กระทรวงพลังงาน
MINISTRY OF ENERGY

"Update on Oil and Gas Security in Thailand"

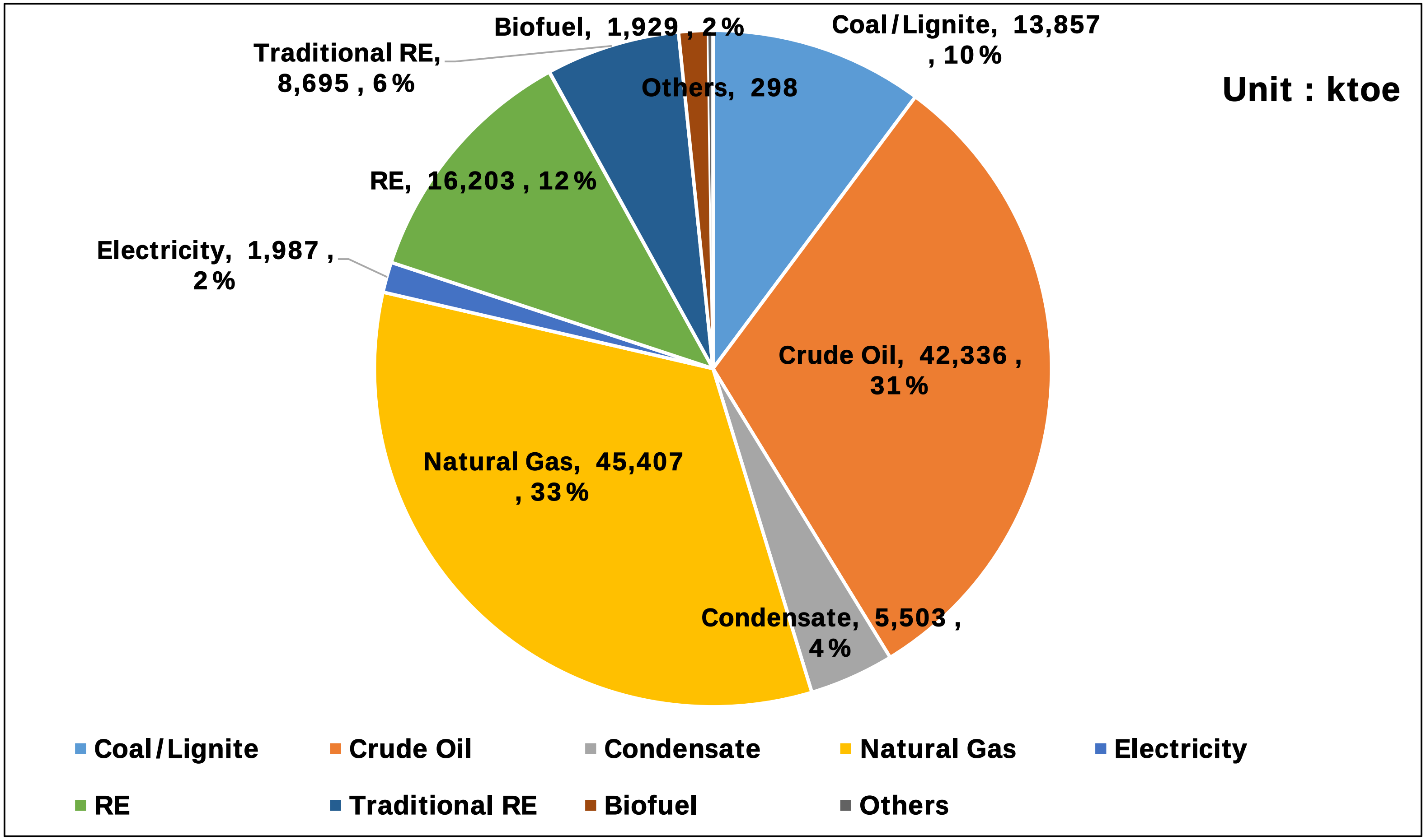
By

Dr. Twarath Sutabutr
Inspector General, Ministry of Energy of Thailand

The 5th APEC Oil and Gas Security Network Forum
10th April 2019, Sendai, Japan

Total Primary Energy Supply

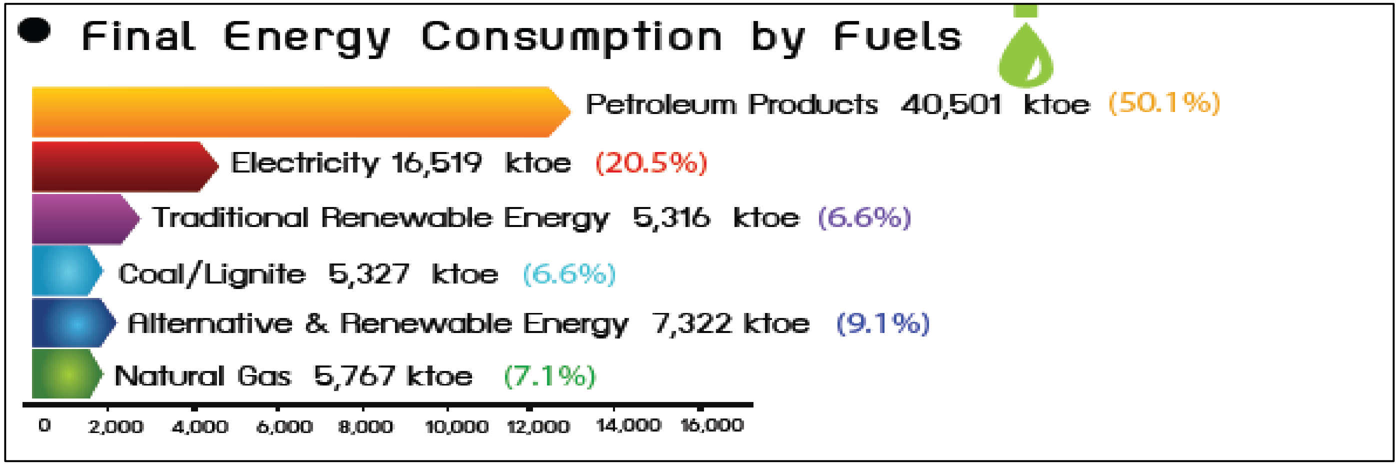
In 2017, Total Primary Energy Supply by Fuels = 136,215 ktoe

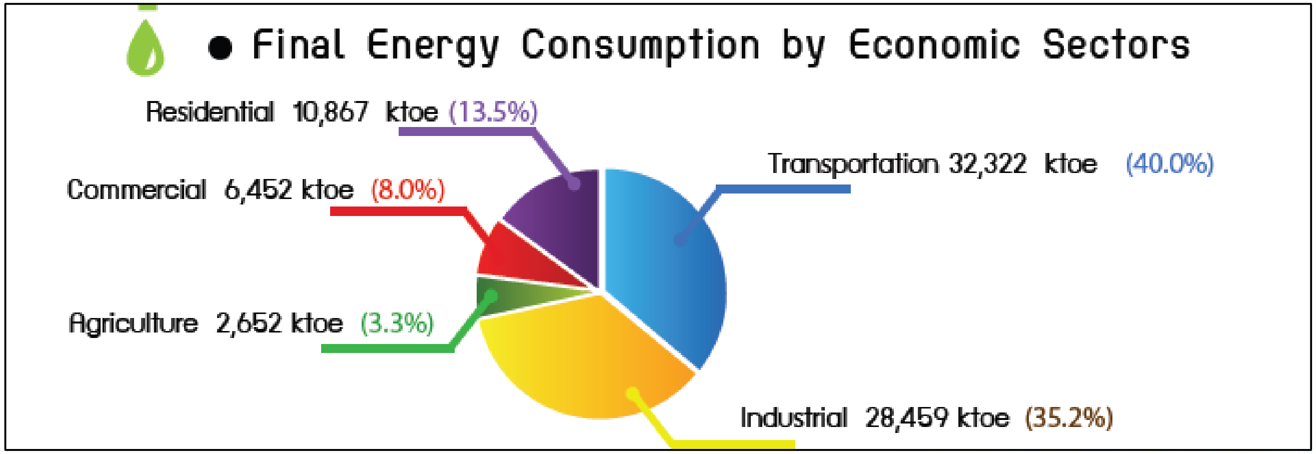


Source: Energy Balance of Thailand 2017

Final Energy Consumption

In 2017, Final Energy Consumption
= 80,752 ktoe





Oil Situation in 2019

Crude Oil Supply

1,189 thousand Barrel/day ↑ **10.1%**

(2018 – 2019)

Domestic

10%

117 thousand Barrel/day

↓ 16.4% *

(2018 – 2019)

Import

90%

1,072 thousand Barrel/day

↑ 2.8% *

(2018 – 2019)

Middle East 63%

Far East 9%

Other 18%

Domestic Supply has declined whereas Imported Crude Oil has increased

Condensate

91 thousand Barrel/day

↓ 11.9% *

(2018 – 2019)

Refinery Capacity
1,235
thousand Barrel/day

Refinery Production
1,150
thousand Barrel/day

Refinery Utilization Rate

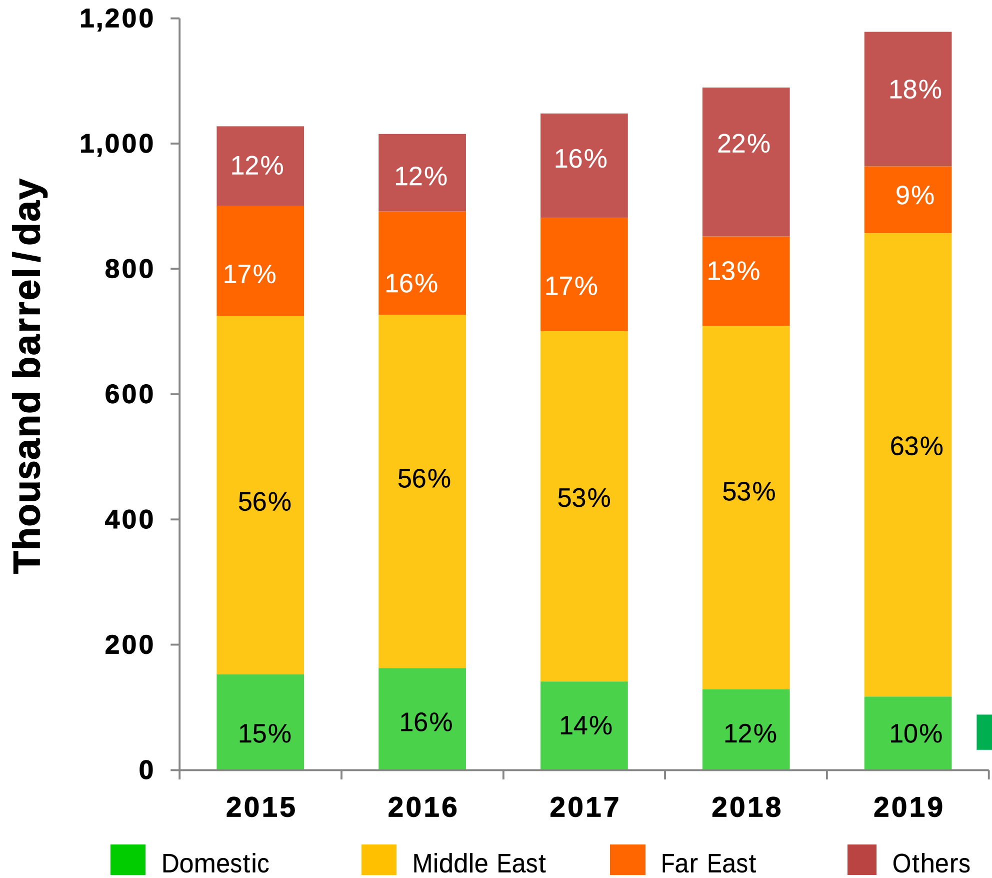
93%

**Remark* : Year on Year basis

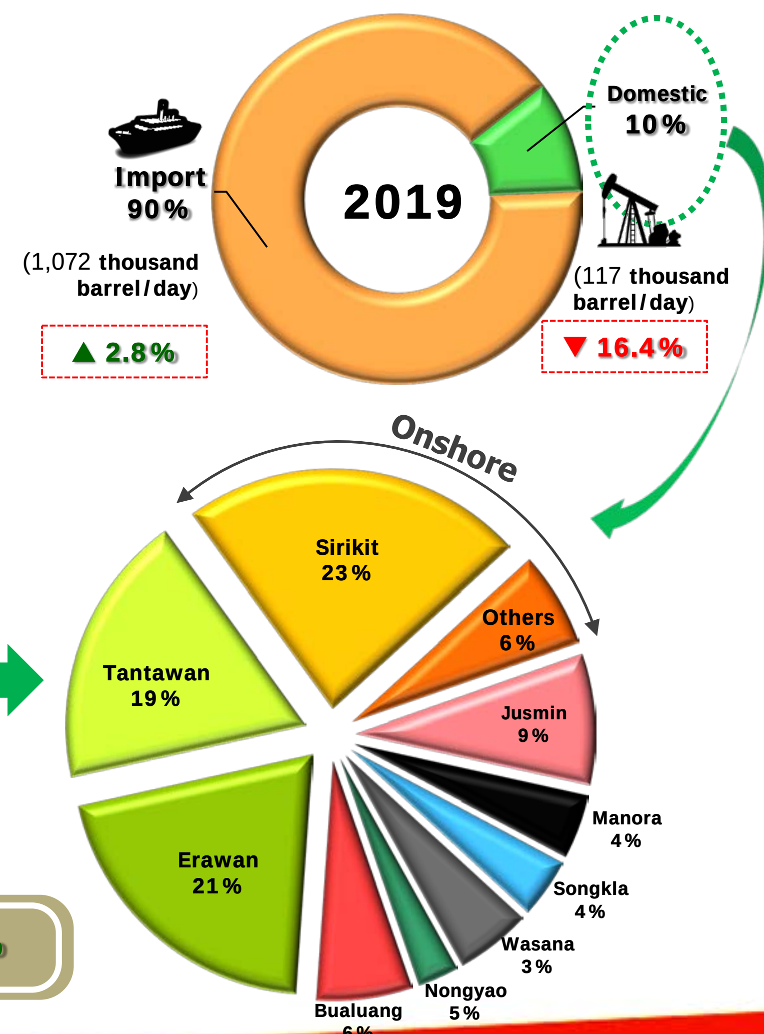
Jan 2019
Source: EPPO

กระทรวงพลังงาน
MINISTRY OF ENERGY

Oil Supply Situation



Crude Oil Supply



Crude Oil Supply 1,189 thousand barrel/day ▲ 10.1%

Source : EPPO, Jan 2019

Natural Gas Situation in 2019

Gas Supply

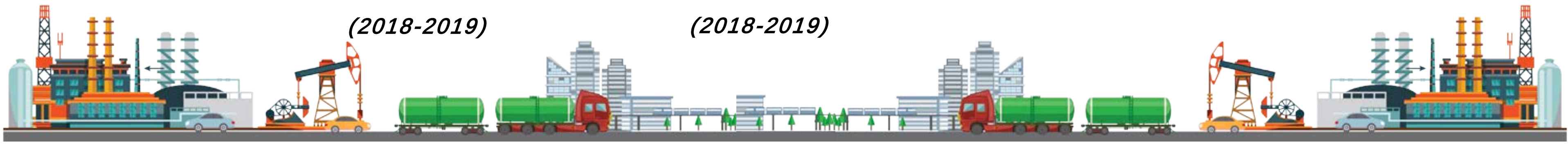
4,666 MMSCFD ▼ **3.8 %**

Domestic	Import
70 %	**30 %**
3,275 MMSCFD	1,391 MMSCFD
▼ 11.5 % (2018-2019)	▲ 20.9 % (2018-2019)

Myanmar 14 %
- Yadana 8%
- Yetakun 3%
- Zawtika 3%

LNG 16 %

Gas supply decrease due to the decline of domestic gas resources ex. Bongkoch, Tantawan, Pailin etc.



Gas Demand

4,301 MMSCFD ▼ **3.2 %**

(2018-2019)

1 unit = 400 MMSCFD

NGV	5 %
Industry	18 %
Refinery	20 %
Electricity	57 %

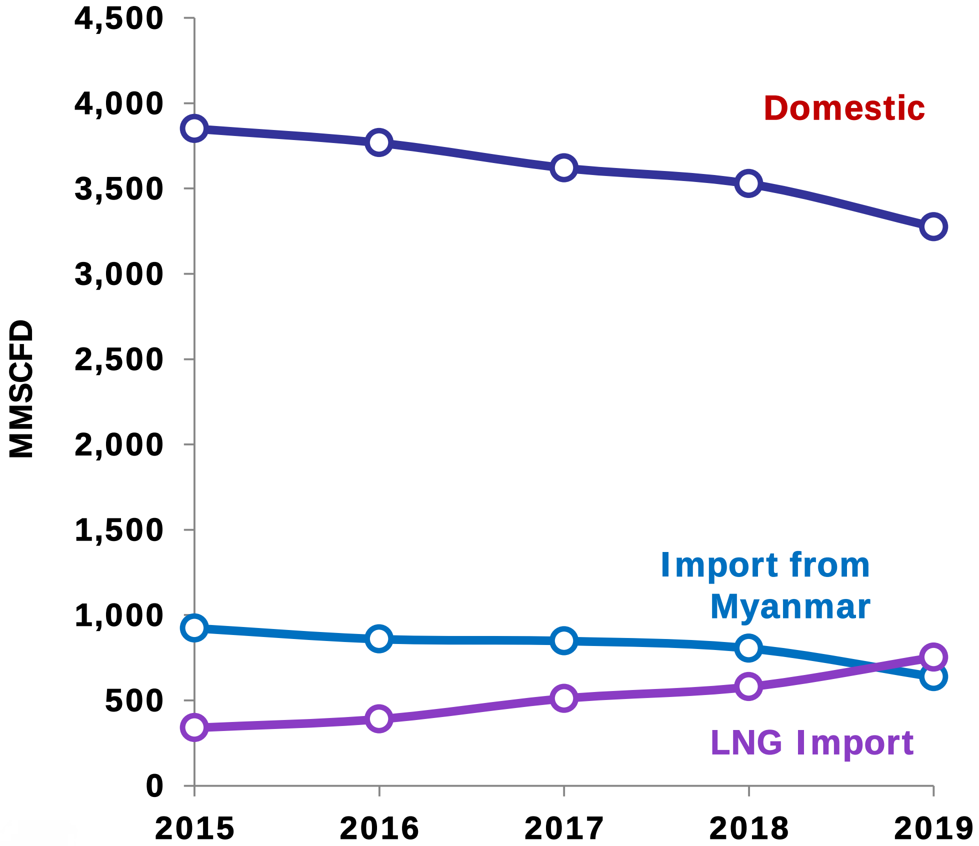
Overall gas demand had decreased.

Whereas gas demand increase in electricity and industrial sector.

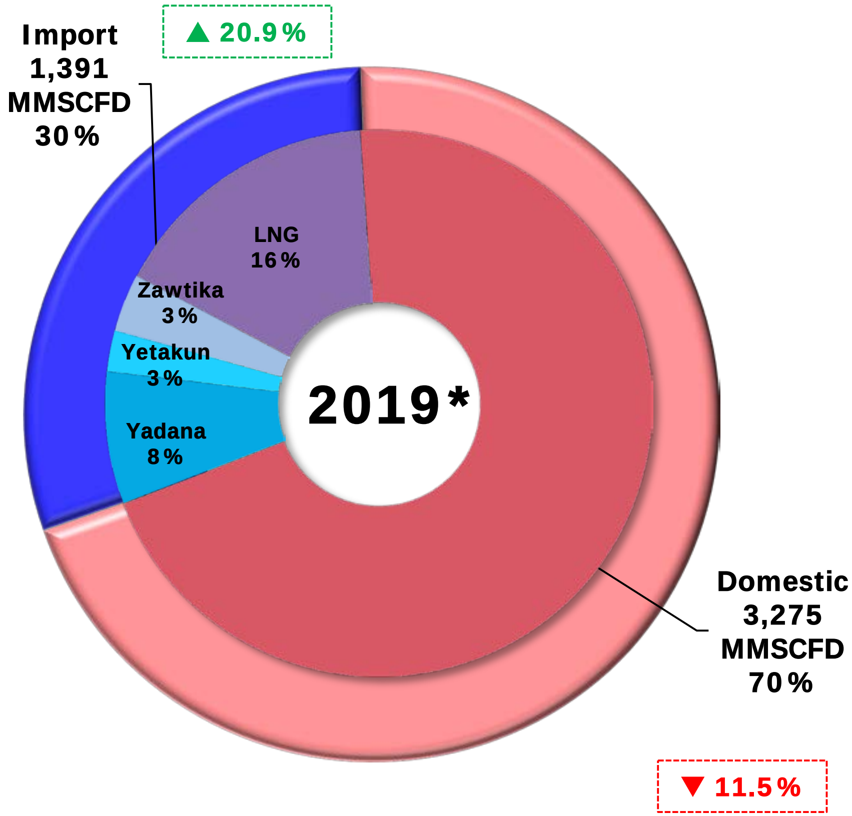
**Remark : Year on Year basis*

Jan 2019
Source: EPPO

Natural Gas Supply Situation



Gas Supply Ratio



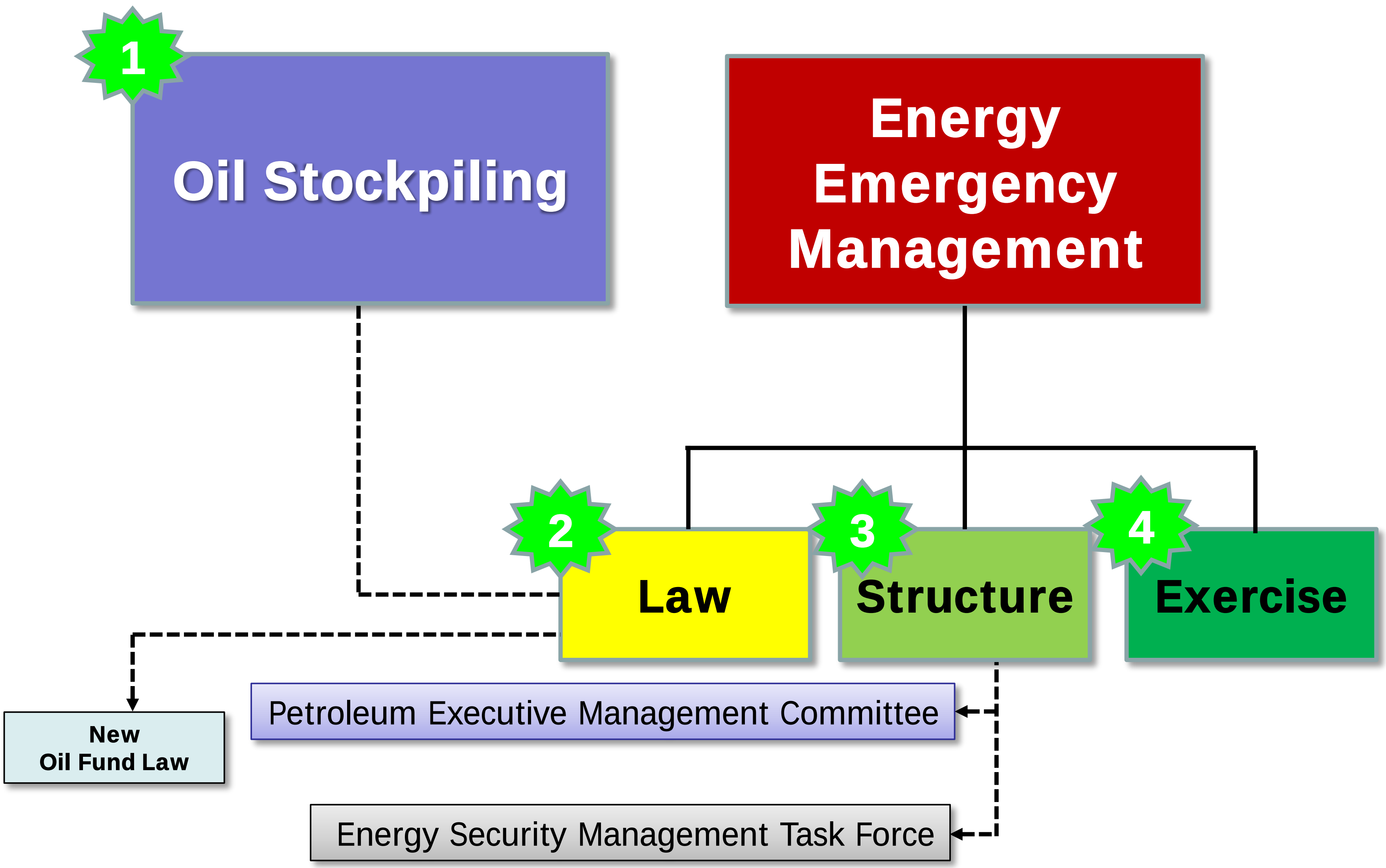
Total 4,666 MMSCFD

Gas Supply 3.8%

กระทรวงพลังงาน
MINISTRY OF ENERGY

Source : EPPO, Jan 2019

Thailand’s Energy Security Management



Thailand: Oil Stockpiling System

Current System

Legal Framework - The Fuel Trade Act., B.E.2543 (Year 2000)
- Department of Energy Business Announcement Re: Oil Stockpiling B.E.2558 (Year 2015)

Type: Private Sector Stockpiling

Crude Oil + Refined Products

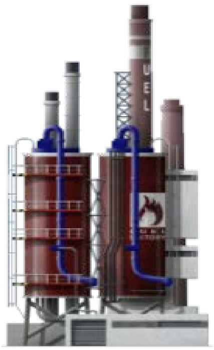
Crude Oil 6 %	Refined 1 %
21.5 days	+ 3.5 days

Total 25 days

➢ The current LPG legal reserve is at 1% of domestic demand

Thailand: Oil Stockpiling System

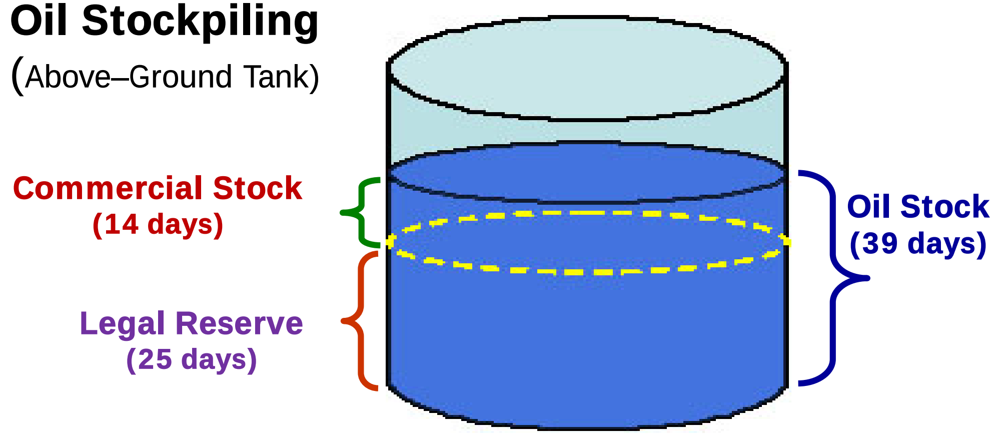
Total Oil Stock
(39 days)



= **Legal Reserve (25 days)** + **Commercial Stock (14 days)**

Type of Fuel	Domestic Refiner	Importer
Crude	6%	6%
Gasoline	1%	7%
Kerosene/Jet	1%	7%
Diesel	1%	7%
Fuel Oil	1%	7%

Oil Stockpiling
(Above–Ground Tank)



Source: DOEB,
Ministry of Energy, Thailand

Thailand Emergency Response Exercise

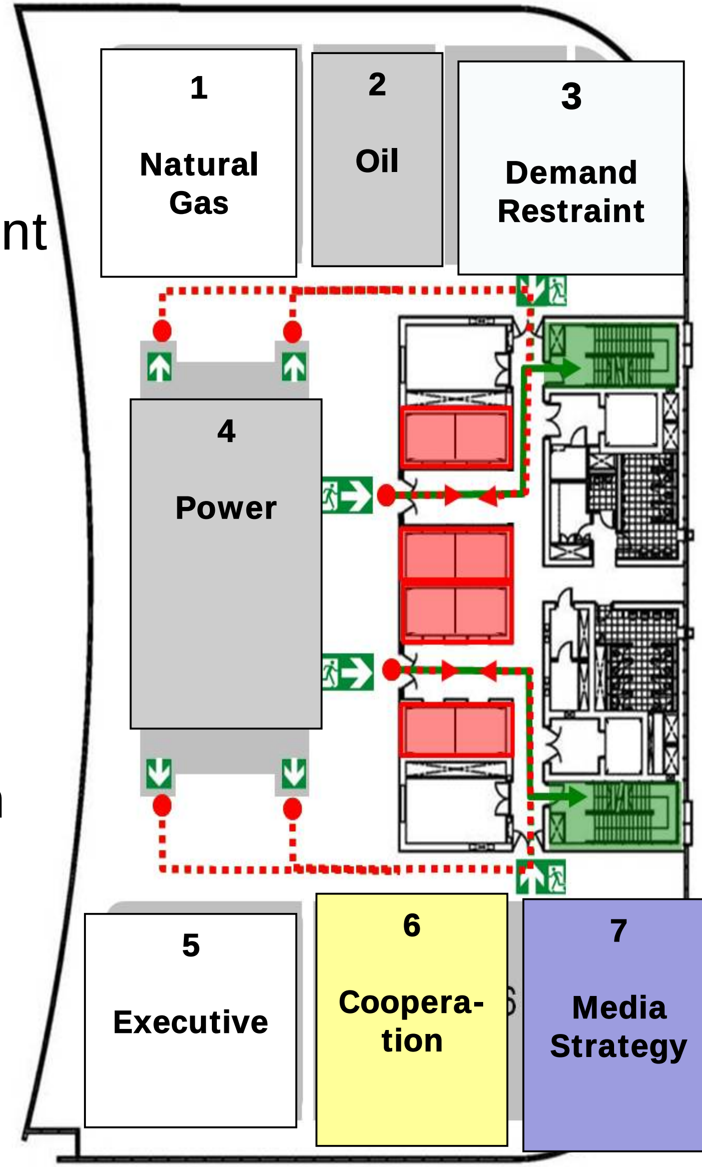
Hypothesis situation

Scenario

- **Focus areas**
  - Natural Gas
  - Oil
  - Demand Restraint
  - Power
  - Executive
  - Cooperation
  - Media Strategy

- **Lessons Learn**
  - measures
  - policy
  - Institutions

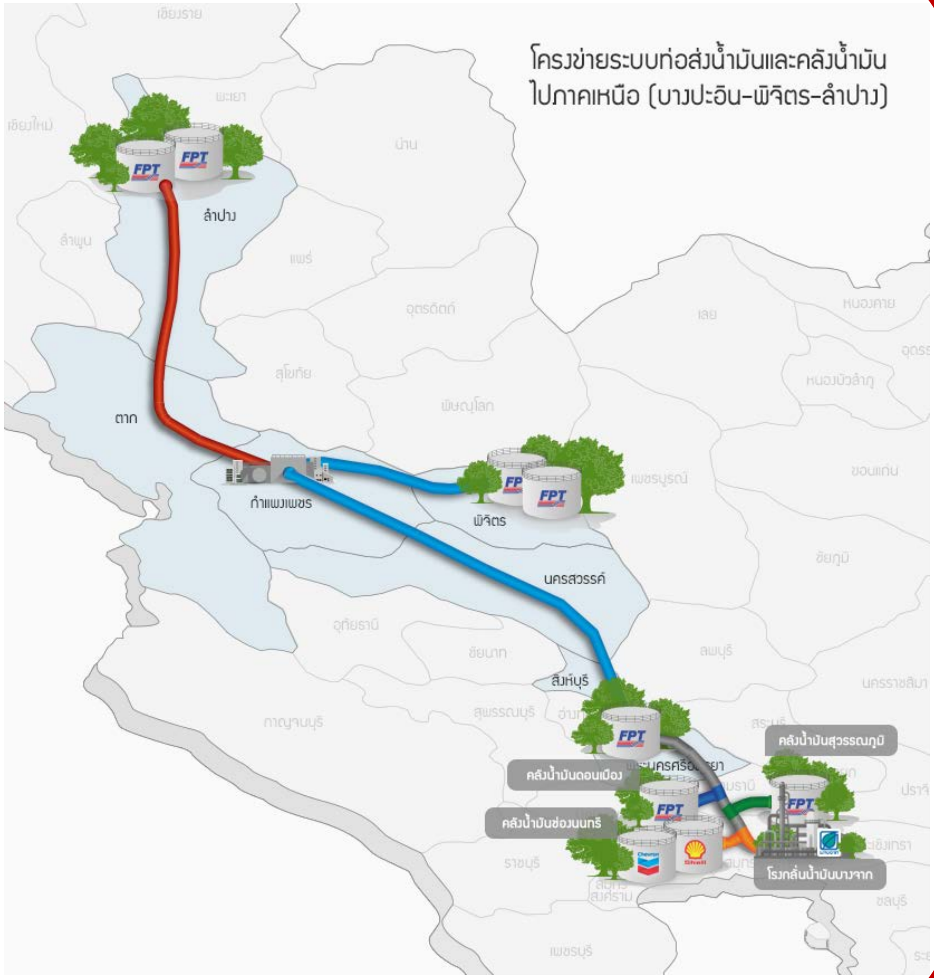
  etc.



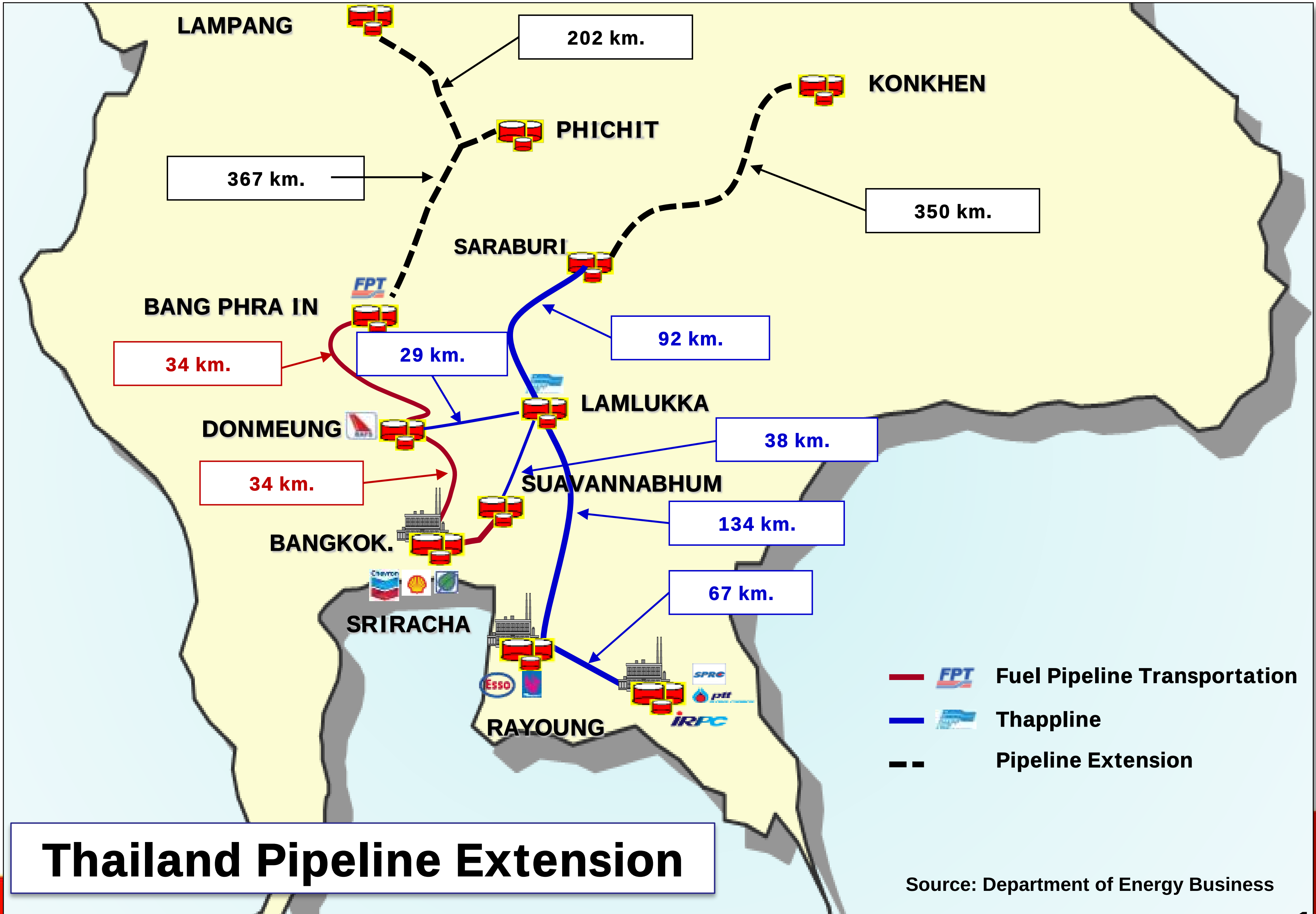
Oil Security Policy

➢ **Focus Area**

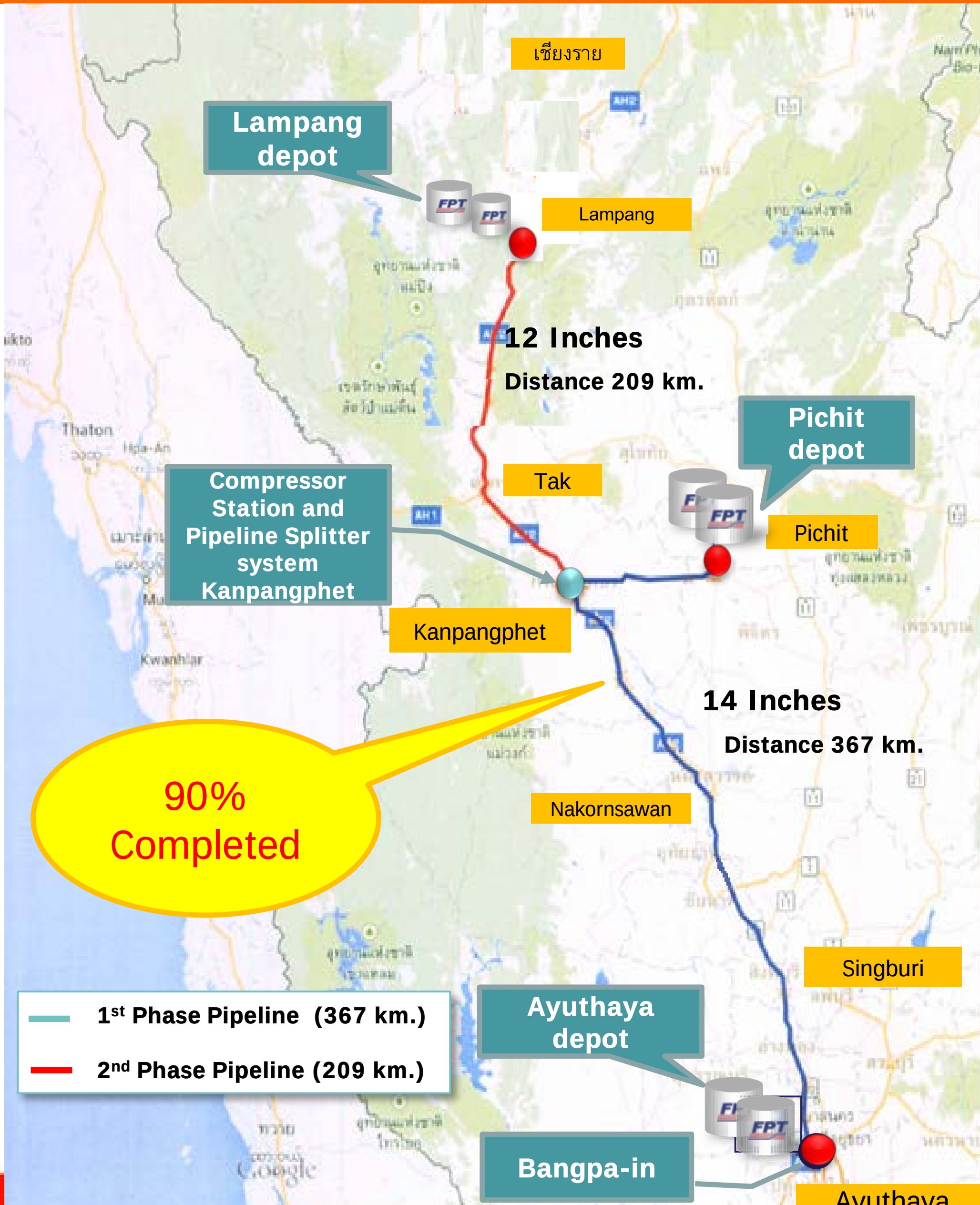
1. Encourage Infrastructure Investment for Oil Security
   - Pipeline expansion
   - Tank farm
   - Rail system expansion
2. Preventive measures for oil shortage situation
   - Enhance refinery capacity
   - Promotion for tank farm for oil export



Oil Pipeline Networks



Northern Pipeline Extension



Project Detail

Start-End point	**Area covered 10 Provinces, Ayuthaya, Angthong, Singbusi, Lopburi, Nakorn Sawan, Kampeangohet, Pichit, Tak and Lampang**
Distance	**576 km.**
Capacity	**9,000 M litres/Year**
Pichit depot	**Capacity 73 M Litres**
Lampang depot	**Capacity 58 M Litres**

Pichit Oil Depots

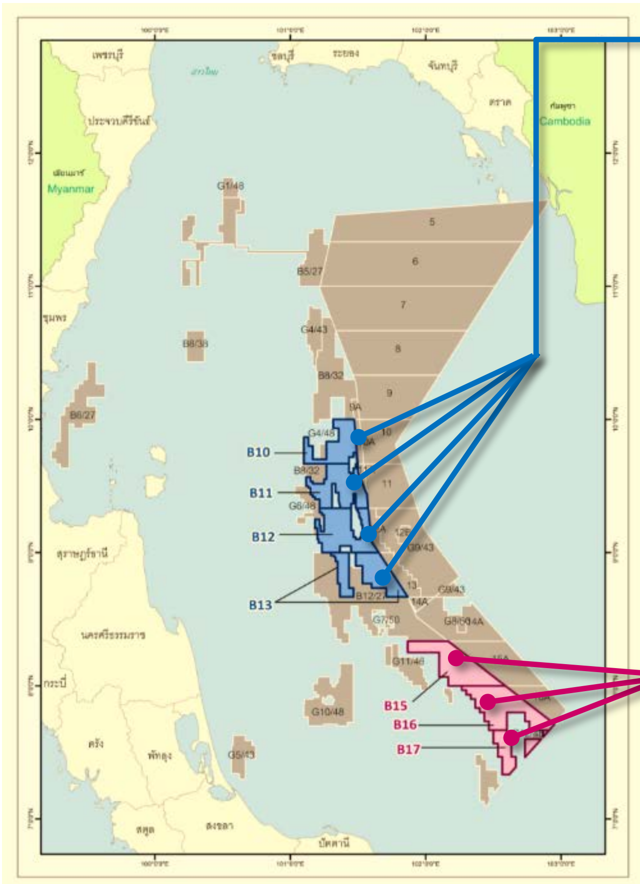
- **Capacity 73 M Litres**

Lampang Oil Depots

- Capacity 58 M Litres

Pipeline construction

Gas Fields in Gulf of Thailand



1 Erawan Gas field

Block 10 11 No. 1/2515/5

Block 12 13 No. 2/2515/6

Volume 1,240 MMSCFD

Expire on 23 April 2022

2 Bongkot Gas field

Block 15 No. 5/2515/9

Block 16 17 No. 3/2515/7

Volume 870 MMSCFD

Block 15 will expire on 23 April 2022

Block 16 17 will expire on 7 March 2023

Total production capacity ≈ 76 % of GOT

The auction petroleum concessions for Erawan and Bongkot gas fields

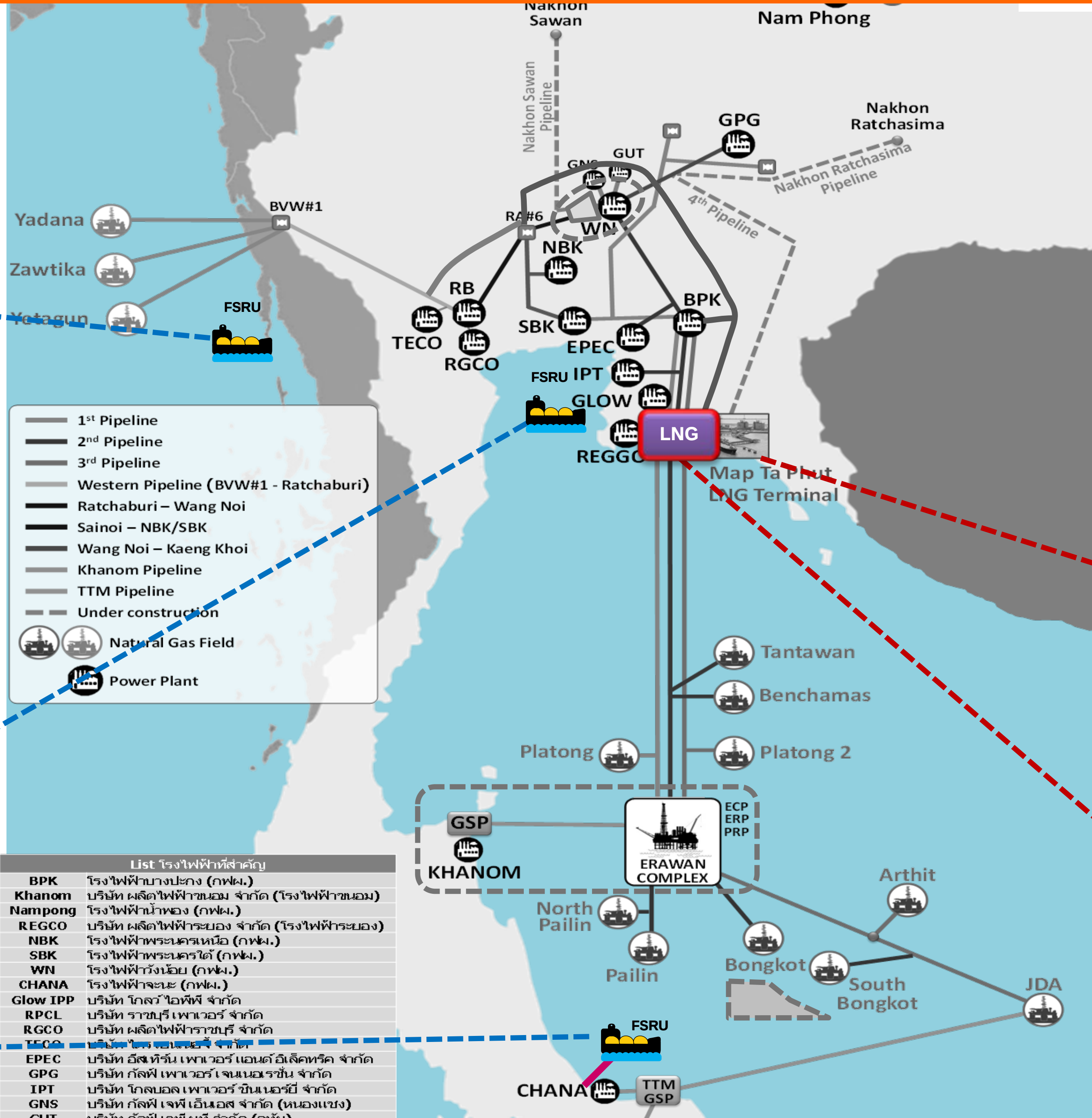
✓ **Completed in February 2019**

LNG Facilities

Future FSRU Myanmar (3 MTA) (Studying)

Future FSRU EGAT (5 MTA) (Studying)

Future FSRU CHANA (2 MTA) (Studying)

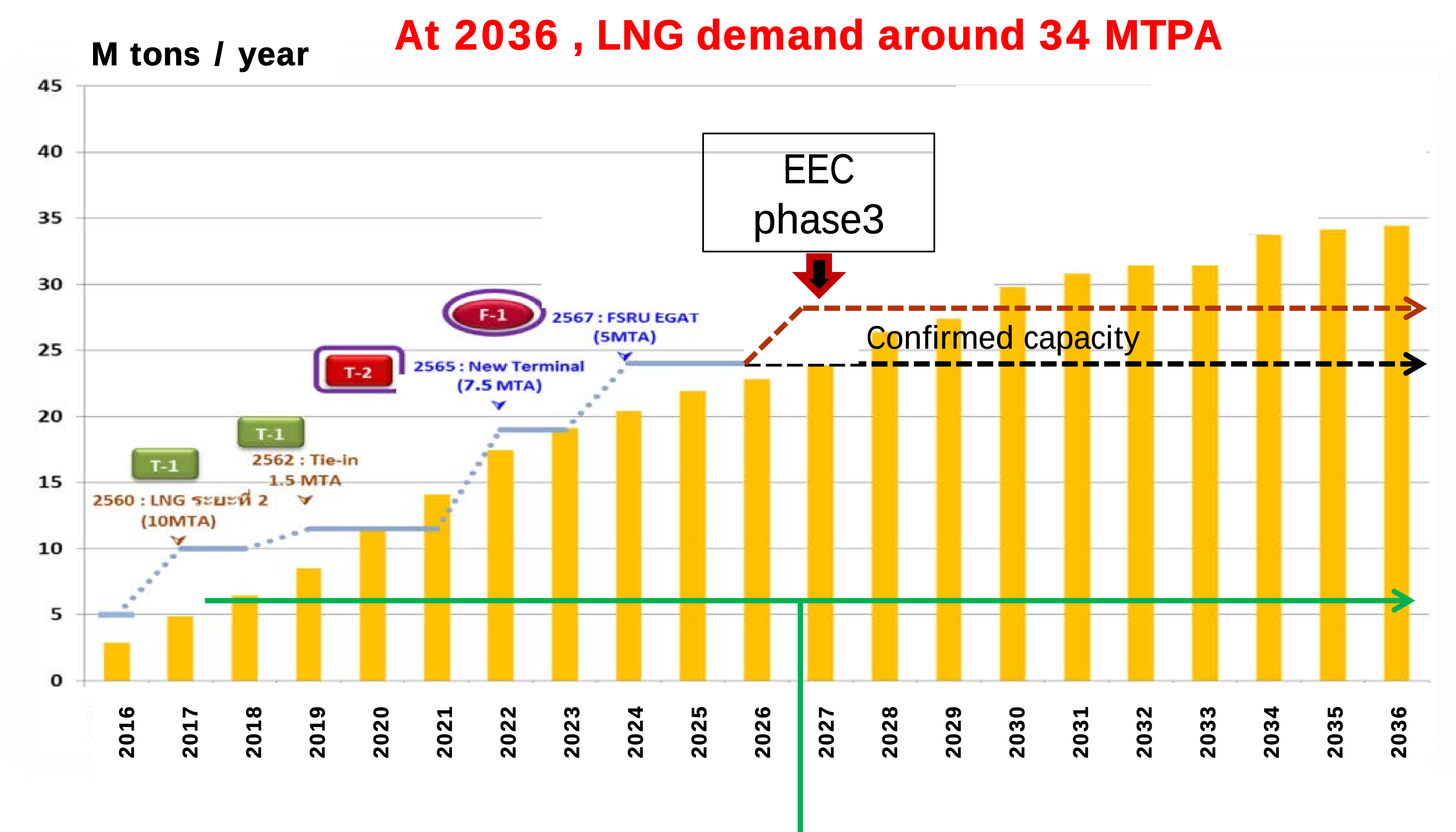


List โรงไฟฟ้าที่สำคัญ	
BPK	โรงไฟฟ้าบางปะกง (กฟผ.)
Khanom	บริษัท ผลิตไฟฟ้าขนอม จำกัด (โรงไฟฟ้าขนอม)
Nampong	โรงไฟฟ้าน้ำพอง (กฟผ.)
REGCO	บริษัท ผลิตไฟฟ้าระยอง จำกัด (โรงไฟฟ้าระยอง)
NBK	โรงไฟฟ้าพระนครเหนือ (กฟผ.)
SBK	โรงไฟฟ้าพระนครใต้ (กฟผ.)
WN	โรงไฟฟ้าวังน้อย (กฟผ.)
CHANA	โรงไฟฟ้าจะนะ (กฟผ.)
Glow IPP	บริษัท โกลว์ ไอพีพี จำกัด
RPCL	บริษัท ราชบุรี เพาเวอร์ จำกัด
RGCO	บริษัท ผลิตไฟฟ้าราชบุรี จำกัด
TECO	[illegible]
EPEC	บริษัท อีสเทิร์น เพาเวอร์ แอนด์ อิเล็คทริค จำกัด
GPG	บริษัท กัลฟ์ เพาเวอร์ เจนเนอเรชั่น จำกัด
IPT	บริษัท โกลบอล เพาเวอร์ ซินเนอร์ยี่ จำกัด
GNS	บริษัท กัลฟ์ เจพี เอ็นเอส จำกัด (หนองแซง)
GUT	บริษัท กัลฟ์ เจพี ยูที จำกัด (อุทัย)

Map Ta Phut Terminal (10 MTA) + Tie-in 1.5 MTA

New LNG Receiving Terminal (5 – 7.5 MTA)

LNG Demand by Gas Plan 2015



Current , LNG Long Term Contract 5.2 MTPA in 4 contracts.

Thank you for your attention