

October 01, 2018

## LNG Quarterly Update - 3Q2018

Stratas Advisors

### Liquefaction Facilities

The second wave of liquefaction investment in the United States is starting to become clearer, with some projects moving forward and others stalling. **Freeport LNG** has signed a deal with Sumitomo Corporation for 2.2 million tonnes of offtake over 20 years from the terminal's proposed train 4 expansion. Sumitomo already holds 2.2 million tonnes of long-term obligations from the facility, and the added commitment from a strong buyer gets Freeport more than halfway to the threshold of contract volumes needed to secure financing and make a final investment decision on train 4. Further up the Texas coastline, Woodside has chosen to exit Semptra's **Port Arthur LNG** project. Woodside cited very challenging economics, while Semptra put forth that Woodside intends to focus its capital elsewhere, namely on integrated E&P opportunities.

The remaining liquefaction proposals moving ahead in the U.S. will have to compete with a huge planned expansion at **Qatargas**. Qatar operates about 78 million tonnes of liquefaction capacity currently, and had planned to expand that with three new mega-trains to reach about 100 million tonnes of capacity. At the end of September, Qatar Petroleum announced that a fourth train is to be expected as well, pushing the grand total to 110 million tonnes. The proposed 8 million tonne trains will be among the largest in the world, rivaling the facility's most recently constructed trains of similar size.

Trinidad and Tobago will continue to see their **Atlantic LNG** facility operate, thanks to a gas supply deal with Venezuela. The facility will receive about 0.15 bcf/d of gas from Venezuela's Dragon Field, with the possibility of increasing that to up to 0.3 bcf/d in the future. This gas will help to offset the declining domestic production that has threatened the facility's future LNG output. Trinidad has also announced plans to expand domestic gas production to over 4.0 bcf/d by 2021 in an effort to continue to supply the country's petrochemical and LNG sectors for years to come.

#### FID Tracker

Project	Location	*Expected FID	*Expected Startup	Notes
LNG Canada	British Columbia, Canada	4Q2018	2024	Decision expected imminently
Driftwood LNG	Louisiana, USA	1H2019	2023	

\*Expected dates based on latest known company targets, no Stratas Advisors estimates

#### Status Tracker

Project	Location	New Status	Notes
Driftwood LNG	Louisiana, USA	Draft EIS received	
Port Arthur LNG	Texas, USA	Woodside exits as owner	Semptra moving forward with project

## Regasification Facilities

Focus remains strong on South Asia, where Mitsubishi has agreed to acquire a 25% stake in the **Summit LNG** terminal in Bangladesh. The FSRU site is currently under construction and is expected to be operational in 1Q2019, with an import capacity of nearly 3.5 million tonnes annually. Summit will hold the remaining 75% of the facility, which will regasify LNG for Petrobangla.

Qatar Petroleum, REW, and Uniper are in talks about cooperating on the execution of a German LNG terminal, which would be the country's first. Qatar Petroleum's participation in the project is expected to be limited to gas supply, rather than in ownership of the terminal.

In China, CNOOC inaugurated its 9<sup>th</sup> regas terminal in August when Shenzhen LNG received its first cargo. The 4.0 million tonnes per annum facility comes at a time when China has faced gas shortages during the winter months.

In India, Total has agreed to sell its stake in **Hazira LNG** to its partner Shell. Total holds a 26% stake in the 5.0 mtpa project, and as part of the asset sale has also agreed to terms with Shell for the delivery of 0.5 mtpa of LNG annually for five years through the facility.

As Egypt winds down the lone LNG imports into Africa at the moment, Ghana is looking to revive a project of its own. **Tema LNG** has signed a deal with the Chinese Jiangnan Shipyard for the supply of an FSRU to the project. The facility is decidedly smaller than most existing FSRUs, with a capacity of only 28,000 cubic meters. Proponent TGE Marine has been moving towards more small-scale solutions for supplying gas to power plants, and this project will continue to advance that cause. Tema is expected to source its LNG on a 12 year, 1.7 mtpa deal with Rosneft. Tema is expected to finally be operational in early 2020.

### FID Tracker

Project	Location	*Expected FID	*Expected Startup	Notes
Wilhelmshaven LNG	Germany	2019	2022	RWE & Uniper
Pichilingue LNG	Mexico	2019	2020	Would be Mexico's first FSRU

\*Expected dates based on latest known company targets, no Stratas Advisors estimates

### Status Tracker

Project	Location	Old Status	New Status	Notes
Summit LNG	Bangladesh	Ownership: Summit (100%)	Summit (75%), Mitsubishi (25%)	
Shenzhen LNG	China	Under Construction	Operational	

## Country and Commercial

Geopolitics continue to play a leading role in the LNG industry in Europe, where Germany has begun talks about building an LNG import terminal in order to give full outside access to its gas markets. With focus on the Nord Stream 2 pipeline from Russia to Germany that figures to make Germany and Europe more dependent on Russian gas while strategically cutting out other Eastern European nations, Western Europe and the U.S. have been looking for ways to reassert influence in the region. The U.S. Deputy Energy Secretary expects a terminal online in Germany within four years, but the market will not be without competition as Qatar has already begun talks with German participants to supply LNG in the future.

Panama and the U.S. are working together to encourage private investment in Latin America's LNG industry. The U.S. Energy Department is seeking to open up new markets for its LNG exports by increasing the number of terminals in the region while simultaneously supporting demand growth in the region's downstream sectors. Due to the distributed nature of demand in Latin America and the Caribbean, Panama's existing terminal figures to be a key piece as a distribution hub.

Thailand is also attempting to open up its LNG and gas markets, with the state-run Electricity Generating Authority of Thailand beginning its first search for LNG. Under the current structure, EGAT purchases gas from PTT, which imports and regasifies LNG at its wholly-owned facility. The liberalization of the gas market is both in response to and in support of a large expected growth rate in Thailand's LNG needs. With domestic gas supply declining and public opposition to coal-fired power, LNG appears to be the choice fuel of the future for the country.

#### Contract Updates

Buyer	Seller	Volume	Duration	Notes
CPC	Cheniere	2.0 mtpa	25 years	DES beginning 2021
PetroChina	Qatar Petroleum	3.4 mtpa	22 years	
Sumitomo	Freeport LNG	2.2 mtpa	20 years	Beginning 2023
Axpo Group	Goldboro LNG	2.5 mtpa	10 years	Non-binding term sheet