

# Thailand's Response to High Natural Gas Prices and Views on Energy Transition

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# Outline

- 1. Overview of Demand & Supply Balance**
- 2. Role of Natural Gas for Thailand**
- 3. Impact of High Price of natural Gas**
- 4. Measures to Remedy**
- 5. Thailand Energy Transition Policy**
- 6. Views on Energy Transition**

# Outline



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# Energy Overview

\*Jan 2023



Production



704 KBD\*

Production of all kinds of Primary Energy mostly decreased except the production of Hydropower increased 44.3%

## Primary Energy

Import (NET)



1,585 KBD\*

The net of all kinds of primary energy imported mostly increased in particular the electricity and natural gas and coal.



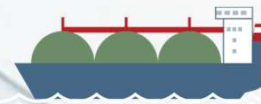
Consumption



1,995 BD\*

The energy consumption mostly increased, according to the consumption of oil products, natural gas, and hydropower, whereas, the consumption of coal and lignite decreased.

The final energy consumption mostly increased, according to the consumption of oil Products, in particular, the use of jet fuel has increased to 102.5% due to the recovery of tourism sector and the consumption of Natural Gas increased by 8.5%



The Final Energy Consumption



1,476 KBD\*

Oil Products

60%

Electricity

19%

NG

11%

Coal

10%

0.1% lignite

\*Thousand barrels oil equivalent per day  
Note: Year on Year basis

# Energy Overview

\*Jan 2023

## Electricity Generation & Consumption 2022



### Electricity Generation

Total Generation Capacity

**53,659** MW\*

Dec 2022

↑ **2.9%**

Electricity Generation

215,824 GWh\*

Export 2,062 GWh



### Electricity Consumption

System Peak Demand

**33,177** MW\*

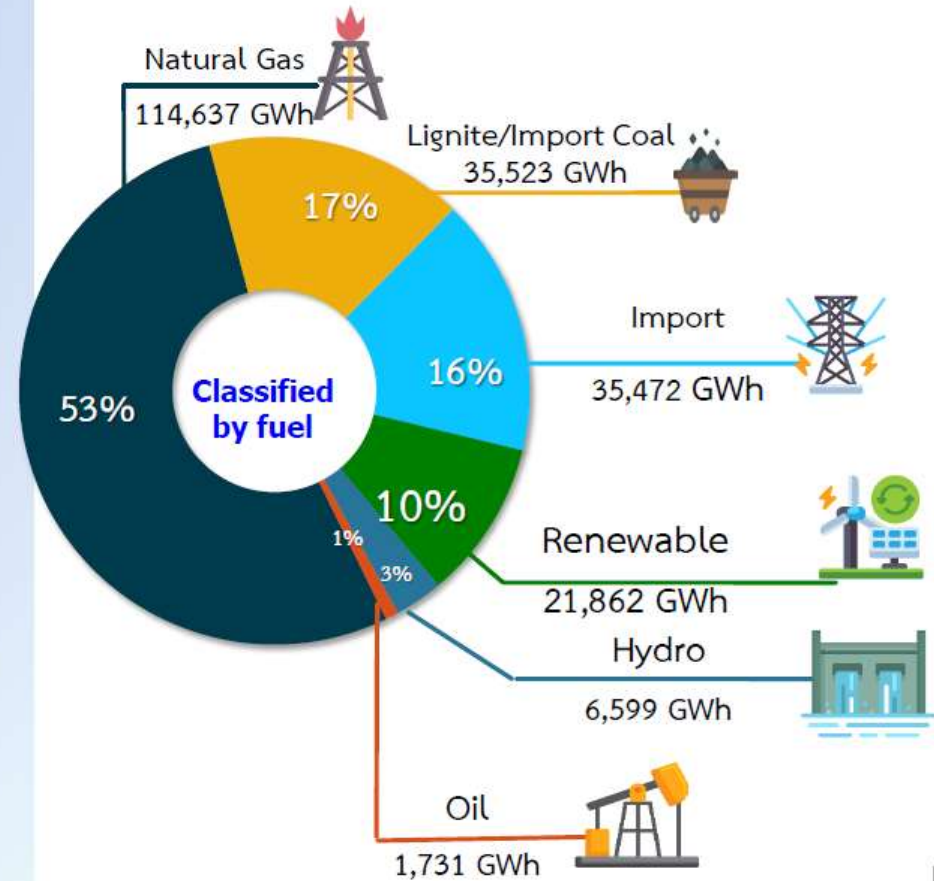
28<sup>th</sup> April 2022 2.30 PM

\*excluding IPS

↑ **3.5%**

Electricity Consumption

197,209 GWh\*



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# Natural Gas

\*Jan 2023

## Natural Gas Supply

4,178 MMSCFD  2.5%

### Domestic

64%

2,692 MMSCFD

 1.2%

### Import

36%

1,487 MMSCFD

 10.0%



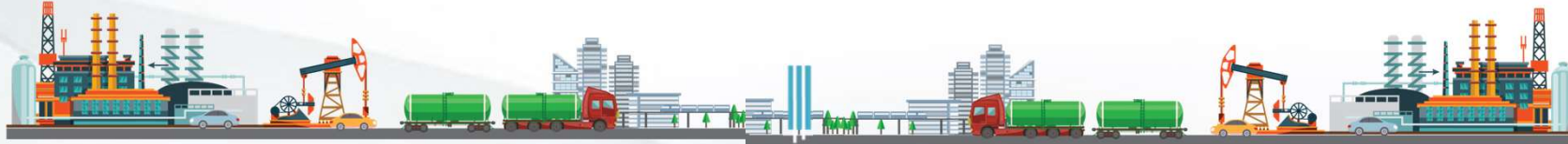
Myanmar • 12%

- Yadana 6%
- Yetakun 1%
- Zawtika 5%



LNG  
24%

The increasing of Natural gas supply mainly from LNG imports, increasing by 34.0%



3,588 MMSCFD  11.2%

## Natural Gas Demand

The consumption of natural gas decreased, particular in gas separated plant decreased by 21.4% and power plant by 14.4%, whereas, the consumption of NGV in transportation sector increased by 9.0%.

NGV



3%

Industry



23%

GSP



18%

Power Plant



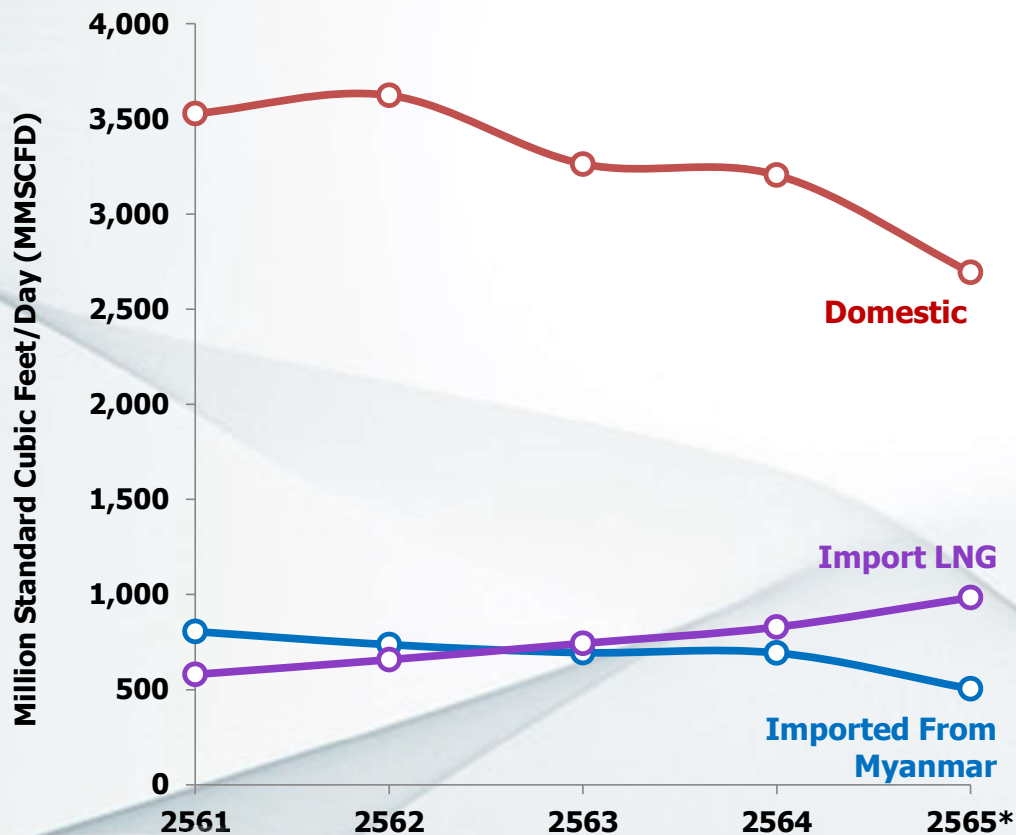
56%

1 icon = 400 MMSCFD

Note: Year on Year basis

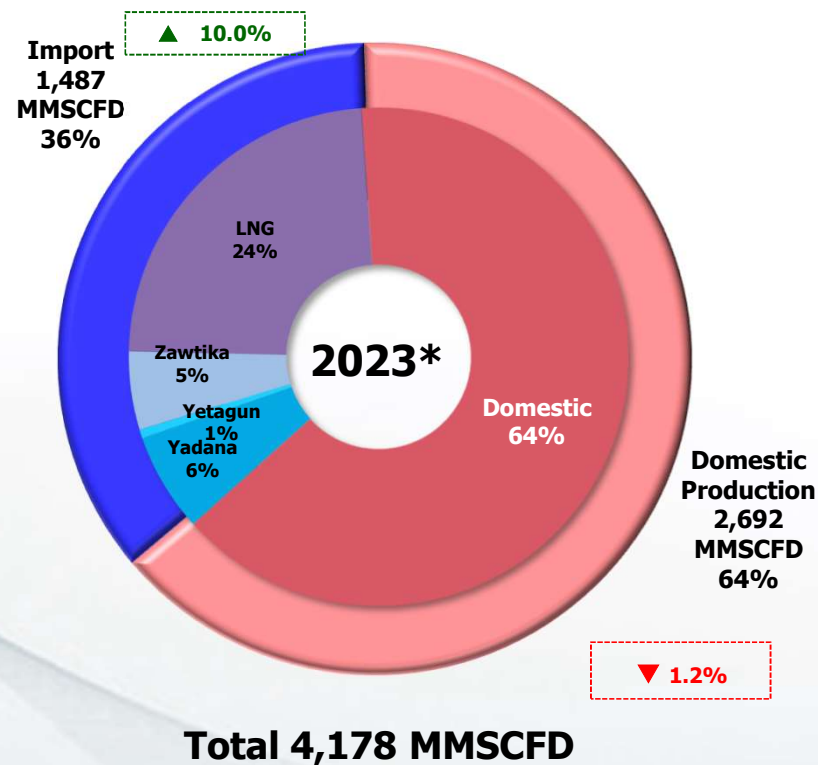
# Natural Gas Supply

\*Jan 2023



**Natural Gas Supply** 2.5% ↑

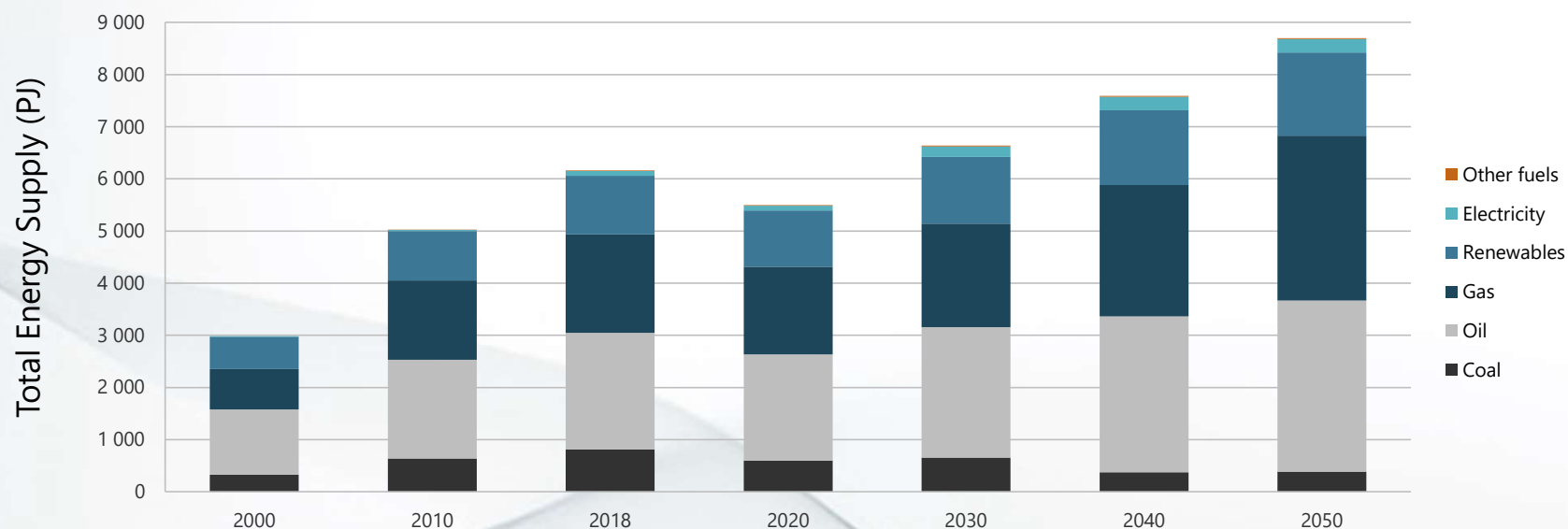
## Proportion of Natural Gas Supply



Noted: Import LNG since May 2011  
Import NG form Zawtika since August 2014



## Thailand's energy mix relies on natural gas for power generation and industrial development



Source: APEC 8<sup>th</sup> Edition Energy Demand and Supply Outlook

- **APEC 8th Edition Demand and Supply Outlook shows high dependency in both natural gas and oil.**
- **Natural gas accounts for 31% of total energy supply in 2020, mainly for power generation and industrial uses. Share of natural gas increases to 58% in 2050.**
- **Oil accounts for 37% of total energy supply, primarily for transportation demand**

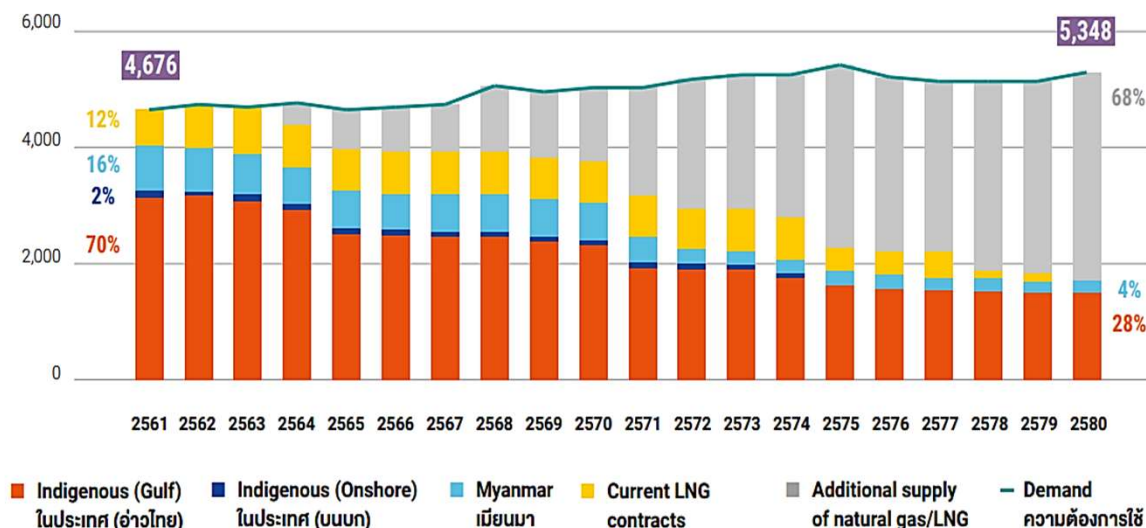
## Since 1981, Thailand has continued to emphasize on natural gas development to support economic development



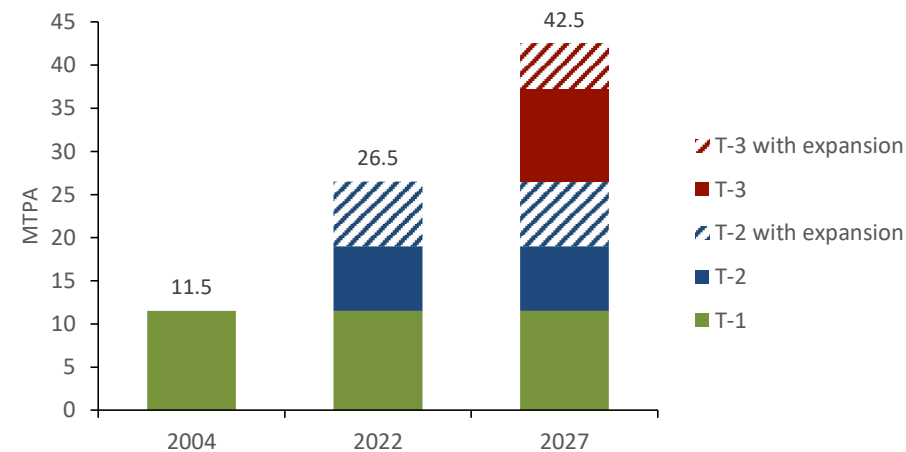
- First discovery of natural gas resource in **the Gulf of Thailand in 1981**
- **Value added of natural gas** through gas separation in Thailand has contributed to significant GDP growth from the **petrochemical and export industries**
- **Investment in natural gas grid** enhanced development of important basic industries (cement, steel, ceramic, etc.)
- **Investment in LNG receiving terminal** in 2010 and 2020 provides **security of supply** to declining domestic gas production

## Thailand's Gas Plan anticipates imported LNG to play crucial roles in gas supply

MMSCFD  
@1,000 BTU/scf



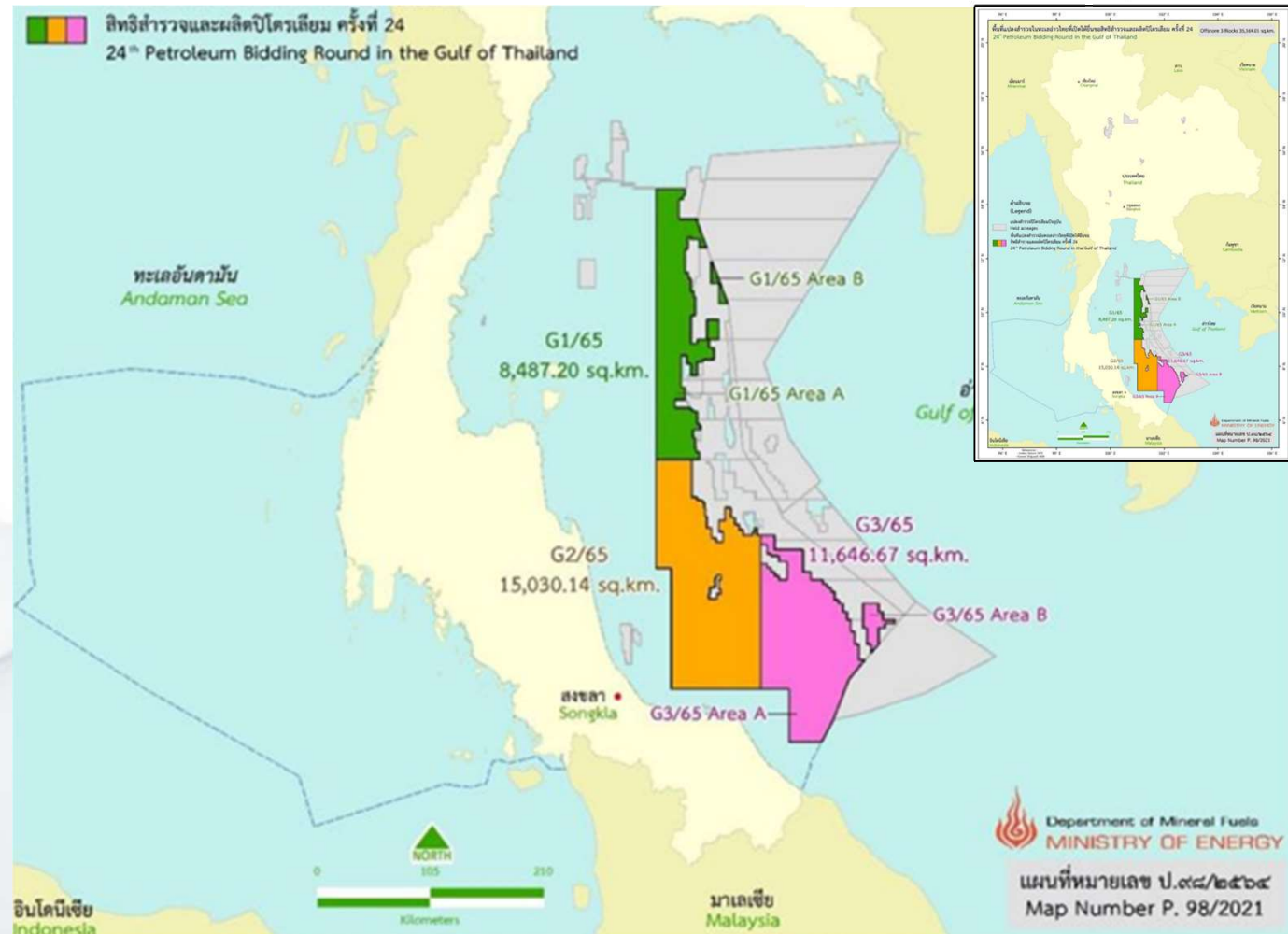
Capacity of Thailand LNG receiving terminals




- **Imported LNG is forecasted to reach 68% mix of total gas consumption in 2037**, considering the decline of domestic gas production and expiration of long-term pipeline gas contracts from Myanmar.
- The completion of the second LNG receiving terminal (T-2) and the construction of T-3 will bring **total LNG receiving capacity to 42.5 MTPA (including expandable capacity)**, compared with forecasted 25 MTPA LNG import in Thailand BAU scenario

## In addition to LNG, Thailand continues natural gas exploration activities in the Gulf of Thailand to enhance gas security

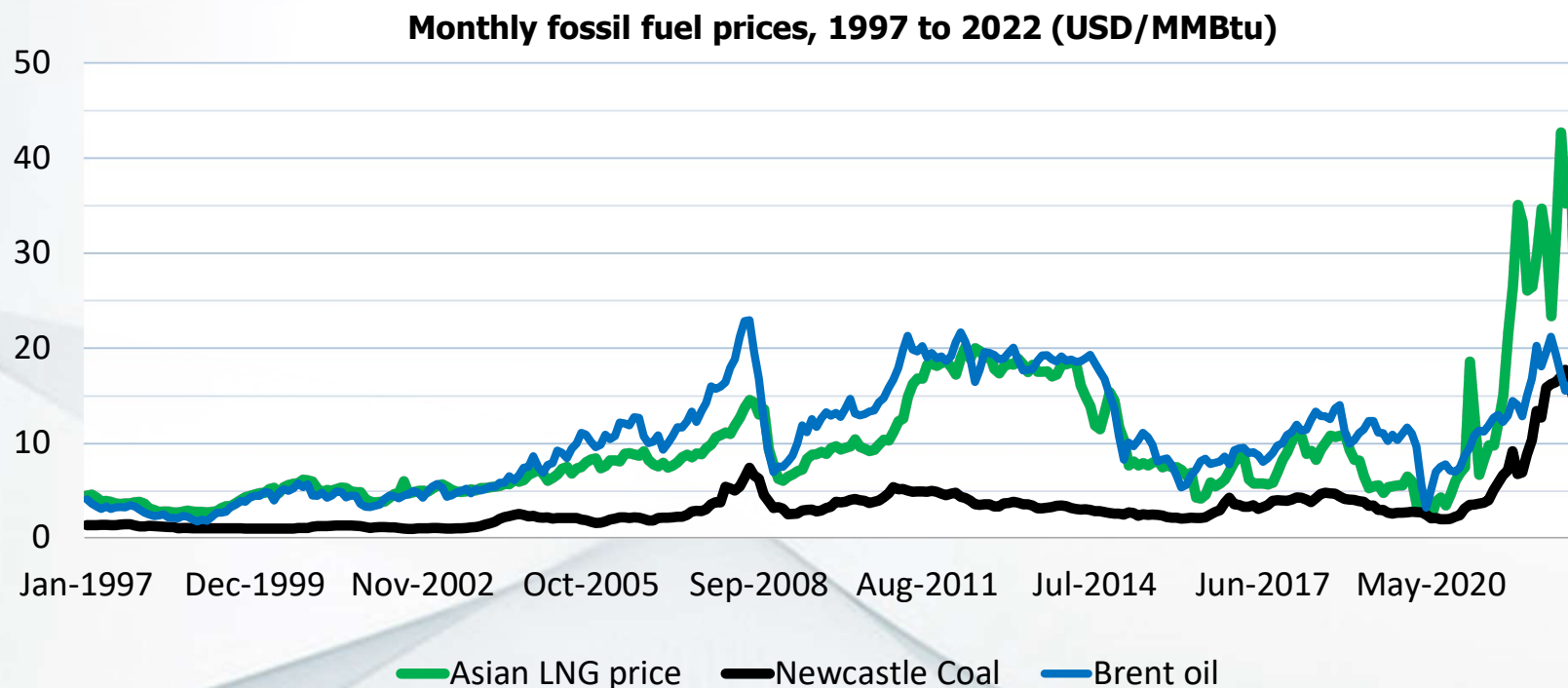
- The three concession blocks with total **35,164 sq.km.** of Thailand's 24<sup>th</sup> exploration bidding round were awarded on March 7<sup>th</sup> 2023
- **G1 and G3 blocks** (20,134 sq.km.) were awarded to **PTTEP**, and **G2 blocks** (15,030 sq.km.) to **Chevron E&P**



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## Recent High Energy Prices Prompted Thailand To Balance Energy Trilemma



- **Pandemic recovery is prompting a rebound in energy demand**
- **Energy supply growth is constrained by several factors**
- **Rising energy prices affects Thailand's inflation and energy prices to consumers**

## Impact of High Price of Natural Gas



**Competitiveness** → High Cost of fuel use for power gen. transport, and feedstock



**Higher Electricity Tariff** → Avg. increase from 4.22 to **4.72 B/kwh**




**Higher Inflation Rate** → Increase **5.89%** (YoY) in Dec 2021, highest since 1998  
cost of energy increase **14.62%** (petrol, LPG, electricity)



**Debt** → Oil Fund **-89 Billion Baht** (April 2023)  
→ EGAT debt from bearing electricity tariff subsidy **>122 Billion Baht**  
→ Delayed payment of energy cost from EGAT to PTT

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# Measures to Remedy

## Short Term

### Fuel Switching

From natural gas to diesel/fuel oil



### Utilizing Existing Power Plant

Delaying block 8 retirement at Mae Moh Power plant



### Accelerating RE

Call for proposal of SPP/VSP (biomass)



### Target Subsidy

- Capped Diesel price <30 Baht/litre
- Subsidize electricity tariff for household <300 unit/month
- Subsidize LPG customer

### Energy Response Working Team

Set up team/ war room led by DPM



### Energy Saving Campaign

- Public awareness in social media by DEDE
- Setting Air Condition up to 27 °C in building and household sector
- Switching to efficient appliances
- Close gas station after 11 pm.

### Max Domestic NG Production

Boost up Erawan gas



# Measures to Remedy

## Long Term

### Exploring Gas Supply

- MTJDA
- New Gas Sales Agreement (GSA) ex. Arthit etc..



### Energy Response Exercise (ERE)

- Use worst case scenario for planning
- Ready to respond to the worst scenario with best available resources
- ERE on collective action

### Promote EE

New technology and innovation



### Promote RE

- Community Power Plant
- Call for RE proposal
- Enhance grid infrastructure



### Promote EV

Expedite 30@30 Policy



### LNG Facility

- Speed up LNG terminal at Nong Fab to use early gas sent out
- Joint LNG collaboration with international alliance

# Measures to maintain energy security of Thailand



**During the Transition of E&P procedure in G2/61 area from Concession Scheme to Production Sharing Contact (PSC) in March 2023**

- To maintain energy security to Thailand
- Smooth handover managed by Gas Disruption and Disaster Prevention Team (Department of Mineral Fuels) during March 2023
- War room has been set up and successfully achieve the goal to maintain adequate gas supply for country

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# National Energy Plan

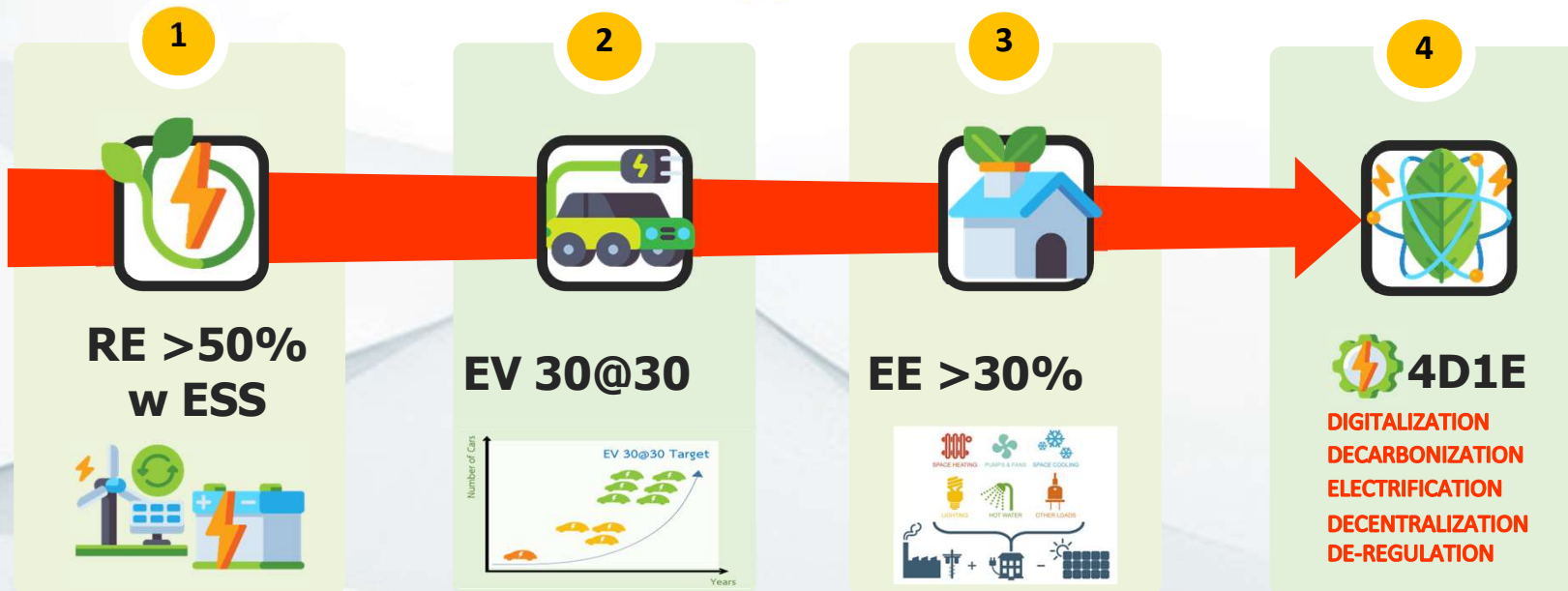
On 4<sup>th</sup> August 2021 : NEPC considered and approved national energy plan framework. The goal is to support Thailand *moving towards clean energy and reduce carbon emissions to net zero.*



แผนพลังงานชาติ  
National Energy Plan

EPPO is preparing the details of the **National Energy Plan**, in line with Carbon Neutrality in the year 2050

## Policy Direction to National Energy Plan

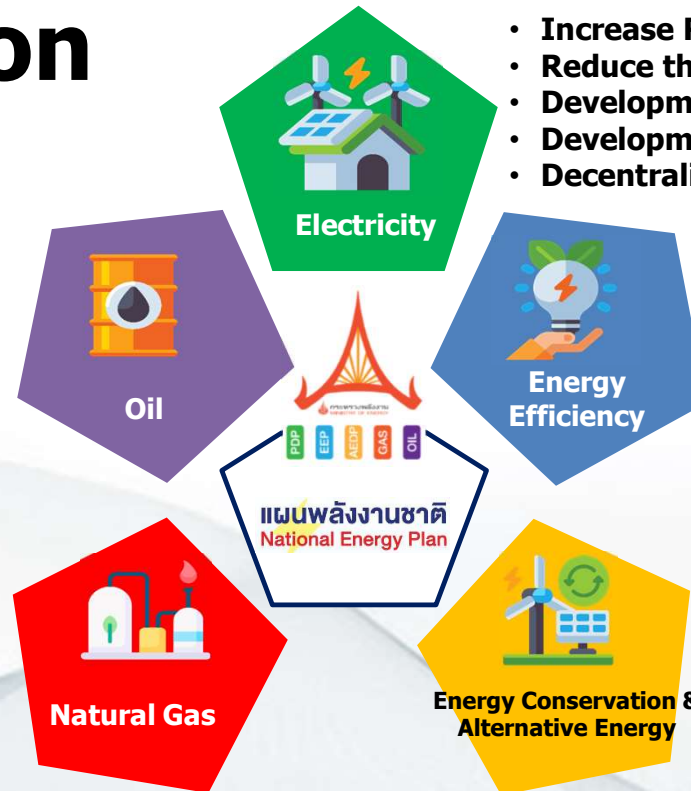


**Timeline for NEP** June 2023 : Draft NEP for public hearing  
Dec 2023 : Present to the Cabinet for approval

# 4D - 1E

## Policy Direction

- Improving the refinery standard
- Promote the use of low-carbon fuels and biofuels
- Development of regulatory system and data collection



- Develop and modernize the potential assessment and regulatory system
- Infrastructure development to support decentralization

- Set the target of energy efficiency
- Support investment on energy efficiency technology
- Development of efficiency energy management technology

- Evaluate RE potential
- Promote and develop distributed electricity generation mechanisms
- Establish a platform and develop a data center to monitor RE using digital technology
- Determine measures to encourage investment in RE
- Promote investment in the RE technology market
- Study and develop the use of hydrogen

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# Views on Energy Transition

Way forward to ensure **Energy Security & Affordability**

High Energy  
Price



## Natural Gas

- Clean fuel for smooth energy transition
- If NG price is abnormally high gov't policy & action are necessary

## RE

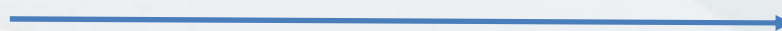
- Max utilize RE resources
- Readiness of infrastructure
- Proven technologies / cost competitiveness

## EE

- **"Key success factor"** to lower energy use and emission
- Support for investment and technology

Promote Public Understanding & Acceptance

Short Term



Long Term



Thank you

