

Current Status and Issues of BEC/GBC and AEA compatible in ASEAN

Presented by:
ASEAN Centre for Energy



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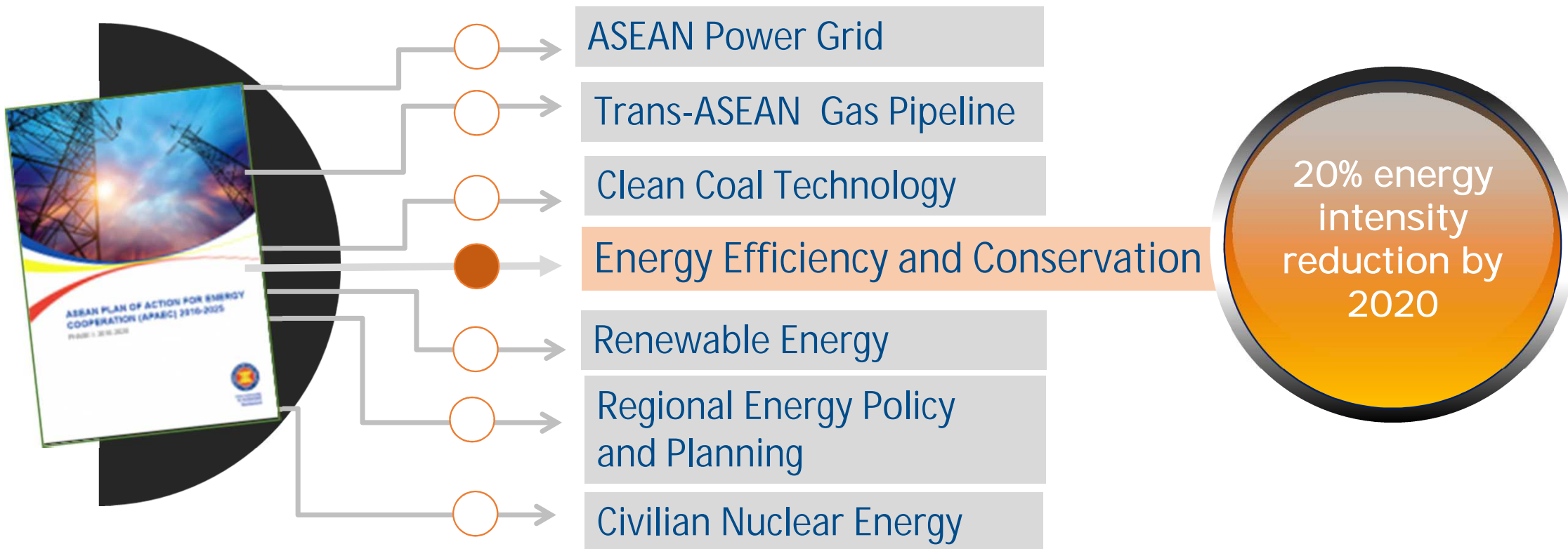


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INTRODUCTION

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"



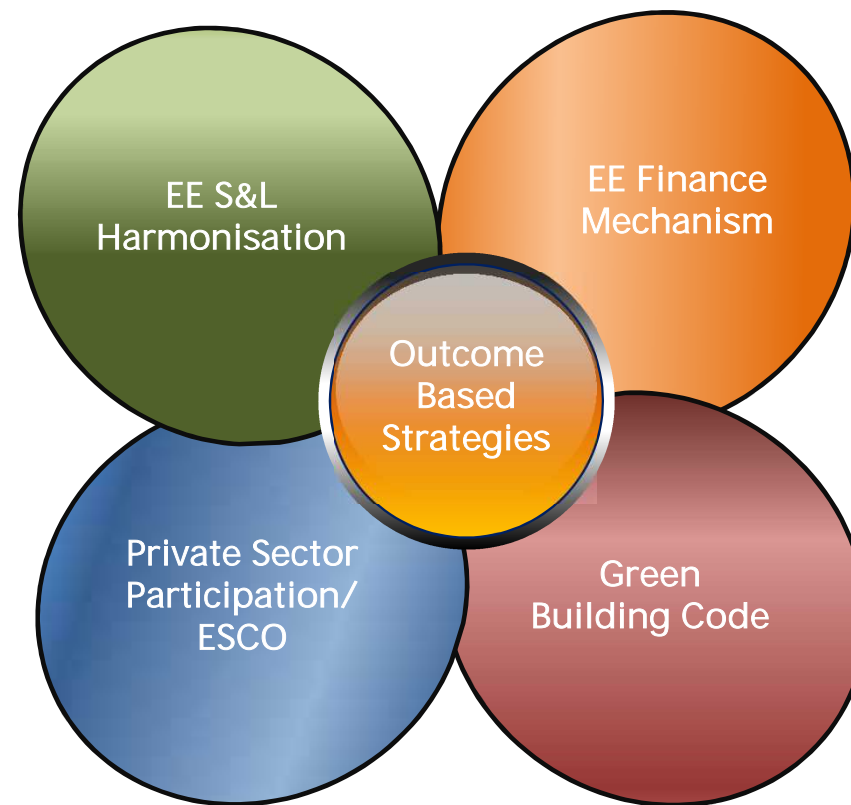
EE&C Outcome-Based Strategies and Action Plans

Action Plans

- ☐ Regional policy and roadmap for MEPS
- ☐ National Policy & Roadmap for MEPS
- ☐ Awareness raising programme

Action Plans

- ☐ Create more opportunities for private sector
- ☐ Capacity Building
- ☐ ASEAN Energy Awards



Action Plans

- ☐ Establish network of FIs
- ☐ Training
- ☐ Pilot Projects
- ☐ Guidelines on EE financing
- ☐ Implementation of EE financing projects

Action Plans

- ☐ Review of international experience on GBC
- ☐ Guideline of GBC
- ☐ Capacity building



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AMS EE Strategic Plan and EE Target

Country	EE Strategic Plan	EE Target
 BN	<ul style="list-style-type: none"> Energy White Paper 2014 Intended National Determined Contribution 2015 	<ul style="list-style-type: none"> 45% reduction of EI in 2035 compared to 2005
 KH	<ul style="list-style-type: none"> National Policy Strategy and Action Plan on Energy Efficiency in Cambodia 2013 National Strategic Development Plan 2014-2018 	<ul style="list-style-type: none"> 20% reduction of energy demand in 2035 compared to BAU
 ID	<ul style="list-style-type: none"> National Master Plan for Energy Conservation 1995, 2011 General Plan for National Energy 2017 	<ul style="list-style-type: none"> 1% reduction of EI per year until 2025 15% reduction of TFEC in each household and commercial sectors by 2025 compared to BAU
 LA	<ul style="list-style-type: none"> Energy Sector Assessment, Strategy, and Road Map 2013 Energy Efficiency and Conservation Plan (2017) 	<ul style="list-style-type: none"> 10% reduction of TFEC in 2030 compared to BAU 1% reduction of energy consumption per year
 MY	<ul style="list-style-type: none"> National Energy Efficiency Action Plan 2016-2025 11th Malaysia Plan 2016 	<ul style="list-style-type: none"> 8% reduction in energy consumption in 2025 compared to 2016
 MM	<ul style="list-style-type: none"> National Energy Efficiency and Conservation Policy, Strategy and Roadmap 2015 Myanmar Energy Master Plan 2015 	<ul style="list-style-type: none"> 20% reduction of electricity consumption in 2030 compared to 2012 baseline
 PH	<ul style="list-style-type: none"> Philippines Energy Efficiency and Conservation Roadmap 2017-2040 	<ul style="list-style-type: none"> 40% reduction of EI in 2050 compared to 2005 25% and 20% reduction of TFEC in commercial and residential sectors respectively in 2040
 SG	<ul style="list-style-type: none"> Energy Efficiency Singapore BCA Green Building Masterplan (2006, 2009, 2014) 	<ul style="list-style-type: none"> 35% reduction of EI in 2030 compared to 2005 80% of buildings certified by GreenMark in 2030
 TH	<ul style="list-style-type: none"> 20-Year Energy Efficiency Development Plan 2011-2030 Thailand's Integrated Energy Blueprint 2015 	<ul style="list-style-type: none"> 30% of EI reduction in 2036 compared to 2010 baseline 41% and 15% reduction of TFEC in commercial and residential sectors respectively in 2036
 VN	<ul style="list-style-type: none"> Vietnam National Energy Efficiency Program 2006-2015 National Targeted Program on EE&C 2012-2015 	<ul style="list-style-type: none"> 8% reduction of TFEC in 2020 compared to BAU 10% reduction of EI in 2020 compared to BAU



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AMS Building Codes and Energy Standards

Country	Building Codes	Energy Standards	RE Utilisation in Building
 BN	PBD 12:2017 Building Guidelines and Requirements	EEC Building Guidelines for Non-Residential Buildings - 2015	
 KH			
 ID	Jakarta Green Building Code (2012)	SNI 03-6389-2011; SNI 03-6390-2011; SNI 03-6197-2011	
 LA			
 MY	JKR Guidelines to Practice Energy Efficiency in CKE (Cawangan Kejuruteraan Elektrik) - 2010	MS 1525 - 2014	Voluntary
 MM			
 PH	Philippines Green Building Code - 2015	Guidelines for Energy Conserving Design of Buildings - 2008	
 SG	Code for Environmental Sustainability of Buildings(2012)	Code on Envelope Thermal Performance for Buildings SS530: 2014, SS553:2016, SS 531-1:2016SS554:2016, SS591:2013, SS CP 38	Mandatory
 TH	Thailand Rating Energy and Environment System - 2012	Ministerial Regulation for Energy Saving Building Design BE 2552 Energy Conservation Promotion Act BE 2550 – 2007	Voluntary
 VN	Law on Economical and Efficient use of Energy (LOTUS) - 2010	National Energy Efficiency Building Code CVN 09:2013/BXD	

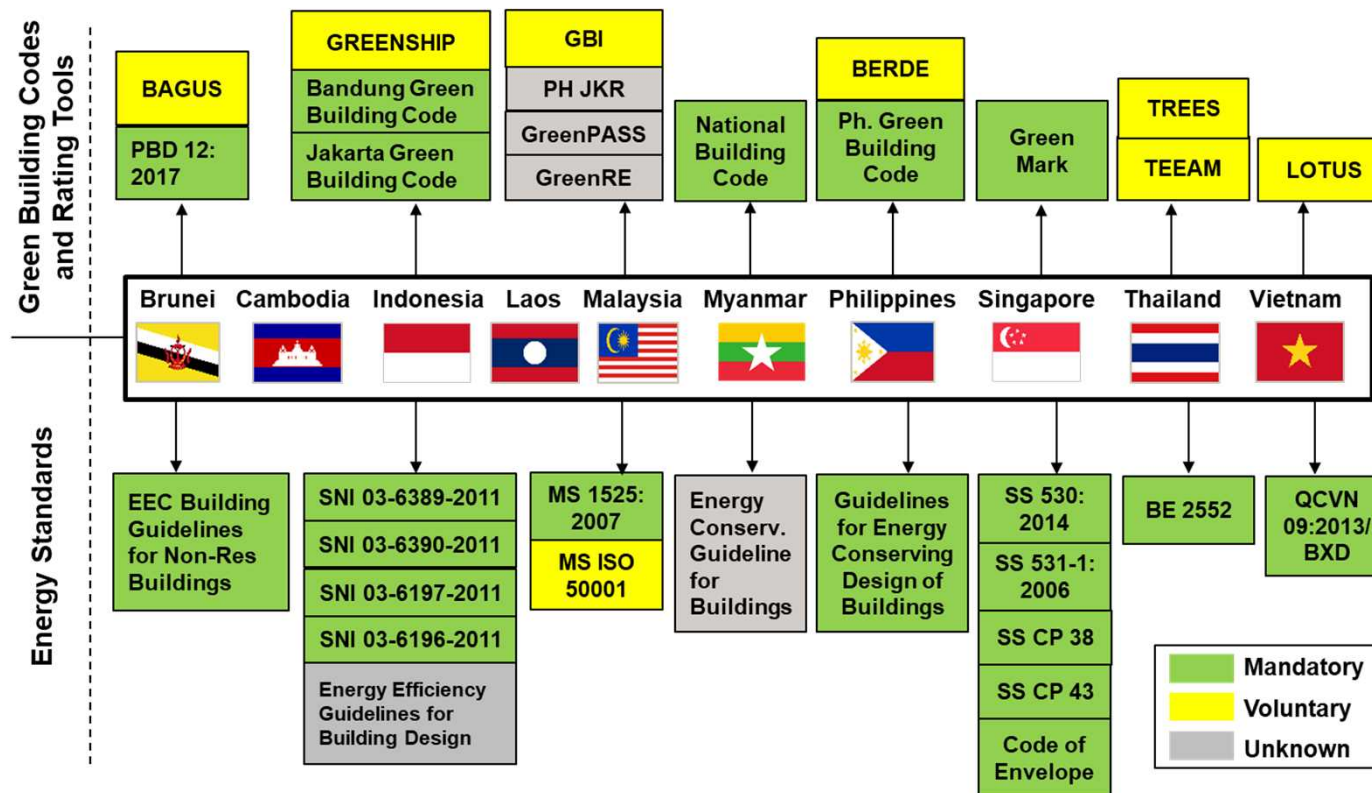


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ASEAN GBC Rating Tools



Green Building Codes, Rating Tools, and Energy Standards



Energy Efficiency Categories in Green Building Rating Tools

Brunei (BAGUS) <ul style="list-style-type: none"> • Building Envelope - OTTV • Air - Conditioning System • Building Envelope - Design / Thermal Parameters • Natural Ventilation (exclude carparks) • Artificial Lighting • Ventilation in Carparks • Ventilation in Common Areas • Lifts and Escalators • Energy Efficient Practices & Features 	Cambodia	Indonesia (GREENSHIP) <ul style="list-style-type: none"> • Electrical Sub-metering • OTTV Calculation • Energy Efficiency Measure • Natural Lighting • Ventilation • Climate Change Impact • On Site Renewable Energy (Bonus) 	Laos	Malaysia (GBI) <ul style="list-style-type: none"> • Minimum EE Performance • Lighting Zoning • Electrical Sub-metering • Renewable Energy • Advanced EE Performance • Enhanced Commissioning • Post Occupancy Commissioning • EE Verification • Sustainable Maintenance
Myanmar	Philippines (BERDE) <ul style="list-style-type: none"> • Energy Sub metering • Energy Efficient Lighting • Natural Ventilation • On - site Renewable Energy Generation • Energy Efficiency Improvement • Energy Efficiency Building Envelope 	Singapore (Green Mark) <ul style="list-style-type: none"> • Building Envelope - ETTV • Air - Conditioning System • Building Envelope - Design / Thermal Parameters • Natural Ventilation/ Mechanical Ventilation • Daylighting • Artificial Lighting • Ventilation in Carparks • Ventilation in Common Areas • Lifts and Escalators • Energy Efficient Practices & Features • Renewable Energy 	Thailand (TREES) <ul style="list-style-type: none"> • Minimum Energy Efficiency • Energy Efficiency • Renewable Energy • Refrigerant in air conditioning systems that does not destroy ozone layer 	Vietnam (LOTUS) <ul style="list-style-type: none"> • Passive Design • Total Building Energy se • Building Envelope • Natural Ventilation and Air-conditioning • Artificial Lighting • Energy Monitoring and Management



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Challenges in EE measures implementation in GBC

- General Challenges
 - Limited Resources and Financial
 - Limited Awareness on EE measures and impacts
 - Unavailability of Energy Codes and Standards
- Technical Challenges
 - Overall scope of the building EE codes and standards
 - Data Availability and Analysis
 - Measurement, Reporting, and Verification system
- Policy Challenges
 - Coordination between stakeholders, including related government/ministries
 - Supporting policies, laws, and regulation
 - International practices alignment



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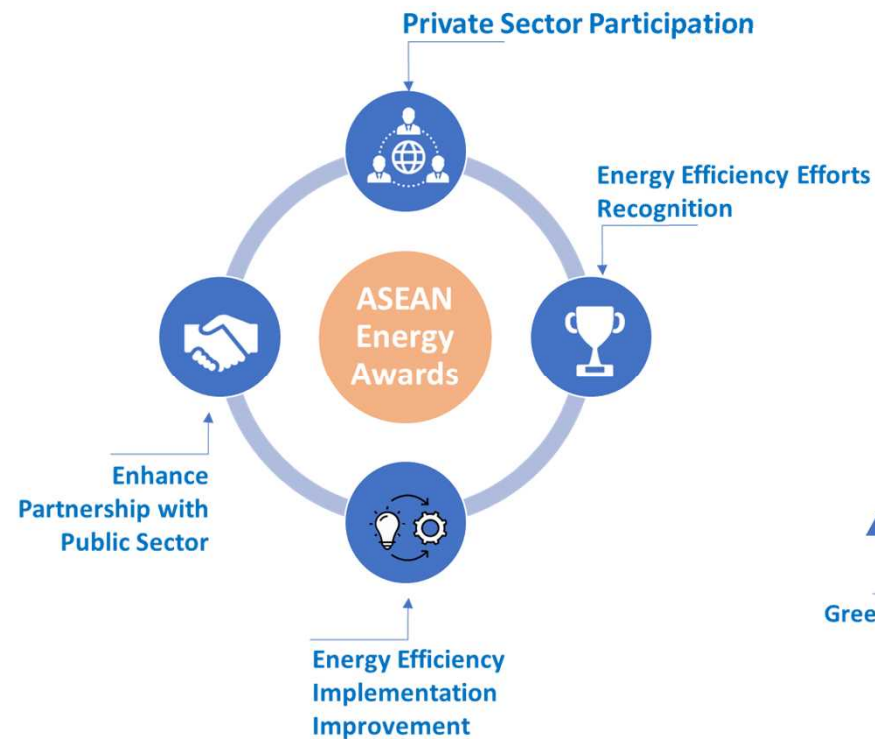
ASEAN Energy Awards

Introduction

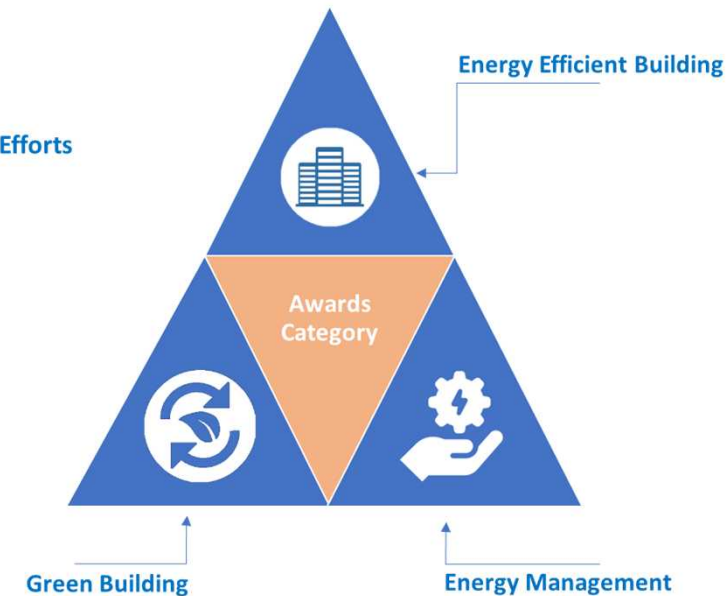


- Launched in 2000
- Regional Award Programme
- Energy Excellence Highest Rewards

Objectives



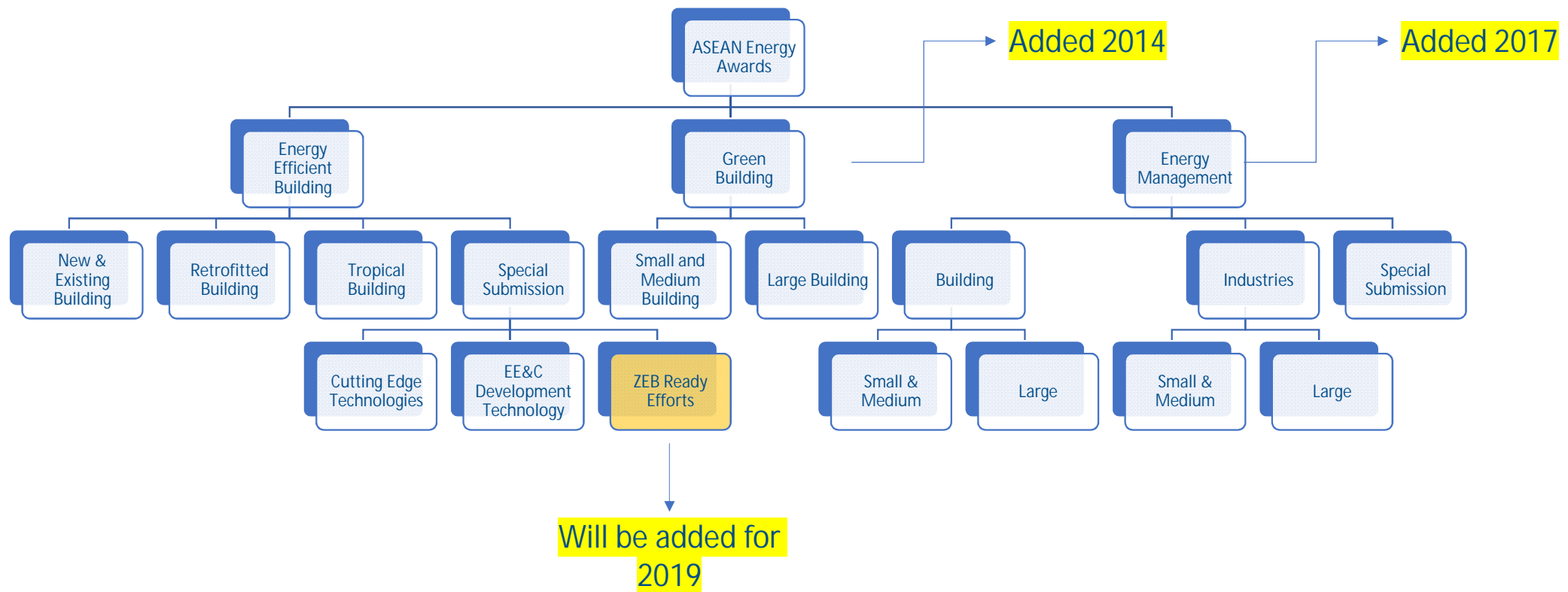
Categories





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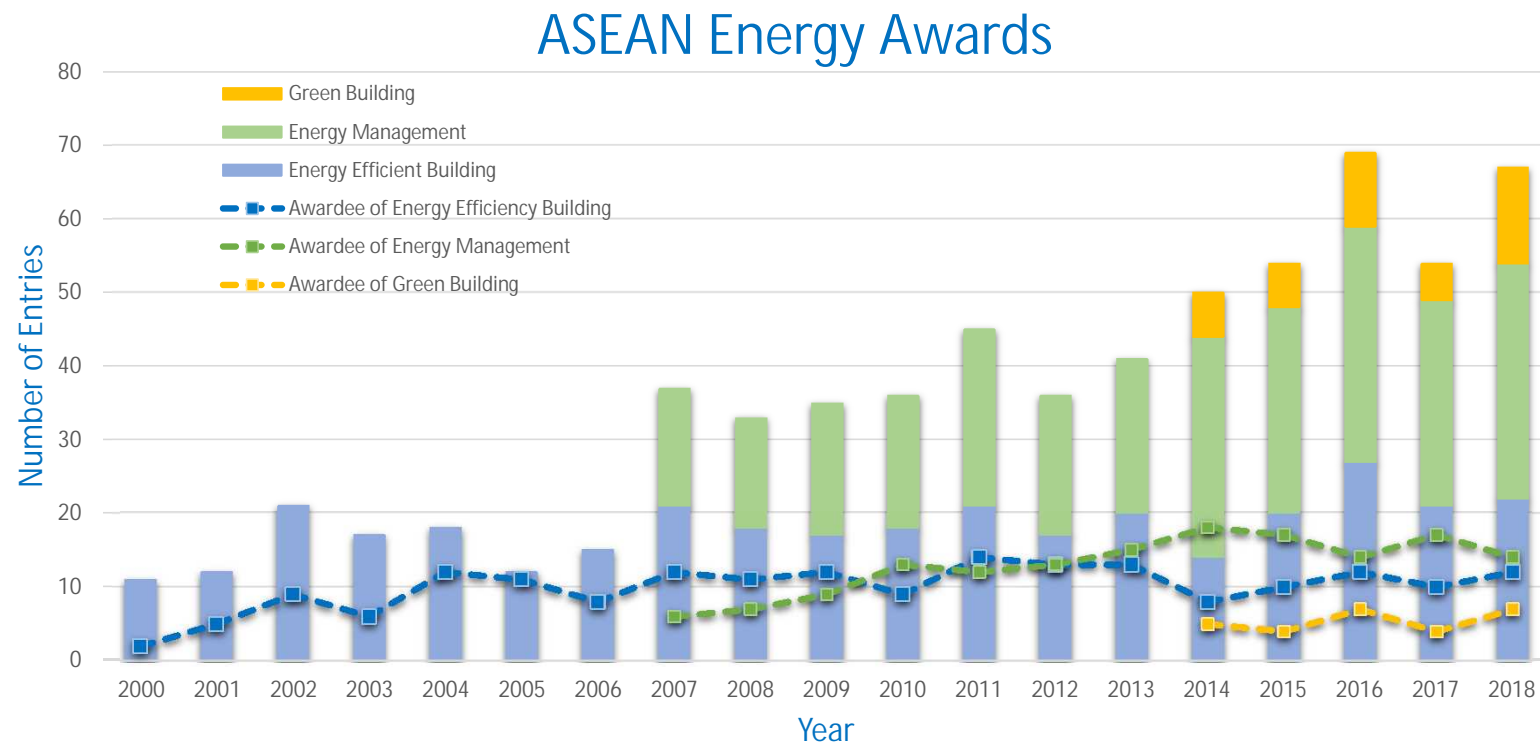
AEA Categories





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ASEAN Energy Awards Entries



- In 2018, we received 22 entries (EEB), 13 entries (GB), and 32 entries (EM) from five (5) AMS. BOJ selected 12 awardee (EEB), 7 awardee (GB), and 14 awardee (EM).



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Zero Energy Building-Special Submission Category



- In 2019, ZEB will be a sub-category under the Special Submission.
- The movements for prevention from global warming has been accelerated in the building sector. Under this situation, one of these movements is to develop net-Zero energy buildings in which CO₂ emission from buildings has to be balanced with the energy produced by renewable energy.
- The specific objectives are as follows:
 - To accelerate the movement of ZEB in the ASEAN Member States.
 - To motivate the people in the building sector of each ASEAN Members States to promote and pursue ZEB.



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Proposed Evaluation Criteria for ZEB Ready

- Energy Savings Rate
- Improvements efforts for saving energy
- Energy management and maintenance plan; including energy audit programme
- Net-ZEB roadmap plan



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Framework of ASEAN Energy Award

