

# Delivery Chain To Mexico Yucatan Peninsula for Power Terminal and LPG Development



## Featherwood/Kratus

# Mexico Proposed Development

FWC  
Experience

- Featherwood and Kratus would develop the project from the upstream supply and export terminal to the downstream receiving terminal and associated infrastructure. All technical and commercial feasibility studies and associated engineering and development of contracts along with the associated project management. The proposed development budget is \$10-\$15 million USD. This budget would be funded by the local Mexican company who would operate the receiving facilities and the associated infrastructure. Featherwood and Kratus will develop the project from start up to final investment decision (FID). Once FID has been determined Featherwood and Kratus will provide project financing for both equity and debt.
- Development costs paid by the local Mexican entity
  - Monthly retainer to Featherwood Kratus for project management from inception to start-up
  - Carried interest of 10% of the project
  - Feasibility Studies engineering, financial, shipping
  - Environmental studies

# Mexico Proposed Development

FWC  
Experience

- Project Overview
  - Develop a full project description including preliminary routing, start and end points, interconnections and robust description of territory and terrain of construction route
- Scope of Work and Deliverables
  - Featherwood and Kratus would select an engineering firm through an RFP process that would include a minimum of three contractors with direct experience in the territory
- Once selected the project engineering firm would provide:
  - System alternatives (design, optimal operation, power block, marine facilities any compression stations, and interconnections) based on lowest life cycle cost for review and approval by the client
  - Contractor will provide multiple options to help minimize the overall construction costs
  - Engineering firm would provide flange to flange including launchers/receivers and mainline valves
  - Engineering costs with a +/- contingency

# Mexico Proposed Development

FWC  
Experience

- Data Requirements (FWC/Kratus working with Client)
  - Finalized project origination and completion timelines
  - Finalized gas composition, inlet pressures, transportation volumes and delivery pressure
  - Interconnecting pipeline tie-in location plan coordinates
  - P&ID's for existing equipment/facilities at delivery point, if applicable ( hard copy and native formats)
  - Any survey/topographic information for existing and proposed sites
  - Any underground piping and as-built for existing utilities
  - Supervisory control and data acquisition system (SCADA) communication system input requirements
- FWC/Kratus would commence work immediately after receiving a commercially acceptable purchase order
  - FWC/Kratus would work closely with the project sponsor to provide timely deliverables of the items above. These items are time sensitive and it is extremely important to stay on timeline as any delay delays the entire project timeline
  - Any changes to the Original design and any pipeline route changes will add to the timeline for completion so proper identification early in the development is critical
  - Any Right of Way (ROW) or environmental issues can cause delays. Engagement of the proper ROW and environmental contractors early in the development helps mitigate these issues



# Mexico Proposed Development

FWC  
Experience

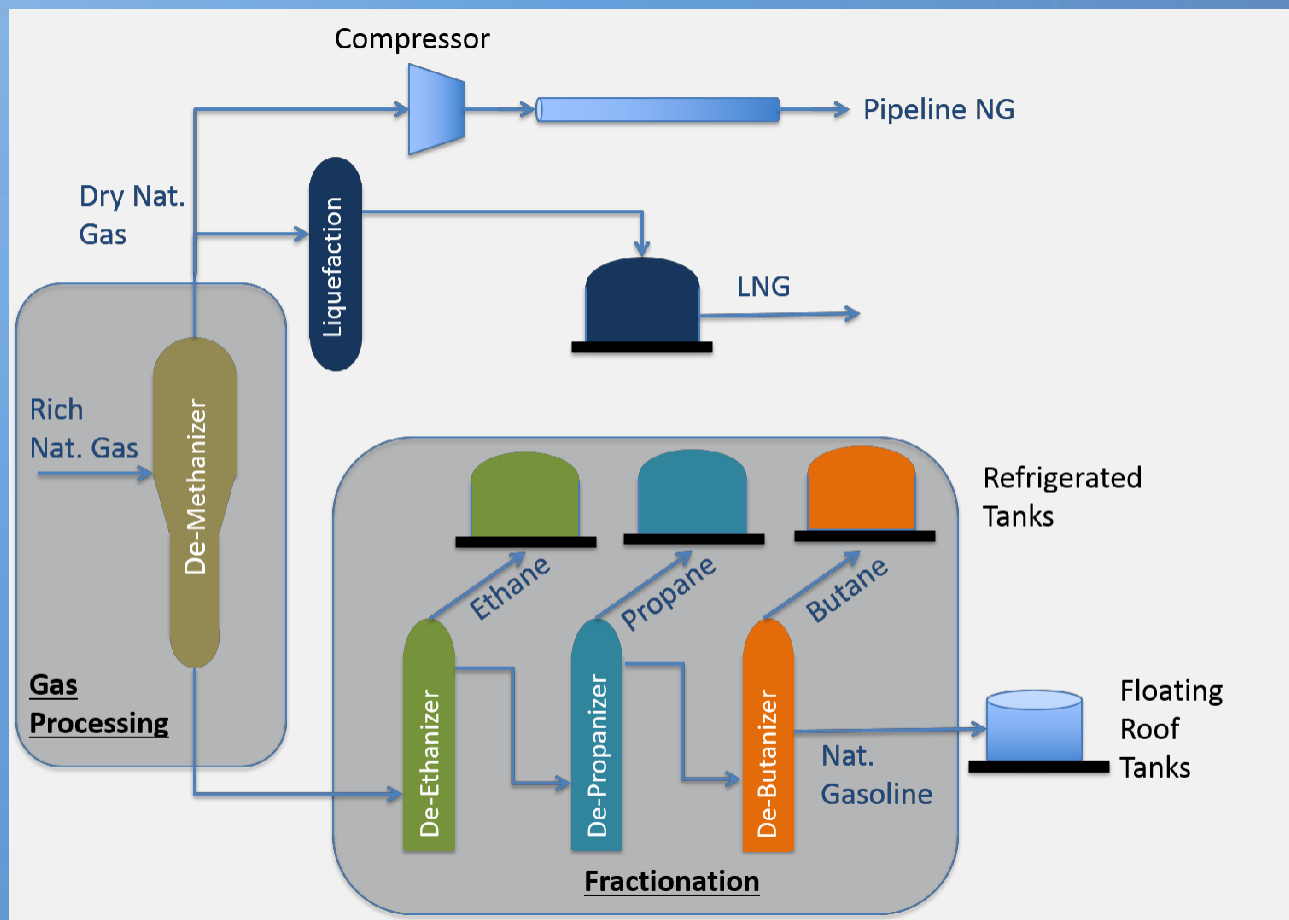
- Commercial exceptions and Clarifications
  - Agreement on commercial terms from contractor selected through the RFP process
  - Any exclusions or exceptions need to be clearly identified
  - Featherwood Capital would require bi-weekly updates from the selected contractor
  - All project documents would be securely stored and accessible to people approved by client
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- Flow charts
  - Project flow charts will be provided by all contractors and compiled in a master project development project timeline
  - Project organizational charts will be provided from all contractors to facilitate all communications within the contracted counterparties
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- Successful project development requires extensive daily interaction with contractors and stakeholders as well as accurate reporting of all activities. Featherwood/Krayus will work extensively with the selected contractor to develop the project from inception to operation

# LPG to Power

## Existing Project Development Example

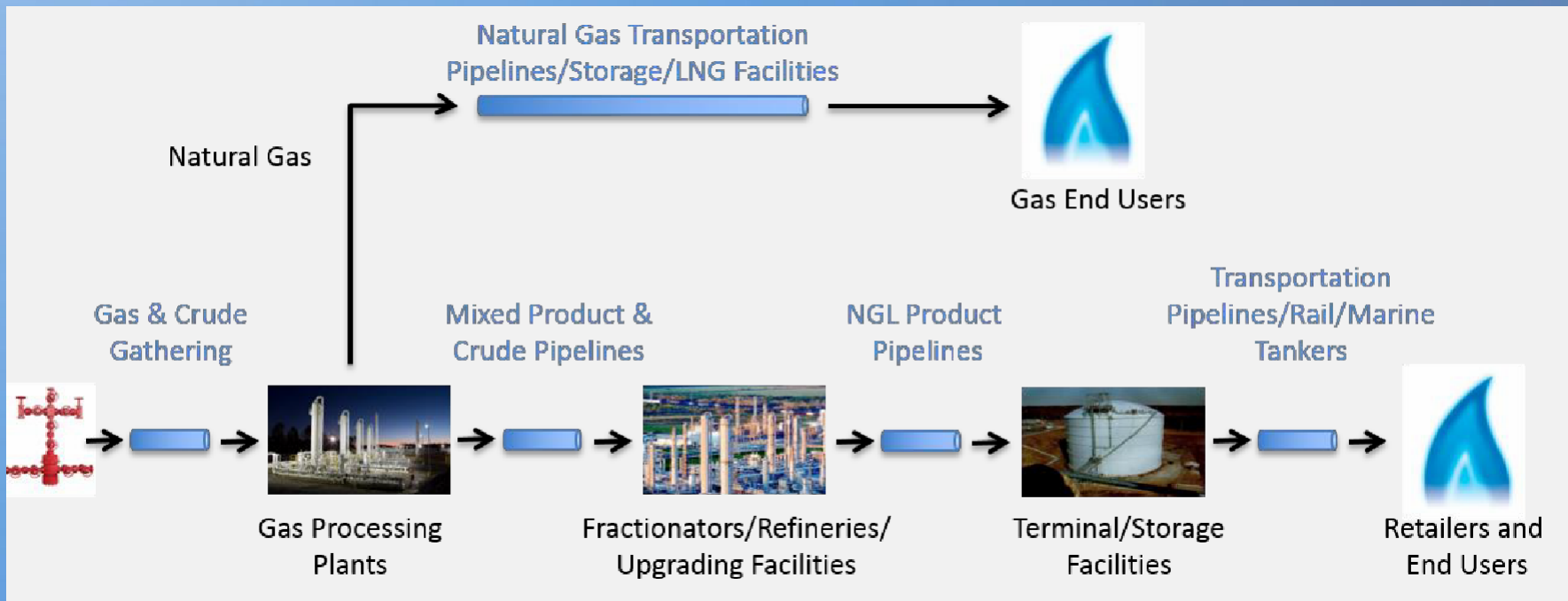
# LPG Value Chain

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Experience



# LPG Gas Transportation from export terminal to downstream market

FWC  
Experience



# Project Component - Berth

FWC  
Experience

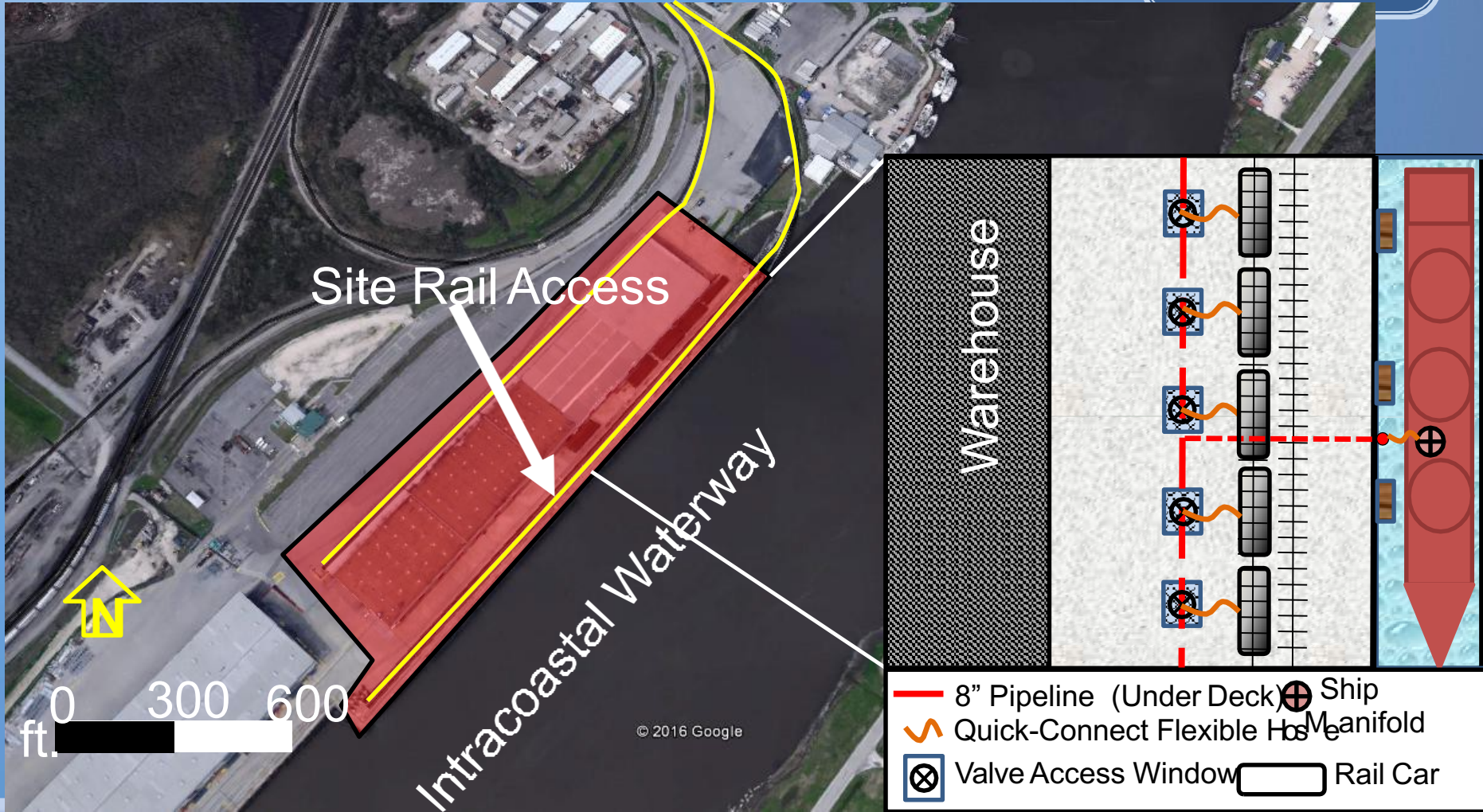


- Project Berth is large enough for the largest LPG carriers
- No waterway restrictions transit restrictions for LPG vessels
- Brownfield site with sufficient pipeline access
- No export license required
- Minimal infrastructure requirement provides for shortened permitting timeline



# Loading Site & Schematic Rail Loading System

FWC  
Experience



# EXPORT TERMINAL LOCATION

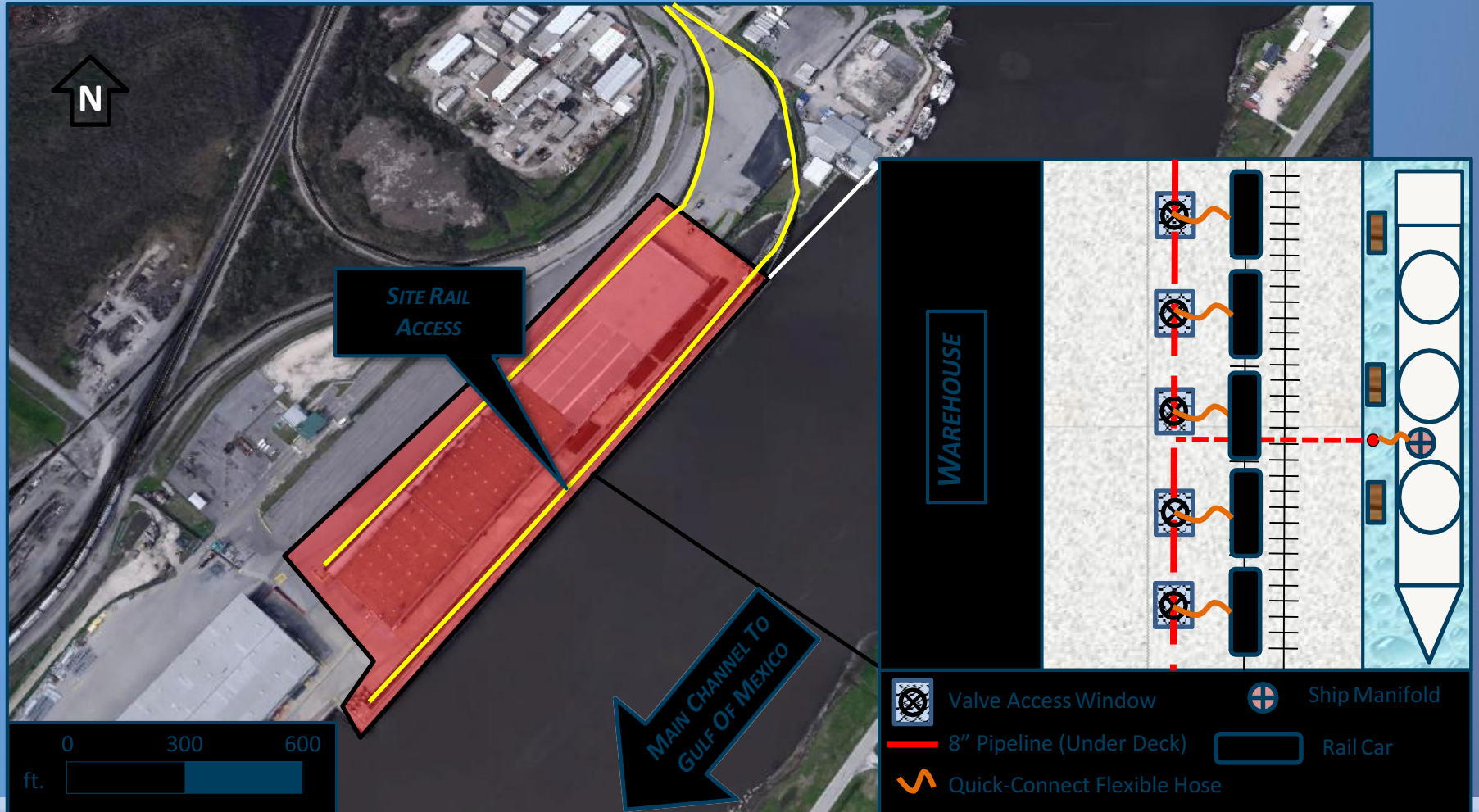
The Port of Port Arthur has granted access to the port facilities and loading rights to Featherwood for 10 years with an option to extend for an additional five years. With 1,500 feet of water frontage, rail access and warehouse space, the location is ideal for the proposed export terminal. The location also offers LPG supply diversification, with nearby suppliers identified below in addition to MLPX and sellers such as Musket.





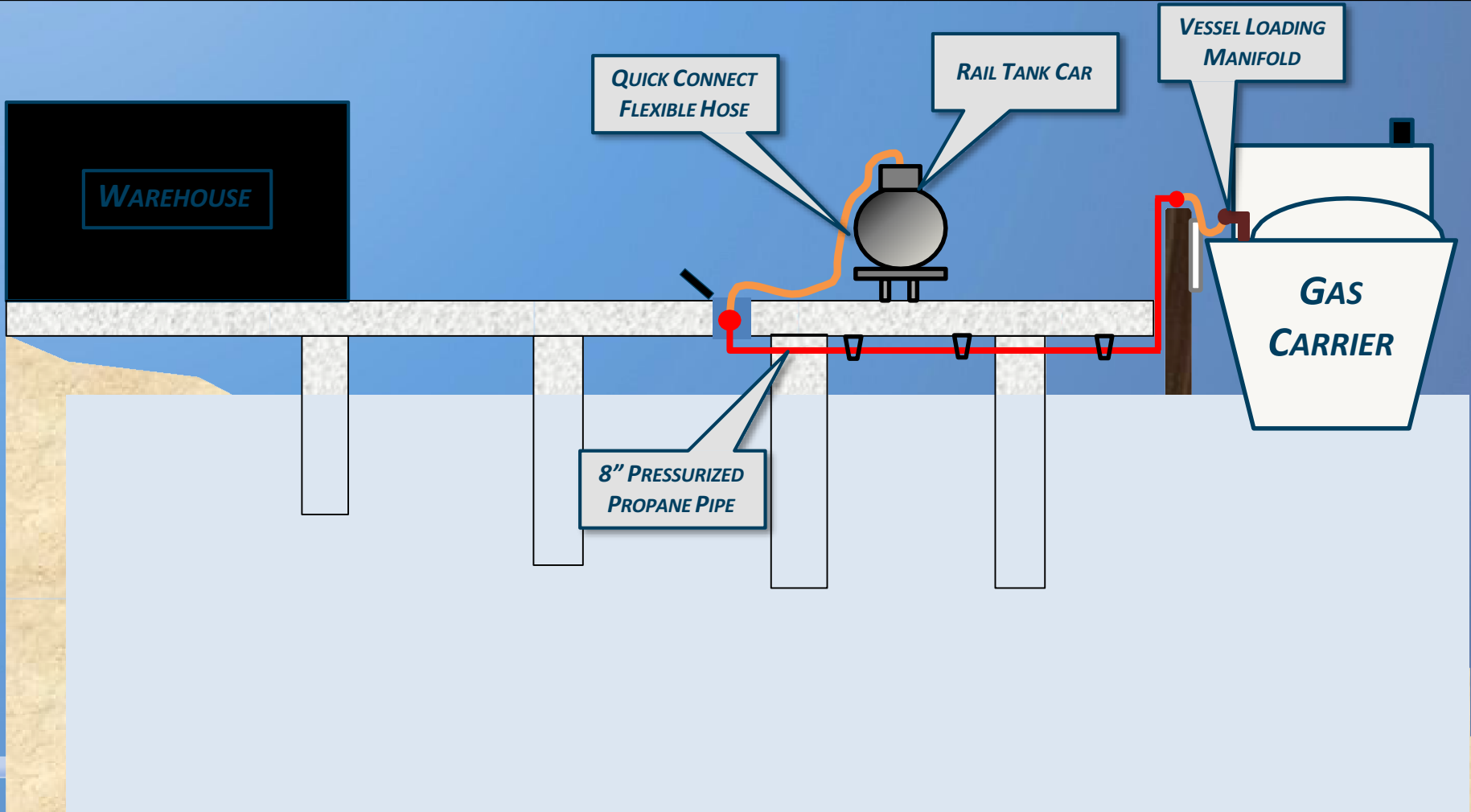
# EXPORT TERMINAL SITE PLAN

The location that Featherwood has secured for the export terminal provides the Company with key existing infrastructure, including rail access and a split dock.



# EXPORT TERMINAL CROSS SECTION

The hot loading system would require minimal build-out beyond quick connect flexible hoses, pressurized pipe and a vessel loading manifold. Featherwood has engaged a terminal operator to supply the terminal infrastructure and perform ongoing operations of the facility.



# Project Component - Vessel

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Experience

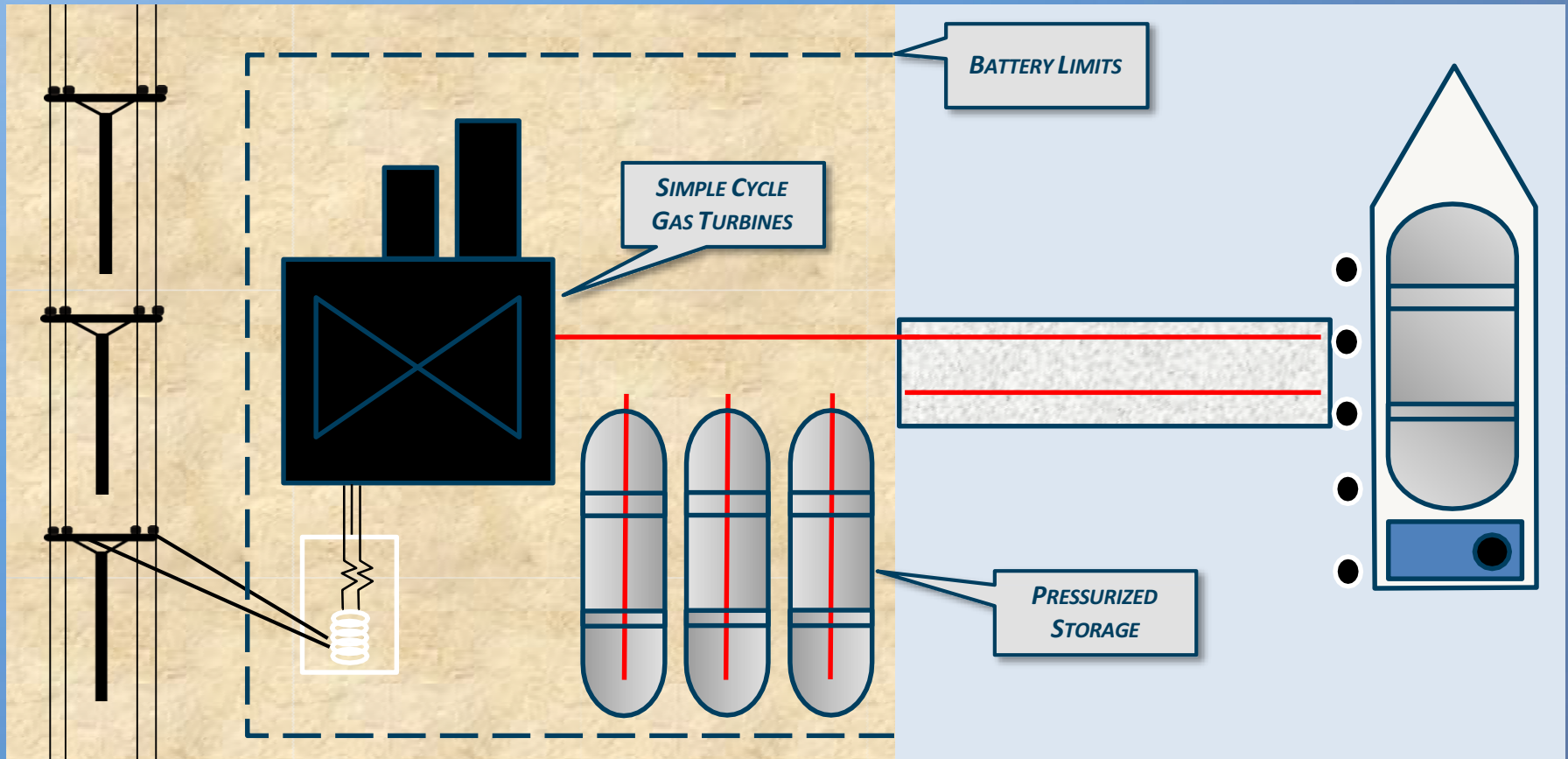


- Vessels can be sized according to downstream storage capabilities
- Vessels can deliver into pressurized storage
- Vessels can deliver into floating storage if required
- Typical vessels require 8-9 meters of draft
- One way transit time: 2.5 days
- Discharge can be completed in 12-16 hours depending on vessel size



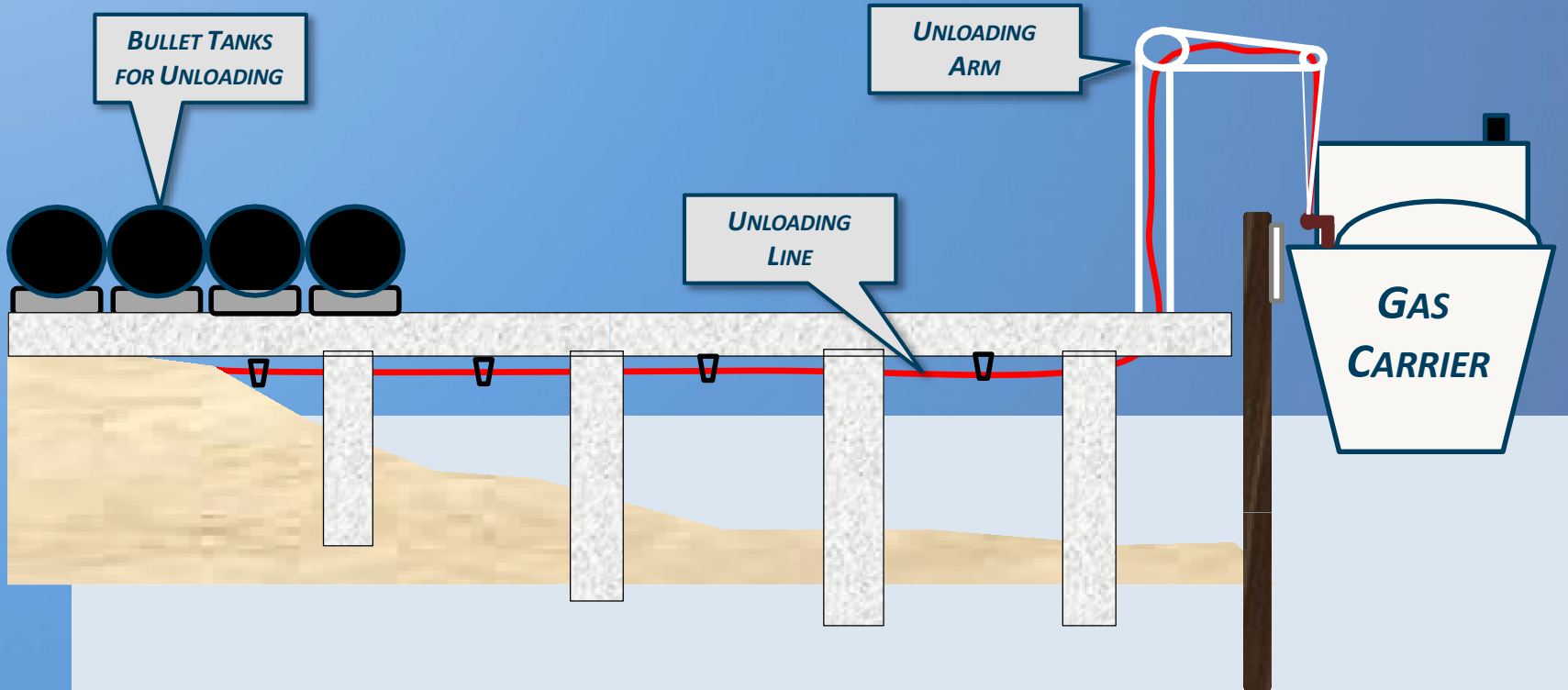
# RECEIVING TERMINAL SITE PLAN IN MEXICO

The downstream power generation facilities will be run on five GE LM6000 PC turbines, complete with on-site pressurized fuel storage, at each site. In Mexico a lump sum turnkey EPC contractor for the power plants and receiving terminals, and will also provide ongoing operations and maintenance under an agreement with Local power Provider.



# RECEIVING TERMINAL CROSS SECTION

Below is a cross section of one of the receiving terminals which will be built, which would allow for direct unloading into the on-site, pressurized storage tanks.



# GENERAL ELECTRIC LM6000

Featherwood plans to acquire refurbished GE LM6000 PC turbines, which have already been identified in the market . The LM6000 is an aeroderivative, simple cycle high performance turbine that affords the Company with a number of advantages relative to alternative power generation technologies.

## LM6000 Overview



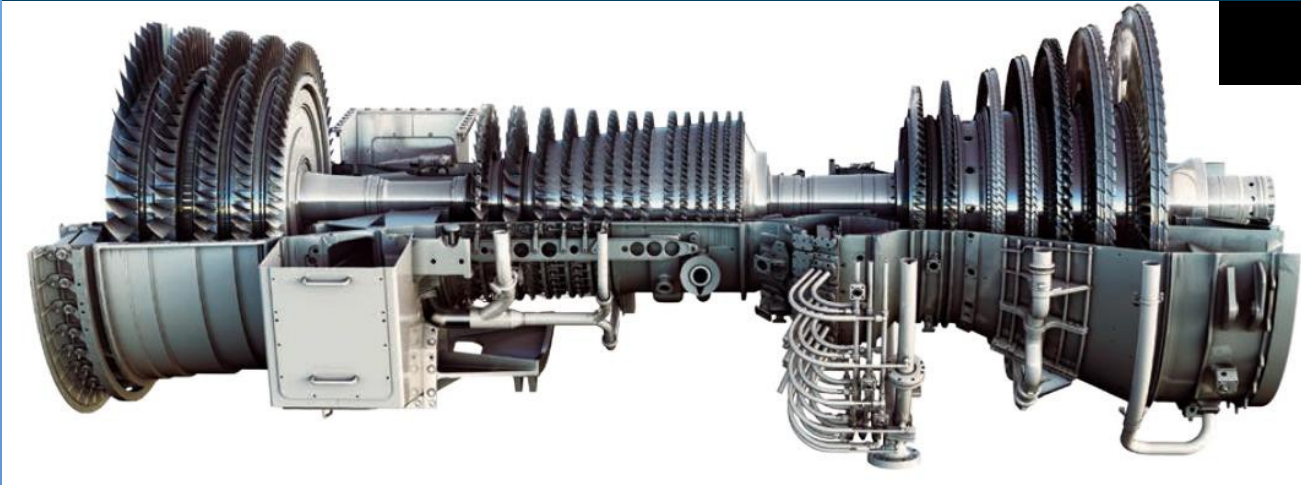
GE Power

GE's family of LM6000 PC aeroderivative turbines has more than 31 million operating hours and over 1,100 units have been shipped globally. The LM6000 design is proven, reliable, efficient and can be tailored to meet the needs of the application and operating requirements.

## LM6000 Advantages

- Equipment is modular and easy to install
- System is self-contained, with no external control installation necessary
- Simple cycle engine able to quickly reach full power
- Units have been in GE fleet for over 20 years and is a proven product

## LM6000 Turbine



# Featherwood Capital LLC

Over 70 Years of Project  
Experience

# Featherwood Capital

FWC  
Experience

- Featherwood Capital LLC (FWC) is a developer and consultant to the Liquefied Natural Gas and Natural Gas Liquids industries
- FWC develops LPG and LNG projects from inception through start-up
  - Upstream terminals
  - Midstream shipping
  - Downstream receiving terminals, fuel distribution and power plants
- The firm was formed in 2003 and has over its lifetime provided services to a wide variety of international customers
- Featherwood Capital LLC's primary services are:
  - Commercial Contract Facilitation
  - Project Development
  - Pipeline Infrastructure and market optimization



# Commercial Contracts

FWC  
Experience

- FWC has negotiated and drafted numerous commercial contracts:
  - LPG/LNG Purchase and Sale Agreements
  - Terminal Capacity and Use agreements
  - Pipeline Transportation Agreements
  - Vessel Charter Agreements
  - Corporate Structuring, and Structure Valuation
- From 2003 to 2009 FWC drafted and negotiated roughly 70% of the LNG supply agreements for North American receiving terminals and is currently drafting for contracts for a national oil company participating in a major LNG export project

# Commercial Contracts: Sale and Purchase Agreements

FWC  
Experience

- **Qatar Gas – QG2**
  - Principal commercial advisor: pricing provisions for North American delivery
  - Market analysis: market value, potential impact of imported LNG
- **Qatar Gas – QG3**
  - FWC drafted critical sections of the SPA
  - Principal negotiation advisor between QG3 and the developers of two North American LNG receiving terminals. FWC drafted critical sections of the SPA
- **Qatar Gas – QG4**
  - Key provisions of the SPA involving consistency with other agreements in the value chain
- **Ras Gas – RG3**
  - Drafting of market pricing provisions
  - The executed SPA market pricing formula was a direct result of FWC recommendation
- **Cove Point re-activation and SPA**

# Commercial Contracts: Terminal Capacity and Use Agreements (TCA's)

FWC  
Experience

- **Qatar Gas – QG2**
  - Reviewed and commented on the content, provisions and functionality of the TCA
- **Qatar Gas – QG3**
  - Market fundamentals analysis to assess the viability of TCA provisions
- **Qatar Gas – QG4**
  - Analysis of markets in the southeastern U.S. and the Caribbean shore of Mexico provided initial quantitative estimates for terminal use
- **Ras Gas – RG3, Neptune LNG, & Kitimat LNG**
  - Conducted gas pipeline market fundamentals analysis to assess viability of the TCA provisions
- **Bear Head LNG**
  - FWC staff drafted in it's entirety the Terminal Capacity and Use Agreement for Bear Head LNG

# Contract Negotiation – Vessel Time Charters

FWC  
Experience

- Qatar Gas - QG3: Charter and Sub-Charter Agreements
- Qatar Gas - QG4 : Charter and Sub-Charter Agreements
- Ras Gas - RG3 : Charter and Sub-Charter Agreements
- Cove Point - El Paso
- Neptune LNG
- Snohvit LNG
- Kitimat LNG

# Project Development – Gas Pipelines

FWC  
Experience

- **Port Dolphin**
  - Managed the ROW acquisition, geotechnical, and geophysical surveys, FERC filings, state and local permitting, basic engineering design and commercial negotiations with port authorities
- **Kitimat LNG**
  - Technical due diligence and pre-feasibility for ROW and development of pipeline infrastructure associated with development of the LNG facility
- **Bear Head LNG**
  - Lead negotiation team for contracting capacity on the Maritimes and Northeast Pipeline to transport volumes imported LNG volumes into the Eastern Canadian and North Eastern US markets
- **Neptune LNG**
  - Commercial due diligence for project pipeline access to interstate and intrastate pipeline markets and proposals for alternate pipeline routing



# Project Development – LNG Import

FWC  
Experience

- Bear Head LNG
  - Lead development team and equity stakeholder
  - Site successfully permitted
  - Sold site and development rights to Anadarko Petroleum
- Port Dolphin LNG
  - Site successfully permitted (USCG deep water port 2007-28532)
- Proprietary Projects
  - Southeastern United States
  - Northeastern United States

# Due Diligence – Pipeline Infrastructure and Markets

FWC  
Experience

- As the chief commercial advisor for more than 2/3 of supply contracts to North American LNG terminals, FWC has a detailed understanding of North American gas pipeline infrastructure and natural gas market dynamics associated with LNG development
- FWC Principals and partners have over 25 years of experience in the North American power and gas trading and marketing industries including all forms of physical and financial contracts, power and gas derivatives, and cross commodity derivative products.

# Due Diligence: Pipelines and Pipeline Markets for LNG Imports

FWC  
Experience

- **Qatar Gas – QG3**
  - FWC performed due diligence in relation to the selected receiving terminals in support of clients efforts to determine an acceptable market entry point that would meet the physical volumetric, market liquidity and market depth over the desired tenure structure requirements of the LNG imports
  - Assessment of the applicability of language in the Pipeline agreements to safeguard the interests of the client
- **Qatar Gas – QG4**
  - FWC was tasked with evaluating the net market value at the receiving terminal at the head of a to be developed 200 mi pipeline designed to interconnect the receiving facility with higher value interstate pipeline markets
- **Ras Gas – RG3**
  - FWC participated in PTA negotiations highly focused on incremental value of specific interstate pipeline markets accessed
  - FWC's market analysis was an integral part of RG3's internal estimates of interstate pipeline incremental values and market volume limitations

# Due Diligence: Pipelines and Pipeline Markets for LNG Exports

FWC  
Experience

- The following studies were conducted for third party clients seeking off-take from North American LNG Export Terminals
  - **Magnolia LNG:** Assessment of physical natural gas market access afforded by the Kinder Morgan Louisiana pipeline system and logistical implications of a multi-user access
  - **Sabine Pass, Cameron & Freeport:** Assessment of both the individual and aggregate impact of these export projects in interstate pipeline flows, and markets for pipeline capacity and gas basis
  - **Delfin LNG & VG Calcasieu Pass:** viability of supply through the projects proposed pipeline access
- Featherwood developed an integrated underground storage and natural gas basis market optimization model for LNG export projects with access to multiple interstate and intrastate gas markets that exhibit seasonal variation in relative pricing

# Project Knowledge

FWC  
Experience

- Through various technical and commercial feasibility and due diligence projects completed for our global clients; Featherwood Capital LLC has acquired an extensive knowledge of LNG projects
- LNG Import Projects
  - Gulf Coast – Corpus Christi, Sabine Pass, Lake Charles, Altamira, Cameron, Magnolia, Freeport
  - Florida – Port Dolphin, Bahamas Terminals
  - US Southeast – Elba Island, Confidential Site
  - US Mid-Atlantic – Cove Point, Crown Landing, Confidential Site
  - US Northeast – Neptune
  - US Northwest-Jordan Cove
  - Canadian Maritimes – Bear Head LNG, Canaport
  - North American West Coast – Oregon LNG, Baja Mexico
  - Spain and Portugal – All terminals
  - UK – Isle of Grain, Dragon, South Hook, Canatxx
  - Belgium – Zeebrugge
- Featherwood has experience analyzing recent LNG Liquefaction projects
  - Kitimat LNG
  - Snøhvit
  - Sabine Pass
  - Freeport
  - Maverick LNG
  - Jordan Cove
  - Bear Head
  - Magnolia LNG



# The Featherwood Team

FWC  
Experience

- **Walt T. – Lead Commercial Negotiator**
  - Lead contract negotiator
  - Lead project structuring
- **Jeff O. - Permitting & Power Supply**
  - Lead permitting process at the federal and state levels
  - Lead interface with pipeline and power companies and utilities
- **Gregg O.- Pipeline, Supply, Infrastructure & Markets**
  - Lead Pipeline and Infrastructure
  - Supply logistics and viability
  - Natural gas markets: viability of tenure structures, liquidity, pricing
- **John T. – Project Modeling and Analysis**
  - Lead market analysis and technical interfaces
  - Creation of project specific financial and commercial models
  - Lead technical – Project management
- **Brandon Farine – Infrastructure Analyst**