



# **ASEAN Energy Efficiency Sectoral Trends including the impact of Covid-19 on the ASEAN energy efficiency pathways**



**One Community  
for Sustainable  
Energy**



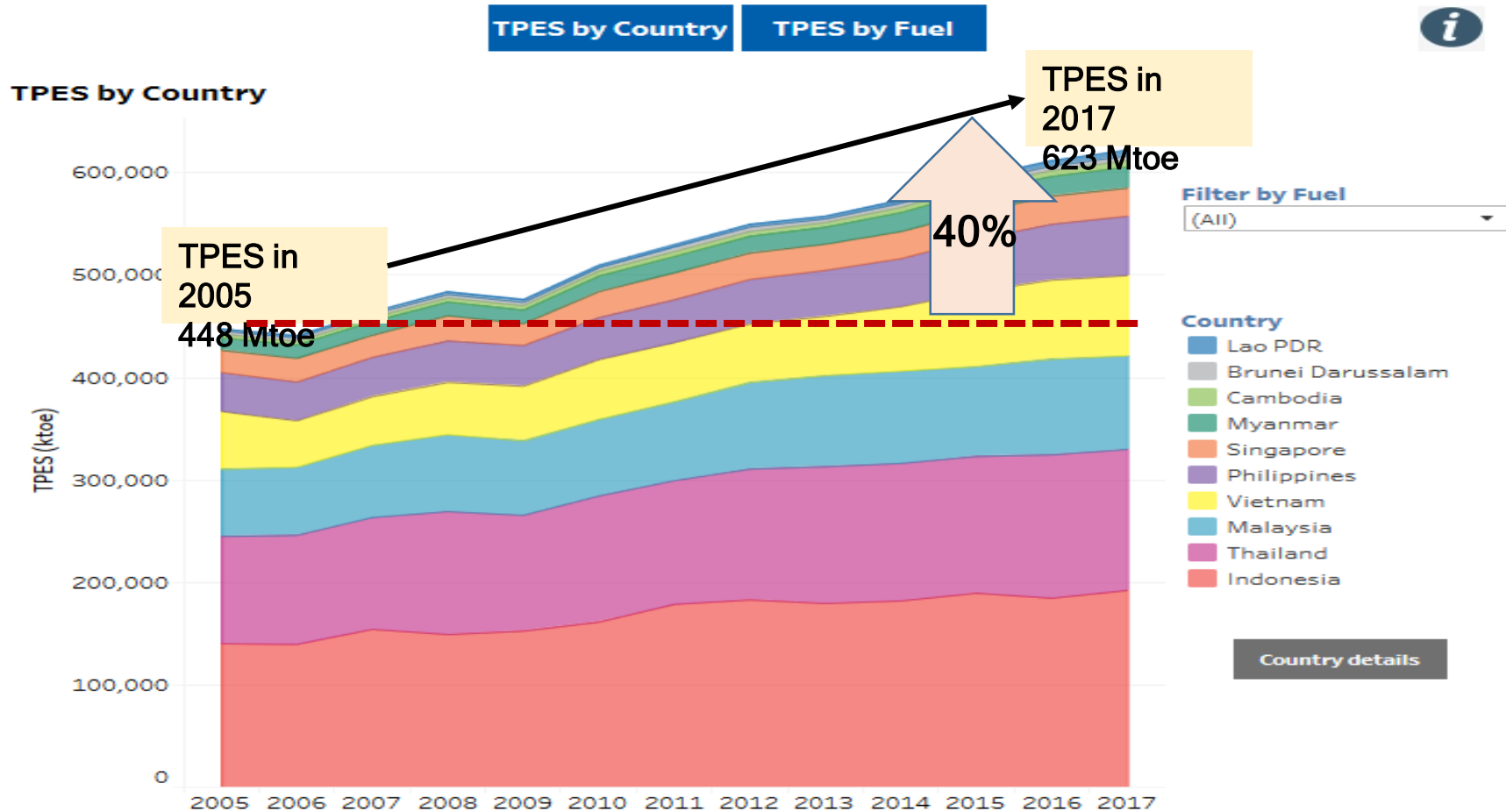
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# ASEAN Energy Mix 2005 - 2017

## Total Primary Energy Supply



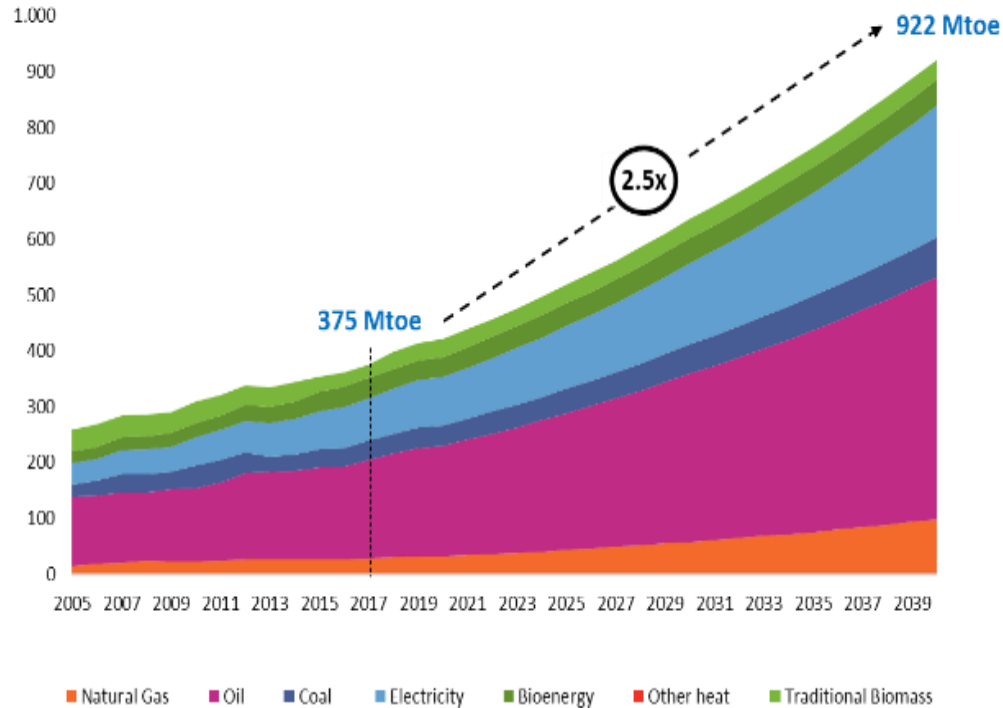
Others renewables include biofuel, biomass, geothermal, solar, waste, wind.  
Others include electricity and heat.

- Dominated by oil, following by gas and coal
- Coal demand has increased 2.5 folded from 2005 to 2017
- Hydro contributes less than 5% of TPES
- RE shares is 14.3%

# ASEAN Total Final Energy Consumption

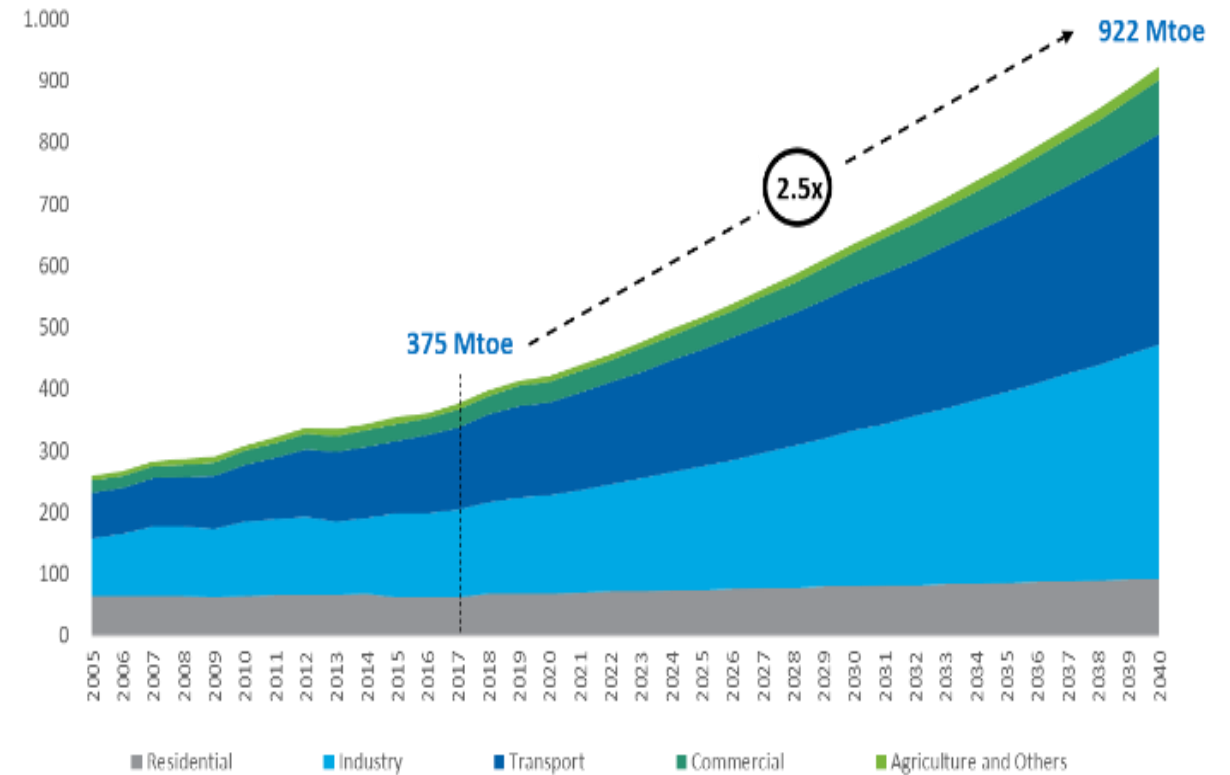
## By Fuel

ASEAN Total Final Energy Consumption (TFEC) by Fuel, Baseline - Mtoe



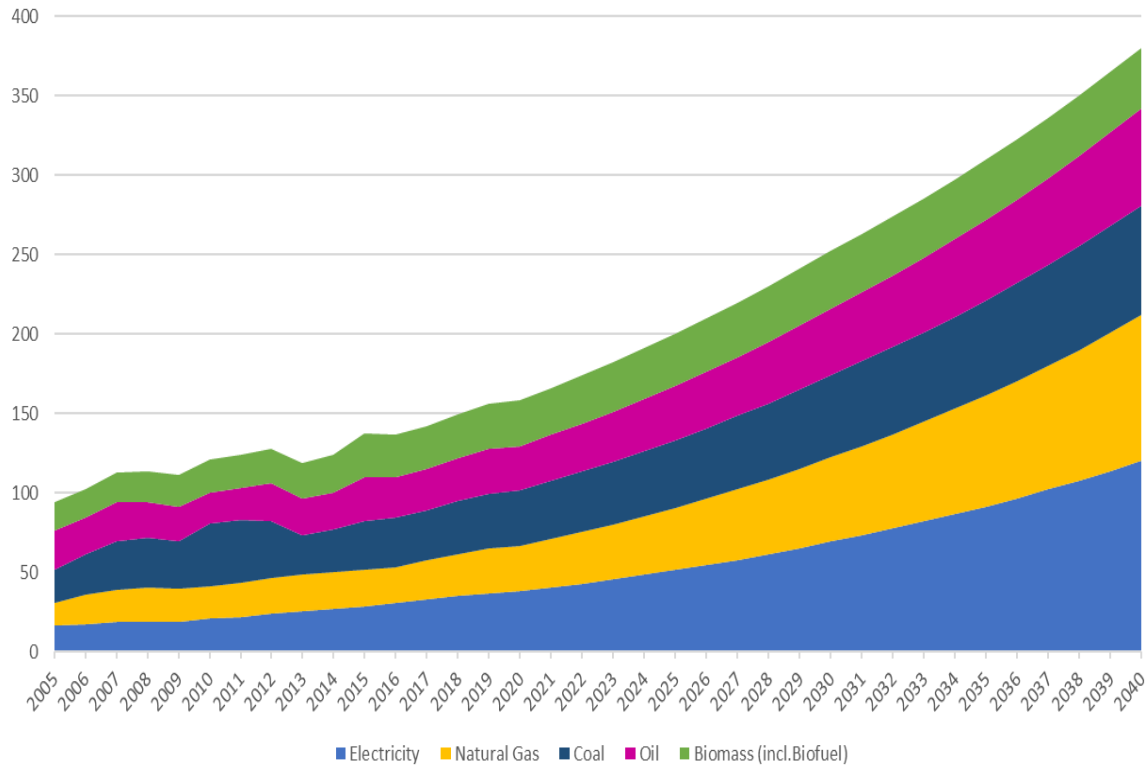
## By Sector

ASEAN Total Final Energy Consumption (TFEC), Baseline - Mtoe

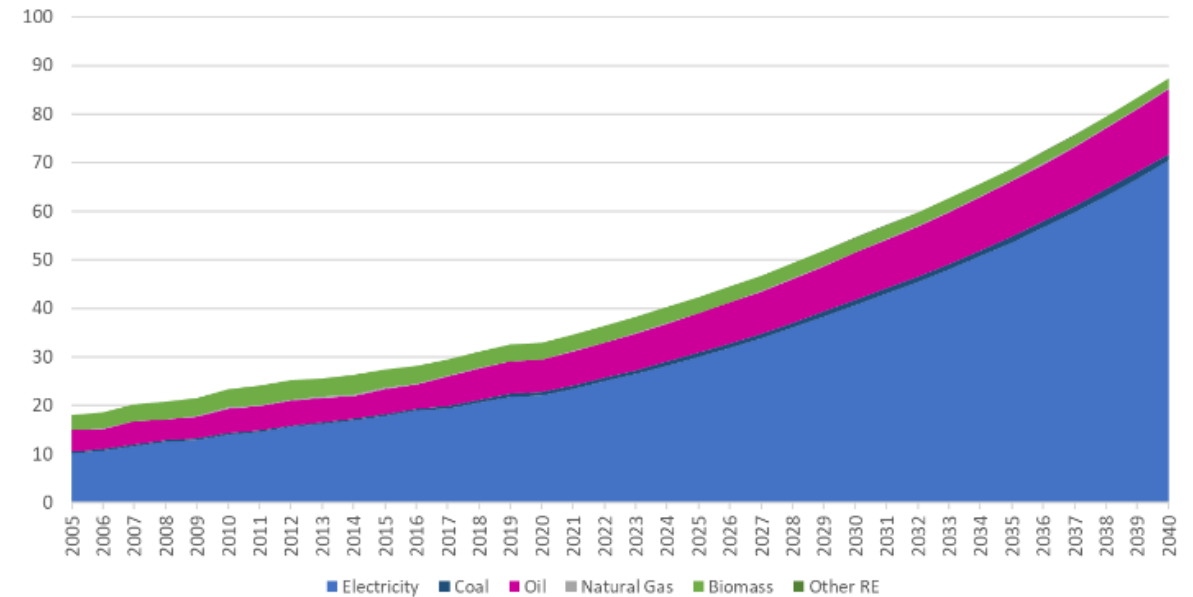


# Final Energy Demand by Commercial Building Sector

ASEAN Industry Energy Demand (Mtoe),  
Baseline



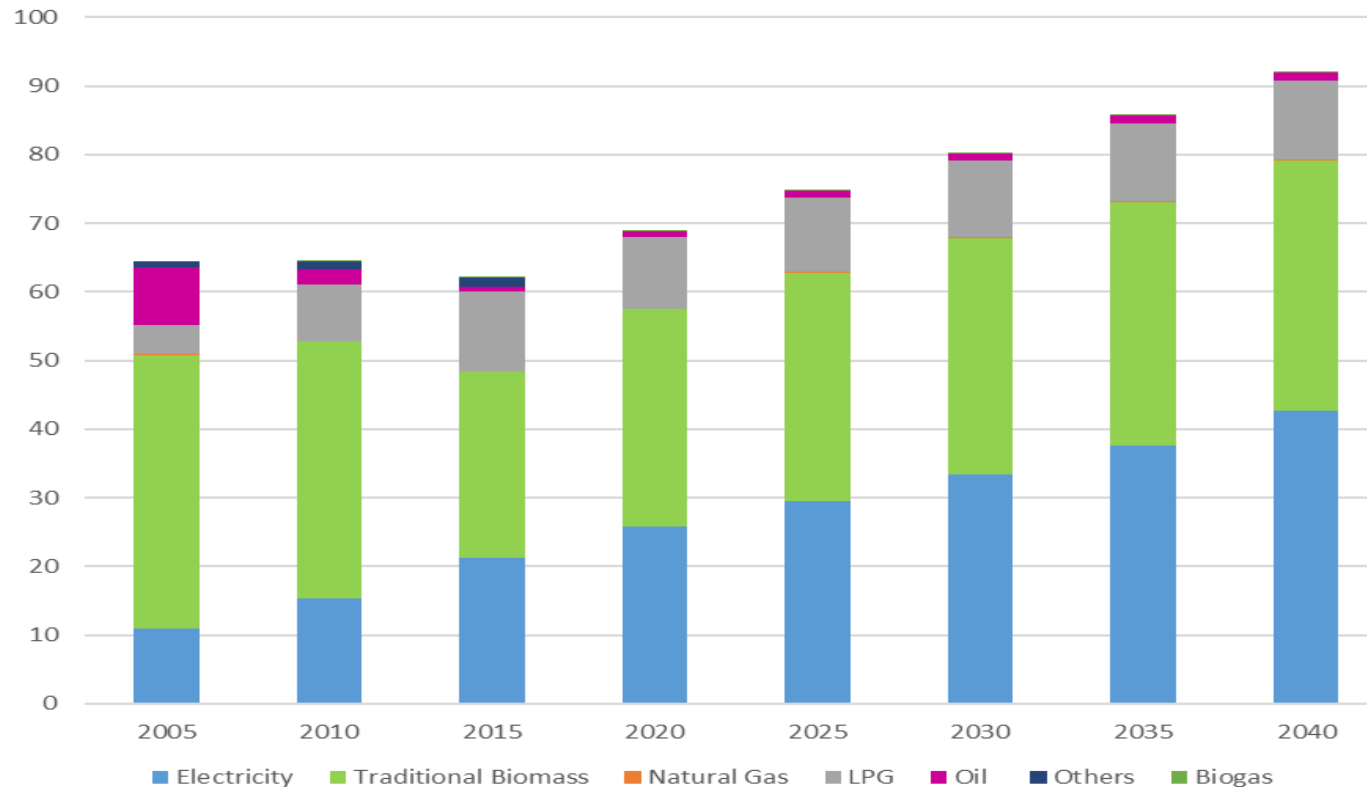
ASEAN Commercial Energy Demand (Mtoe),  
Baseline



the commercial and industrial sectors will have the most notable demand growth, with CAGR of 4.8% and 4.4% respectively

# Residential Energy Demand by Fuel

ASEAN households energy demand (Mtoe) by fuel,  
Baseline

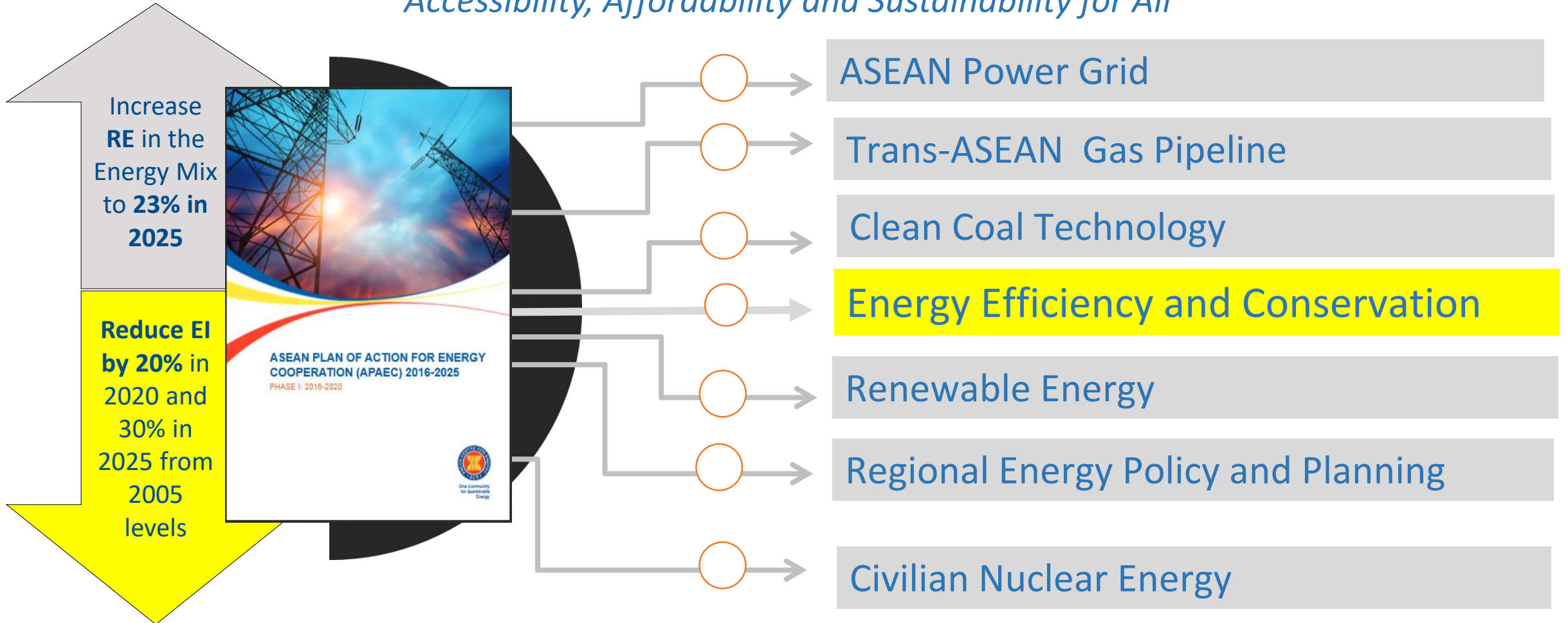


- Besides electricity, a large proportion of energy demand is provided by traditional biomass, which is in turn largely associated with cooking and it is also driven upwards by the growth of population.
- Accordingly, , around 74% of residential cooking in ASEAN uses traditional biomass sources, with wood as the most commonly-used fuel.



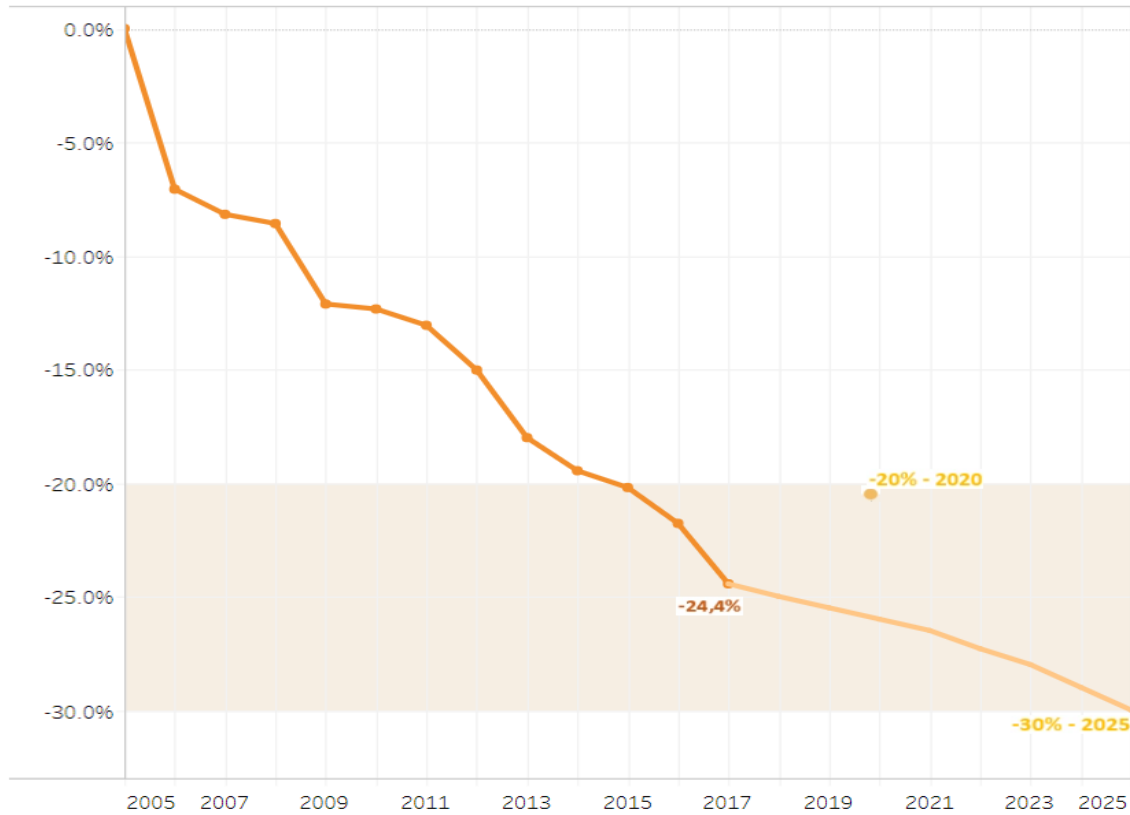
# ASEAN Plan of Action for Energy Cooperation (APAEC ) 2016-2025: Phase I 2016 - 2020

*“Enhancing Energy Connectivity and Market Integration in ASEAN to Achieve Energy Security, Accessibility, Affordability and Sustainability for All”*



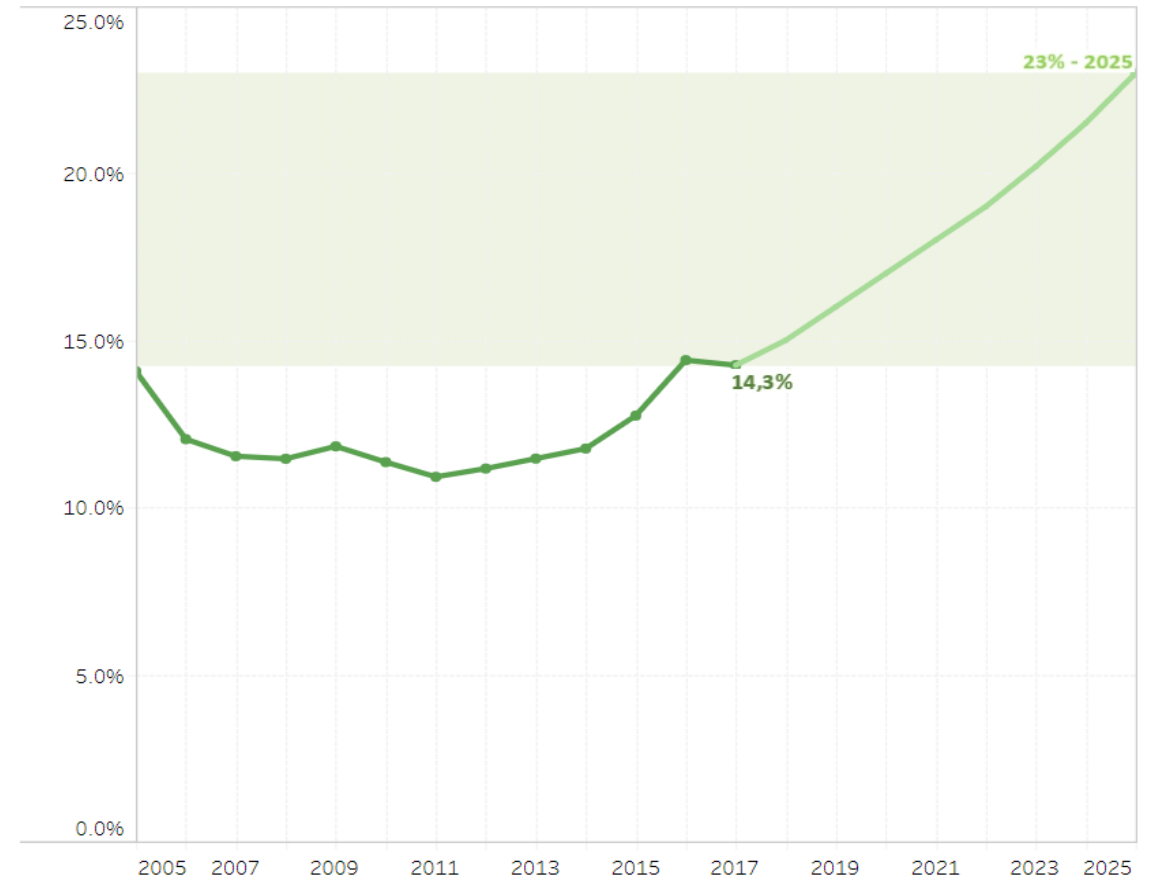
# ASEAN EE & RE Progress

ASEAN Energy Intensity (EI) Reduction in TPES from 2005 level



Energy Intensity (EI) reduction in TPES target by 2025 is -30% according to APAEC 2016-2025.

ASEAN Renewable Energy (RE) Share in TPES (%)



Renewable energy include biofuel, biomass, geothermal, solar, waste, wind.  
RE Share in TPES target by 2025 is 23% according to APAEC 2016-2025.



# Overview: Policies, plans, acts & financing instruments

Brunei Vision 2035		ESCO regulation		Tax exemption					
Standard & Labelling		National EE standard for building	Import duty exemption	Investment tax allowance		EE&C Act 2017			
Elec. Tariff Reform		Energy Law	Corporate tax holiday	Five fuel policy	Tax exemption	Republic Act 7638	Tax incentive		
EE Strategy	National strategic development plan	National Energy Policy 2014	EE&C plan (under developmen t)	National Energy Policy 1979	National Energy Policy 2014	Philippine Development Plan 2017- 2022	Energy Conservation Act 2013	EE Promotion Act	EE Law 2010
Energy white paper 2014	National policy, strategy and action plan 2013	National Energy Conservation Master Plan 2005	National EE Policy 2016	National EE Action Plan 2014	National EE&C policy, strategy & roadmap 2014	EE&C roadmap 2017-2040	Sustainable Singapore Blueprint	20-year EE Development Plan	Vietnam National EE Program
Brunei Darussalam	Cambodia	Indonesia	Laos PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
		Grants	Grants	Grants		Grants	Grants	Grants	Grants
				Loans	Loans			Loans	
				Guarantee	Guarantee				
							Equity		
				EPC, rebates			EPC		

# ASEAN Integrated Approach on Energy Efficiency

- ASEAN has a target on the Improvements in energy efficiency which lead to reduced fossil fuel energy consumption result in a reduction in 30% energy intensity by 2025.
- The ASEAN Centre for Energy (ACE) has a role to expedite the adoption of energy efficiency policy and technology in the region.

## Research & Development

- Develop technology roadmaps
- Prioritize opportunities
- Solicit and select innovative technology solutions
- Collaborate with researchers and market performers
- Solve technical barriers and test innovations to prove effectiveness
- Measure and validate energy savings



## Market Stimulation & Information

- Identify barriers to “speed and scale” adoption
- Develops solutions to policy, adoption, and financial barriers
  - Collaborate with industry partners to improve market adoption
  - Increase usage of products and services
  - Communicate the importance and value of energy efficiency
  - Provide technical assistance
  - Support development of workforce training and certification and award system



## Codes and Standards

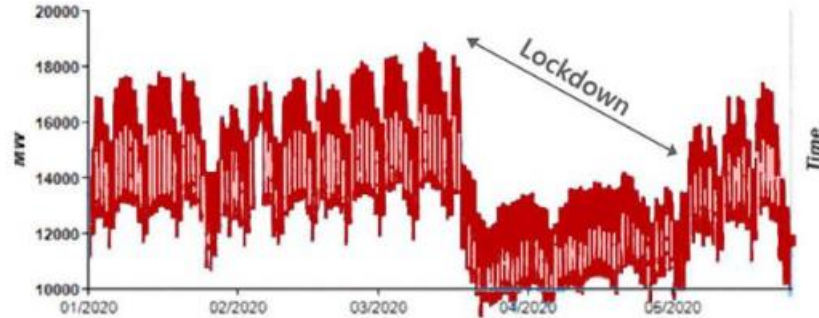
- Establish minimum energy use in a transparent public process- raise the efficiency bar
- Standard harmonisation
- Awareness raising
- Enhance industry competitiveness and sustainability
- Expand portfolio of energy efficient appliances and equipment



# Electricity Demand Falls in ASEAN Countries



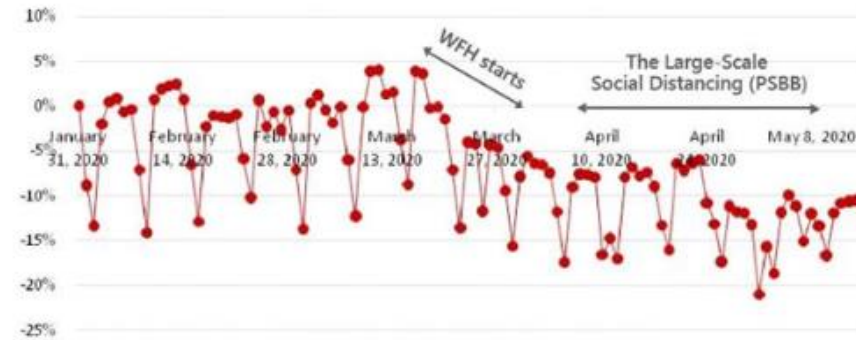
## Malaysia



10-minutes demand profile for Peninsular Malaysia



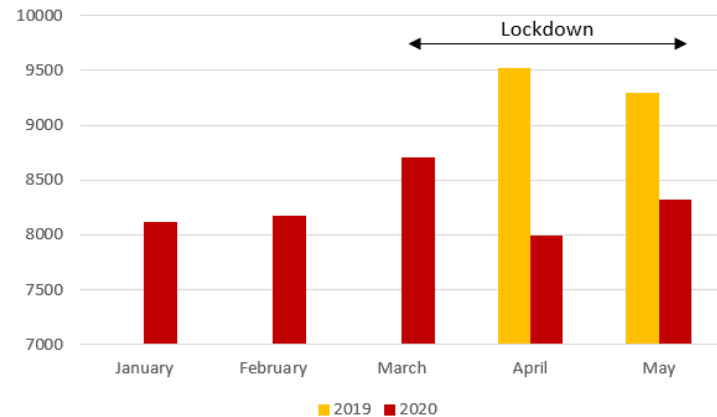
## Indonesia



Daily Peak Load for Jawa Bali System, 31 Jan to 15 May 2020



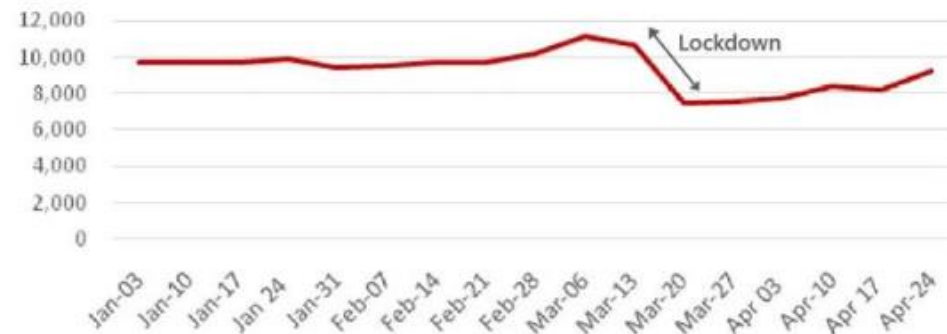
## Thailand



Max Demand in Bangkok Metropolitan Area



## Philippines



Max Demand for Luzon Area

# EE development was pushed back due to the Covid-19

*The delay on the acceleration of EE policy instruments and regulation*

*Aside of the policy, some of the EE related project are also postponed*



## Indonesia

Cut the ministerial budget on green energy including energy efficiency



## Malaysia

Malaysia postponed the legalization of the EE Law until 2021



## Singapore

Government measures for RE and EE projects under construction, special provision has also been made under the COVID-19 (Temporary Measures) Act of 2020 to allow for relief from obligations and construction timelines where delays are materially caused by COVID-19 and its impact on the economy



## Philippines

DOE will extend the submission of the Annual Energy Efficiency and Conservation Reports (AEECR) for designated establishments until April 15, 2021.



## Thailand

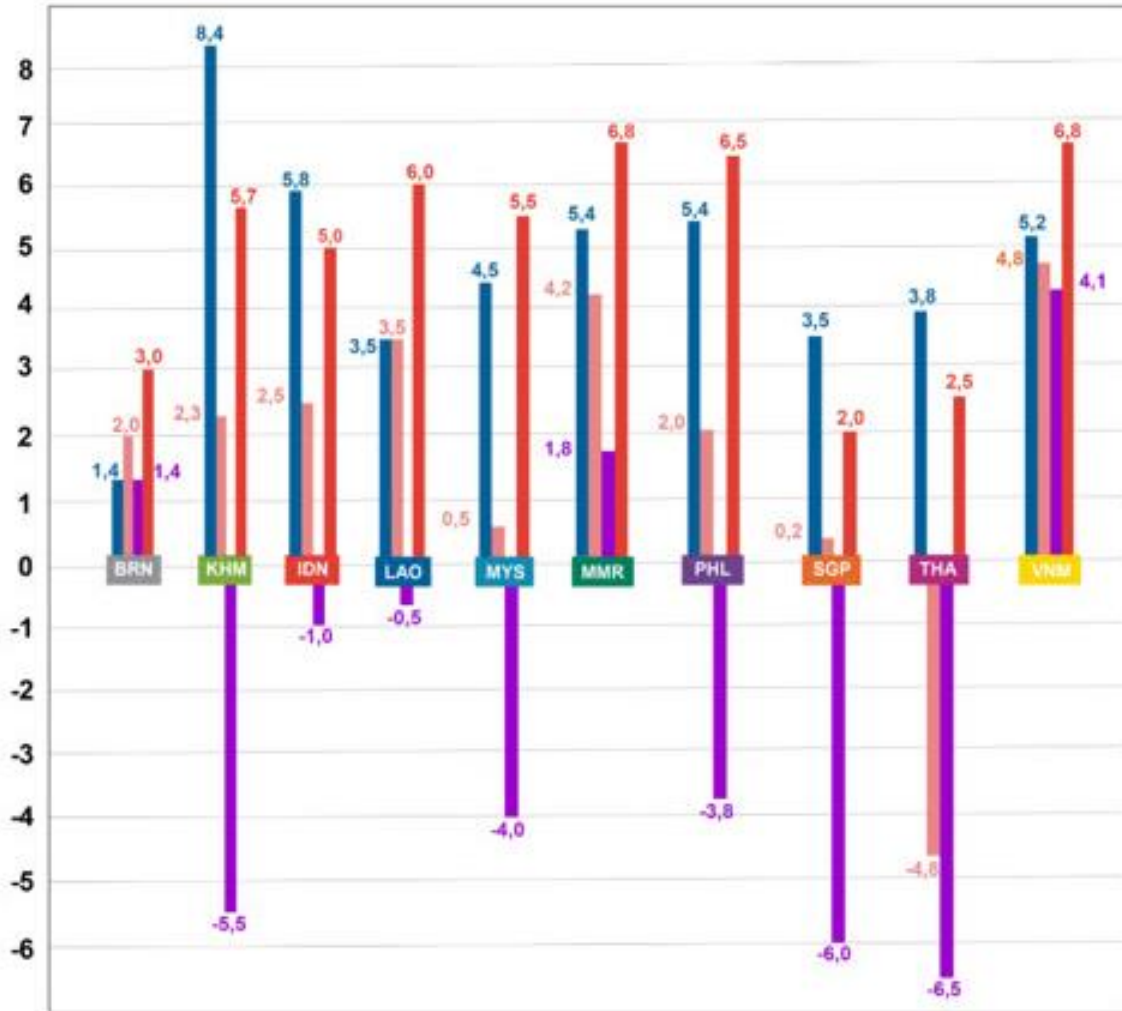
the budget for the Energy Conservation Fund Committee for fiscal year 2020 has been slashed to Bt5.6 billion from Bt10 billion approved on March 13.



## Myanmar

Delayed on the efficient power plant development

# Covid Impact on GDP Growth Rate



- The GDP decline reflected the response to COVID-19.
- GDP is used as the main dependent variable in the energy projection functions.
- GDP recession impacts to lower energy demand in End-users which consequently.

Source:

\*APERC GDP projection on the APEC Energy Demand & Supply Outlook 7th Edition (2019)

\*Cambodia and Lao PDR's non-covid projection are from IIASA, while Myanmar is from OECD

\*\* COVID growth projection refers to ADB Asian Development Outlook (ADO) April 2020

Growth Projection -  
2016-2030 /  
before Covid\*

Covid Growth  
Projection - 2020  
(ADB, April 2020)\*\*

Covid Growth  
Projection - 2020  
(ADB, June 2020)\*\*

Covid Growth  
Projection - 2021  
(ADB, April 2020)\*\*



# COVID-19 and ASEAN Energy Sector



## Lower Energy Demand

- Utilities need to cope with declining earnings and do technical adjustments during the lockdown period
- Lower fossil fuel demand >> creates opportunities to shift to cleaner fuel



## Halted Power Projects

- Power Development Plan need to be evaluated
- Priorities of power & energy development are adjusted as AMS in the recovery phase



## Emergency Stimulus Packages

- Easing the burden on paying the bills
- Energy incentive and subsidy during pandemic will change the overall energy budget in the country



## Energy Efficiency impact

- With credit rating of companies declining, it is going to be a challenge to secure uncollateralized EE project
- Delayed of EE projects put investment and progress halted



## Inter-related sector impact

- Declining oil-price impact to power sector
- Emission was lower during the lockdowns but in post pandemic era it still uncertain



# Recommendation Action for Policymakers

for Sustainable  
Energy

1. Draw up national programmes for housing and industrial and commercial buildings that are known to have potential to perform better in terms of energy efficiency.
2. The implementation of EE and related investments will not only create immediate energy saving but job opportunities, hence, contributing directly to business recovery
3. The guarantee supported by the financing must be functional to M&V system that is key to ensuring more energy efficiency projects are developed
4. The government fiscal incentives such as an EE investment tax allowance, EE equipment import duty waivers, etc will increase the appetite on energy efficiency projects post the covid-19
5. Encourage private participation in joint projects or provide financial assistance to ensure that the fundamental needs and trustworthy

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