Texas LNG

Strategically located, realistically sized, and focused on low risk, low cost LNG production

Marine Technology Society, Houston Section
Monthly Leadership Luncheon
February 23, 2017
mtshouston.org

Guy Dayvault, CFA, Commercial Director for Texas LNG
gdayvault@txlng.com
mobile: 832 445 6910
Introduction

- Port of Brownsville, South Texas, USA
- Permit Capacity: 4 MTA
- 2 Phases: 2 MTA x 2
- Phase 1 (2 MTA permit capacity) Operation in 2021-2022
Smaller projects are more viable in current environment

- Phase 1 permit volume of 2 MTA is realistic. Total permit volume of 4 MTA is viable.
- Market conditions favour mid-scale projects
- Minimal environmental impact – electrical driven compressors minimize emissions
- Flexible, creative and experienced engineering team
- CAPEX per tonne targets significantly less than larger projects
- Less financing required

Smaller is Smarter

Realistic, Simple, & Easier to Reach FID
Texas LNG – Current Status of development

Engineering
- Completed Conceptual Design (2014), Pre-FEED (2015), and FEED (2016)
- Samsung Engineering as EPC contractor
- Over 200,000 engineering man-hours completed
- Leverage local labor and shipyard efficiencies
- Air Products C3MR liquefaction process – most proven global technology
- Honeywell gas pre-treatment, and automation & control technology

Regulatory
- Completed FERC Pre-filing process. All Resource Reports submitted in 2015
- FERC application completed in March 2016; approval expected early 2018
- FTA export licence granted. Non-FTA export licence will be granted after FERC approval

Marketing
- Four non-binding term sheets signed with state-owned as well as private entities for over 3 MTA
- Phase 1 oversubscribed; Phase 2 marketing underway
- Negotiations for definitive LTAs and SPAs ongoing
- Offering tolling or LNG sale (FOB and DES) structures indexed to low-cost US gas

Texas LNG is on course to take FID in 2018
Excerpt from FERC Resource Report 1
Port of Brownsville, Texas, provides the optimal location

- Available Land
- Significant waterfront close to open water
- Zoned for industrial development
- Close to Panama Canal
- Deepwater channel draft

Project Site (625 acres)
Samsung Engineering: Equity Owner and Responsible for pre-FID engineering.

- FEED Engineering completed in 1Q 2016
- First set of technical queries regarding formal FERC application completed on time
- Over 200,000 cumulative engineering man-hours completed by Samsung, Braemar and Texas LNG
- Samsung Engineering will execute the EPC phase on an lump-sum turnkey basis
- Modular construction – to minimize capex and optimize schedule
Proven and Reliable Technology: World’s Leading Liquefaction Technology – C3MR

- Leading supplier of natural gas liquefaction technology
- C3MR highest market share in global large and mid-scale LNG projects
- Used by Shell, ExxonMobil, and Qatar for major LNG projects
- Over 90 trains installed and operated globally - over 80% of global LNG capacity
Texas LNG’s capex costs will be among the lowest for new projects

Texas LNG will achieve low capex resulting from low complexity design and modular shipyard construction strategy

Source: Societe General - LNG rescue Europe - LNG GC London Sept 2015 and Company Estimates
## Benefits of Texas LNG vs. other US projects

<table>
<thead>
<tr>
<th>Liquefaction Technology</th>
<th>Other US LNG Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New technology risk and scale-up risk carry significant reliability and efficiency risks</td>
</tr>
<tr>
<td></td>
<td>Calculasieu channel, Sabine River, Freeport &amp; Corpus Christi will face maritime traffic challenges</td>
</tr>
<tr>
<td></td>
<td>Difficult for large volume projects to aggregate market demand</td>
</tr>
<tr>
<td></td>
<td>Bigger LNG plants have busier berths; late ship arrivals could result in cancelled cargoes and low value makeup rights</td>
</tr>
<tr>
<td></td>
<td>Reputational baggage &amp; conflicts of interest (matching price of other buyers) prevent best price to LNG Buyer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port Traffic</th>
<th>Texas LNG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>APCI liquefaction is highly reliable and proven in over 80% of global LNG facilities.</td>
</tr>
<tr>
<td></td>
<td>Brownsville has less maritime traffic than most other US Gulf ports</td>
</tr>
<tr>
<td></td>
<td>Will be able to take FID after selling just 2 MTA (Phase 1) to multiple smaller customers</td>
</tr>
<tr>
<td></td>
<td>Small plant means that loadings are less frequent providing operational flexibility</td>
</tr>
<tr>
<td></td>
<td>Texas LNG will serve end users with transparent pricing structure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LNG Output</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Berth Occupancy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Portfolio LNG Sellers</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tolling Model: Disaggregation of the LNG value chain provides Maximum Flexibility to Customers

- Texas LNG paid to process natural gas into LNG ➞ “manufacturer” of LNG
- Offtaker Customer pays Capacity Fee to reserve capacity of export facility
- Offtaker Customer pays pass through costs (power and fuel/losses)
- Offtaker Customer responsible for procuring and delivering feed gas to export facility and arranging LNG shipping. Texas LNG will facilitate introductions if required.
- Texas LNG can offer Sale Purchase Agreement on an FOB or DES basis if preferred
- No destination restrictions and flexible terms offered
Texas LNG’s tolling economics are competitive

Based on conservative estimates, inflation indexed
Delivered cost to Asia = $7.75 /MMBtu : Europe / Latin America = $6.75 /MMBtu
(assuming US Feed gas @ $3.00)
Capacity Fee may decrease if capex savings achieved

Texas LNG will continue to focus on cost reduction to further reduce tolling fees.

- Shipping estimate $1.50 (Asia), $0.50 (Europe).
- Texas LNG believes that energy retainage charge (majority for electricity consumed during liquefaction process) pass-through should be transparently disclosed.

Source: Company Estimates
US sourced LNG is less sensitive to commodity price rises

If oil price doubles, oil linked LNG increases 86%. If HH doubles, TX LNG price increases only 39%

Texas LNG DES price assuming $2.6 Capacity Fee + $0.25 feed gas pipeline tariff + $0.40 Power + Fuel/Losses + $1.5 shipping costs. Typical Australian based = Oil price x 12% + 1.0
SG2791 TEXAS LNG PROJECT
(Phase 1)

Activity Name

Texas LNG Project (Phase 1)

EPC
- EPC Notice To Proceed (NTP)
- Detailed Engineering
- Procurement

Construction
- Marine & Jetty
  - Site Fill
  - Piling Installation
  - MOF Construction
  - Jetty Construction
  - Placement Area Development
  - Dredging
  - Revetment
- LNG Tank Construction
  - Site Preparation
  - Upland Piling (All piling except Marine Works)
  - Piping Works (U/G and A/G)
  - Building Works
  - Steel Structural Works
  - Mechanical Works
  - Electrical Works
  - Instrument Works
  - Precommissioning
- Commissioning & Start up & Commencement of service
  - Commissioning
  - Upland Piling (All piling except Marine Works)
- Restoration of Temporary Workspace

Month

< == Month 0 thru 29 == >

Marine & Jetty work

Excerpt from FERC Resource Report 1
Manpower Mobilization at Site

Month 29

Appendix H-1
Phase I Estimated Manpower
Forward Plan

Engineering

1. PRE-FEED
   - COMPLETE DRAFT RESOURCE REPORTS
     FILE FERC APPLICATION

 Permitting

2. FERC PRE-FILING DOE FTA

 Commercial

3. OFFTAKER DISCUSSIONS

   1. SIGN TERM SHEET/MOU WITH CUSTOMERS
   2. DRAFT EIS
     FINAL EIS
     DOE NON-FTA
   3. BINDING TOLLING AGREEMENTS
      & FINANCE AGREEMENTS

PRE-FID DETAILED ENGINEERING / EPC CONTRACT

Current

FID* 2018

* Final Investment Decision

Ready for Startup 2021-2022

Current

1. Engineering
2. Permitting
3. Commercial

- Engineering
- Permitting
- Commercial

- FERC PRE-FILING DOE FTA
- COMPLETE DRAFT RESOURCE REPORTS
  FILE FERC APPLICATION
- FERC APPROVAL
- DRAFT EIS
  FINAL EIS
  DOE NON-FTA
- BINDING TOLLING AGREEMENTS
  & FINANCE AGREEMENTS

- PRE-FID DETAILED ENGINEERING / EPC CONTRACT
- Ready for Startup 2021-2022

* Final Investment Decision
Not everything is bigger in Texas!

Texas LNG Brownsville LLC
2800 N. Loop West Suite 910
Houston, TX 77092, USA
www.txlng.com
Disclaimer

Cautionary Statement:

The information and materials in this document are provided for informational purposes only and are subject to addition, deletion and modification without notice at the sole discretion of Texas LNG LLC and Texas LNG Brownsville LLC., and are not warranted or guaranteed to be correct, complete or up-to-date. The information and materials could include technical inaccuracies, and other errors and are provided “As Is” without any representation or warranties of any kind. Texas LNG LLC and Texas LNG Brownsville LLC will neither accept or assume any liability, direct, indirect, or consequential, of any kind arising from the use of information and materials contained in this document or linked website. This document is not to be considered or to be constituted as investment advice or as any type of offer, invitation, solicitation or recommendation in relation to the purchase or sale of any type of financial instruments or security in any jurisdiction.

Any forward looking statements contained in the information and materials in this document are only predictions and are subject to risks, uncertainties and assumptions, many of which are outside the control of Texas LNG LLC or Texas LNG Brownsville LLC or its officers or representatives. These risks, uncertainties and assumptions include commodity prices, currency fluctuations, economic and financial market conditions in various countries and regions, environmental risks and legislative, fiscal or regulatory developments, political risks, project delay or advancement, approvals and cost estimates. Actual values, results or events may be materially different to those expressed or implied in this document. Given these uncertainties, readers are cautioned not to place reliance on forward looking statements.

Readers are strongly advised to complete their own investigations to the accuracy and completeness of the contents of this or any other communication or document, written or oral, provided by or referred to by Texas LNG LLC or Texas LNG Brownsville LLC or its officers or representatives.