Report on the Optimizing LNG and LPG Trade in Asia Forum 2019, 27th Feb – 1st March 2019, Bangkok, Thailand

This Forum was held at the St Regis Hotel, Bangkok. The event comprised of two days forum i.e. 27 – 28th Feb, followed by site visit to PTTLNG's Map Ta Phut LNG Terminal on 1st March 2019. The forum was attended by delegates and exhibitors from overseas and locally. Separate parallel sessions were held for the LNG and LPG presentations.

Top: At the two days forum

Highlights of the LNG Presentations

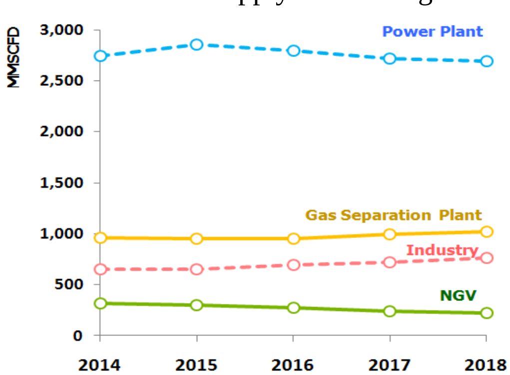
i. Although Renewable is the fastest growing source of energy, fossil fuels remain the large portion of energy supply with natural gas playing a major role. LNG trade is anticipated to grow 123 % between 2017 and 2040. In 2018, global LNG trade reached 293.1MT.

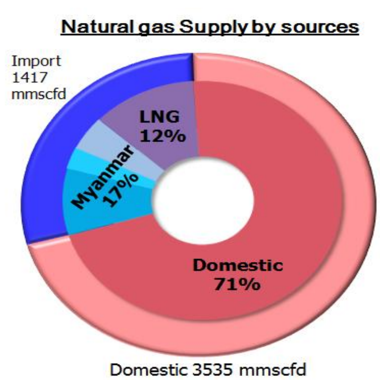
ii. Powerships, floating power plants, are increasingly being deployed worldwide, operating in Middle East, Asia, Africa, Caribbean and Mediterranean. Powerships are either self-propelled or barge mounted and operate on LNG and Heavy Fuel Oil. They can be delivered in 3 – 6 months ready to generate electricity at competitive all-in cost of electricity.

Thailand

i. Natural gas is the major source of primary energy consumption in Thailand. In 2017, natural gas consumption was 42%, followed by oil at 39%, coal/lignite at 17 % and hydro at 2%.

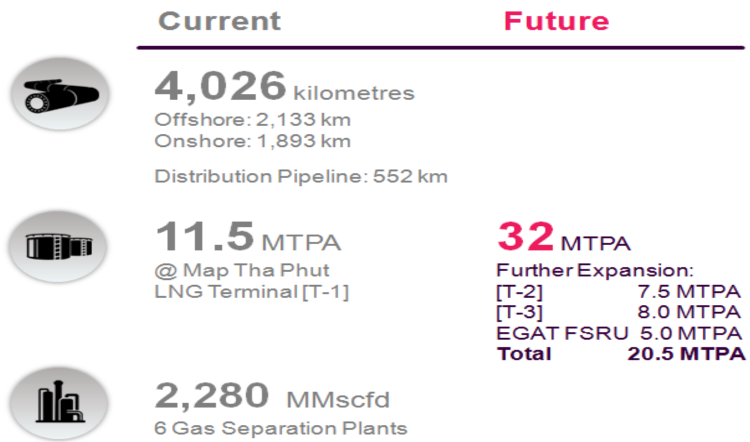
ii. Demand and supply of natural gas continue to grow in all sectors except for NGV.





From presentation by Ministry of Energy, Thailand

iii. Thailand gas industry depends on 3 sources i.e. supply from Gulf of Thailand (GoT), supply from Myanmar, and LNG. Supply through LNG is increasing as supply from GoT declines.



iv. Thailand's current and future gas infrastructure and supply.

From presentation by PTT

Note:

i. T2 to be operational by 2022

iii. EGAT FSRU operational by 2023

v. Thailand target to be a regional LNG hub since the LNG terminals are strategically located. The LNG Terminal Operator (PTTLNG) is preparing infrastructure and price structure besides the already available Third Party Access ((TPA).

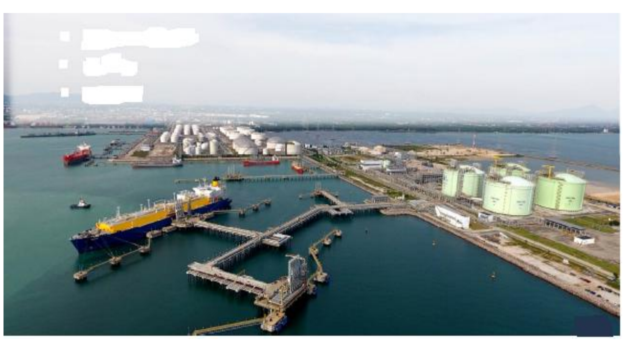
vi. EGAT – The Electricity Generating Authority of Thailand, reported that the fuel mix for generation of electricity in 2018 was: 57 % Natural Gas; 11 % Imported Coal; 6 % Lignite; 9 % Renewable; 4 % Hydropower; 0.05% Heavy Oil; 0.05 $ Diesel; and 13 % imported electricity from Laos and Malaysia.

vii. EGAT is the first company in Thailand to utilize TPA (first LNG cargo in 2019), and the first power utility in South East Asia to enter into Gas Business through TPA. EGAT is also second LNG importer in Thailand and the first national power utility to enter the international gas business.

Site Visit to Map Ta Phut LNG Terminal

On Day 3 of the forum i.e. on 1st March 2019, registered delegates were taken by bas from Bangkok for a tour of PTT LNG Company Ltd (PTTLNG)'s LNG Terminal at Map Ta Phut in Rayong, about 220 km southeast of Bangkok.

PTTLNG was established on August 30, 2004 as a wholly owned subsidiary of PTT Plc, to build and operate the first LNG Receiving Terminal in South East Asia.



Data	Terminal 1 Map Ta Phut	Terminal 2 (Phase 1) Nong Fab
Jetty	2	1
Vessel Size (m3)	125,000 – 264,000	125,000 – 266,000
LNG Tank (m3)	160,000 x 4	250,000 x 2
Capacity (million Ton / year)	Currently 10 million Tons and will reach 11.5 millions tons in 2019	7.5
Truck Loading (ton per day)	500	-
Commercial Operation	2011	2022

Source: PTTLNG Leaflet, 1st March 2019

Reported by: Lee Giok Seng, Executive Director, ANGVA, 8th March 2019