)

San Juan Generating Station

- 847 MW (net) Coal-fired Electricity Generation Station in Northwest New Mexico originally built in the 1970s, expanded in the 1980s
- High BTU Coal is supplied by the adjacent San Juan coal mine, owned by Westmoreland Mining Holdings. Enchant signed MOU to extend coal supply through 2035
- SJGS is operated by PNM on behalf of PNM (66%), TEP (20%), Farmington (5%), Los Alamos (4%), & UAMPS (4%)
- Plant size decreased from 1,828 MW (gross) in 2017 through shutdown of Units 2 & 3 in conjunction with installation of Selective Non-Catalytic Reduction (SNCR) equipment on Units 1 & 4, and settlement with U.S. EPA
- Low NO_X/SO_2/Mercury/Particulates emissions, but currently significant CO_2 emissions



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Why San Juan Generating Station (SJGS)?

- Existing Qualities of Physical Plant
  - Existing SO2 / NOX / Mercury / Particulates Pollution Controls
  - Permitted mine-mouth coal supply through 2035
  - Nearby CO_2 Pipeline with access to Permian Basin EOR
  - Located at the center of the Southwestern transmission grid, with connections to rest of New Mexico, Arizona, California, Colorado, Nevada, and Utah
- Able to Acquire 95% Interest in SJGS for $1
- Ability to Strip 90% of CO_2 guaranteed by MHIA
- Ability and progress in formulating key agreements:
  - Coal supply agreement
  - Electric sales contracts
  - Carbon dioxide sales to customers for Enhanced Oil Recovery (EOR)
  - Transmission agreements

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San Juan Generating Station CCUS Project

- With decarbonization, SJGS will be lowest CO_2 emitting fossil-fueled power plant in the US
  - CO_2 emissions decrease from 2,200 lbs/Mwh to ~250 lbs/MWh, making its CO_2 intensity less than 30% of the intensity of the most efficient gas-fired power plants
- DOE cooperative funding agreements: $2.9m FEED study, $17.5m drilling of a CO_2 sequestration well planned for 2021
  - FEED study underway with Mitsubishi Heavy Industries and Sargent & Lundy
  - Partnering with NM Tech on drilling a sequestration well in 2021 which provides alternative plan for permanent sequestration
- MHIA will provide performance guarantee on the CO_2 removal at 90% to facilitate financing in 2021
- Kiewit Power Constructors will provide full project wrap as EPC
- Bank of America has been retained to raise the ~$1.4 billion for technology retrofit
- Advanced negotiations with CO_2 off-takers for 12-year contracts to take 100% of the CO_2, approximately 5.8 million metric tons per year, starting in 2023, combined CO_2 sales price and 45Q tax credit worth over $300m annually in 2026
- Power sales start with 34% of output committed to City of Farmington and CCUS, additional 250 MW under negotiations

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Jobs, Economic Development, and Climate

- Maintain 450 high paying union jobs and an additional ~1000 indirect jobs
- Maintain $53 million annually in annual state and local tax revenues, including critical school district tax revenues
- Construction period jobs in excess of 2 million worker-hours
- Strong benefits to local communities, including communities on Navajo Nation
- Low-emission/carbon power plant, stable reliable low-cost electricity to attract industrial business and jobs

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Key Revenues and Costs for SJGS Retrofit Project

Project Capital Costs	
Project Development Cost	$22 million
Power Plant Deferred Maintenance Capital	$140 million
Fixed Priced EPC Contract to CCUS & Pipeline	$1.3 billion
Other Power Plant Acquisition Costs	$23 million
Total Project Capital Costs	**$1.5 billion**
CO_2 Captured per Year	5.8 - 6.0 million tonnes
Revenues and Tax Credits, Each of 12 Years	
45Q Tax Credits Generated Annually	$160 - $230 million
CO_2 Sales Revenue Annually	$85 - $110 million
Electricity & Capacity Sales Revenue Annually	$100 - $160 million
Total Revenues and Tax Credits Annually	**$ 345 - $500 million**
Total Lifetime Revenues and Tax Credits	**$4.14 billion - $6.00 billion**

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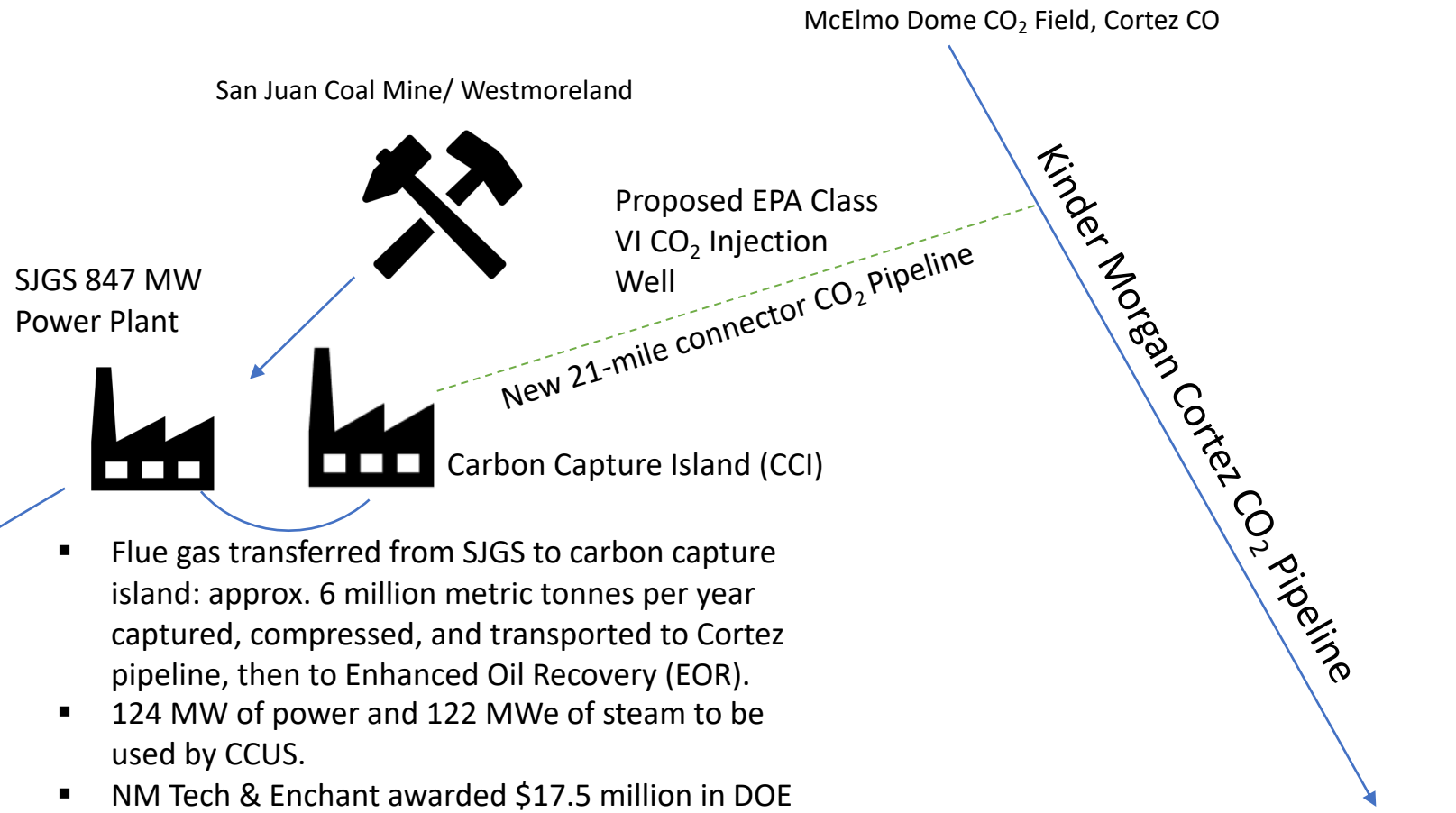
Technology and EPC Team

- Technology
  - Mitsubishi Heavy Industries America (MHIA) is proven amine absorption technology provider
  - Use of 4-train-design avoids numerous technology scale-up problems and issues
  - MHIA to provide performance guarantees for 90% carbon capture percentage along with history of successful capture at Petra Nova
- Engineering, Procurement, Construction (EPC) Team
  - Benefit of learning curve and experience of EPC Team that successfully constructed Petra Nova
    - Sargent & Lundy
    - MHIA
    - Kiewit Power Constructors
- Other Technical Supporters
  - Navigant Consulting
  - Department of Energy
  - New Mexico Tech
  - Broad NM Support
  - All NM Labor Unions

CCUS Project Schematic



Sales of electricity to customers in Southwest and CA. Exploring bi-lateral electric capacity sales to CA.

- Flue gas transferred from SJGS to carbon capture island: approx. 6 million metric tonnes per year captured, compressed, and transported to Cortez pipeline, then to Enhanced Oil Recovery (EOR).
- 124 MW of power and 122 MWe of steam to be used by CCUS.
- NM Tech & Enchant awarded $17.5 million in DOE funds (plus cost share with $22 million grand total) to explore CO_2 storage in New Mexico wells, along with partners Schlumberger and Hilcorp.

EPA approved permanent CO_2 storage sites in EOR fields in the Permian Basin.

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Partners and Service Providers

- **Bank of America.** Retained as lead financial advisor for $1.4 billion tax equity, and project financing planned for 2021. Top-ranked tax equity placement bank in 2018 & 2019
- **US Department of Energy.** Major funder of CCUS technology development under the current and two past Administrations as a way for the US to contribute to the reduction of global CO_2 emissions. Provided ~$250 million of funding for the Petra Nova project and is providing $3.4 million of funding for the SJGS FEED study and $22 million in funding for the development of a sequestration well adjacent to the San Juan Generating Station.
- **Westmoreland Mining LLC** owns and operates 12 coal mines in the US and Canada, including the San Juan mine which supplies the fuel for the the San Juan Generating Station. Has provided start-up financing to Enchant and is represented on Enchant's Board
- **Mitsubishi Heavy Industries, Ltd. (MHI)** is one of the world's leading industrial firms with 80,000 group employees and annual consolidated revenues of $38 billion U.S. dollars. MHI delivers innovative and integrated solutions across a wide range of industries from commercial aviation and transportation to power plants and gas turbines, and from machinery and infrastructure to integrated defense and space systems. **MHIA, wholly owned MHI subsidiary, provided the technology for the successful Petra Nova CCUS Project.**
- **Sargent & Lundy (S & L)** is a global leader in power and energy engineering with expertise in grid modernization, renewable energy, energy storage, nuclear power, and fossil fuels. **Sargent & Lundy was NRG's Owner's Engineer for Petra Nova CCUS Project.**
- **City of Farmington.** Public-Private.
- **Baker Tilly Virchow Krause LLP** and **Baker Tilly Capital** provide financial advisory and accounting services to Enchant Energy.
- **Sidley Austin LLP** is a leading national law firm that provides legal services to Enchant Energy.
- **Cuddy & McCarthy LLP** is a leading New Mexico law firm that provides legal services to Enchant Energy..
- **CO_2 Offtake Partner.** Enchant is currently undergoing confidential negotiations with a leading global energy company to sell all of the CO_2 captured from SJGS and guarantee its permanent storage in EOR oil fields that are qualified by the EPA in order to generate 45Q Tax Credits.

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Upcoming Milestones

- **Q3/4 2020**
  - Raise Development Equity
  - Continued expansion of the Management Team
  - Complete CO_2 Off-Take Agreement and Associated Transportation and Storage
  - Complete Power Purchase Agreements for ~250-500 MW
- **Q4 2020:** Finalize EPC Contract with Construction Consortium
- **Q2 2021:** Close $1.25 Billion Financing
- **Q2 2021:** NM Tech Sequestration Well Drilling & Core Samples Extracted for CO_2 Permeability Tests
- **Q2 2021:** Commence construction of CCUS, if granted permission by current and former owners of SJGS
- **On or Before June 30, 2022:** Transfer ownership of 95% of SJGS to Enchant Energy Corporation; 5% to Farmington
- **Q3/4 2022:** Complete plant deferred maintenance program
- **Q2/3 2023:** Energize first of 4 units (trains), and begin commercial operation of CCUS
- **Q1 2024:** Full, 4-train commercial operation of CCUS System

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