



Carbon Capture and Storage

Petra Nova Power Plant

Houston, Texas

Type:
Coal-fired

Capacity:
240 MW

Date completed:
2016

Date put in reserve:
2020

Project cost:
\$1 billion

NRG Energy, with funding from the U.S. Department of Energy (DOE) Clean Coal Power Initiative program, retrofit an existing coal-fired power plant in Houston, Texas into a carbon capture and storage (CCS) facility that captured and sequestered approximately 90% of the carbon dioxide (CO₂) released by the plant. The system captured compressed CO₂ and transported it through an 82-mile pipeline to the West Ranch Oil Field where the gas was pumped 5,000-feet underground to help with enhanced oil recovery (EOR). Increased oil production was expected to offset construction costs at the plant. While operational, the system captured over 1.6 million tons of CO₂ per year. *In 2020, the project was put on reserve shutdown status as oil prices plummeted due to the pandemic.*



! Key Findings

Reduced emissions

Carbon capture technology can reduce CO₂ emissions by 90% and could help decarbonize many industries.

Rapidly advancing technology

New technologies are improving the carbon capture process and new ways are being explored to better utilize the captured CO₂.

Federal support

DOE is actively studying and providing funding for CCS projects.

Tight margins

Margins for large-scale investments like this will be tight and those that depend on EOR will be vulnerable to fluctuating oil prices.