Country Updates And Developments in Gas Sector

Roundtable Discussion input by Thailand

Energy Regulatory Commission

ERRA Gaseous Fuels Markets and Economic Regulation Committee (GF COM) Meeting

October 28-29, 2024 | 3rd Meeting | Physical in Tirana, Albania

Recent Gas Sector Updates

- Overview of natural gas supply and demand
- Natural Gas supply and demand 2024 – 2037 (Gas Plan 2024)
- Natural Gas industry structure to enhance competition, phase 2
- Revised Natural Gas Price Structure according to Competition Policy, Phase 2
- Current Natural Gas Industry structure in Thailand

Overview of natural gas supply and demand 6M/2024

PTT's Gas Transmission Pipeline: 4,570 km (as of Dec 2023)
On-shore: 2,437 km; Off-shore: 2,133 km

Gas Separation Plants (GSPs): 6 Units
Total processing capacity: 2,870 MMSCFD*

Natural Gas Supply (MMSCFD)				(Source: EPPO)	
	2022	2023	2024 (6M)	% Share 6M2024	% Growth 6M/24 vs 6M/23
Domestic Production	2,648	2,653	2,927	59	▲ 13.3
Import (Myanmar 26%+ LNG 74%)	1,626	2,010	2,034	41	▼ 2.0
TOTAL	**4,274**	**4,664**	**4,961**	**100**	▲ **6.5**

Natural Gas Demand (MMSCFD)				(Source: EPPO)	
	2022	2023	2024 (6M)	% Share 6M2024	% Growth 6M/24 vs 6M/23
Power Generation	2,437	2,731	2,899	65	▲ 5.0
GSP	780	783	822	18	▲ 9.6
Industry	804	777	667	15	▼ 13.9
Transport (NGV or CNG)	122	119	104	2	▼ 16.4
TOTAL	**4,143**	**4,410**	**4,492**	**100**	▲ **1.9**

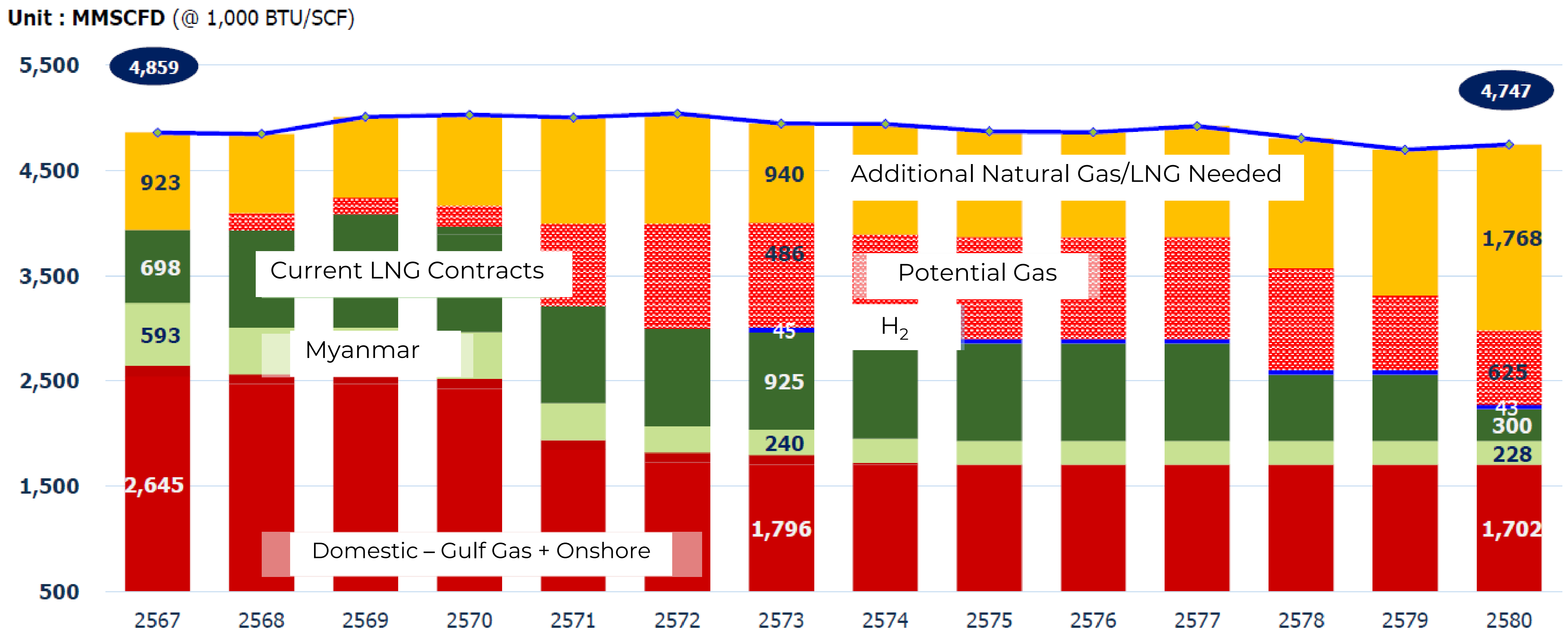
*MMSCFD = Million Cubic Feet @ Heating Value 1,000 Btu/ft^3

Source: PTT

6M/2024

- **Domestic Production** increased by 13.3% due to increase in production from major domestic gas fields, e.g., Erawan, Bongkot & Tantawan.
- **Import** from Myanmar & LNG import decreased by 2%, compared with the same period in previous year.
- **Consumption** in the Power Sector (major consumer) & GSP increased in line with the economic recovery, While consumption in the Industry and Transport decreased;
  however, the overall consumption still increased by 1.9%.

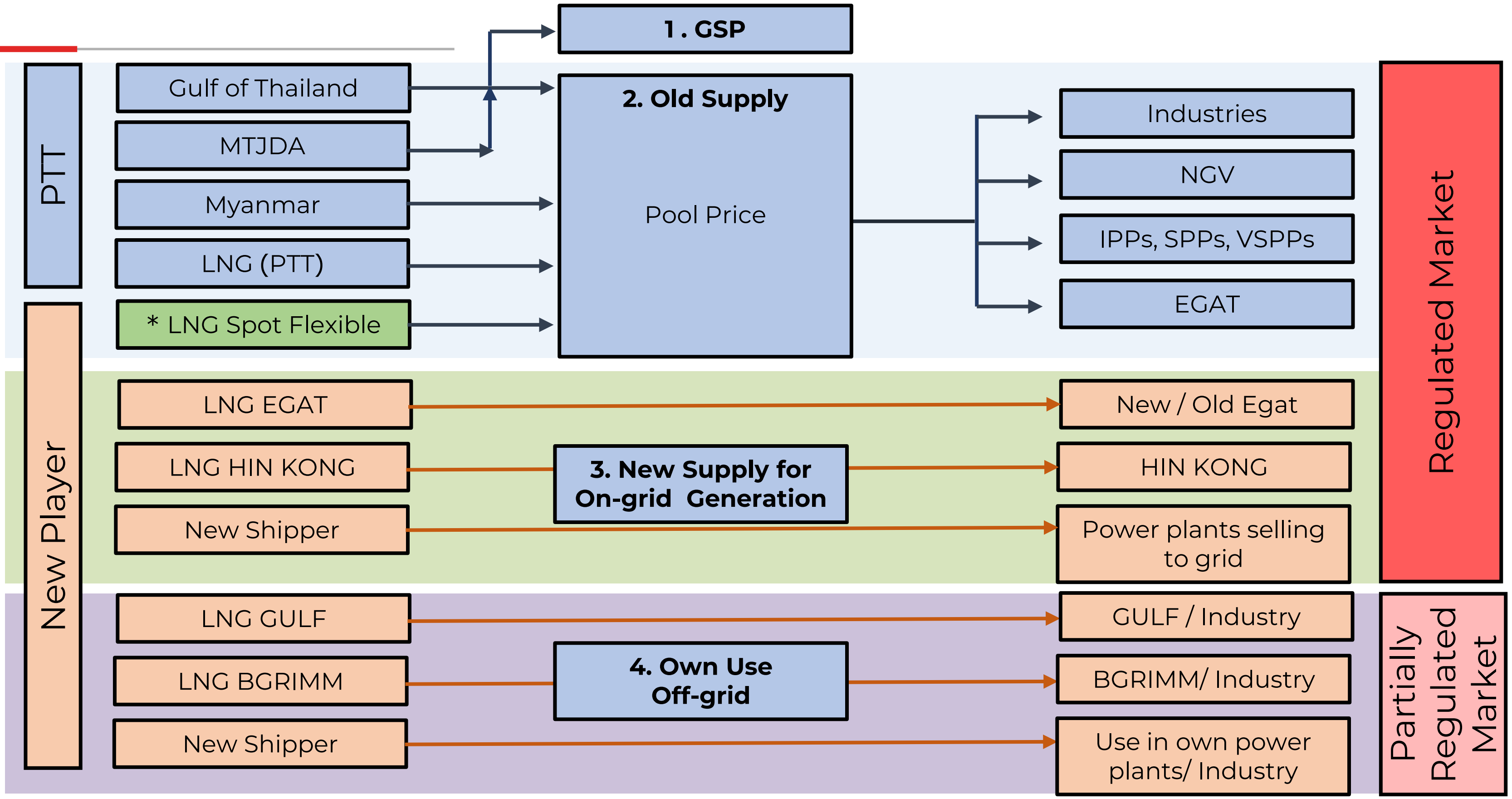
Natural Gas supply and demand 2024 – 2037 (Gas Plan 2024)



Source: EPPO

Natural Gas industry structure to enhance competition, phase 2

NEPC Approval: 1 Apr 2021



1

Old demand under existing contracts (Pool Price), applying existing pass-through terms and terms for LNG Spot flexible

2

New demand for On-grid generation/ new contracts (LNG Benchmark)

3

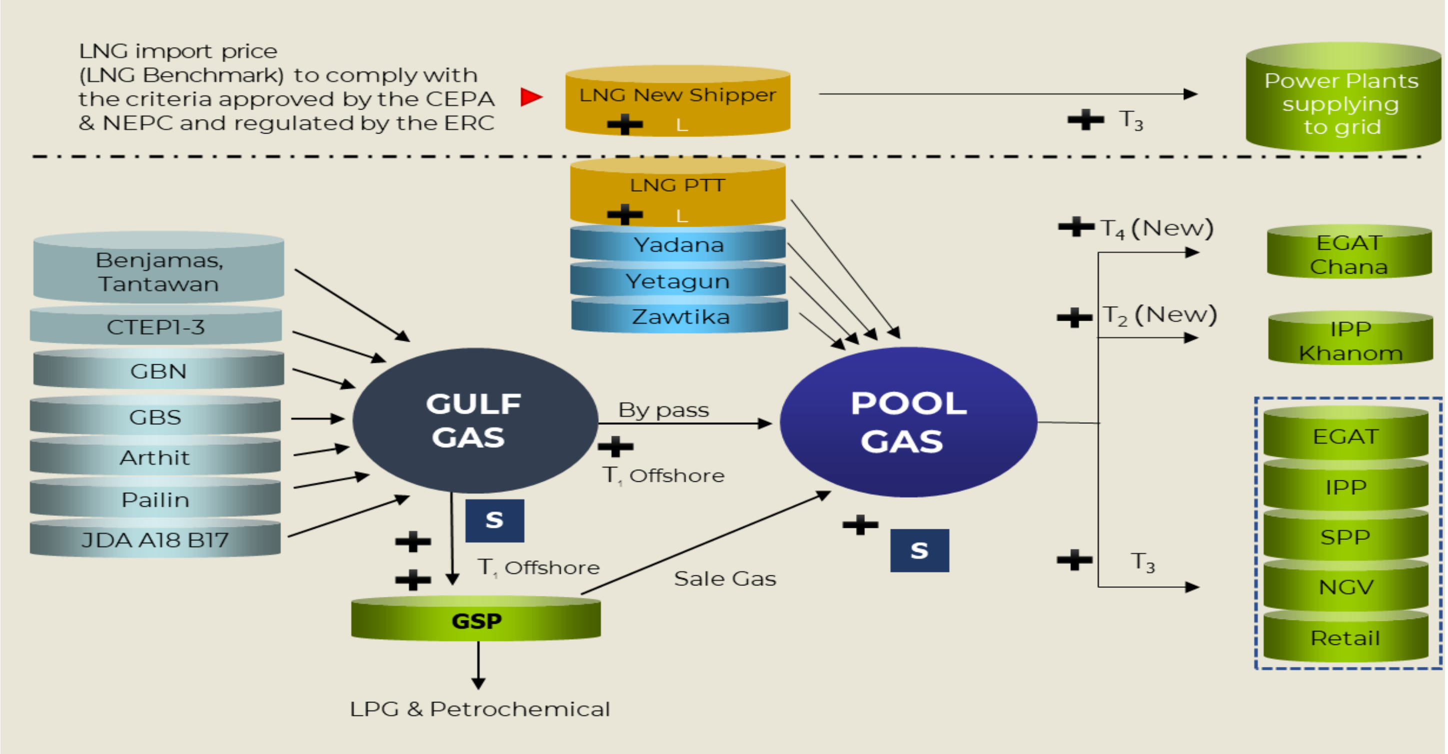
New demand
for use in one's own power plants - Off-grid

* LNG Spot Flexible—both quantity and price terms under ERC regulation

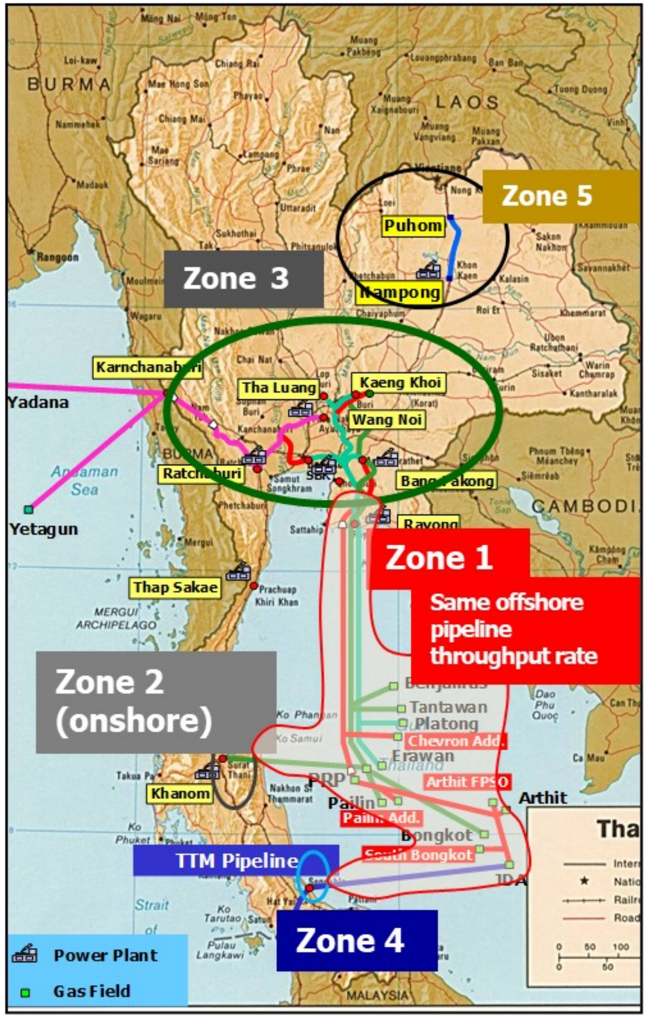
- Reasons for revising the NG price structure:
  1. Change from ONE gas supplier (PTT) to several Shippers.
  2. Increasing LNG import.

- Principles for revising the price structure:
  1. Shippers must pay for the use of Facilities to reflect the source of gas supply.
  2. Users of Gulf Gas pay the same rate for offshore transmission pipelines, but different rates for onshore transmission pipelines, depending on project locations.

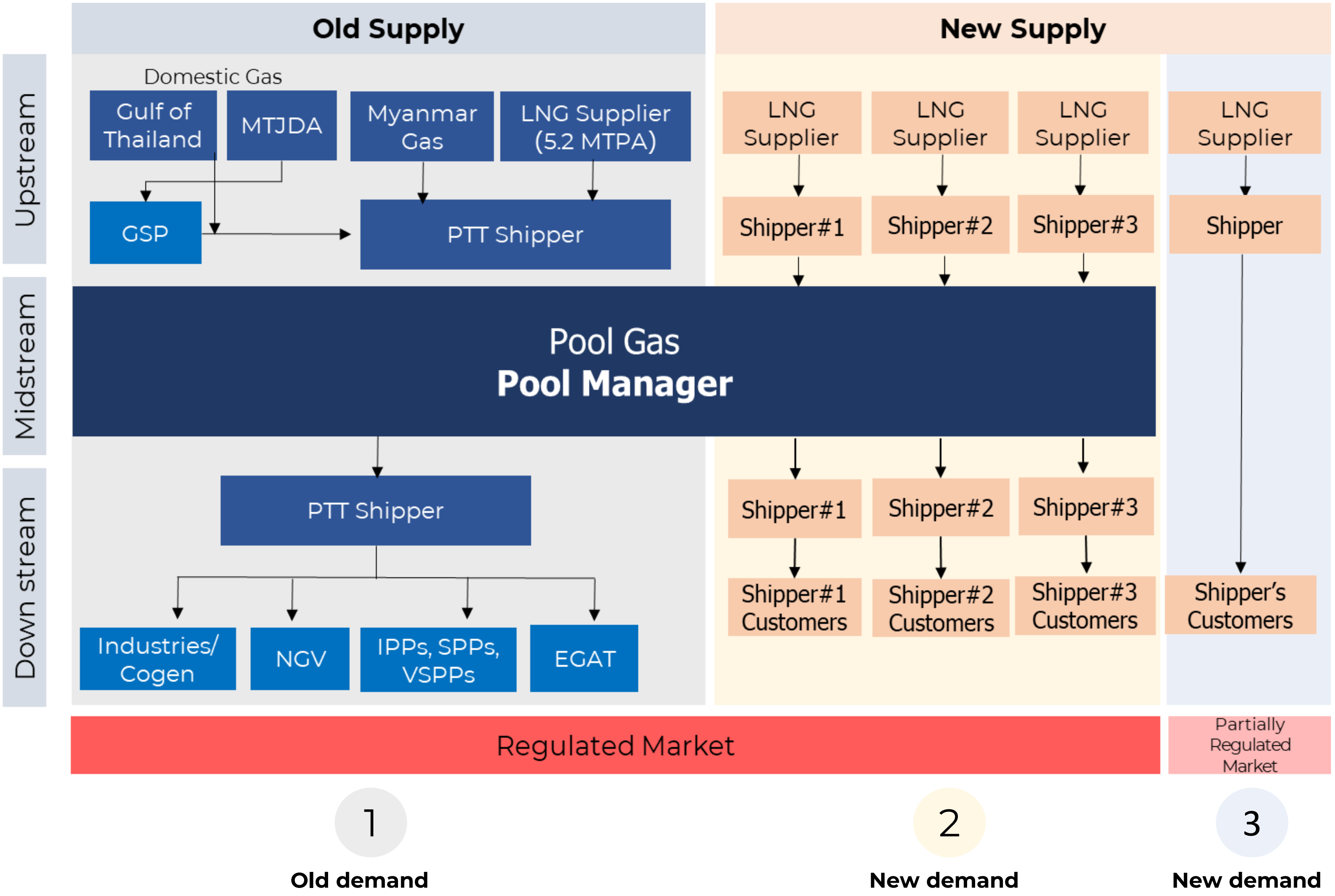
Revised NG Price Structure according to Competition Policy, Phase 2



1. **NG Price (GSP)** = Gas Price (Gulf Gas) + Supply & Wholesale Cost (S) + Throughput Cost (T) (Offshore - Zone1)
2. **NG Price (Old Supply)** = Gulf Gas + Offshore Pipeline Tariff + LNG + Myanmar Gas (Pool Gas) + LNG Terminal Tariff (in Pool) + Supply & Wholesale Cost + Throughput Cost (Onshore — Zone 2-4)
3. **NG Price (New Supply)** = LNG Price (Shipper) + LNG Terminal Tariff + Supply & Wholesale Cost + Throughput Cost (Onshore—Zone 3)



Current Natural Gas Industry structure in Thailand



Upstream

- PTT Shipper manages the Old Supply.
- Shippers can procure and import LNG.
- ERC regulates and set criteria to ensure adequate LNG procurement to meet the domestic demand.
- PTT operates the separation of Gulf gas .

Midstream

- Shippers in the Regulated Market sell gas/LNG to the Pool Manager to be part of Pool Gas and buy gas from the Pool Gas at the amount equal to their procurement.
- PTT functions as the Pool Manager, ring-fenced from PTT.
- ERC regulates the GSA execution between Shippers and the Pool Manager.
- TPA must be granted to Terminal & Gas Transmission Pipeline System.
- ERC can have terms & conditions of Terminal & Gas Transmission Pipeline System revised.
- Establish TSO as a new juristic person by 2023.

Downstream

- Shippers in the Regulated Market buy gas from the Pool Gas at the amount equal to their procurement.
- Shippers in the Partially Regulated Market can sell LNG directly to their customers.
- Gas users that are power plants of EGAT, IPPs, SPPs and VSPPs, including NGV, are classified under the Regulated Market. Others can opt to be under the Regulated or Partially Regulated Market.

Recent developments in Gas Sector

New Shippers in Gas Market

- In the past, there was only ONE gas importer , that is, PTT;
  Now there are several New Shippers : Egat, HKH and BGRIMM
- Enhance competition in the NG industry

The afford to regulate LNG importing price to the power sector

- In order to reflecting the competitive market price.
- Seek the better ways to ensure LNG procurement in reliable and sufficient

Revise TSO Code for Transmission Systems and TPA Code for LNG Terminal

- To promote competition in the NG industry
- To opened opportunities for other natural gas importers/ Shippers to compete on a level playing field

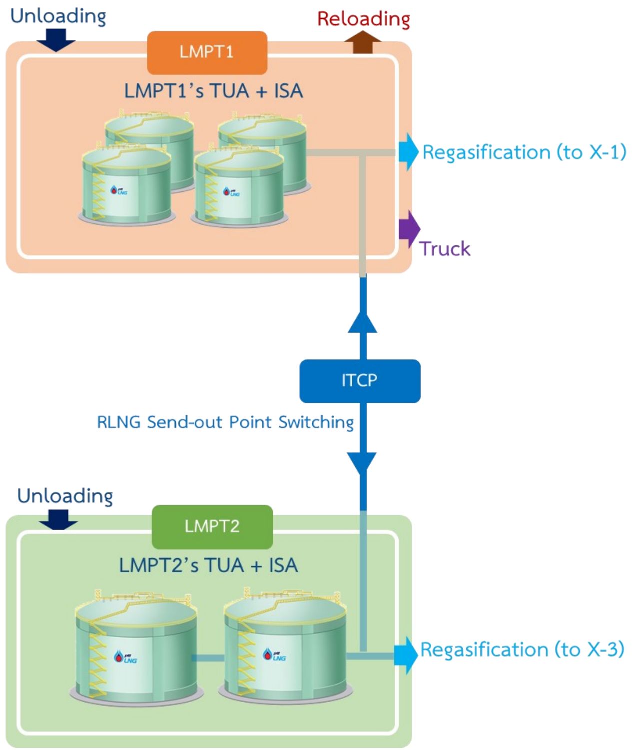
Develop GSA standard between shipper and Gas user

Recent developments in Gas Sector (Cont.)

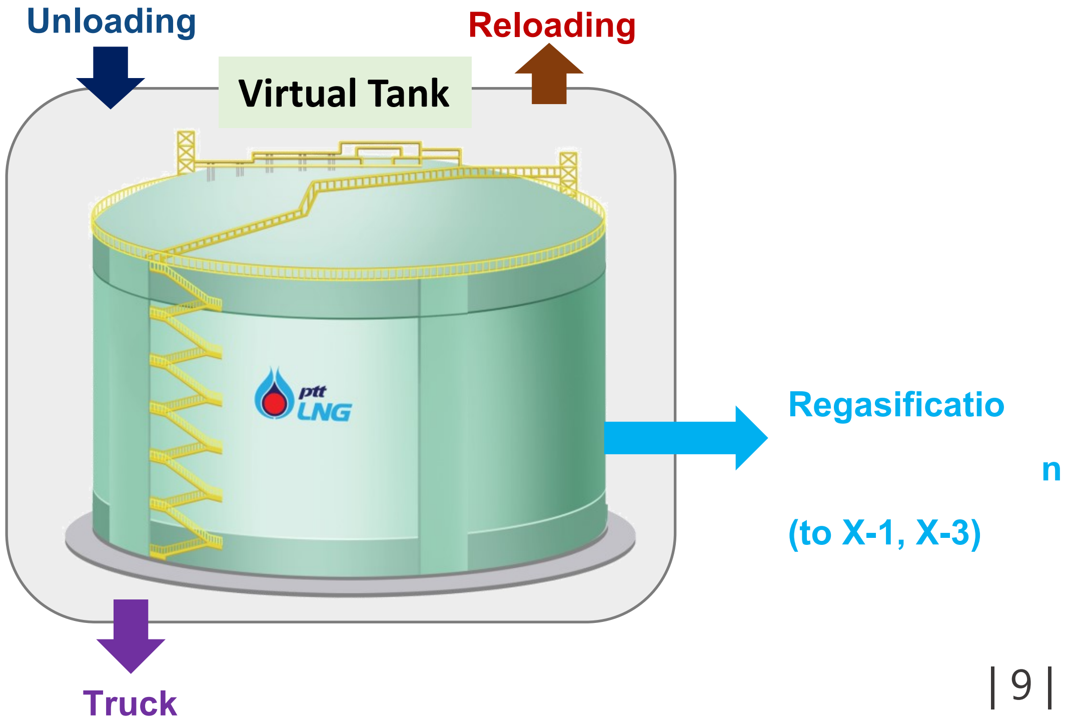
Virtual LNG Inventory

- Increase Flexibility for Shippers to unload LNG Cargo at any LNG Terminal
- Shippers can use every service such as Regasification/ Reloading / Truck Loading without location restrictions

Current Situation



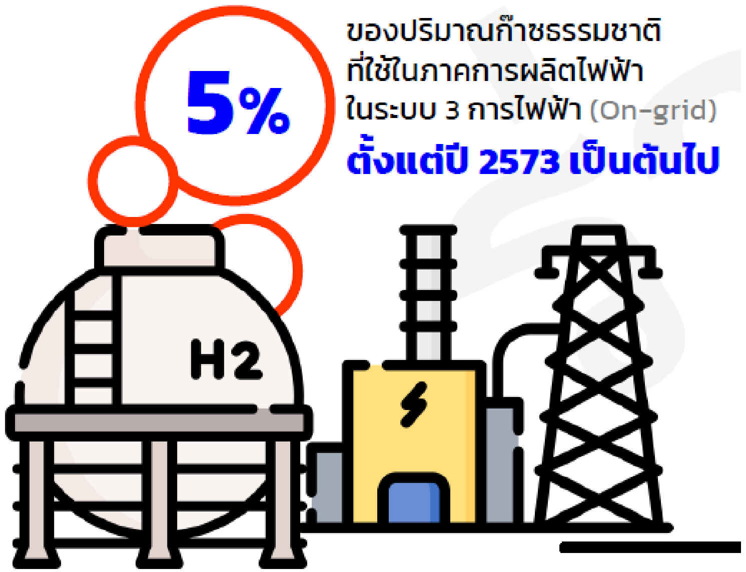
Virtual LNG Storage



Planned developments in Gas Sector

Policy Direction of Hydrogen Utilization

- Use Hydrogen 5% by volume in Natural Gas pipeline
- To be able to prepare for the energy transition and reduce the impact on expenses

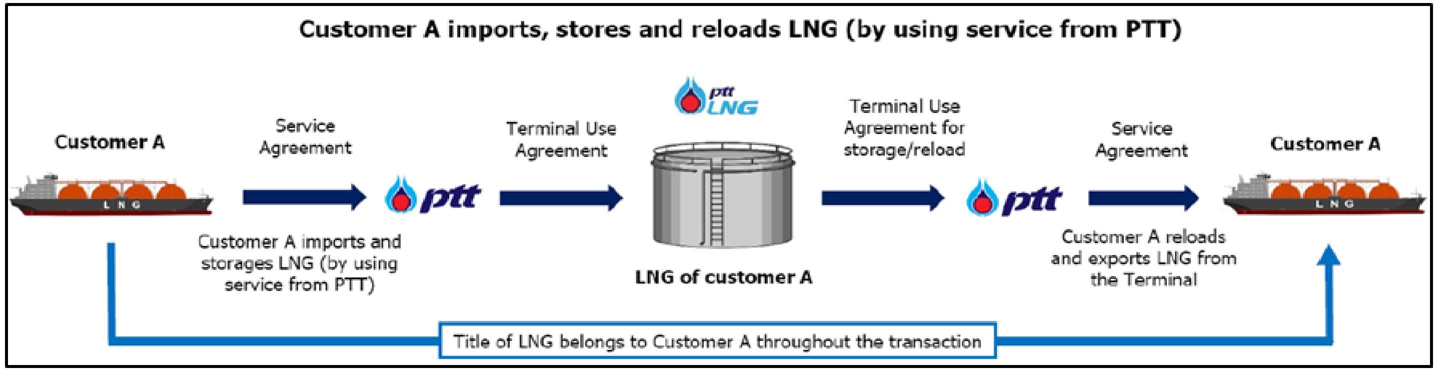


Target: Go Green — to achieve Carbon Neutrality by 2050 & Net-Zero Emissions by 2065;

Enhance competitiveness and get prepared for investment in low-carbon economy & society

Planned developments in Gas Sector

Regional LNG Hub



Small Scale-Break Bulk	Exporting LNG from the terminal by smaller ships to the country that has low demand of LNG e.g. Cambodia ,Vietnam ,Philippines
LNG Reloading	• Reloading LNG from the terminal by standard ships to the country that has high demand of LNG e.g. China South Korea Japan
ISO –Tank	• Reloading LNG from the terminal by Capsule LNG Container through Truck Loading service and exporting to all customer

Current Statas

- Have an ultimate plan to create environment at Map ta put Terminal to be a regional hub
- Besides, we also have a concept plans to Add - on LNG strategic reserve

THANK YOU
FOR YOUR ATTENTION!

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