

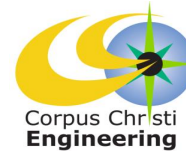
Underground Natural Gas Storage



Council Presentation
July 30, 2024



Underground Natural Gas Storage Scope of Work



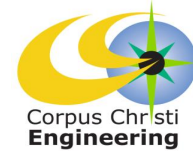
Motion authorizing a professional services contract with NITEC, LLC, of Denver, Colorado in an amount of \$4,571,582 for the design of the Underground Natural Gas Storage project, located in a yet to be determined location outside of city limits, with FY 2024 funding available from the Gas Capital Fund.

The primary purpose of the facility is to purchase and store natural gas at affordable rates during low market days, then withdrawal gas during high market rate days.

- Will build natural gas compressors used to inject natural gas through multiple wells
- Natural gas can be stored and ready to withdrawal when gas prices are high or during supply shortages
- Natural gas from the reservoirs is processed through a central gas plant then supplied to customers



Underground Natural Gas Storage Project Schedule



2024 - 2026	2026
August - January	February - April
Design	Bid/Award

Projected Schedule reflects City Council award in July 2024, with anticipated design completion by January 2026.



Underground Natural Gas Storage Facility

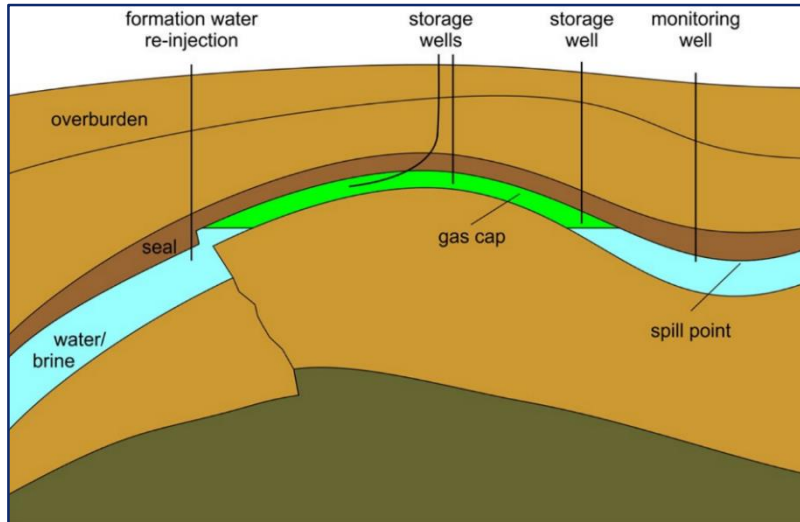
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Underground Storage Basics



A Natural Gas Storage Facility's primary purpose is to store Natural Gas underground in a depleted Oil and Gas Reservoir.

- Injection- When excess Gas is purchased due to low market rates or low demand, compressors inject gas through storage wells into the reservoir.
- Withdrawal- During supply shortages or when gas prices are high, pressurized gas from the reservoir is withdrawn through storage wells, processed, and delivered to customers.



- Gas is stored at a minimum and maximum range of pressures specific to the reservoir.
- The ideal reservoir is selected to ensure gas is safely and securely stored thousands of feet below the earth's surface.

NITEC – Underground Gas Storage



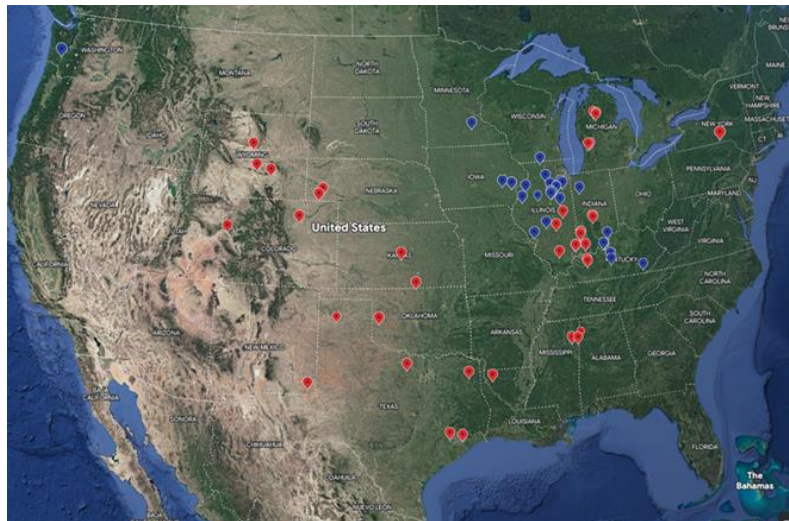
NITEC has been providing reservoir modeling and decision support solutions for Underground Gas Storage (UGS) operators since 1997.

Extensive experience in evaluating UGS reservoirs for:

- new field development
- due diligence and field acquisition
- inventory verification and assessment
- reservoir modeling

Projects are focused on:

- optimization of operations
- working gas storage expansion
- gas migration control
- deliverability improvement
- infrastructure alterations, investment



As of 2024, NITEC has analyzed 24 aquifer fields (shown in blue) and 42 depleted fields (shown in red) for 18 well-known clients.

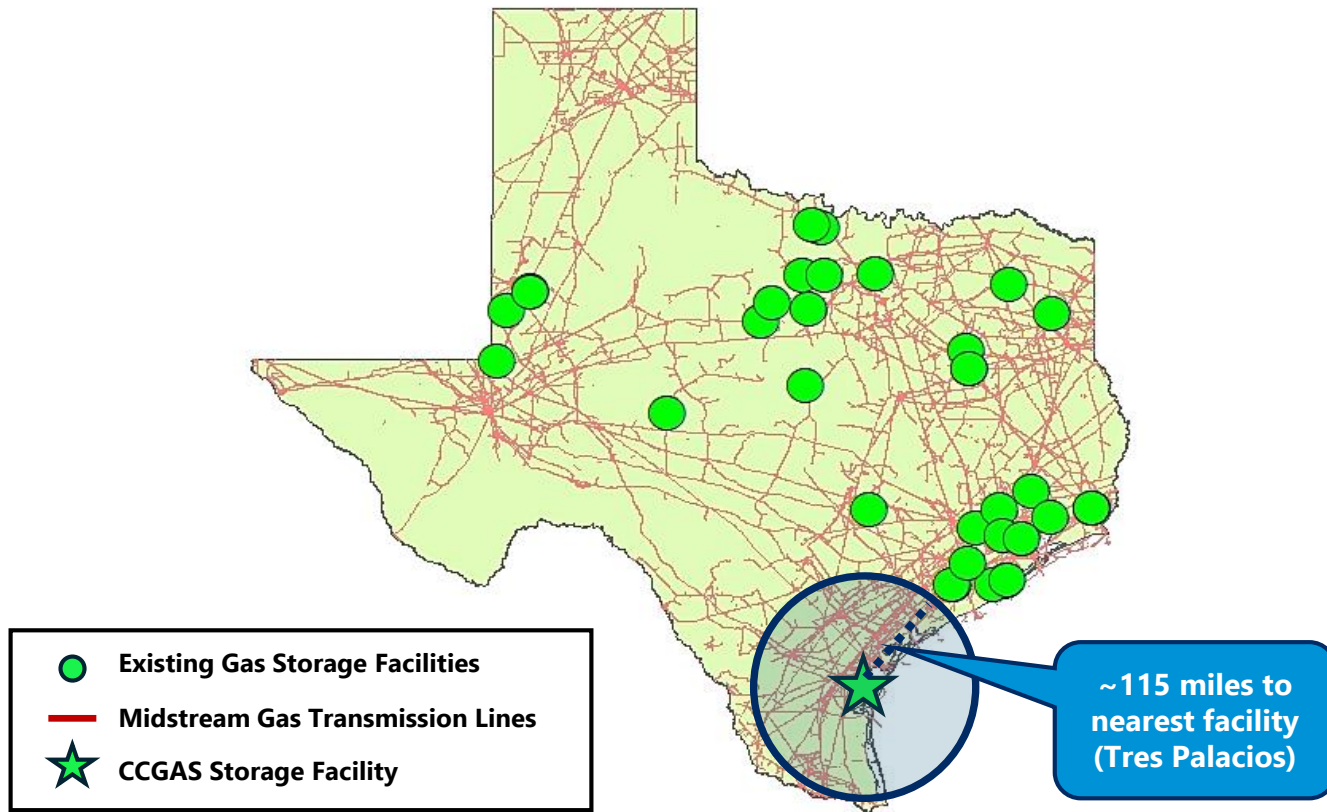
Gulf Coast Gas Demand

Gas Demand (bcf/d)	2022	2030
TX/LA Border	8.5	37.1
South TX	4.8	12.4
Mexico	4.0	5.0
Local Demand	14.0	15.0
Total	31.3	69.5

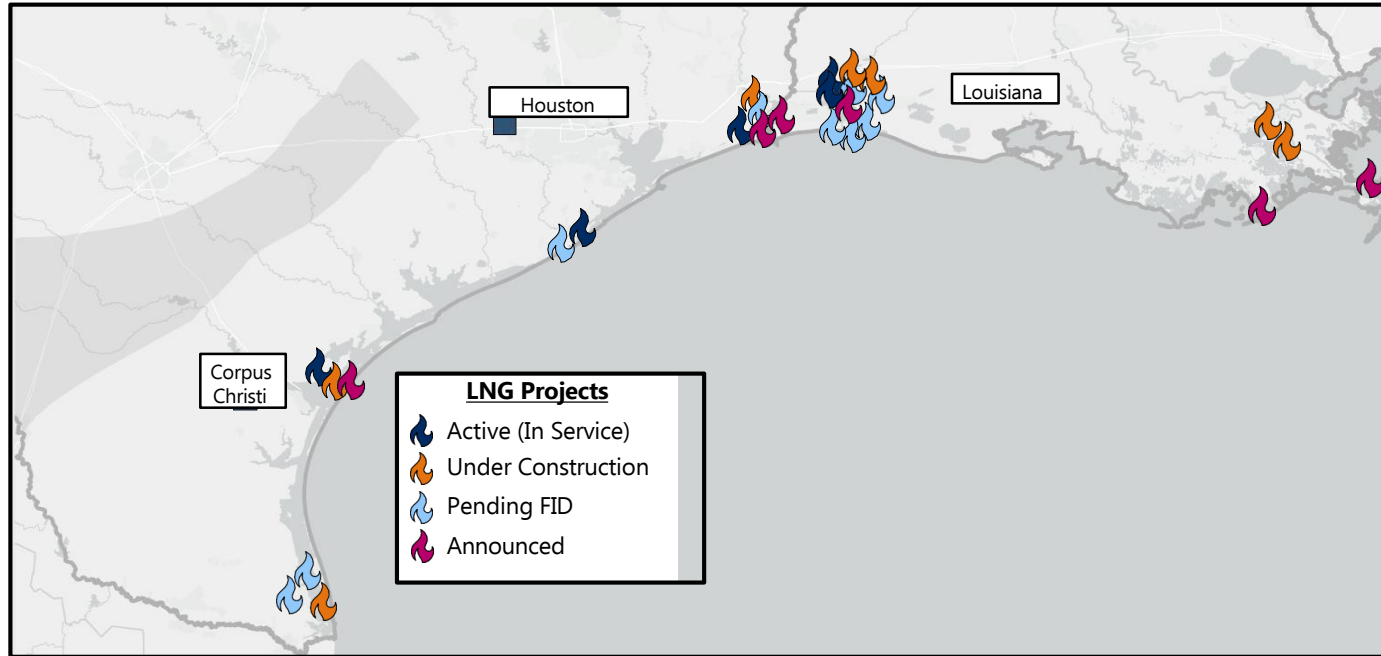
U.S. Gulf Coast demand for Natural Gas is increasing and we should expect a more volatile Gas Market in the future.

Increased export demand, constrained infrastructure and recent extreme weather events (ex: Winter Storm Uri) are driving new storage solutions

First Facility in South Texas

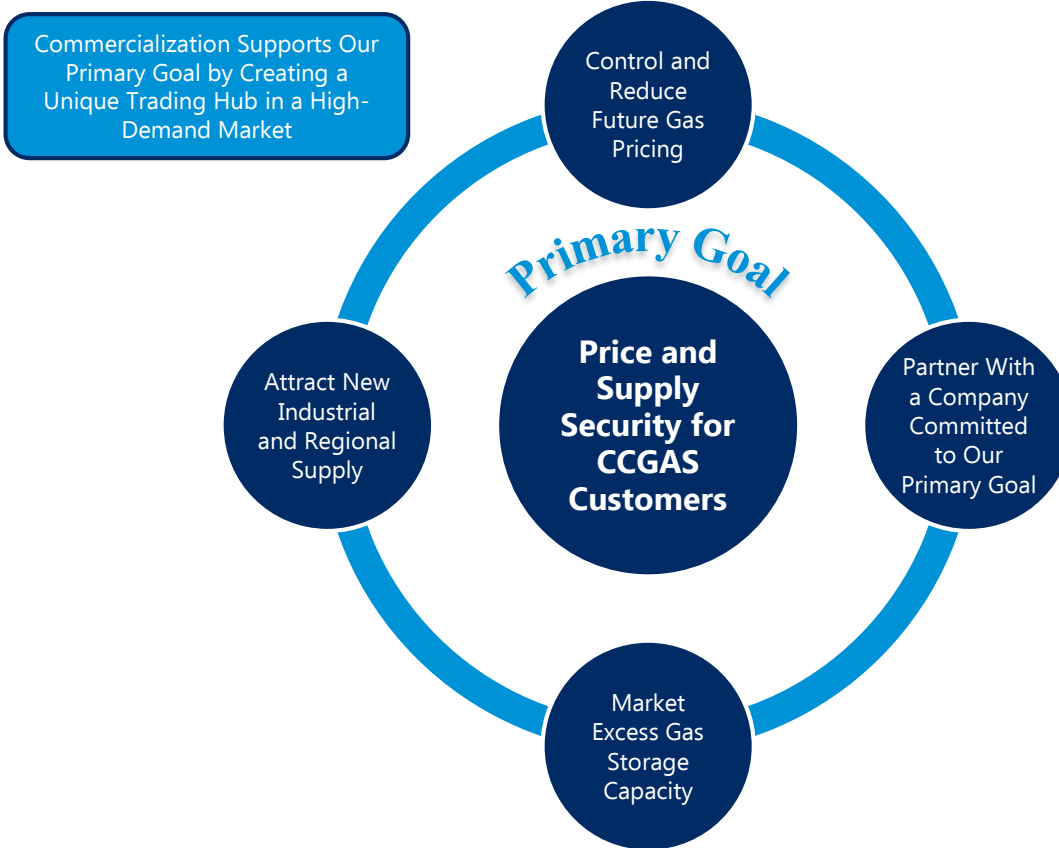


LNG Facilities and Local Industries Need Storage



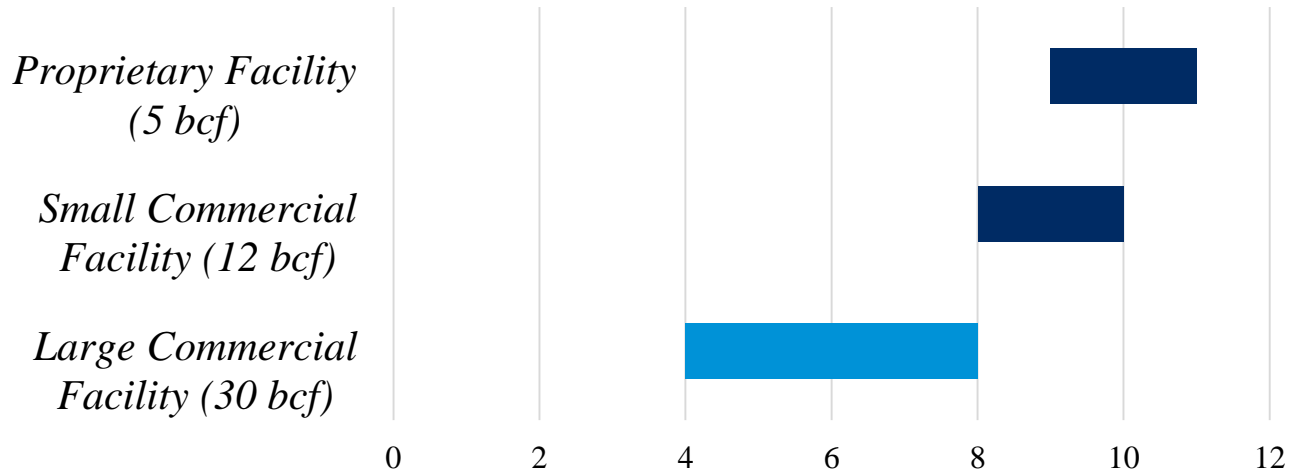
The Project Is Uniquely Positioned to Benefit the Market and Local End Users

Commercialization Goals



Illustrative Financial Scenarios for Three Storage Facility Sizes

Estimated Payback by Facility Type (Years)



A Large Commercial Facility presents the best opportunity to serve our primary goal of price and supply security for CCGAS customers.