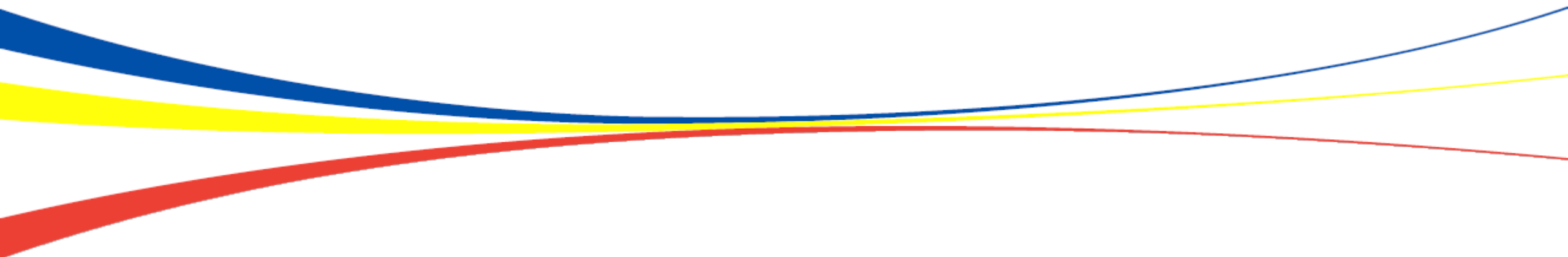


ASEAN-ENERGY EFFICIENCY & CONSERVATION AND ENERGY TREND



One Community
for Sustainable
Energy

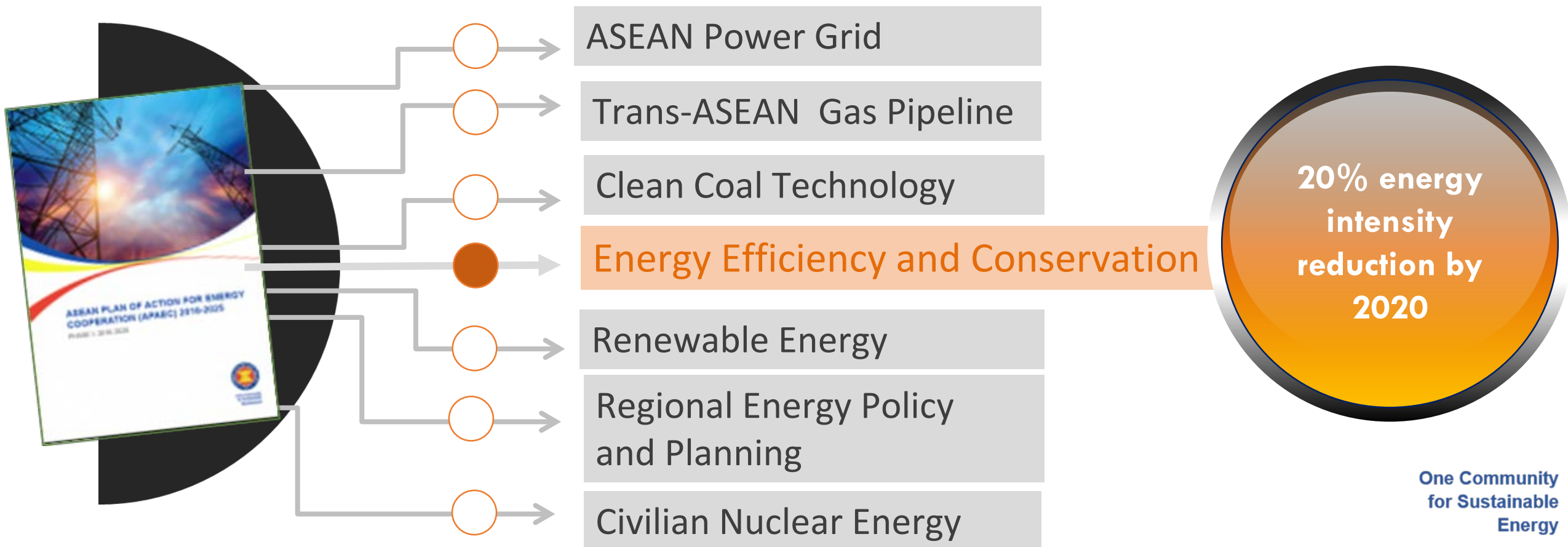
Table of Content

- 1 APAEC 2016-2020**
- 2 EE STRATEGIC AND ACTION PLAN**
- 3 ASEAN EE&C TARGET OVERVIEW**
- 4 ENERGY TRENDS**
- 5 EE STATUS**
- 6 KEY FINDINGS: ASEAN EE BEST PRACTICES**
- 7 CONCLUSION**

REGIONAL EE TARGET

ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025:

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



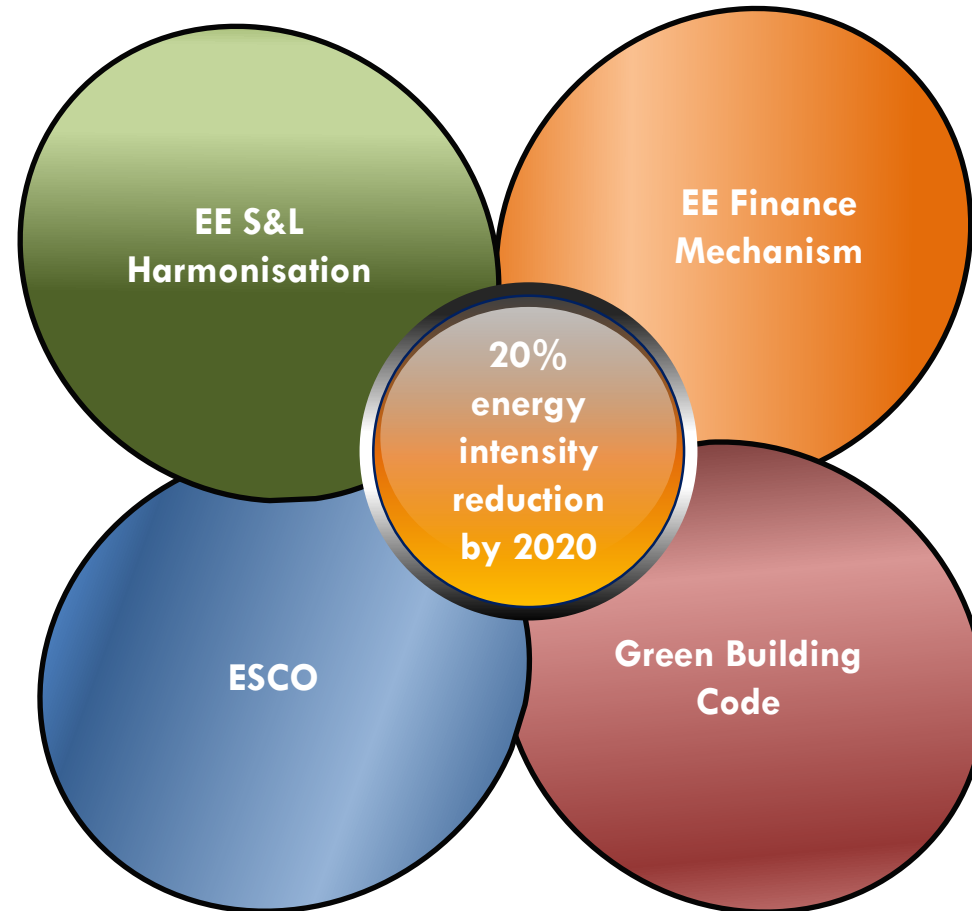
EE&C STRATEGY & ACTION PLAN

Key Strategies

- Regional policy and roadmap for Minimum Energy Performance (MEPS)
- Capacity Building
- Awareness raising programme

Key Strategies

- Policy support to promote ESCO
- Greater involvement of private sector
- EE technology



Key Strategies

- Guideline to finance EE project
- Greater involvement of public and private
- Training for finance institution (Bank, project developer, etc.)

Key Strategies

- Guideline of building code
- Capacity building
- International collaboration on green building

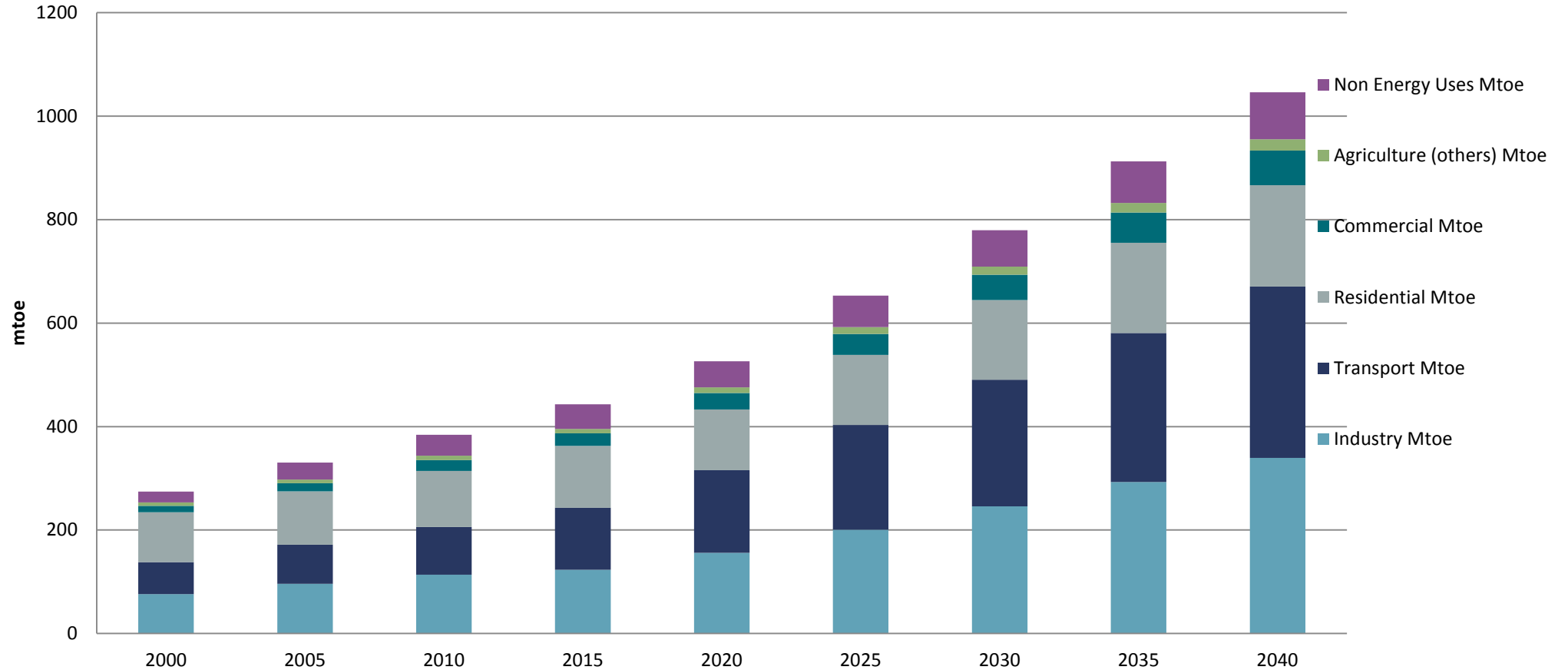
EE TARGET OVERVIEW OF ASEAN MEMBER STATES



Country	Reference Document	Energy Efficiency Target
Brunei	Energy White Paper 2014	45% energy intensity reduction by 2030 (baseline 2005)
Cambodia	National Policy, Strategy and Action Plan on Energy Efficiency in Cambodia (2016)	20% reduction in energy demand by in 2035 (baseline 2009)
Indonesia	Government Regulation No. 79/2014 KEN	1% energy intensity reduction per year between 2005 and 2025 Energy Savings of 15% in the commercial sectors and households
Lao PDR	Energy Efficiency and Conservation Plan (<i>Under development</i>)	10% energy saving by 2030
Malaysia	The 11th Energy Efficiency Action Plan	To reduce electricity consumption at 8% in 3 sectors by 2025 (residential, commercial & industry sectors)
Myanmar	National Energy Efficiency Policy, Strategy and Road map, 2016. (approved by Cabinet and published in Feb, 2016).	National Energy consumption Reduction Target are 12% by 2020, 16% by 2025 and 20% by 2030 (base year 2012).
Philippines	National Energy Efficiency and Conservation Program (NEECP) (<i>Under revision</i>)	45% energy intensity by 2035 (baseline 2005)
Singapore	Sustainable Singapore Blueprint 2015	30% energy intensity improvement by 2030 (baseline 2005)
Thailand	Energy Efficiency Development Plan 2015-2036	Energy Efficiency Development Plan 2015-2036
Vietnam	Vietnam National Energy Efficiency Programme (VNEEP) 2005-2015	Initial energy savings of 3-5% during the period 2006 - 2010 and a further 5-8% during the period 2011 - 2015

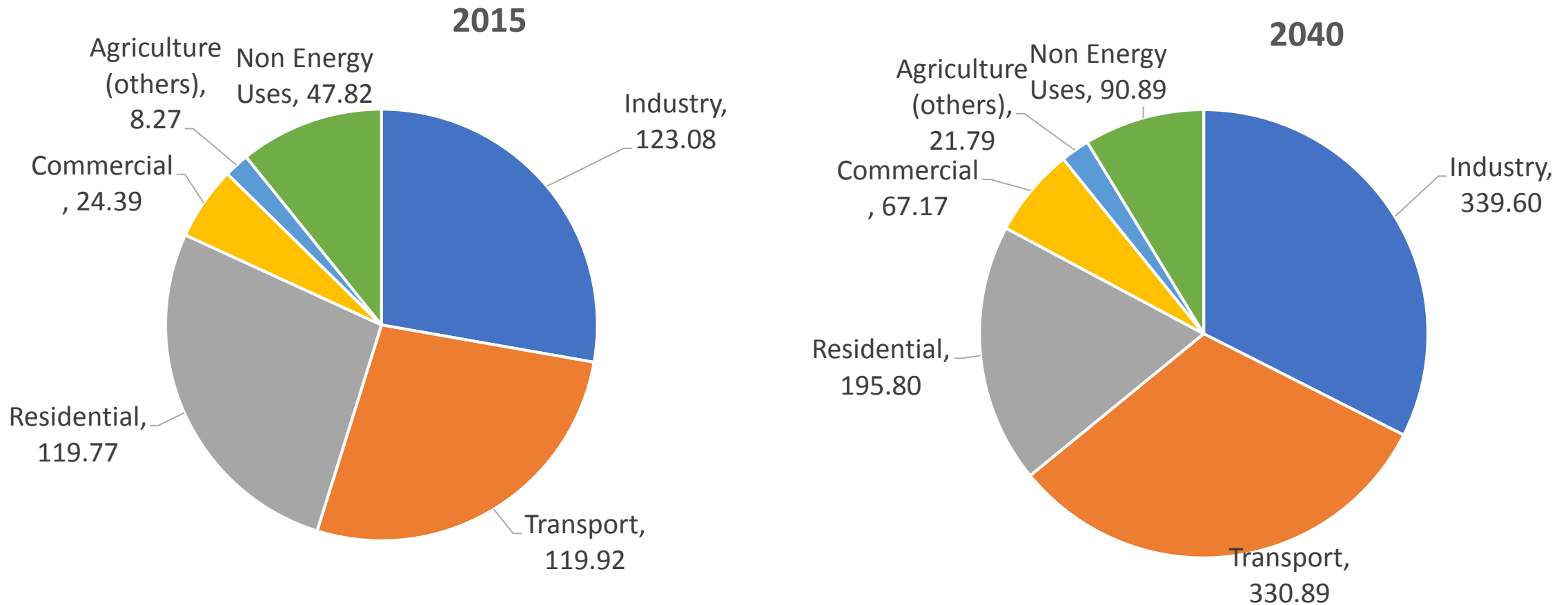
TOTAL FINAL ENERGY CONSUMPTION

TFEC by sectors



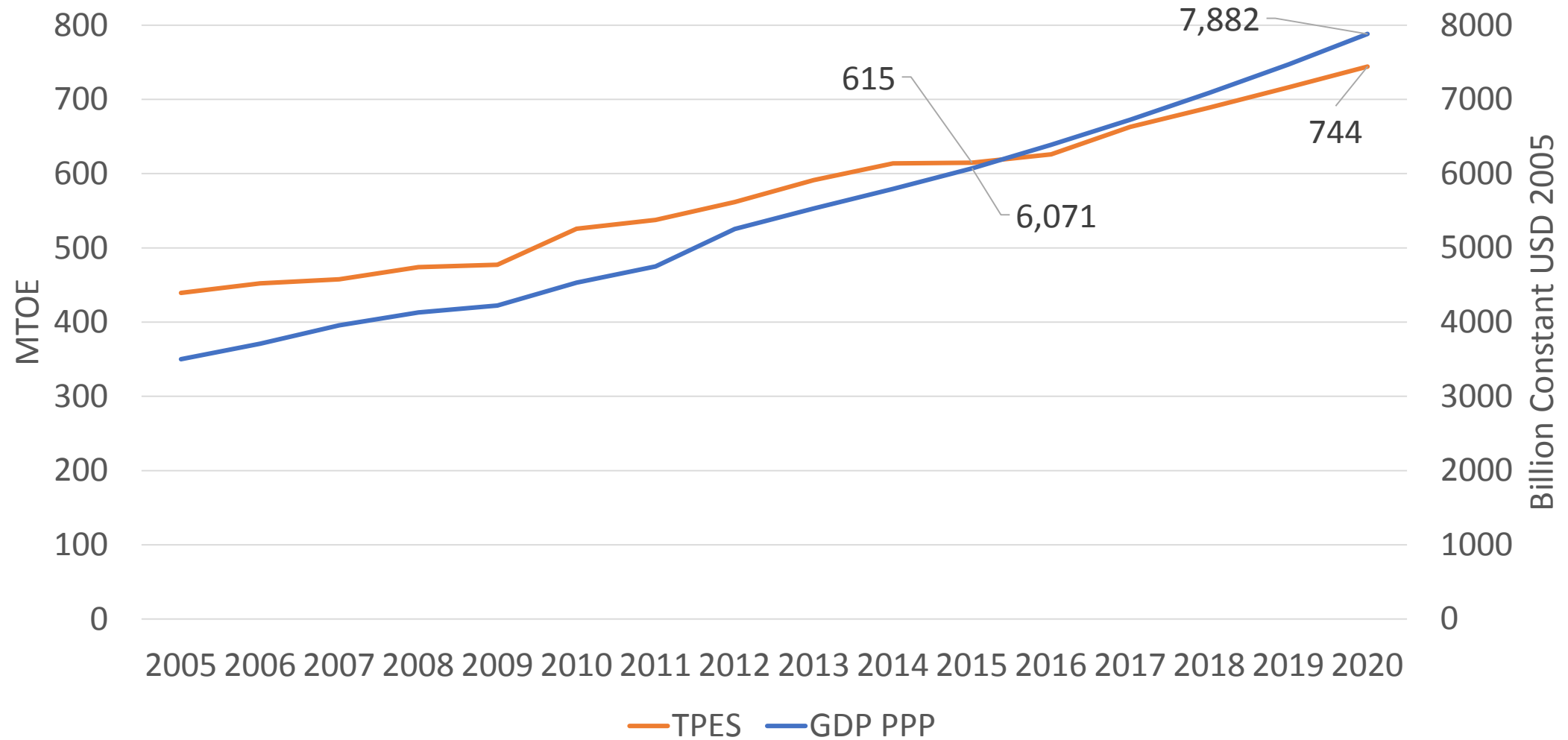
TFEC will reach 1046 mtoe in 2040 and increase by factor 2.4x.

TOTAL FINAL ENERGY CONSUMPTION



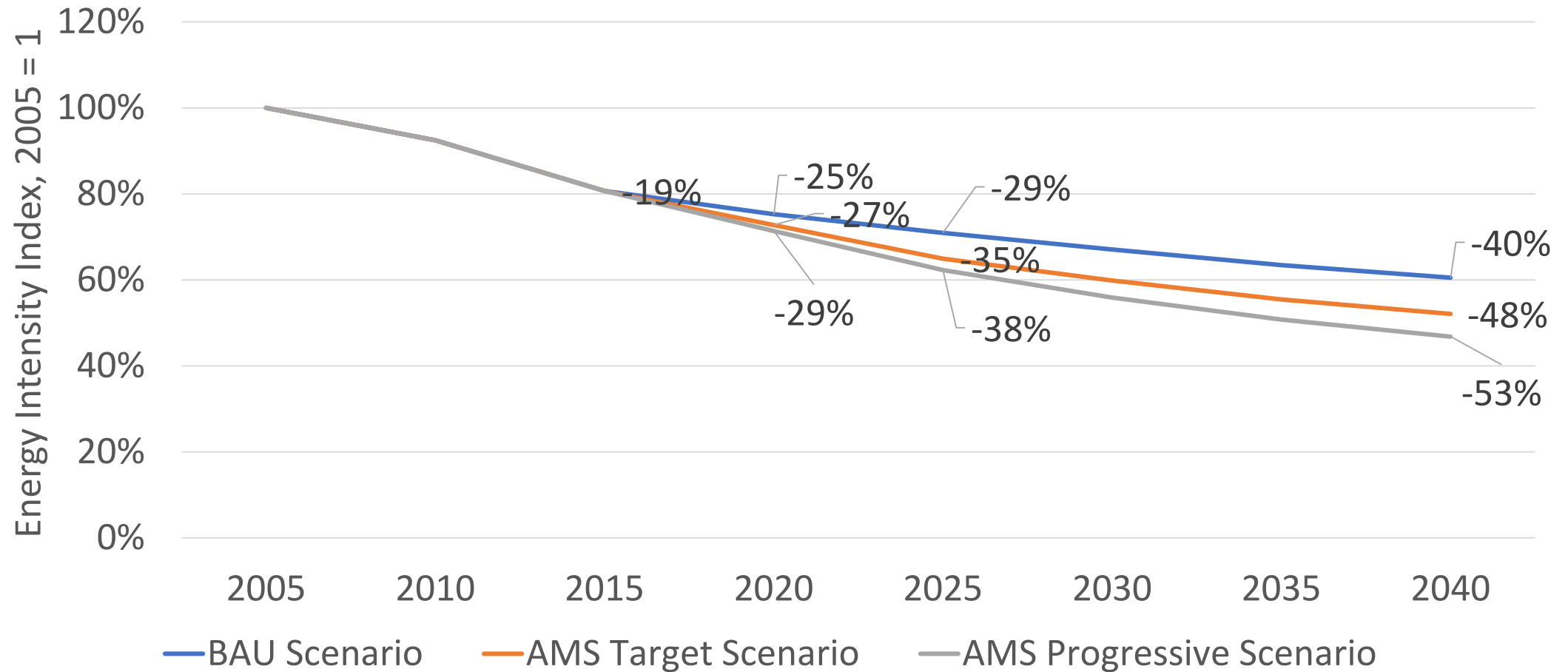
Industry and commercial energy consumption will increase by factor 2.8x in 2040

PRIMARY ENERGY CONSUMPTION AND GDP



ENERGY INTENSITY TREND

APAEC EI Target; %Reduction - all scenarios



ASEAN MEMBER STATES

“EE LEGALISATION FRAMEWORK”

	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
National Plan & Policy on EE&C	Yes	Draft	Yes	Draft	Yes	Yes	Yes	Yes	Yes	Yes
EC Law/Regulations Enforced Year	Yes Energy Law 2014	UP	Yes 2009 (regulation)	UP	Yes 2008 (regulation)	Draft	Yes (regulation)	Yes 2013	Yes 1992	Yes 2011
Government Organization responsible for EC	EDPMO	MME	MEMR	MEM	MEGTW EC	MOI	DOE	EMA	DEDE	MOIT
Implementing Body	EDPMO	MME	DGNREEC	IREP	EC	EE&C Office	DOE	NEA	DEDE	EE&C Office

Note: UP = Under Preparation

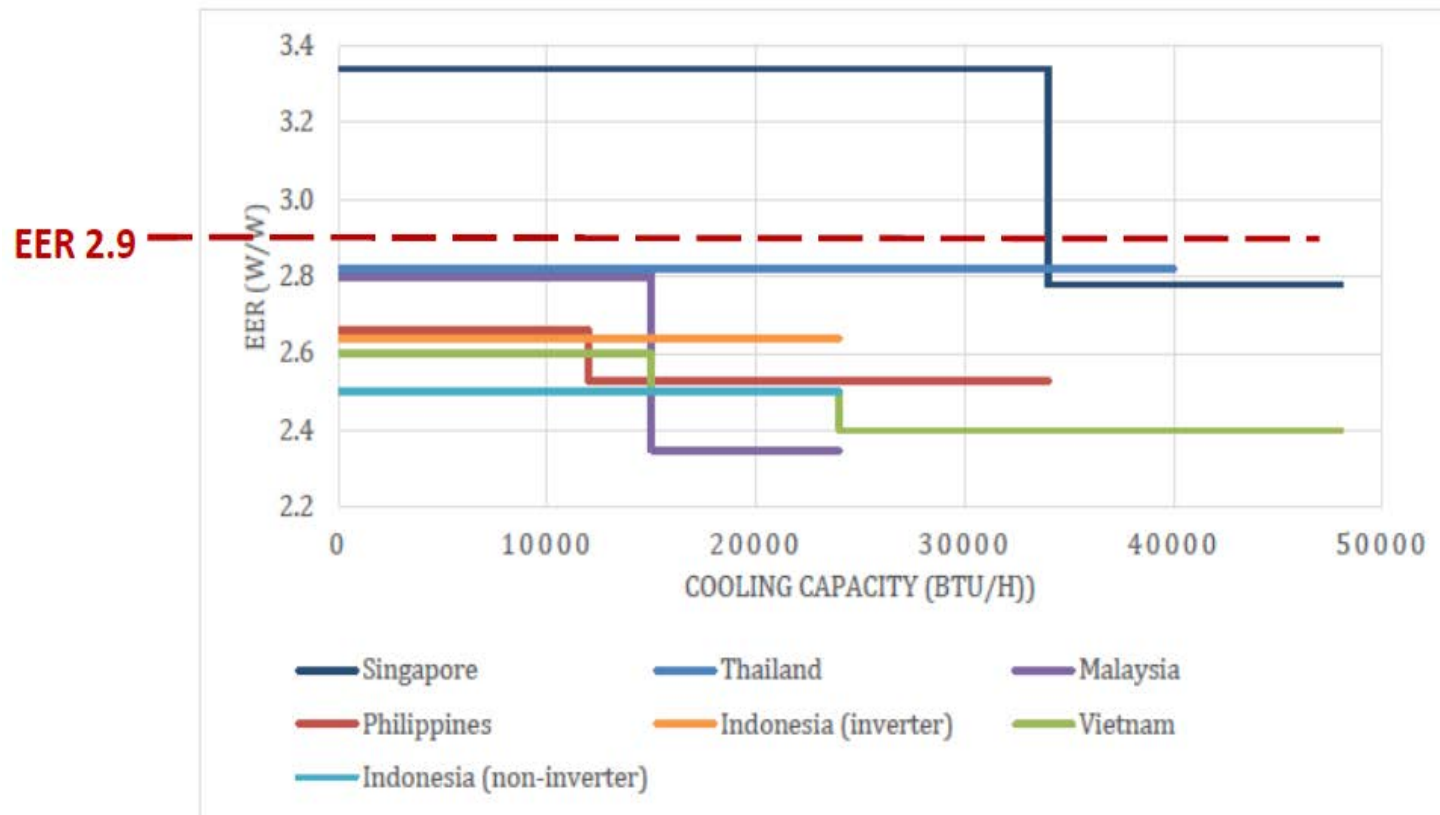
ENERGY MANAGEMENT POLICY

	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
Target Energy										
1) Electrical Energy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2) Thermal Energy	No	No	Yes	No	No	No	Yes	Yes	Yes	Yes
Designated Energy Users (Yearly basis)	No	No	$\geq 6,000$ toe/y	No	$>3 \times 10^6$ kWh/6M	No	$\geq 1 \times 10^6$ LOE (Q4) $\geq 2 \times 10^6$ LOE (54TJ/y (1,290 toe/y)	≥ 478 toe/y or See below.* ¹	Industry $\geq 1,000$ Building ≥ 500 toe/y
Periodical Reporting	No	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Certified Energy Manager	(Under Preparation)	No	Yes	No	Yes	Under preparation	Yes	Yes (04/2014-)	Yes	Yes Yes
Certified Energy Auditor	(Under Preparation)	No	Yes	No	No	Under Preparation	Yes	No	Under preparation	

EE STANDARD & LABELING

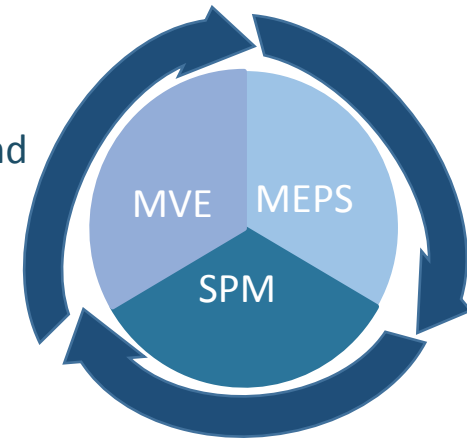
	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
Standard										
1) MEPS	Yes	UC	Yes	UP	Yes	UP	Yes	Yes	Yes	Yes
Initiated year;			2009-		M 2013-					
<u>Target product</u>										
▪ AC	V	UP	M	UP	M	UP	M	M	M	M
▪ Refrigerator	V	UC	UC	UP	M	UP	M	M	M	M
▪ Lighting	V	UP	M	UP	M	UP	M	M	M	M
2) HEPS	No		No		No		No	No	Yes	No
									2010 (V)	
Labeling	UC	UC (5 star rating)	M 4 star rating (Under study)	UP	M 5 star rating Mandatory	UP	Yes (New design for 5 star rating - under study)	Yes 5 tick system Mandatory	V 5 star rating Mandatory/ Voluntary	M 5 star rating 2013-
Note: UC = Under Construction UP = Under Preparation/Plan										

ASEAN REGIONAL POLICY ROADMAP ON AC



Integrated Policy Approach

Monitoring
Evaluation and
Verification



Minimum
Energy
Performance
Standard

Supporting Policy
And Mechanisms

EE FINANCE MECHANISM



	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
ESCO (Source: ACE ESCO Study) <ul style="list-style-type: none"> ESCO related policies ESCO existence, Association, Accreditation Types of Contract 	Yes, Associa., No Accred. Share and Guaranty Saving		Yes, Associa., No Accred. Share and Guaranty Saving		Partial Yes, Associa., No Accred. EPC		Yes, Associa., No Accred. EPC	Yes, Associa., No Accred. EPC	ENCON ACT Yes, Associa., No Accred. EPC	Yes, Associa., No Accred.
FINANCE MECHANISM			Available : Tax incentive		Available : Rebate, Incentive, lower tax, etc		Available	Available : Grant, tax incentive etc	Available Encon fund, Lower tax, Subsidy, Grant	Available

*Combine public and private involvement on EE investment, policy support on ESCO and guideline development

STATUS OF EFFICIENT BUILDING CODES

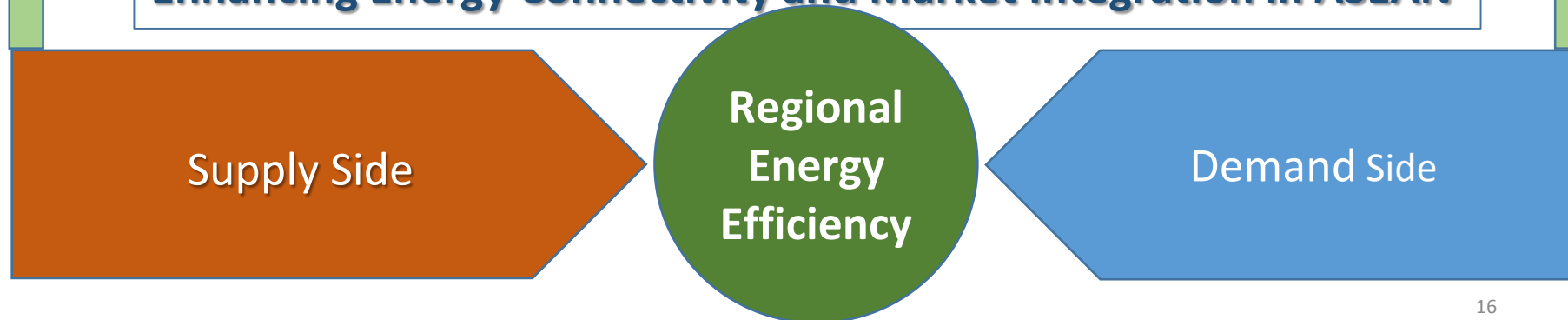
	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
STATUS OF REGULATION										
Included in Standard Building Codes /laws			●		●			●	●	●
Included as separate codes			●		●			●	●	●
Include as separate rating system			●		●		●	●	●	●
Mandatory sub-national level										●
TECHNICAL REQUIREMENTS										
Building Enveloped			M		M		M	M	M	M
Energy Efficiency			M		V			M		M
HVAC			M		M		M	M	M	M
Lighting			M		M		M	M	M	M
Renewable Energy					V			V		

MOVING FORWARD

Continue to draw on the regional platforms to

- 1. Establish policy formulation and institutional framework to overcome common barriers to promote EE & C strategies**
- 2. Decoupling between gross domestic product (GDP) and primary energy consumption esp. in developing economies in ASEAN**
- 3. Moving towards establishing of MRA - regional energy labels and standards and data base**

Enhancing Energy Connectivity and Market Integration in ASEAN



Thank you.



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