



AFEO Midterm Meeting 2019

Energy Sector

WONGKOT WONGSAPAI

- Thailand representative (Energy), EIT-

wongkot@eng.cmu.ac.th

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The Centre Point Hotel Gadong,
Bandar Ser Begawan
Brunei Darussalam



Introduction



- Thailand energy situation (as of Jan 2019)
- Progress of networking with ASEAN Centre for Energy (ACE)
 - Draft renewable energy networking
 - Future move





Production

10.9%
881 thousand bbl/day*

Primary energy

Import (net)

15.0%
1,593 thousand bbl/day *

 Import more in all energy type
except electricity


Consumption

4.0%
2,076 thousand bbl/day *

 การใช้พลังงานลดลง จากการใช้
ถ่านหิน ก๊าซธรรมชาติ และพลังงาน/
ไฟฟ้านำเข้าที่ลดลง ขณะที่การใช้
น้ำมันและลิกไนต์เพิ่มขึ้น

 Decrease in all final energy
consumption ; Oil still has
highest proportion at 58%
followed by electricity at 20%.

Final consumption

1.6%
1,503 thousand bbl/day *

Petroleum products

58%

Electricity

20%

NG

11%

Coal

11%

0.3%

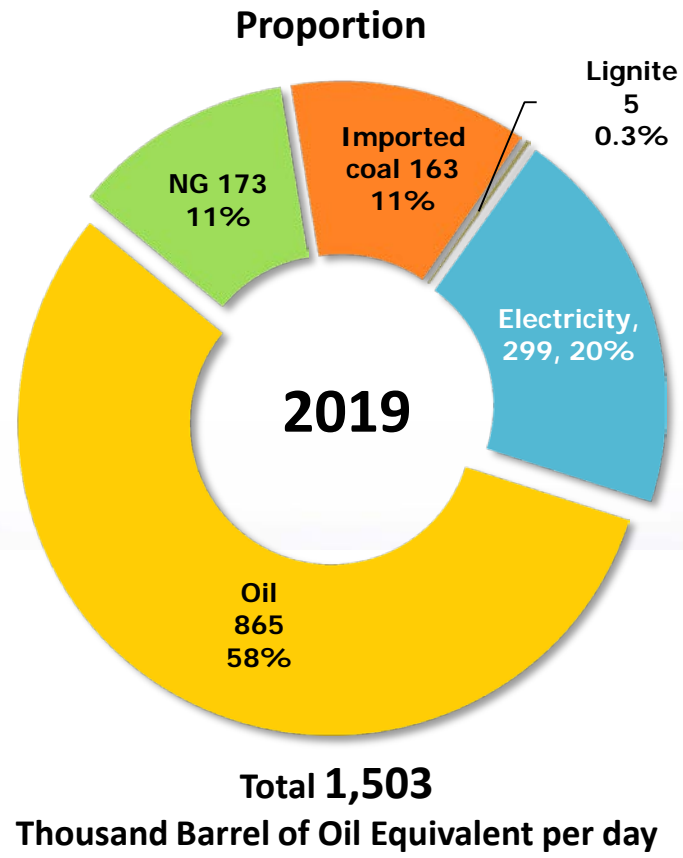
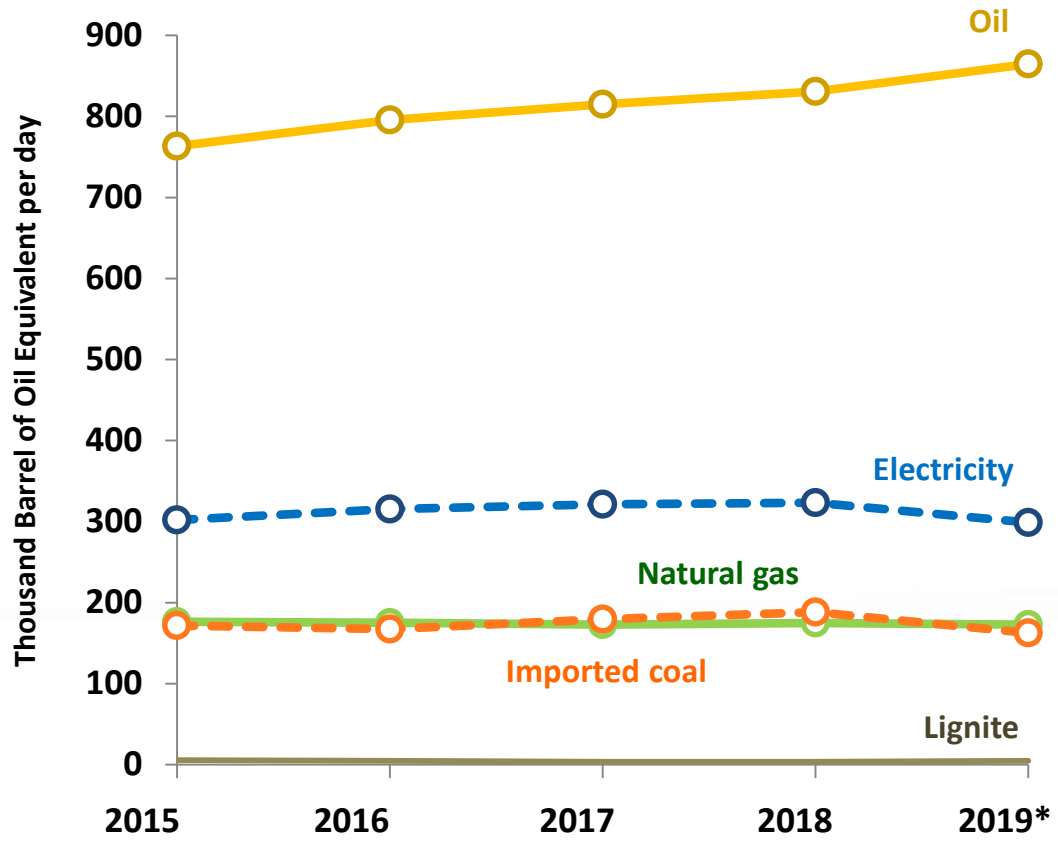
Lignite

*crude oil equivalent

Note: compare with last year same period



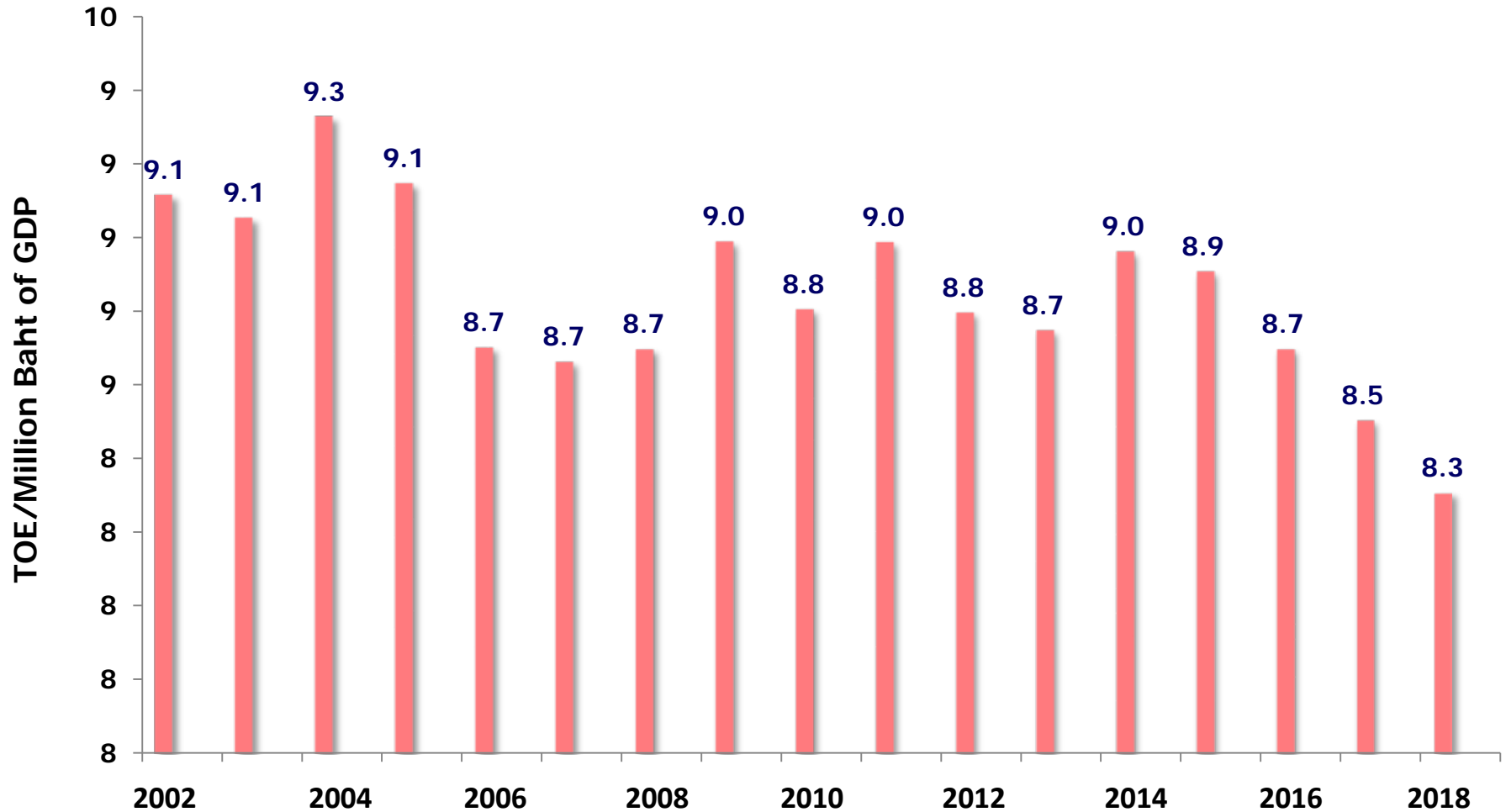
Final commercial energy consumption: Thailand 2019



Final energy consumption

* As of Jan 2019

Energy Intensity



Energy Intensity : $EI = \text{Final Energy Consumption} : \text{FEC} / \text{GDP}$

GDP : chain volume measures (reference year = 2002) from NESDB

Source: EPPO

Thailand Major Indicators

As of January 2019



Energy security

R/P ratio***

- Crude oil (year)
- Natural gas (year)

3



5



อัตราส่วนการพึ่งพาตนเอง
ในการจัดหาพลังงาน
ขั้นต้น** (%)

55



B100* domestic
production (Million litre/day)

4.63



Ethanol* domestic
production (Million litre/day)

4.63



Energy value **

- Energy import value per total import value (%)
- Energy export value per total export value (%)

15.1



3.5



Energy Efficiency

Energy elasticity to
GDP
(Year 2008 to 2018)

0.8562



Electricity elasticity to
GDP (Year 2008 to 2018)

1.0584



Energy intensity (EI)
**
(TOE/billion Baht)

8.3



Electricity per GDP**
(GWh/million Baht)

17.6



Per capita final energy
consumption**
(TOE/capita)

1.33



Per capita final electricity
consumption ***
(kWh/capita)

2,821



Energy & Environment

CO₂ emission per
energy consumption*
(kton CO₂/KTOE)

1.90



CO₂ emission per
capita**
(ton CO₂/capita)

3.92



CO₂ emission per
GDP**
(ton CO₂/million Baht)

24.42



CO₂ emission per
electricity generation *
(kg CO₂/kWh)

0.441



หมายเหตุ : * as of Jan 2019
** year 2018 data
*** year 2017 data

= Good = Fair = Need to improve

All indicators evaluate by comparing to same previous year period, except Energy elasticity and Electricity elasticity to GDP compare to 1.0



- Possibilities of **Renewable energy (Research & Development) Nodal Networking with ACE**
 - Objectives & scope of work
 - Contribution btw ACE & AFEO
 - Timeline
(pls see following slides)



Concept for RE R&D Nodal Network (i)

OBJECTIVES

- This initiative is intended to establish a network of Research & Development (R&D) practitioners, which provide collaboration to enhance knowledge & expertise on Renewable Energy (RE) technology and policy for ASEAN region

SCOPE OF WORK

For the early stage, the scope of the nodal network will be:

- Designation of RE University Focal Points for each country
- Design and provide exchange platform on knowledge and research opportunities between the members (e.g. workshop, seminar, guest lecture, online database)
- Provide reference for peer-review on relevant topic.
- Hold regular discussion for future activities of the network

STAKEHOLDER

- ACE & AFEO will be the main organizers, while prospective members will consist of RE-related universities/research institutions from all the AMS. RE specialties of prospective member include, but not limited to: science, technology, engineering, energy-economic and policy.
- In the future, there will be possibilities to enhance the network reach to include research bodies of government, private institution, and other regional/international bodies (e.g. AUN, AF)
- Subject to discussion (country or every institutions)

Concept for RE R&D Nodal Network (ii)

PROSPECTIVE OUTCOMES FROM BOTH PARTIES

- Focal Points list and their scope of task for this network.
- Joint-research projects/study in the form of paper, report, etc.
- Events inviting members universities and ACE's network (AMS energy ministries, International Organizations on energy)

Future possibilities

- Exchange on researchers or students in member universities
- Initiate student chapters with multidisciplinary interest
- Collaborate with donor to provide R&D fund for members of network
- Initiate a secretariat as a governing body of the network

CONTRIBUTION: ACE

- Provide opportunity for internship/fellowship
- Provide project opportunity for network members with relevant expertise
- Provide access of data pool, information, and study on energy.

Current available resources from ACE include ASEAN Energy Database System (AEDS) and regular News Clipping for energy in ASEAN

CONTRIBUTION: AFEO

- Provide and invite prospective members to join the network, including universities and other R&D institutions.
- Support in the engineering context to ACE, as think tank firm; e.g. code of practice in energy or harmonization in standard.

Concept for RE R&D Nodal Network (iii)

CONTRIBUTION: Both parties (ACE & AFEO)

- Promote events or publications held by ACE/AFEO/member through each institution's internal communication platform
- Provide reference of relevant academician or professional to help in peer review. Reviewer will have added benefit of being put into acknowledgement section.

ACTIVITY TIMELINE (IF ANY)

- Discussion on activities between 24-26 April 2019 or earlier through video conference
- Signing of formalization document* before week of 20-24 May 2019 between ACE, AFEO, and minimum 2 university partners.
- Further activities after AGEP Phase II project can be discussed on a tentative date.

*As ACE and AFEO are both ASEAN bodies, formalization will not be in the form of MoU

Comment; pls send to wongkot@eng.cmu.ac.th



Thank you

