



RENEWABLE ENERGY (RE) AND ENERGY EFFICIENCY (EE) POLICY AND FINANCING: A GLOBAL BENCHMARKING WITH FOCUS ON SOUTH EAST ASIA AND CHINA



FOREWORD



CIMB, as one of the founding members of United Nations' Environmental Programme Finance Initiative (UNEP-FI) Principles for Responsible Banking, is committed to green initiatives that would bring positive environment, economy and social (EES) impact. Embedding sustainability as a key pillar of CIMB Group's mid-term growth plan, Forward 23, CIMB Islamic is bringing this to life by embedding BNM's Value-based Intermediation into our processes and business. Part of our commitment to the Principles is to engage peers and the industry to consider EES governance in their decision making processes; advocate our clients to adopt industry standards and guidelines, and catalysing action from all stakeholders to begin or enhance their sustainability journey.

As a nation moving towards a greener economy, the next 5-10 years will be crucial in driving more SMEs to start investing into solar panels and renewable energy. Demonstrating our commitment, we introduced the CIMB SME Renewable Energy Financing for micro, small and medium enterprises (SMEs) in Malaysia, as part of our RM 15-billion SME allocation for 2019-2020. The scheme covers 100% of the cost of acquiring and installing renewable energy technology for SMEs. This is to support the Government's greater efforts to transition towards a zero-carbon economy as well as to provide a springboard for the critical mass of SMEs to start embracing sustainability as the future of business.

In support of the Government's agenda to become a sustainable trading nation, CIMB Group recently signed a Memorandum of Understanding with the Malaysia External Trade Development Corporation (MATRADE) to enhance local exporters' capabilities in EES areas. This will be done through a series of training sessions via the SMEs Sustainable Exporters Programme.

In view of the increasing shift of awareness and the development of the Renewable Energy and Energy Efficiency sectors in Malaysia, CIMB Islamic commissioned this research in mid-2019. This research identifies the gaps and opportunities in policies and banking products within these sectors and compares the findings across markets in ASEAN and China. With this information, we hope to educate and empower both the clients we fund as well as other stakeholders related to these sectors.

We thank Dr Adam Ng, Nadia Mohd Noh and Fatin Nabilah Fatah from the Research Management Centre team at INCEIF, for their contributions in producing this research. It is a great example of how public-private partnerships can contribute towards developing real market opportunity with positive EES impacts. We value partnerships like this and would like to invite various industry stakeholders to collaborate with us to inspire the industry towards a greener and more sustainable future.

Ahmad Shahrman Mohd Shariff
Chief Executive Officer, CIMB Islamic Bank Berhad

Date: 27 March 2020

FOREWORD



The earth is slowly dying at the hands of those who gain the most from it - mankind. We cut down without care the plants that help us breathe and pollute the water that quenches our thirst. We allow fires to rage on, burning crops to ashes and animals to die - the source of food we eat, the protectors of the ecosystem of our environment. We continually act as if there are no consequences to our actions; that our future generation will not have to suffer from our greed nor will we be held accountable for such misconduct. It is time for us to wake up.

With the advent of the 2030 Sustainable Development Goals issued by the United Nations and the signing of the Paris Agreement, there is an urgent need to push forward sanctions and regulations that will enable and enforce the steps required for us to be more responsible in our consumption of natural resources. Amongst the largest reason for greenhouse gas emissions is the burning of fossil fuels. It is imperative that alternate sources of energy are explored and undertaken to maintain and control the carbon emissions we produce. We need to harness what is naturally abundant and in ways least harmful to the environment and the ecosystem around it.

Countries worldwide have already taken measures and actions towards this. Some are already relying significantly on renewable energy (RE) and many have enforced energy efficiency (EE) measures. In almost all these cases, it was necessary for all stakeholders to actively play their roles. Governments set up enabling, sustainable and encouraging policies and regulations which require corporates to make a change in their operations and day-to-day running. Industry players of the RE and EE market compete and innovate to achieve efficiency and lower costs. Consumers gain awareness on the harms produced by their actions, and as a result practice responsible consumption. Banks, the main financial enablers of any country, encourage and ease the undertaking of environmental-friendly measures, conduct themselves in accordance to sustainable operations and enforce the same on their supply chain and customers.

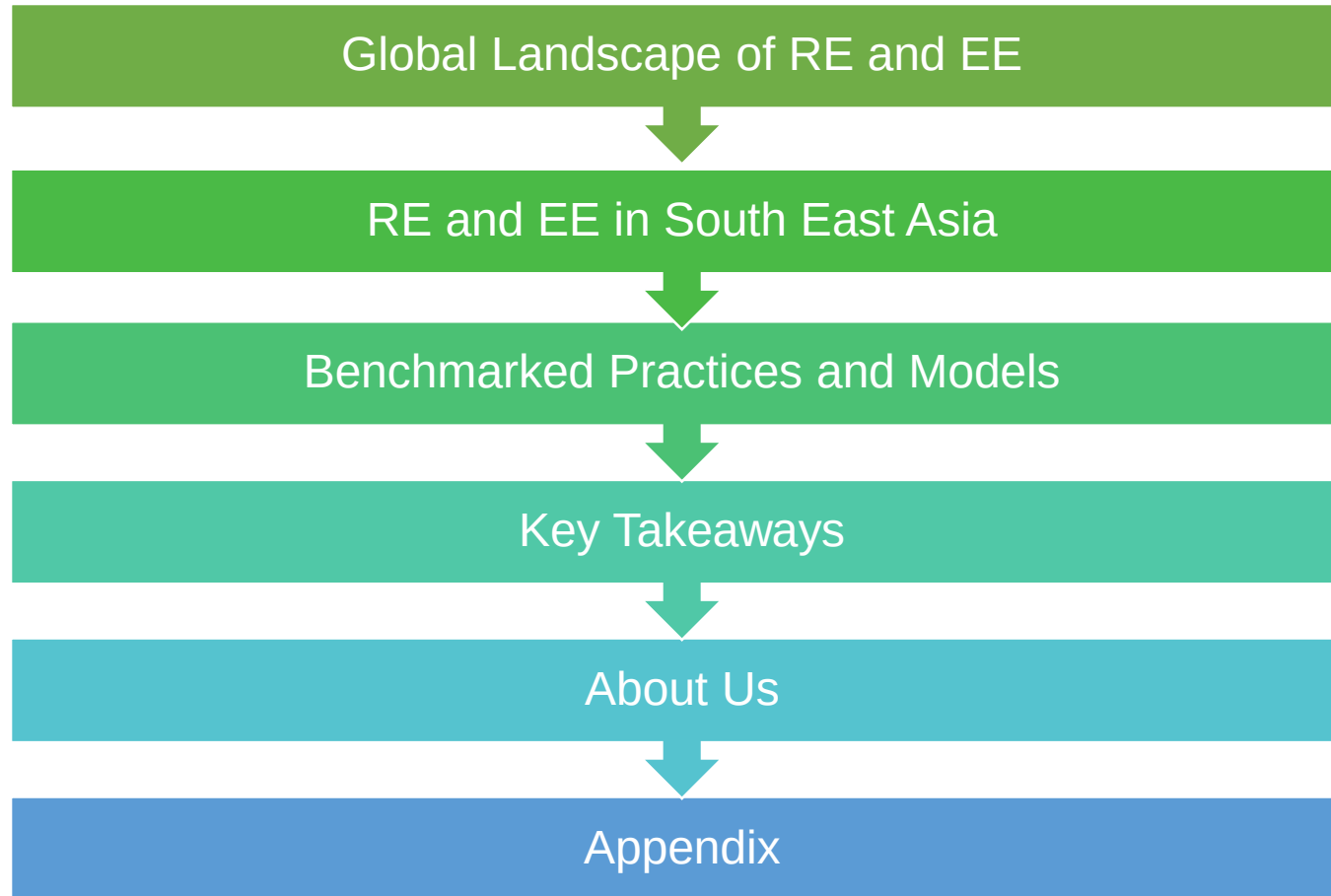
There is much to gain from the study of these various implementations to gauge what worked and what did not. This research seeks to begin that exploration to better understand the global benchmarks that we may look at for inspiration. It also highlights the policies and actions already in place in Southeast Asia and China, a country that is dominating the renewable energy market.

INCEIF has produced a number of sustainability-focused reports over the years. It is a great honour to be a part of this research with CIMB who has already taken measures to incorporate sustainability in its practice and product offerings. This shows great initiative and further underscores the importance of research which can result in changes in the industry practices.

Valuable work and effort has been taken in producing this report. The need for RE and EE measures makes environmental sense as well as good economic sense in the long run. It saves costs, protects the environment and ultimately, saves lives.

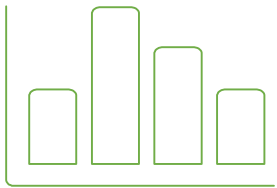
Prof Dato' Dr. Azmi Omar
President and CEO, INCEIF

OUTLINE



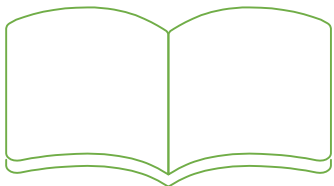
RESEARCH OBJECTIVES

01



Current state, scale, opportunities and types of public and private sector initiatives and financing of Renewable Energy (RE) and Energy Efficiency (EE) in developed and developing markets.

02



Case studies on how developed markets, including China have put in place an enabling environment for RE and EE and lessons for ASEAN countries.

METHODOLOGY

01

Analysis of ASEAN Renewable Energy (RE) and Energy Efficiency (EE) landscape and issues.

02

Benchmarking of global good practices, products and policies based on global recognition of efforts.

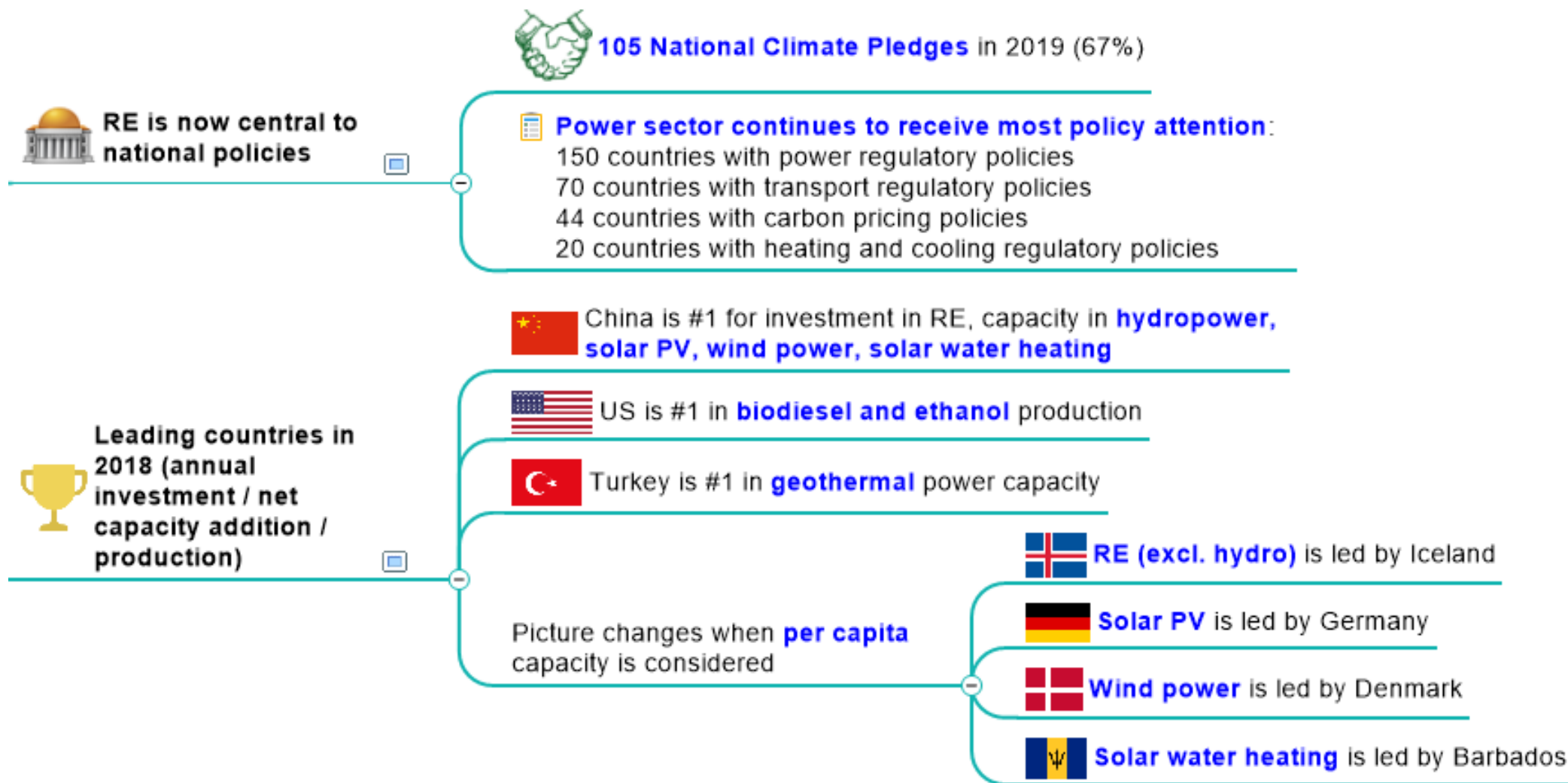
03

Literature review of expert bodies' reports and government policies.

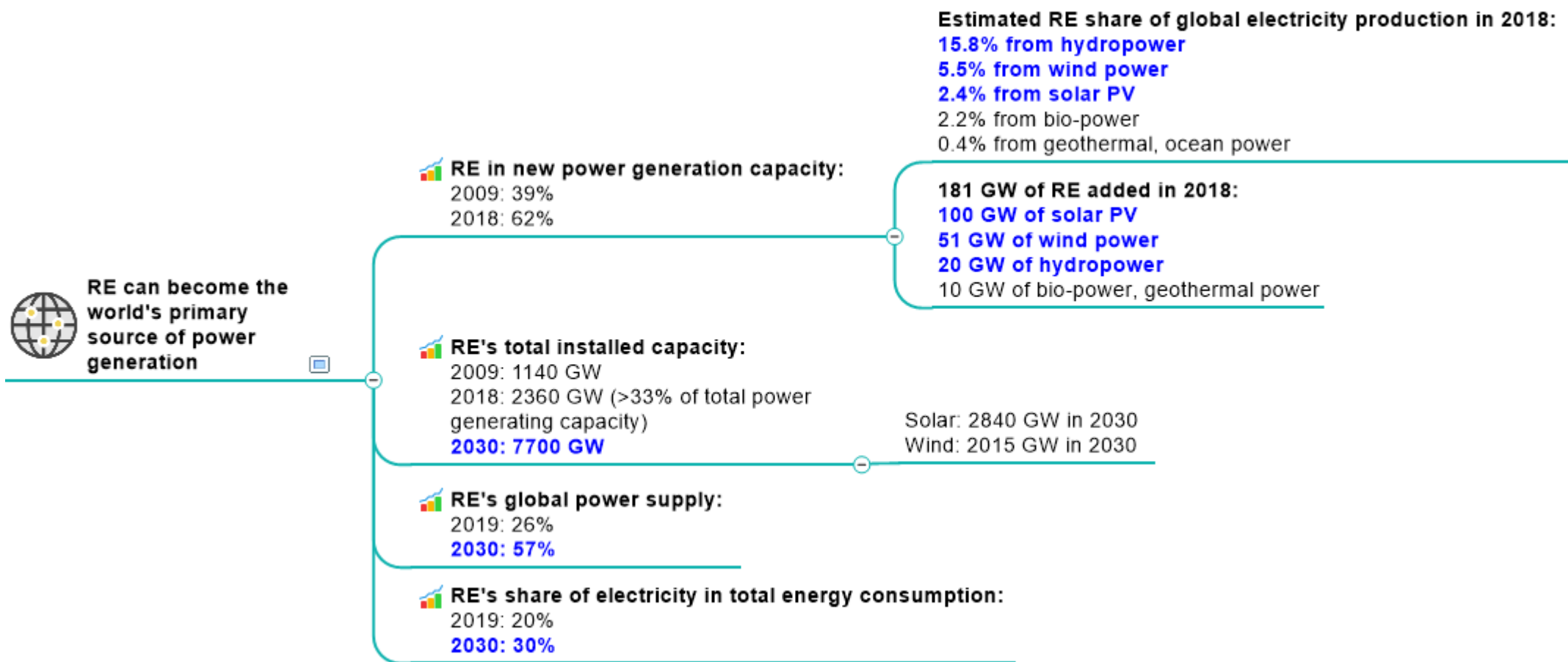
GLOBAL LANDSCAPE OF RENEWABLE ENERGY AND ENERGY EFFICIENCY



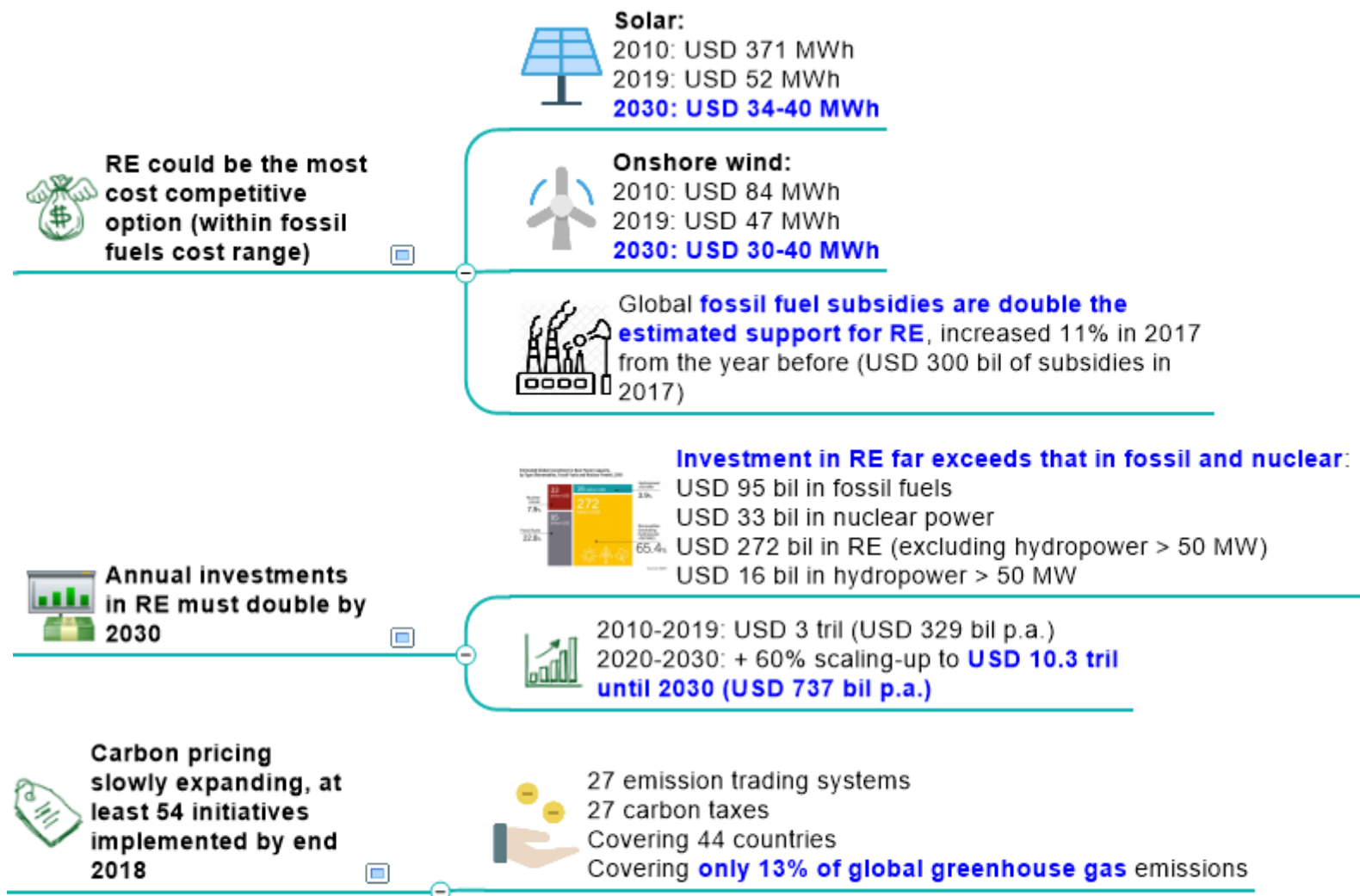
RE IS GAINING MOMENTUM GLOBALLY



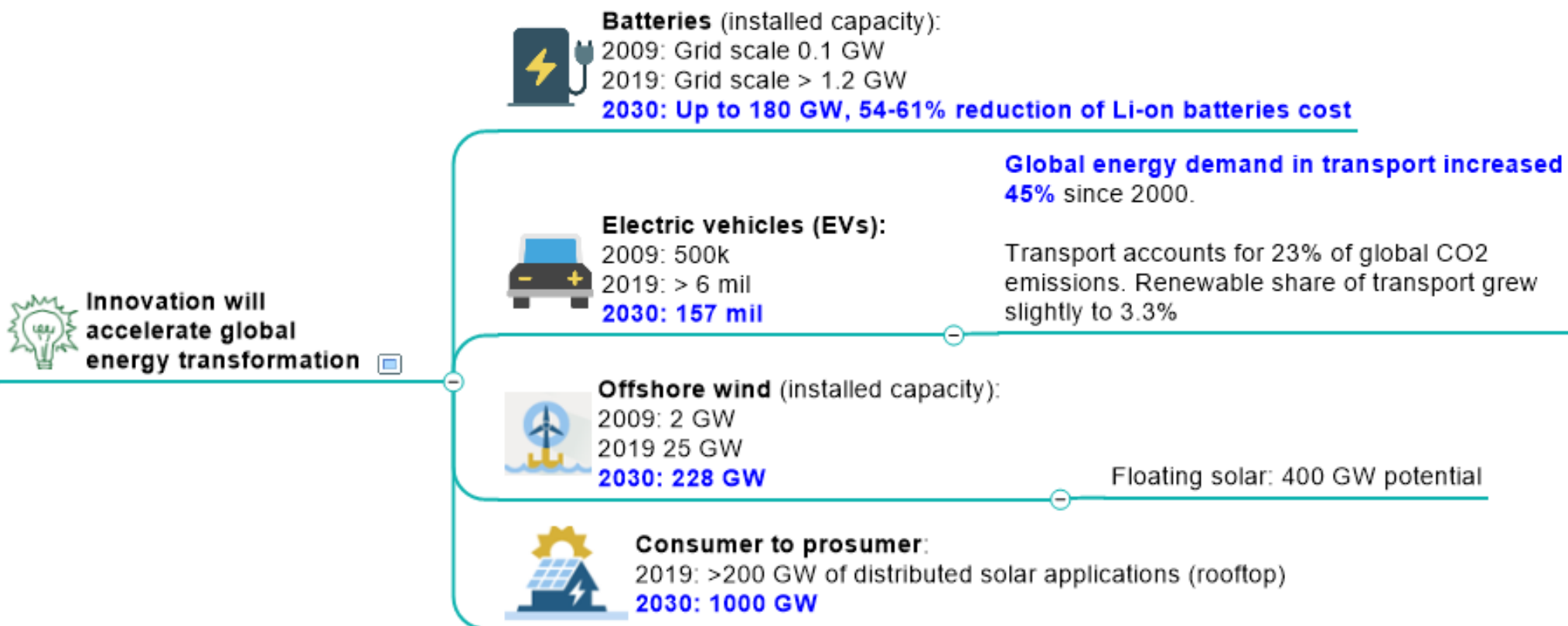
BUT RE MUST GROW 4 X FASTER BY 2030; FOSSIL-FUEL USE DECREASE BY 20%



DESPITE COST COMPETITIVENESS, ANNUAL INVESTMENTS IN RE MUST DOUBLE BY 2030



INNOVATION IN BATTERIES, ELECTRIC VEHICLES, OFFSHORE WIND, PROSUMER KEY TO ENERGY TRANSFORMATION



ENERGY EFFICIENCY: POLICY INCENTIVE, SECTOR INVESTMENT, ESCO MARKET AND GREEN BONDS



In 2019, **grants and subsidies (>60% share of incentives)** continued to be the policy tool of choice



EE investment by sector in 2018:
58%: Buildings
26% Transport
16%: Industry

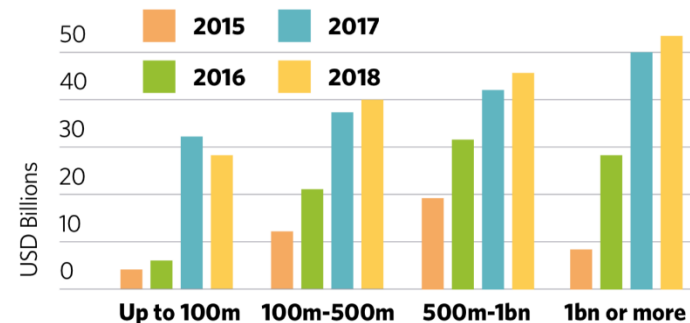


Global ESCO market was USD 30.9 bil in 2018 with China dominating (57% in 2018)

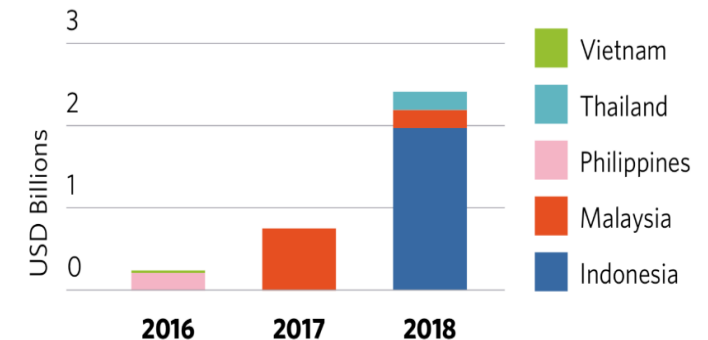


Mortgage-based loans for energy efficiency improvements in residential buildings have been a key driver for green bonds development

Green bond deals have grown across size brackets



Surge of issuance in ASEAN in 2018



By November 2018, **cumulative green bond issuance had exceeded USD 500 bil**, but **green bonds is only 0.5% of the total global bond issuance** (green bonds for energy efficiency accounted for a mere 0.05% of global debt security issuance in 2018)



GLOBAL EE IMPROVEMENTS ARE SLOWING

 In 2018, primary energy intensity (how much energy is used by the global economy) **improved by just 1.2%, the slowest rate since 2010** (Below the average 3% improvement consistent with the IEA's Efficient World Strategy)

 The 1.2% improvement in energy intensity equated to around **\$1.6 trillion more GDP for the amount of energy used compared to 2017** (this figure could have been \$4 trillion had energy intensity improved at 3% every year since 2015)

 3 factors for slowdown

 **Industry and weather**

 **Energy-intensive industries** in countries including **China and US increased industrial production** (e.g. crude steel)

A cooler winter and a warmer summer in US drove up energy use for heating and cooling.

 In Europe, a milder winter cut gas demand for heating, a major factor behind a 2% improvement in energy intensity, up from 1.4% in 2017

 **Changes in transport modes and more building floor area per person**

 **Sales of new, more efficient vehicles have slowed**, consumers prefer larger cars, and typical vehicle occupancy rates have fallen

 **Policy progress and investment are flat**

 The coverage and strength of **energy efficiency obligation programmes remained largely unchanged**

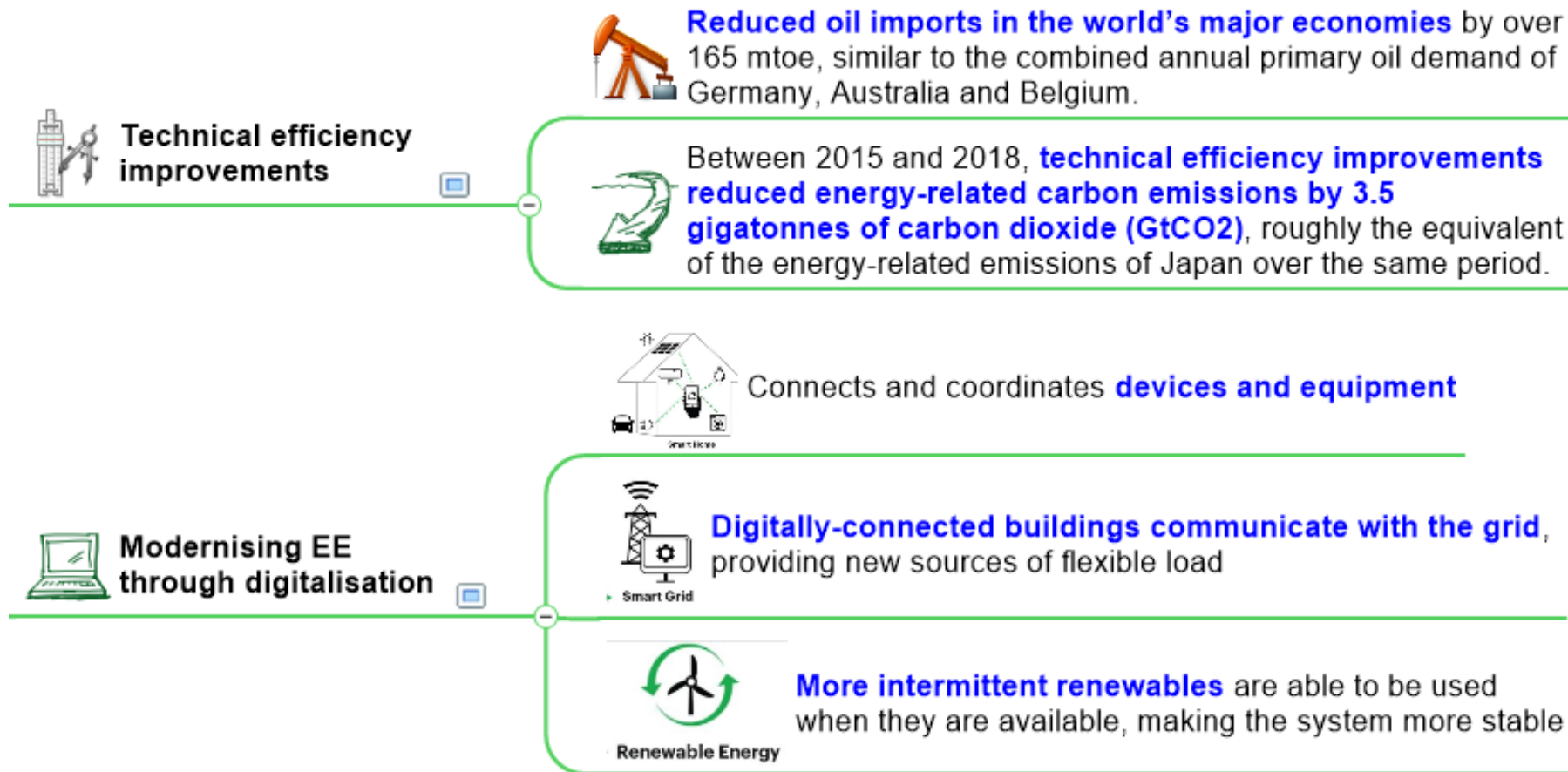
Levels of **investment targeting efficiency have remained largely unchanged since 2014.**

 At \$240 billion, incremental efficiency investments across the buildings, transport and industry sectors were about 0.6% higher in 2018 than in 2017

Note: More fossil fuel-based electricity generation increases primary intensity because energy is lost when these fuels are converted from primary to final energy

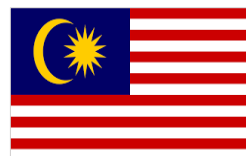
Source: IEA

IMPROVEMENTS IN TECHNICAL EFFICIENCY AND DIGITALISATION OF EE



RENEWABLE ENERGY AND ENERGY EFFICIENCY IN SOUTH EAST ASIA

MALAYSIA, SINGAPORE, THAILAND, VIETNAM PHILIPPINES AND INDONESIA



DECLINE OF ENERGY SELF-SUFFICIENCY AND THE NEED TO SCALE UP RE

Decline of energy self-sufficiency through 2040.



Energy consumption to increase 4% annually till 2025, driven largely by electricity and industry sectors

e.g. **Malaysia's primary energy self-sufficiency**

2013: > 80%

2040: < 60% (business as usual)



Malaysia energy consumption is **driven largely by industry and transport**

To reach **target of 23% RE in SEA's primary energy mix by 2025**, significant **scale-up of RE is needed in power sector, heating, cooling and transport**



(RE investment to be scaled up to an estimated **annual USD 27 bil**)

Total final energy consumption in SEA, 2015:



29%: Industry

27%: Transport

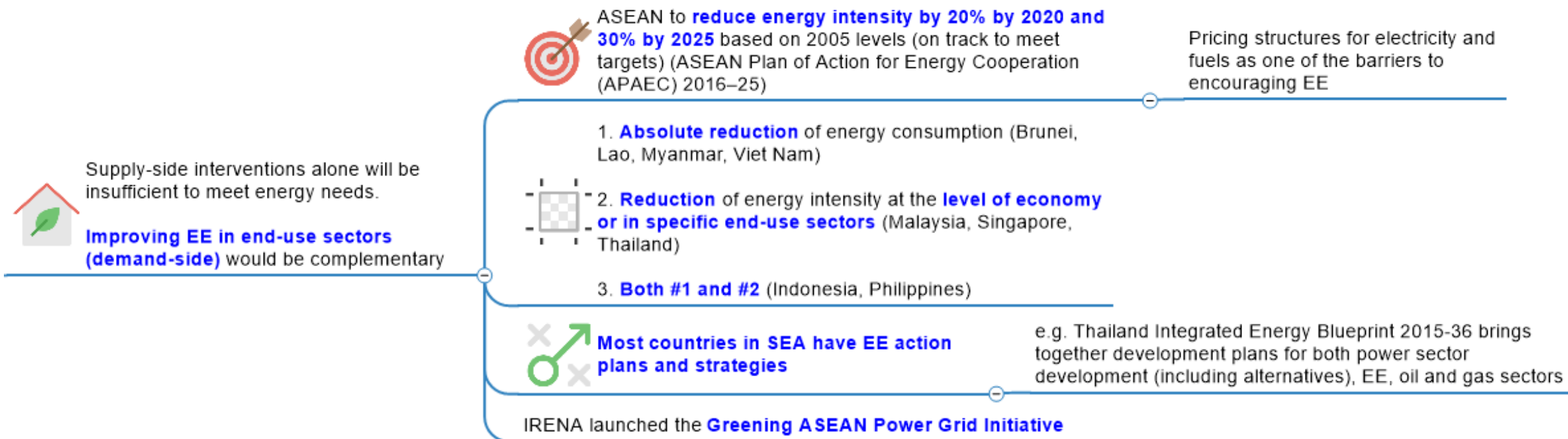
26%: Residential

11%: Other

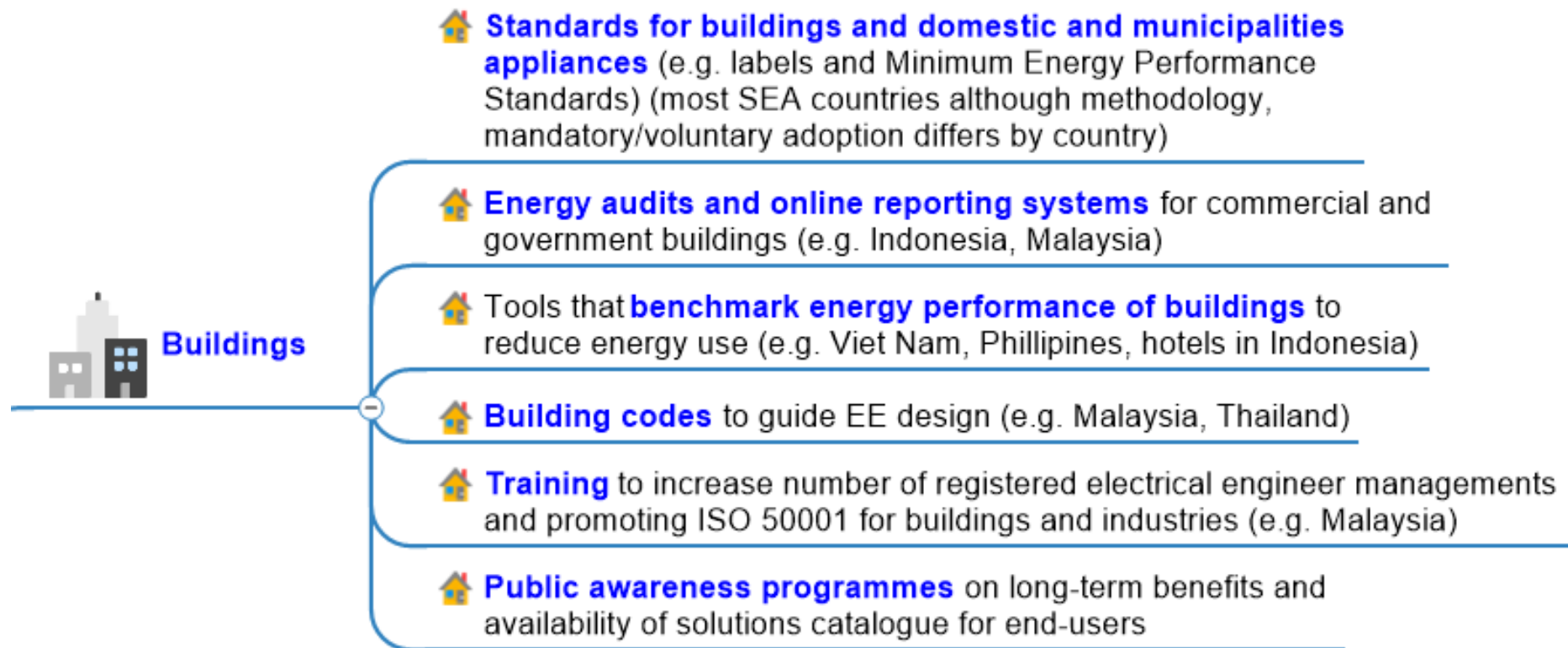
5%: Commercial

2% Primary sector

IMPROVING EE (DEMAND SIDE EFFICIENCY) WOULD BE COMPLEMENTARY



EE IN BUILDING



EE IN TRANSPORT



Transport



Key levers:

1. Efficiency of **public transport systems**
2. Switch to **low-emissions transport fuel alternative**
3. **Low- and zero emission vehicles**
4. **EV charging, maintenance infrastructure**



Singapore has a **fuel-labelling and emissions scheme** (including CO2 emission limits) that includes providing rebates or imposing surcharges on vehicle purchases



Thailand also introduced a **CO2 tax-based incentive scheme and a labelling programme** that rates the fuel economy of passenger cars.



Automobile manufacturing hubs in SEA (e.g. Thailand) are already taking measures (e.g. tax incentives) to attract local manufacturing (e.g. launch of the first Technology and Innovation Learning Center for Electric Vehicles).

Two / three-wheeler market is particularly attractive given its substantial size in the region.



Brunei, Indonesia and the Philippines plan to introduce **fuel-economy standard**

EE IN INDUSTRY



Industry

ASEAN Standards Harmonization Initiative

for **Energy Efficiency** initiative to harmonize standards across the region for specific appliances such as air conditioners and lighting products

In the future, the initiative is expected to expand beyond appliances to include electric motors, distribution transformers and solar technologies.

 In Singapore, the **Energy Conservation Act prescribes mandatory energy management practices**, including appointing an energy manager, monitoring and reporting energy use and emissions and submitting EE improvement plans

Minimum Energy Performance Standards to be applied to industrial equipment and systems, and the establishment of an energy management system for existing facilities

NATIONAL FUNDING SCHEMES



NATIONAL FUNDING VEHICLES AND MULTILATERAL DFIs



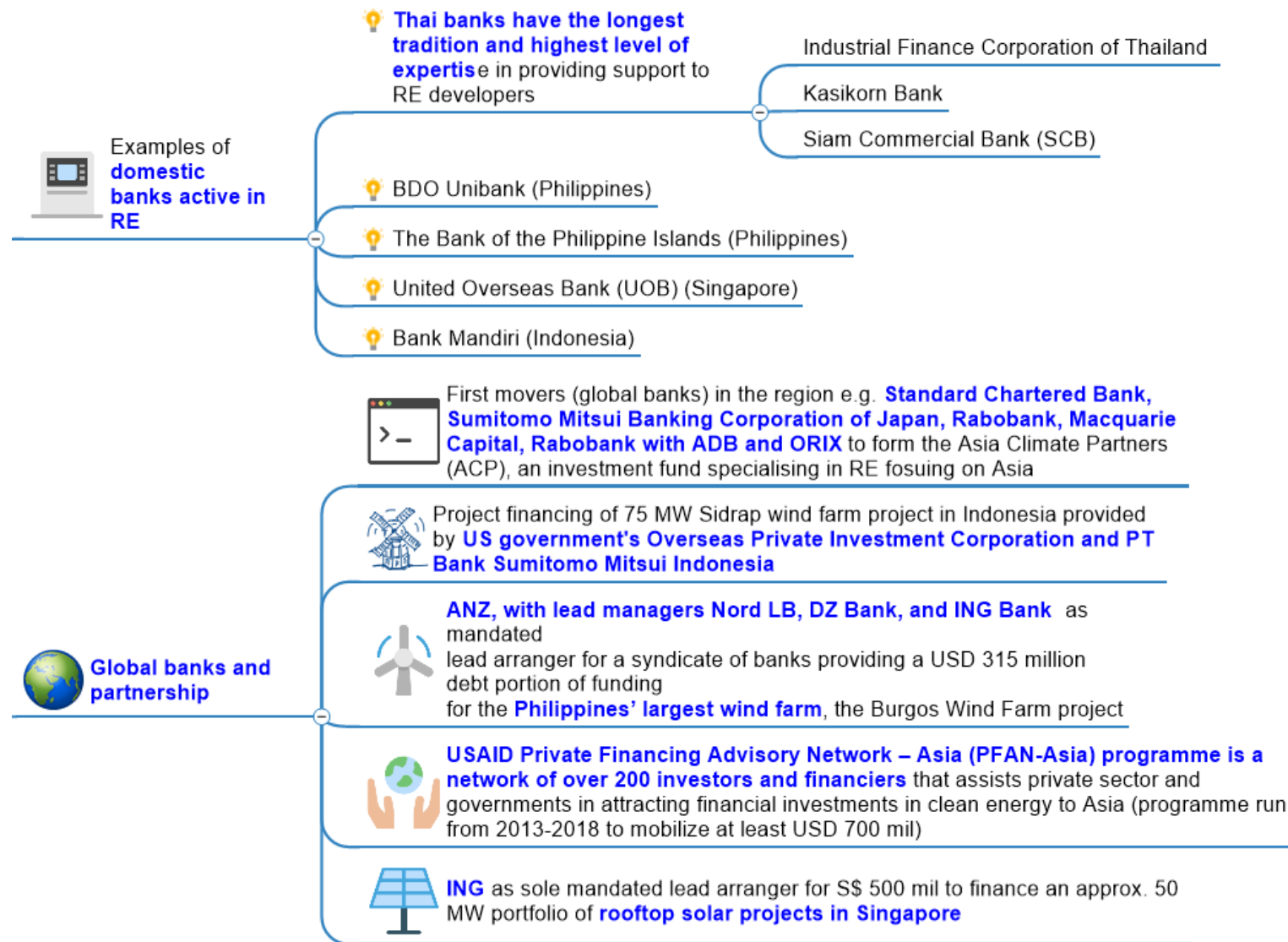
PRIVATE EQUITY AND CAPITAL MARKET PLAYERS



Examples of **private equity**
and **capital market players**

- 💡 **Thailand has the largest number of renewable energy firms listed in capital markets** with a combined capitalisation of over USD 100 million (2017)
- 💡 **InfraCo Asia – Private Infrastructure Development Group** funds pre-financial close, early stage, high-risk infrastructure development activities by taking an equity stake
- 💡 **Armstrong South East Asia Clean Energy Fund** (USD 164 million): Utility-scale RE and resource efficiency projects in Southeast Asia.
- 💡 **Dragon Capital – Mekong Brahmaputra Clean Development Fund L.P.** Focused on development using clean technology in the Mekong River Region and the Brahmaputra River Region.
- 💡 **Asia Climate Partners** to make private equity investments in the clean energy, resource efficiency and environmental sectors
- 💡 **Berkeley Energy – Renewable Energy Asia Fund I** (USD 112 million) Invests in small hydro, wind, geothermal, solar, landfill gas and biomass projects with focus on SEA
- 💡 **Equis Energy** (It has the largest IPP portfolio of energy assets in Asia, comprising 180 projects totalling 11.1 GW)
- 💡 **Olympus Capital – Asia Environmental Partners II** (USD 240 million) makes equity and equity-related investments in RE and environmental services companies
- 💡 **Nexus for Development and Pioneer Facility – Clean Energy Revolving Fund** (CERF) funds RE, and encourages an early shift away from fossil-fuel-based energy sources.
- 💡 **Asian Infrastructure Investment Bank** as anchor investor, with a \$50 million commitment, for the SUSI Asia Energy Transition Fund, which will focus on investments in RE, microgrid projects, and EE and storage in SEA

DOMESTIC AND GLOBAL BANKING IN GREEN ENERGY



BARRIERS TO ACCESSING FINANCE IN SEA



Barriers to
accessing finance
in SEA

- ▶ **Scale of investments** is usually small and **transaction costs** can be substantial
- ▶ Lack of **equity funding** coming from the private sector
- ▶ High **cost of debt finance** and the limited length of **loan tenure**
- ▶ Lack of investment and financial vehicles to mitigate **risks** e.g. currency inconvertibility risk, power off-taker risk
- ▶ **Knowledge gap** in the capacity of provincial and local government entities

MALAYSIA



INITIATIVES BY MESTECC

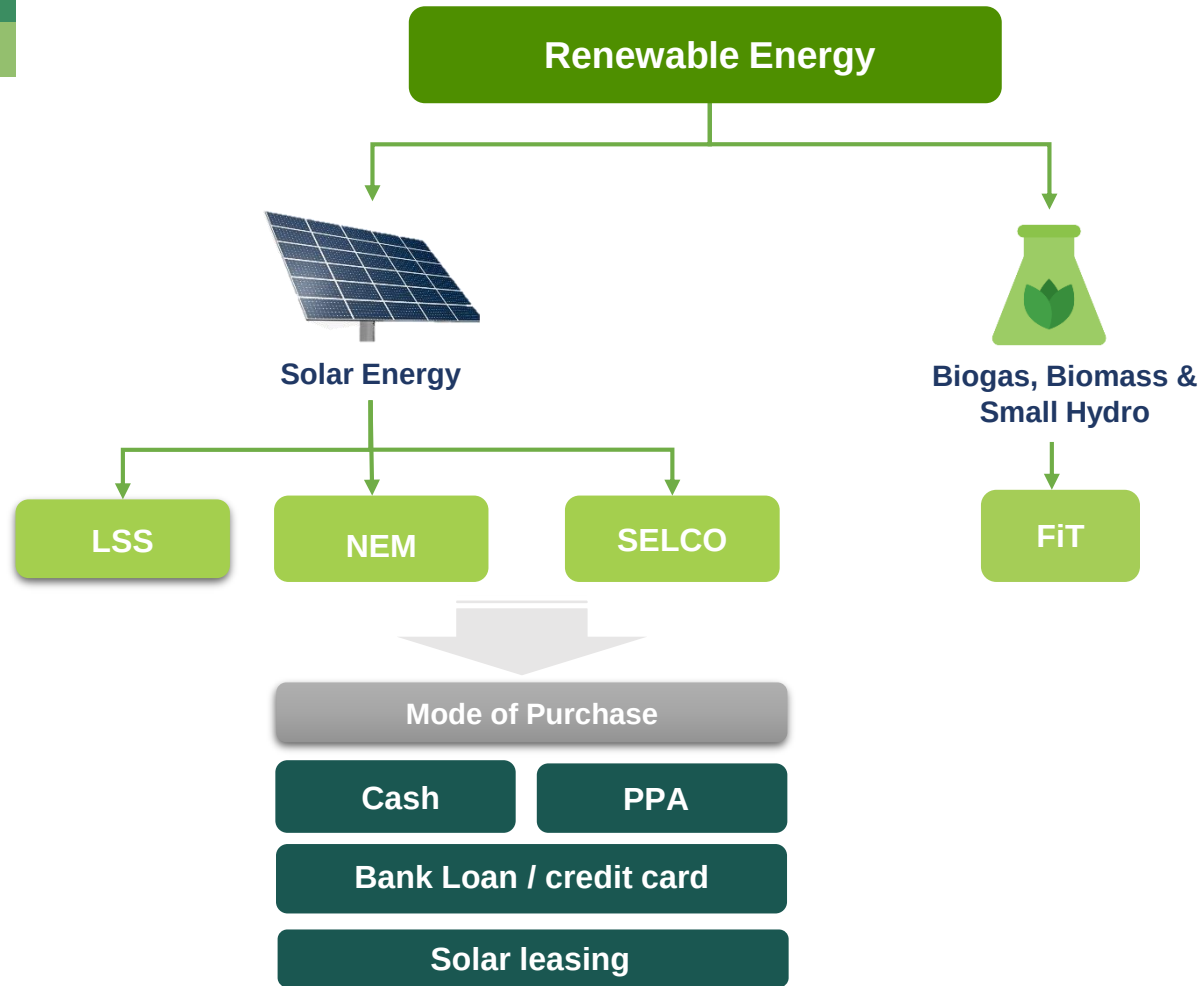
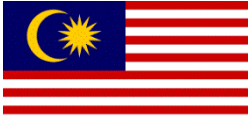
Achieving 20% Renewable Energy Capacity Mix by 2025

1. **Achieving 2019 Renewable Energy Targets:** To increase the mix of RE in the country's electricity supply.
2. **Implementing *Enhanced Net Energy Metering (NEM)* and *Solar Leasing*:** To increase the mix of RE in the country's electricity supply through the installation of solar PV systems on the roofs of building premises.
3. **Implementing *Large Scale Solar 3 (LSS-3)*:** To increase RE mix in the country's electricity supply through the implementation of large scale RE projects to generate RE at competitive rates.
4. **Implementing *Non-Solar Renewable Energy Projects*:** To diversify RE generation sources into the country's electricity supply.
5. **Establishing *Renewable Energy Facilitation Programs in Sustainable Energy Development Authority (SEDA)*:** Facilitate private sector involvement in RE development efforts.
6. **Providing *Greater Access to Renewable Energy Sources*:** Provide RE purchasing options to consumers.

Achieving 8% Savings Through Energy Efficiency By 2025

1. **Extending *National Energy Efficiency Action Plan (NEEAP) 2016-2025*:** A comprehensive strategy for increasing EE in the industrial, commercial and domestic sectors. Aimed to generate socio-economic benefits and to reduce dependence on fossil fuels through prudent energy use practices, this also contributes to the Government's commitment to reduce carbon emission intensity by 45% by 2030.
2. **Establish the *Energy Efficiency and Conservation Act (EECA)*:** In addition to efficient control of energy use, Malaysia needs to strengthen its legal framework on EE and conservation to ensure comprehensive engagement at various levels of institutions and organizations.
3. **Increase *Awareness Through Awareness And Promotion Campaigns*:** Involves all levels of society to raise awareness of EE, adaptation and mitigation of climate change. Improved knowledge and awareness will lead to changes in thinking, behaviour and habits.

MALAYSIA



Solar energy is the **most trendy** renewable energy in Malaysia

Key facts:

- **Renewable Energy Transition Roadmap (RETR) 2035** is currently being developed to explore the possible strategies and action plan to realise the government's target of 20% RE in the national power mix by 2025.
- Open tender **Solar LSS3 scheme**, to increase electricity generation from renewable energy (RE) just closed.
- The government had plans to tender out **RM3.2 billion RE and EE** projects in 2019.
- Estimated **RM1 billion worth** of potential business opportunities for the private sector under the **Net Energy Metering (NEM)** mechanism.
- **Second largest manufacturer** of photovoltaic modules and the third largest producer of photovoltaic cells in the world.
- **Green financing roadmap** to be ready by the third quarter of 2019.
- **Waste management**, a roadmap towards **zero single use plastic** by 2030.
- **Transport**: double up public transport usage from **20% to 40% by 2030**.

Note:

LSS: Large Scale Solar
NEM: Net Energy Metering
SELCO: Self-consumption

MALAYSIA



ENERGY EFFICIENCY

01

Energy Performance Contracting (EPC)

Government tendered out energy efficiency projects for at least 50 government buildings by Q2 2019, and MESTECC also tabled the first draft of Energy Efficiency and Conservation Act by mid-2019.

02

Minimum Energy Performance Standard (MEPS).

Enforcement of the MEPS value of 2 star for 5 domestic electrical equipment



03

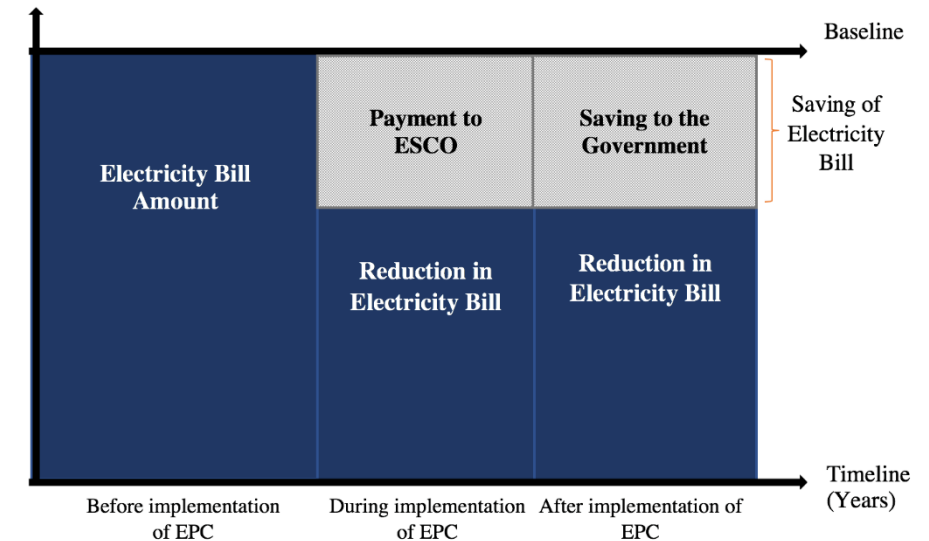
Energy Audit Conditional Grant (EACG).

Financing assistance to eligible applicants to implement an energy audit of their buildings to identify the current energy consumption pattern

ENERGY PERFORMANCE CONTRACTING (EPC)

- EPC is a program for energy saving by **Energy Service Company (ESCO)** that is registered with Suruhanjaya Tenaga (ST). As per March 2019, there are **171 ESCOs** registered under ST.
- Via EPC, the building owner/ government agencies that own buildings do not need to fund energy efficient audit/retrofit/equipment proposed by the ESCO. It will be funded entirely by ESCO.
- Payback to ESCO** is from the **monthly energy saving** (or can be fixed payment) obtained from the project based on the EPC agreement.

Electricity Bill, RM



MALAYSIA



BUDGET 2020 FINANCIAL INCENTIVES FOR GREEN TECHNOLOGY

Islamic finance services

- **Extension of Incentive for Issuance of Sukuk Wakalah and Sustainable and Responsible Investments (SRI) Sukuk:** Proposed that the existing tax incentive in respect of SRI Sukuk issuance be extended for a period of 3 years, so that it is available from the year of assessment 2021 until the year of assessment 2023.
- **Extension of Incentive for SRI Fund Management Services and Shariah Compliant Fund Management Services:** Proposed that the existing income tax exemption for management fees derived from managing conventional and Shariah-compliant SRI funds be extended for a period of 3 years, so that it is available from the year of assessment 2021 until the year of assessment 2023.

Green Investment Tax Allowance – GITA (Project) :

- ▶ ITA of 100% of qualifying capital expenditure incurred on a green technology project from the date on which the first qualifying capital expenditure incurred (application received before 1st January 2020) until 31 December 2020 or up to 3 years; or
- ▶ ITA of 100% of qualifying capital expenditure incurred on a green technology project from the date on which the first qualifying capital expenditure incurred (application received start 1 January 2020) until 3 years.
- ▶ The allowance can be offset against 70% of statutory income in the year of assessment.
- ▶ Qualifying activities comprises of Renewable Energy, Energy Efficiency, Green Building, Green Data Centre and Integrated Waste Management Activity.

Green Income Tax Exemption – GITE (Services) :

- ▶ ITE of 100% of statutory income from the year of assessment where the date of application received by MIDA before 1st January 2020 until the year of assessment 2020 or up to 3 years of assessment.
- ▶ ITE of 70% of statutory income from the year of assessment where the date of application received by MIDA start 1 January 2020 until 3 year of assessment.
- ▶ Qualifying activities under GITE encompasses Renewable Energy, Energy Efficiency, Green Building, Green Data Centre, Green Township, Certification/Verification and Electric Vehicles (EV).
- ▶ Details as table below:

DETAILS	APPLICATION BEFORE JANUARY 2020	APPLICATION STARTS 1 JANUARY 2020
Exemption rate	100% of Statutory Income	70% of Statutory Income
Exemption period	31 December 2020 or up to 3 years of assessment	3 years of assessment
Incentive period	Application for extension must be before 31 December 2020	1 January 2020 – 31 December 2023
Conditions	As current guidelines until 31 Dec 2019	New condition and criteria starts 1 January 2020

Green Income Tax Exemption – GITE (Leasing) :

- ▶ ITE of 70% of statutory income from the year of assessment where the date of application received by MIDA start 1 January 2020 up to 10 years of assessment and companies are undertaking solar leasing activities.

MALAYSIA



REIMAGINING MALAYSIAN ELECTRICITY SUPPLY INDUSTRY 2.0 REFORMS AND POTENTIAL OUTCOMES

Key reform Initiatives for MESI 2.0 (2019–2025)



Efficiency

- Allow generators to source own fuel to optimise cost
- Move from Power Purchase Agreement (PPA) regime to capacity and energy market
 - Enhance ring-fencing of Single Buyer and Grid System operator to maintain level playing field to all players

Customer Experience

- Establish **Third Party Access (TPA) framework & network charges** for grid to facilitate participation
 - **Future-proof through digitalisation** as a platform to facilitate smart energy network using digital technologies
 - Gradually open up retail market, allowing players to offer new products & services for customers' options

Green / Sustainability

- Facilitate green energy producers and consumers
 - Products such as green tariffs, green gentailers (via Third Party Contract) and tradable green certificate

Security

- Maintain reliability and system security through continuous investment in the system
- Continue support for targeted segments E.g. B40, e-Kasih, Bantuan Sara Hidup
- Establish Supplier of Last Resort framework to ensure continuous electricity supply to customers



Potential Outcome



Better Consumer Experience

- Choice, options and control
- Improved service levels



Reasonable Electricity Prices

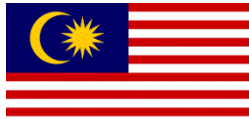
- Regionally competitive
- Transparency across the value chain



Generating Additional Economy Activity

- Increased capital investments and new job opportunities (2020-2030)
- New Small Medium Enterprise (SME's) businesses

MALAYSIA



GREEN TECHNOLOGY FINANCING SCHEME (GTFS) 2.0

- MOF approved to reinstate GTFS 2.0 with the allocation of **RM 2.0 billion** for the period of **January 2019 until the end of 2020**
- The Scheme will be offering a **2% p.a. interest / profit rate subsidy for the first 7 years** with **60% government guarantee** on the financing
- The new category is to **support ESCOs** to finance investment or assets related to EE project and/or energy performance contracting
- **Malaysian Green Technology Corporation (GreenTech Malaysia)** and **Credit Guarantee Corporation Malaysia Berhad (CGC)** are the agencies tasked with administering the Scheme
 - GreenTech Malaysia is responsible for the promotion, assessment, certification and monitoring of Producers, Users & ESCOs
 - CGC is responsible to manage, administer and monitor the scheme which includes the verification and process of guarantee applications, subsidy reimbursements, claim payments and reports to the Government
- The Scheme is available until 31 December 2020 or upon reaching a total financing/funding approval amount of RM2.0 billion, whichever is earlier.

Source: <https://www.gtfs.my/>

Malaysia needs **investments** totalling **RM33 billion** in order to achieve its target of **20% electricity generation from renewable energy sources** by 2025.

In the second round of LSS bidding, 32 sen per kWh was the lowest price; that became our reference price when we opened LSS3 for bidding this year. But when the bidding exercise closed, the lowest bid was at 17.77 sen per kWh. **The cost of generating per kilowatt-hour (kWh) from solar energy was lower than energy generation from natural gas sources.** The lower cost of solar generation was due to the advanced solar panel development technology.

Date: 3rd September 2019

YB Yeo Bee Yin

Minister of Energy, Science, Technology, Environment and Climate Change (MESTECC)

Source:

<https://www.nst.com.my/news/nation/2019/09/518408/malaysia-needs-rm33bil-investment-hit-renewable-energy-target>

MALAYSIA

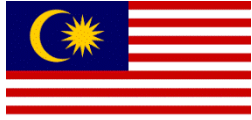


FEATURES OF GTFS

Features	Producer of Green Technology	User of Green Technology	ESCOs
Purpose	To finance investment for the production of green products	To finance investment for the utilization of green technology	To finance investment or assets related to energy efficient project and/ or energy performance contracting
Financing Size	Maximum: RM100 million per group of company	Maximum: RM50 million per group of company	Maximum: RM25 million per group of company
Financing Tenure	Up to 15 years	Up to 10 years	Up to 5 years
Eligibility	Company or Business must be legally registered Malaysian with a simple majority of at least 51% Malaysian shareholding		
Participating Financial Institutions (PFIs)	All Commercial Financial Institutions, Islamic Financial Institutions and Development Financial Institutions as per BNM & other participating entities duly approved by MOF		
Government Incentives	Rebate of 2% per annum on interest/ profit rate (limited to the first seven (7) years only) for each loan/financing. 60% government guarantee on Green Technology Cost.		
Interest/ Profit Rate	Determine by Participating Financial Institutions (PFI's) for financing		
Source of Fund	Participating Financial Institutions (PFI's)		
Implementation Agencies	Ministry of Energy, Science, Technology, Environment and Climate Change, Credit Guarantee Corporation Malaysia Berhad (CGC) and GreenTech Malaysia		
Application Method	Application are to submit application to GreenTech Malaysia at www.gtfs.my for green project certification. The successful applicant then proceeds to forward application for financing to any Participating Financial Institutions (PFI's)		
Application Date	The Scheme will be opened until 31 December 2020 or upon approval of financing/ funding issuance up to RM2.0 billion, whichever is earlier or any subsequent extension on the availability date.		

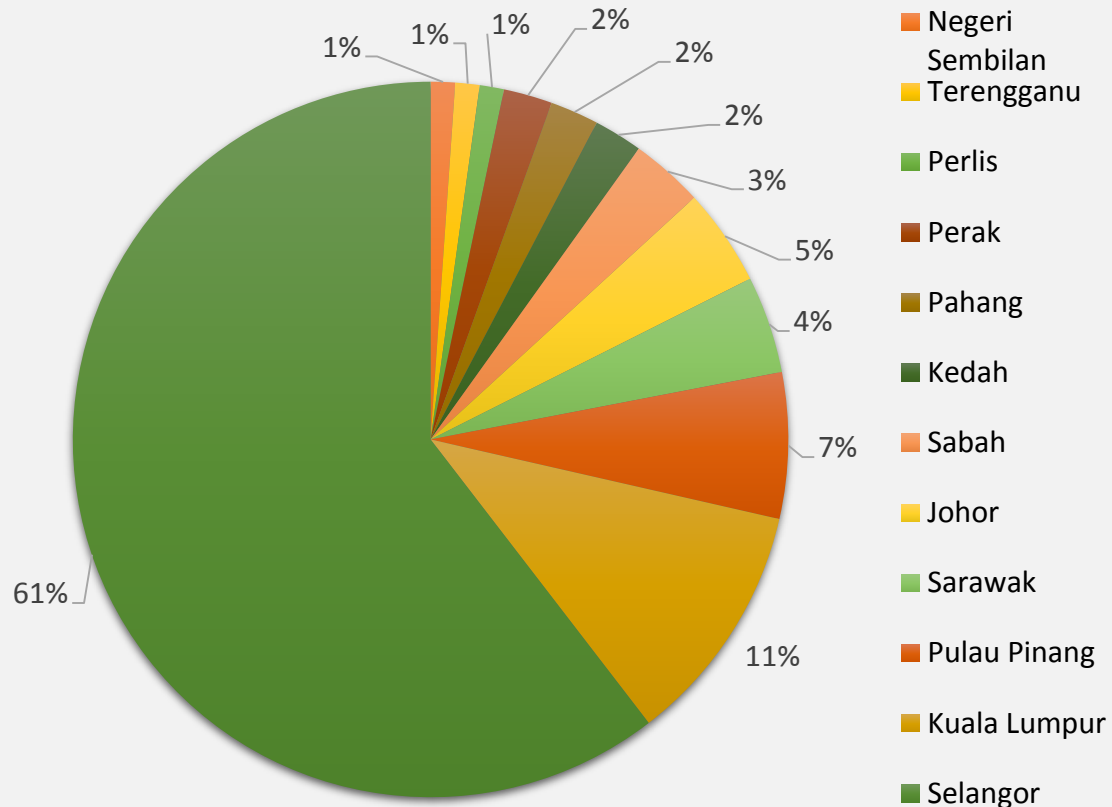
Processing Fee	• 0.25% - Financing tenure of 10 years and less • 0.50% - Financing tenure of more than 10 years
	The above processing fee is subject to green component cost apply or approved, subject to a minimum processing fee of RM8,000 (payable upfront upon submission of the application), payable to Malaysian Green Technology Corporation. (No maximum ceiling) A processing fee of RM4,000 is payable for request to extend the validity of the project certificate (for 2nd and 3rd extension). Each extension on the validity is only for a period of 6 months. A processing fee of RM8,000 is payable for any request to vary the information on the certificate. Note: Processing fee paid shall be refunded should; 1. the application for green project certificate rejected by the Technical committee 2. the applicant company fail to secure financing under the scheme after the 3rd extension of the certificate validity. The amount to be refunded shall be after deduction of minimum RM8,000 processing fee and plus any other expenses incurred during the technical assessment.

MALAYSIA



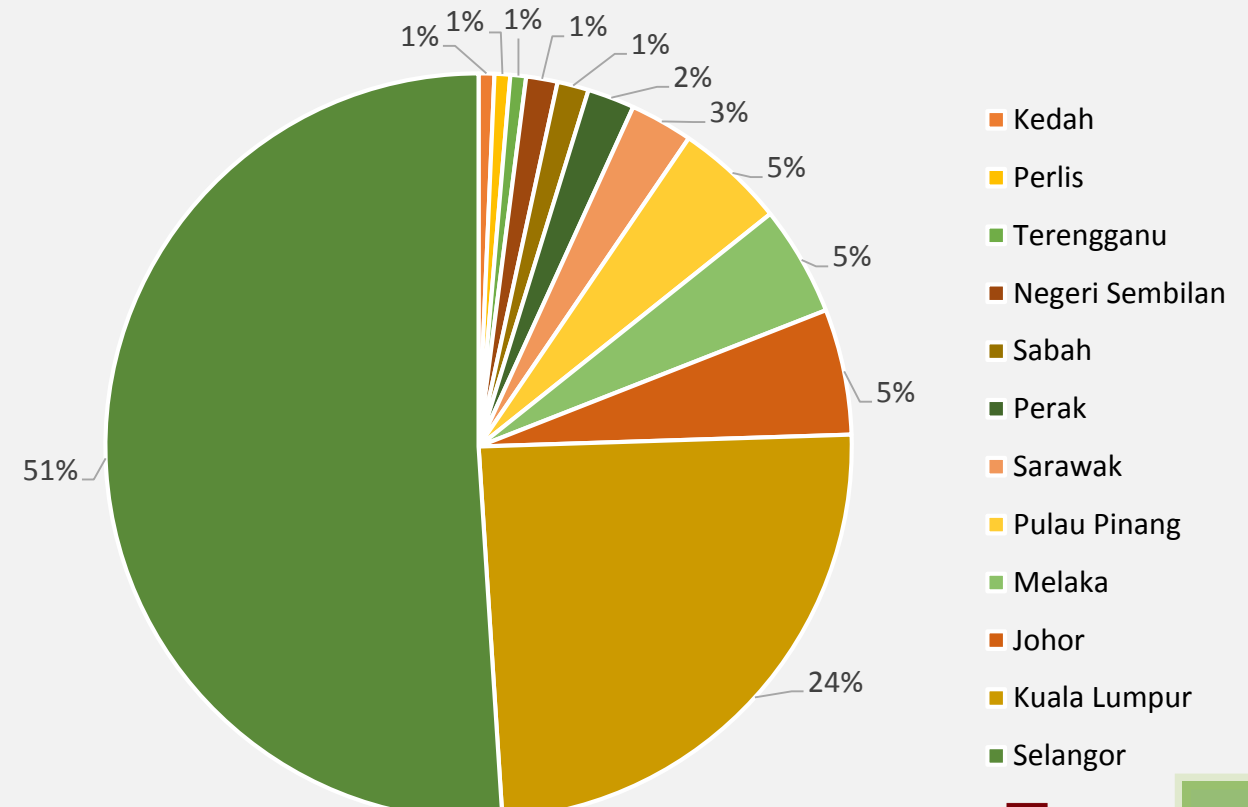
EXAMPLES OF MALAYSIAN RE AND EE SERVICE PROVIDERS

MPIA MEMBERS (SERVICE PROVIDER SOLAR PV) BY STATE



Source: Malaysian Photovoltaic Industry Association, August 2019

ESCOS (SERVICE PROVIDER EE) BY STATE



Source: Energy Commission, August 2019

MALAYSIA



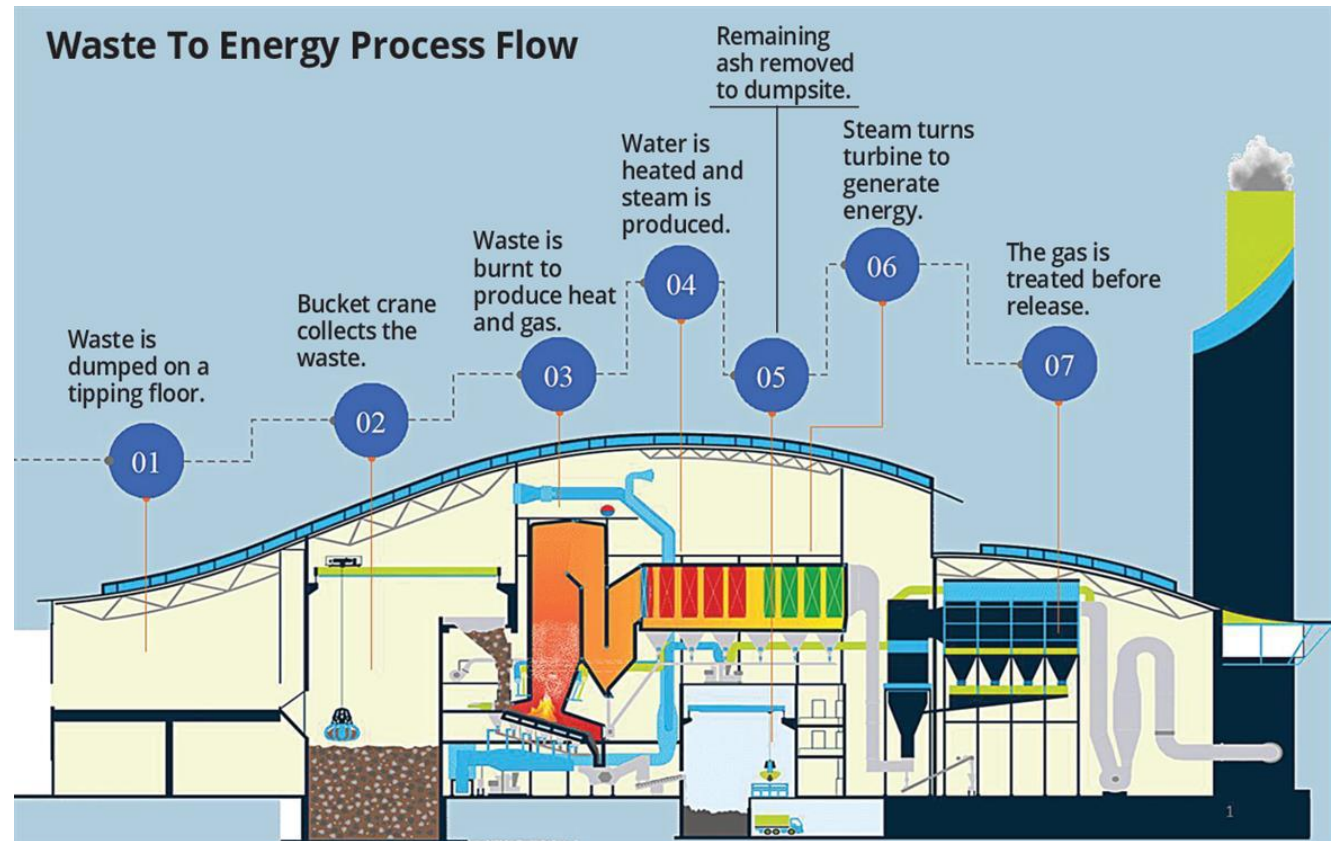
WASTE-TO-ENERGY (WTE)

- Waste separation and recycle rate is expected by the Housing and Local Government Ministry to raise by **30% by 2020**. Currently, waste separation and recycle rate is only at 24% while the remaining 76% goes to the landfills.
- Malaysia's first waste-to-energy (WTE)** plant in Ladang Tanah Merah, Port Dickson, Negeri Sembilan is expected to be fully operational this year, developed by **Cypark Resources Bhd**.
- For Cypark Resources Bhd, income is in the form of tipping fees paid by the government for every tonne of municipal solid waste (MSW) received. Tipping fee was around RM33 a tonne.
- Melaka would also embark on its RM280 million WTE plant in Sungai Udang, slated for construction this year and ready for operation by 2022.
- Selangor also invested RM1.5 billion to build two waste-to-energy plants in collaboration with Western Power Clean Energy Sdn Bhd which is a joint venture between China Western Power Industrial Company and China Western Power International, targeted for completion by 2024.

Adopted from <https://www.thestar.com.my/business/business-news/2016/10/27/cypark-waste-to-energy-project-on-track#BUhkIYGUox84Hu8M.99>,
<https://www.thestar.com.my/lifestyle/living/2018/12/21/waste-green-energy-worldwide-holdings/>

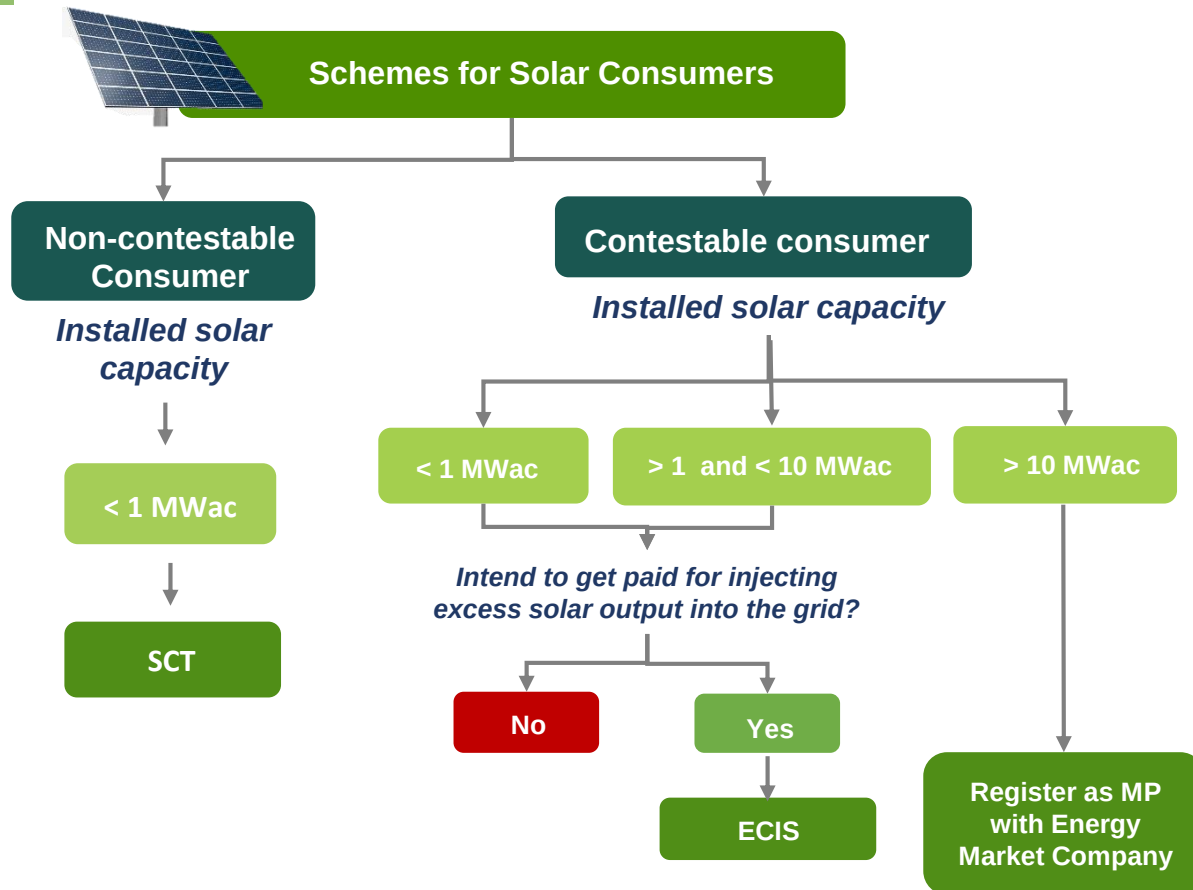
Negeri Sembilan, Selangor and Melaka are embarking the WTE initiative to increase the recycle rate and renewable energy

WASTE-TO-ENERGY (WTE) PROCESS FLOW



Adopted from <https://www.thestar.com.my/lifestyle/living/2018/12/21/waste-green-energy-worldwide-holdings/>

SINGAPORE



Note:

SCT: Simplified Credit Treatment Scheme (SCT)

ECIS: Enhanced Central Intermediary Scheme

MP: Market Participant

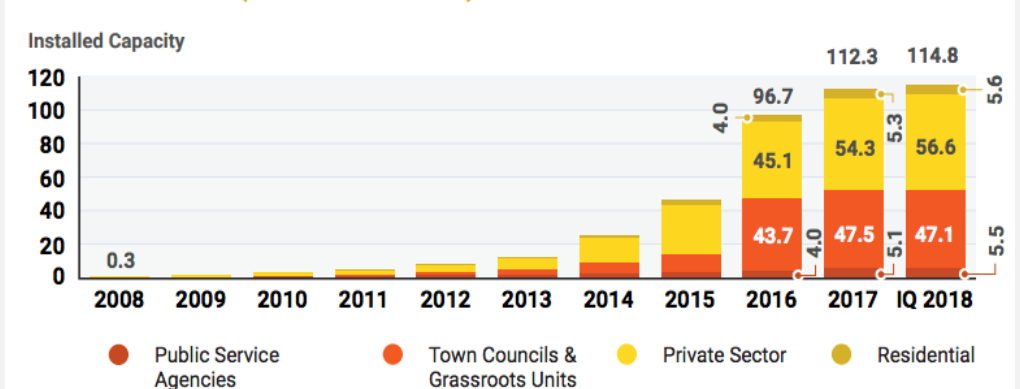
Key facts:

- Singapore is aiming to increase solar deployment from **47MWp to 350MWp** of electricity by **2020**.
- By **2030**, it is estimated that RE could contribute up to **8%** of Singapore's peak electricity demand.

Singapore is investing in research and development to improve the performance of solar PV systems:

- Housing and Development Board's (HDB)** initiative to install solar panels on rooftops of high-rise public housing developments.
- Economic Development Board's (EDB) and PUB's floating photovoltaic (PV) project**, which will pilot solar panel installations on water surfaces at reservoirs.

SOLAR CAPACITY (AS AT END PERIOD)



Adopted from

https://www.ema.gov.sg/cmsmedia/Publications_and_Statistics/Publications/ses/2018/solar/index.html

SINGAPORE



Energy Efficiency Fund (E2F)

E2F supports a wide range of energy efficiency efforts in the industrial sector:

- **Resource efficient design** – Co-funding of up to 50% on consultancy fees (capped at \$600,000 per project)
- **Energy assessment** – Co-funding of up to 50% of the costs of energy audits (capped at \$200,000 per project)
- **Energy efficient equipment or technologies** – Co-funding of up to 30% of the investment cost of energy efficient equipment or technologies

Tax Incentive

- **Accelerated Depreciation Allowance Scheme (ADAS)**: allows the early write-off or depreciation of capital expenditure on energy efficient or energy-saving equipment to replace older, more energy-consuming ones.
- **Investment Allowance – Energy Efficiency Scheme (IA)**: allows an additional 30% investment allowance for energy efficiency investments against taxable income, on top of normal capital allowances.

Energy Efficiency

MELS & MEPS

- **Mandatory Energy Labelling (MELS)**: to help consumers compare the energy efficiency and make more informed purchasing decisions.
- **Minimum Energy Performance Standards (MEPS)**: to raise the average energy efficiency of regulated goods in the market.

Development of Expertise

- Energy Services Company (ESCO) Accreditation Scheme
- Singapore Certified Energy Manager (SCEM) Programme

Green Certification

- BCA Certified Green Mark Manager (GMM)
- Green Mark Professional (GMP)
- Green Mark Facilities Professional (GMFP)
- Green Mark Facilities Manager (GMFM)



THAILAND



Thailand targets to reduce Energy Intensity
by 30% in 2036

Policy and Strategy

EE Improvement
Program

- Industrial and commercial sector
- Government sector
- Transportation sector
- Energy consumption management
- R&D

RE Development
Program

- Biodiesel & gasohol
- Biomass
- Biogas
- Solar energy
- Wind energy & hydropower
- R&D

Supportive Program

- Human resources development
- Public relations
- Administration and management

THAILAND ENERGY EFFICIENCY PLAN 2015-2036



1) Compulsory Program

- Enforcement of ENCON Act 1992 on energy conservation standards for designated factories and buildings
- Building Energy Code (BEC) on the new buildings
- Energy labeling on equipment/ appliances
- Enforcing Energy Efficiency Resource Standard (EERS) - a measure to oblige utilities to help end-users to save energy

2) Voluntary Program

- Supporting financial tools* to hasten the changing of equipment
- Promoting revolving fund for low interest loans and driving LED by price mechanism
- Energy saving measures in transport sector
- Supporting the energy efficiency technology research & development

3) Complementary Program

- Supporting the human resource development on energy conservation
- Supporting the creation of public awareness and behavioural change

Note:

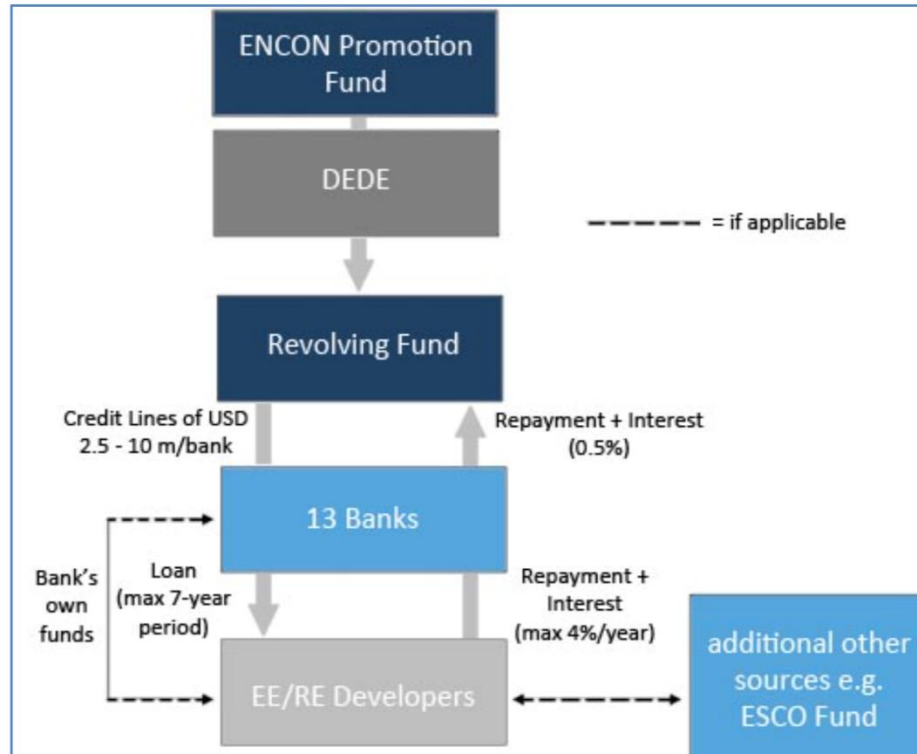
* **Financial tools:** Subsidy, Soft Loan, ESCO Fund and Tax Incentive

THAILAND



THAILAND – ENCON FUND

Structure of the Energy Efficiency Revolving Fund (EERF)



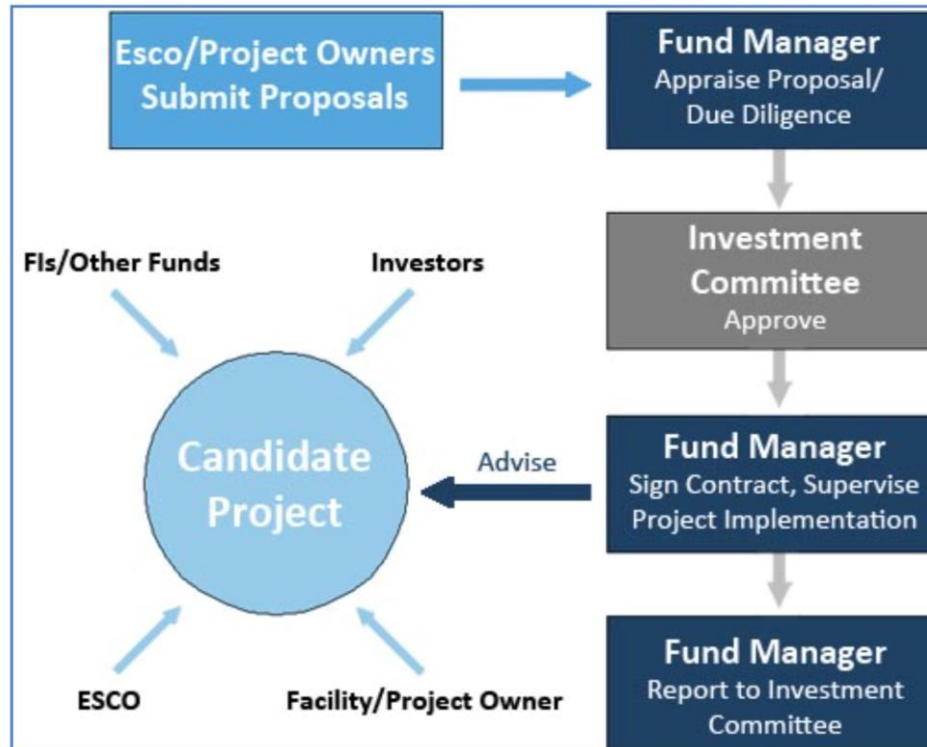
- The EERF was initially funded with THB 2 billion (USD 50 million) from the ENCON Fund and was managed by Department of Alternative Energy Development and Efficiency (DEDE).
- The EERF initially provided credit lines at 0% interest to participating local banks in the range of USD 2.5 million to USD 10 million to finance EE projects. As the financing volume grew, banks began to co-finance projects and the interest rate was subsequently reset to 0.5% to cover administrative costs.
- Local banks were obligated to repay the principal and interest back to the EERF within 10 years.
- Local banks were able to provide low-interest loans which covered up to 100% of project costs but limited to THB 50 million (USD 1.4 million) per project. Loans were provided to developers of EE and RE projects and ESCOs at a fixed rate between 0% and 4% (compared to the market rate of 9%), with up to a seven-year loan period.
- The repaid loans were then used to finance new EE and RE projects, hence the 'revolving' design of the Fund.
- The projects that required less than THB 50 million (USD 1.63 million) borrowed 100% from the EERF, and those that required over THB 50 million (USD 1.63 million) solicited additional debt financing from local banks.
- The loan eligibility for projects was determined by local banks. As collateral for a loan, banks required mortgage over land, building(s) or equipment owned by the applicant.
- EERF funding covered equipment installation and upgrades consultation, civil works, piping, transportation, and tax. Land costs, land improvement costs, and building construction projects did not qualify for funding.
- 13 public and local banks participated in the program which resulted in 294 projects. The total investment was THB 15,959.05 million (USD 521.5 million)

THAILAND



THAILAND – ENCON FUND

Energy Service Company (ESCO) Fund



- The ESCO Fund began in 2008 with an initial budget of **THB 500 million (USD 15.7 million)** and was targeted at **small-to- medium enterprises and ESCOs**.
- The Fund is sponsored by DEDE and is managed by two government-appointed non-profits, the Energy Conservation Foundation of Thailand (ECFT) and Energy for Environment Foundation (E for E).
- The projects are monitored during development, construction and operational phases and the two fund managers provide technical and financial advisory services and help market and promote the projects.
- ESCO Fund includes **six funding assistance** instruments:
 - equity
 - venture capital
 - equipment leasing
 - partial credit guarantees
 - carbon credit trading
 - technical assistance

VIETNAM



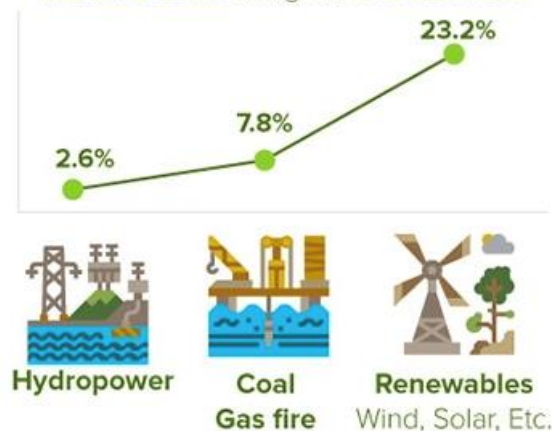
National Power Development Master Plan



The plan aims to increase the share of renewable energy to around 7% by 2020 and above 10% by 2030

IN THE FUTURE 2020-2030

HYDROPOWER, COAL/GAS FIRE POWER will grow at a **slow rate** while **RENEWABLES** will grow at a **fast rate**.



RENEWABLE ENERGY



For RE sector, the funding required would be around US\$23.7 billion and for EE, US\$1.5 – US\$3.6 billion would be required by 2030.

- 1) **Feed-in-tariffs** - one of the lowest in the world. Currently available FiT for biomass, wind, waste-to-energy, and solar projects.
- 2) Government has allowed **100% foreign ownership** of Vietnamese companies in the energy sector. With low feed-in-tariffs and high production costs, public-private partnerships are the most effective means of entering the market to minimize risks. PPP term is 20 years from the commercial operation date.
- 3) RE projects benefit from **import duty exemption** for imported goods to establish fixed assets, materials, and semi-finished products. **Tax incentives** include preferential corporate income tax (CIT) rate of 10% for 15 years; CIT exemption for four years and a reduction of 50% for the following nine years.
- 4) Other incentives include preferential credit loans, land use tax exemption, and land rental exemption.

ENERGY EFFICIENCY



Vietnam Energy Efficiency for Industrial Enterprises (VEEIE)

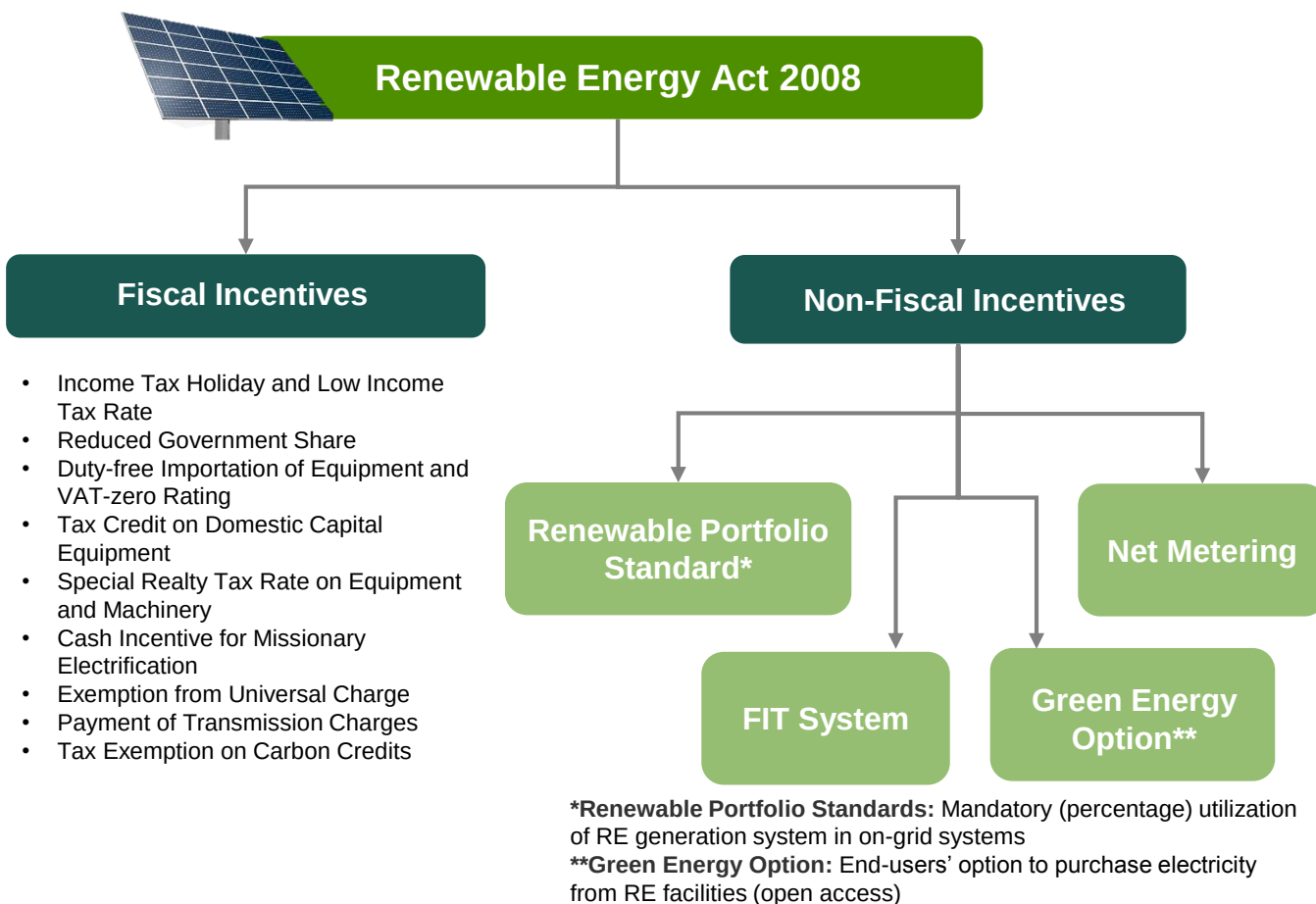
VEEIE is to improve EE in Vietnam's industrial sector. The project has 2 components:

- 1) **Energy Efficiency Investment / Lending** component consists of an Energy Efficiency lending program. Operational Manual (OM) outlines selection criteria for sub-borrowers and sub-projects, appraisal procedures, roles and responsibilities of the Participating Financial Institutions (PFIs). During project implementation, the PFIs will be responsible for identifying, appraising and financing subprojects that meet the criteria in the OM and will bear all associated risks.
- 2) **Project Implementation Support** component will provide technical assistance and capacity building support to Ministry of Industry and Trade on project monitoring and supervision, including audits of project activities and safeguards implementation.

PHILIPPINES

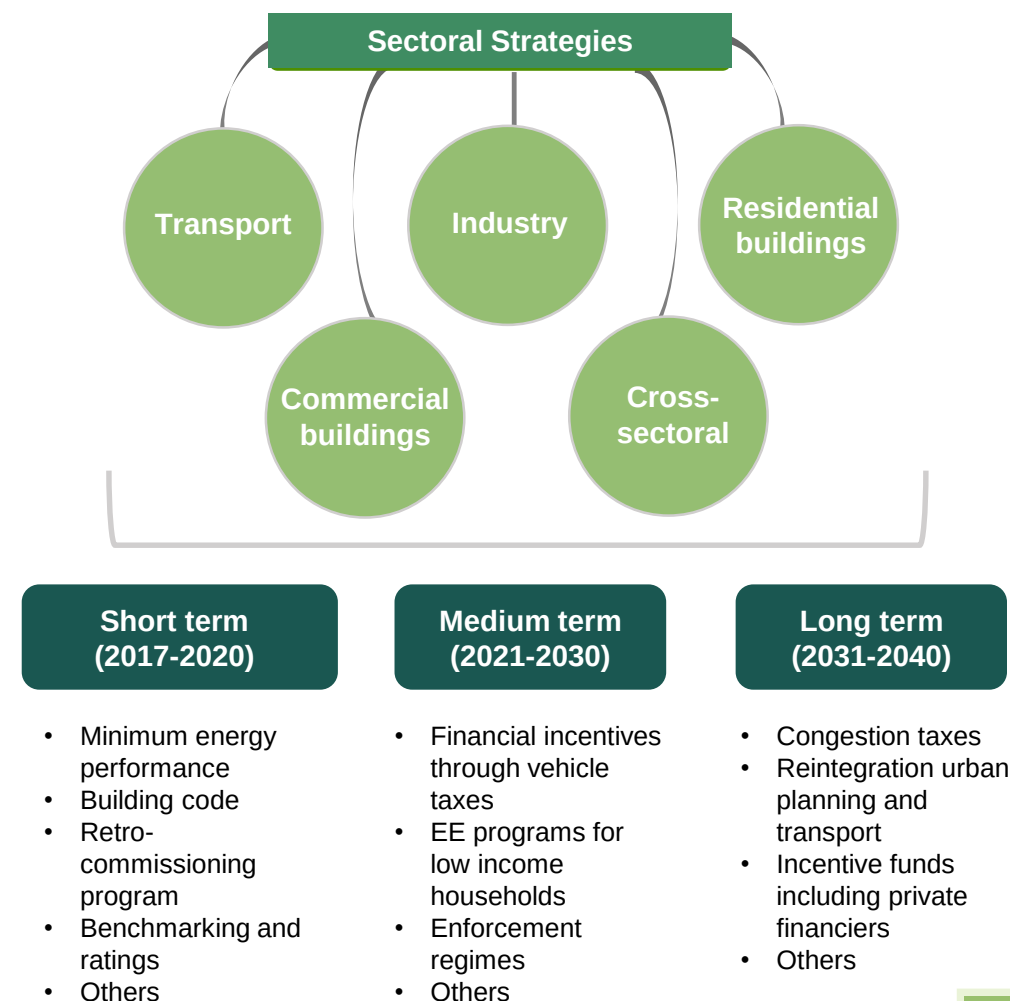


Philippines target in 2011 to almost **triple** its renewable energy generation capacity from 5,438 MW to **15,304 MW by 2030**. It has also joined other ASEAN members in committing to having **23% of their energy supply from renewable sources by 2025**.



Energy Efficiency

Energy Efficiency Roadmap (2017-2040)



INDONESIA



According to National Energy Plan (RUEN): renewables should comprise 33% of total power plant capacity by 2025 (around 45.2 GW).

But, Indonesia's solar policy framework has not delivered cost-effective renewables to the grid. Only 24 MW of solar, including solar rooftop units, are currently installed and dispatchable to the grid.

Perusahaan Listrik Negara (PLN) decreases its solar plan by 137MW or 13% less compared to the previous Electricity Supply Business Plan (RUPTL)

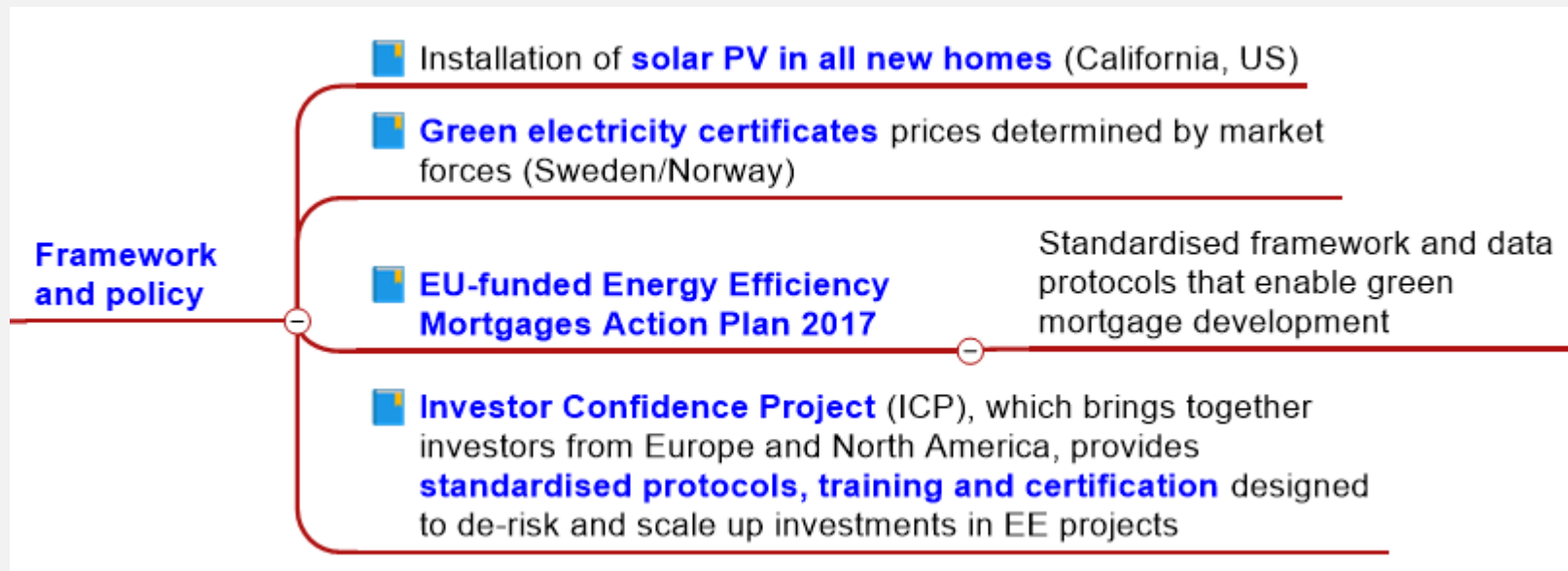




BENCHMARKED PRACTICES AND MODELS

COUNTRY POLICIES AND INITIATIVES

Frameworks and policies



COUNTRY POLICIES AND INITIATIVES

Tools and facilitation

Tools and facilitation

🔑 **Federal Energy Management Program** provides organisations the info, tools, assistance to achieve energy goals (US)

🔑 **Tech-to-market programs** to address **market readiness and resource access** (US Office of EE and RE)

🔑 **Integrated System Plan (ISP)** is a whole-of-system plan that provides an integrated roadmap for the efficient development of the National Electricity Market in Australia

🔑 **EnerCit'IF**, the **first solar energy cooperative** in Paris, enables locals to invest and install solar on roofs and public spaces

🔑 **Asset Class Energy Efficiency (ACE)**, aims to provide structure and tools for efficiency investments in Germany

🔑 **Asian Development Bank Institute** suggested a credit assessment framework comprising **green credit ratings** that will consider externalities

🔑 **On-Bill Repayment (OBR)** combines the **savings and loan payments in the same bill** and this eliminates the split-incentives issue between property owner and tenant

COUNTRY POLICIES AND INITIATIVES

Funding mechanisms (1)

- € **Clean Energy Finance Corporation (CEFC) partnered with National Farmers' Federation (NFF)** to help farmers identify opportunities to reduce their energy bills. Financed through the NAB Energy Efficient Bonus program which uses CEFC finance to offer 0.7% discount on finance for eligible clean-energy investments (Australia)
- € **Energy Efficiency Services Limited (India) aggregating demand for energy-efficient appliances and equipment through bulk purchase** agreements, providing financing, and marketing
- € **KfW Germany channel EE loans through commercial banks by combining home mortgage loans with solar home systems loans.** This is to ease solar financing with the added advantage

- € **State government of Ohio** partners with banks for the Deposit Linked Loan Programme where the **state government will purchase a certificate of deposit (CD) at these banks with a reduced interest rate** to be paid for the CD and the **banks will offer below-market-rate loans to priority sector including RE and EE projects**, particularly for EE installment at residential housing.

- € **Financial Instruments for Brazil Energy Efficient Cities – FinBRAZEEC** to **reduce credit risk through loan syndication with commercial lenders and provide technical assistance through studies and capacity building.** The programme was granted USD 200 million by the International Bank for Reconstruction and Development and is implemented by the Brazilian National Bank, Caixa Economica Federal
- € **Norwegian Energy Efficiency Scheme**, administered by ENOVA and financed by the Norway Climate and Energy Fund, provides subsidies in five end-use sectors. The majority of the savings (45%) were made in the transport sector
- € **US lender Fannie Mae's Green Rewards programme**, which provides preferential financing and audit support to enable efficiency investments in buildings, particularly residential properties

COUNTRY POLICIES AND INITIATIVES

Funding mechanisms (2)

€ UK's GBP 5 million fund to help commercial lenders develop green mortgages

- € Since 2014, over USD 6.6 billion has been invested through **property assessed clean energy (PACE) loan securitization** in US, with the majority, USD 5.6 billion, going into residential (R-PACE) projects, while USD 1 billion has been invested in commercial (C-PACE) projects

European version of PACE is unlikely to be linked to property taxes, but rather secured by a lien (claim) on the property and collected regularly with the support of the public authority that initiated the programme

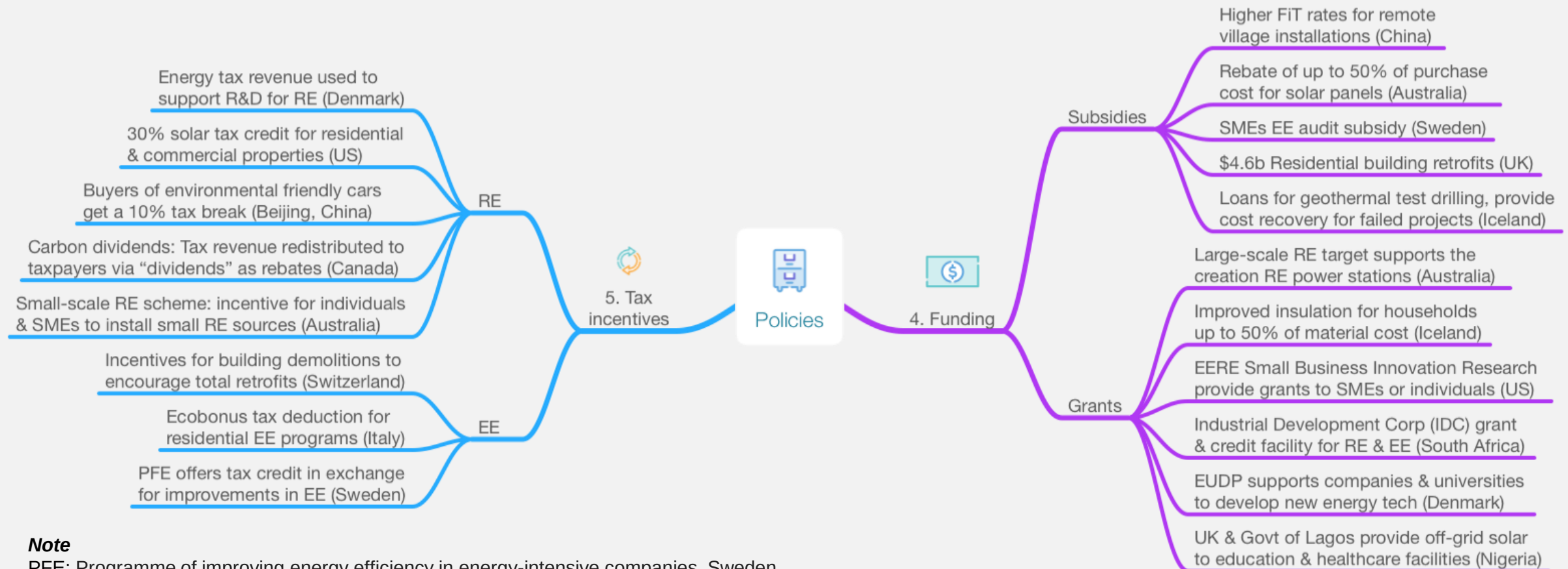
- € **Cooling as a Service (CaaS):** Paying for efficiency as a service – as an operational rather than as a CAPEX – to overcome upfront cost barriers (service agreement rather than purchase). The CaaS initiative, led by the Basel Agency of Sustainable Energy (BASE) on behalf of Kigali Cooling Efficiency Program, was launched in March 2019.

- € In Latin America, **Inter-American Development Bank (IADB) and the Danish Energy Agency**, is supporting the development of an **insurance product for efficiency projects undertaken by SMEs**

The programme also includes measures such as standardised contracts to reduce transaction costs; third-party verification to ensure the quality of energy service providers and their projects; credit lines from development banks; and grant support to sustain market demand

COUNTRY POLICIES AND INITIATIVES

Subsidies and incentives



Note

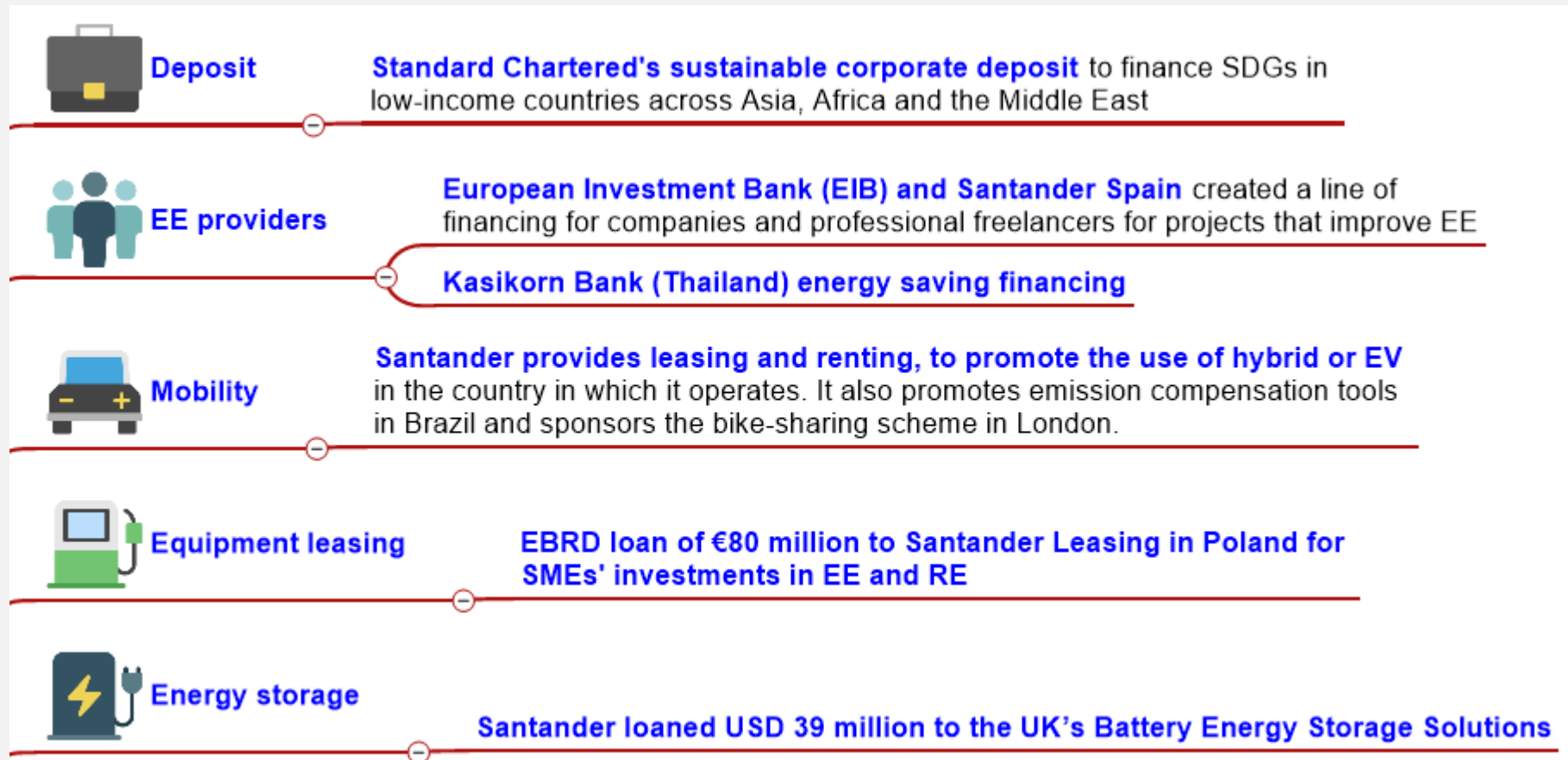
PFE: Programme of improving energy efficiency in energy-intensive companies, Sweden

EERE: The Office of Energy Efficiency and Renewable Energy, US

EUDP: Energy Technology Development and Demonstration Program, Denmark

FINANCIAL INSTITUTIONS' PRACTICES/INITIATIVES

Deposit, loan and financing (1)



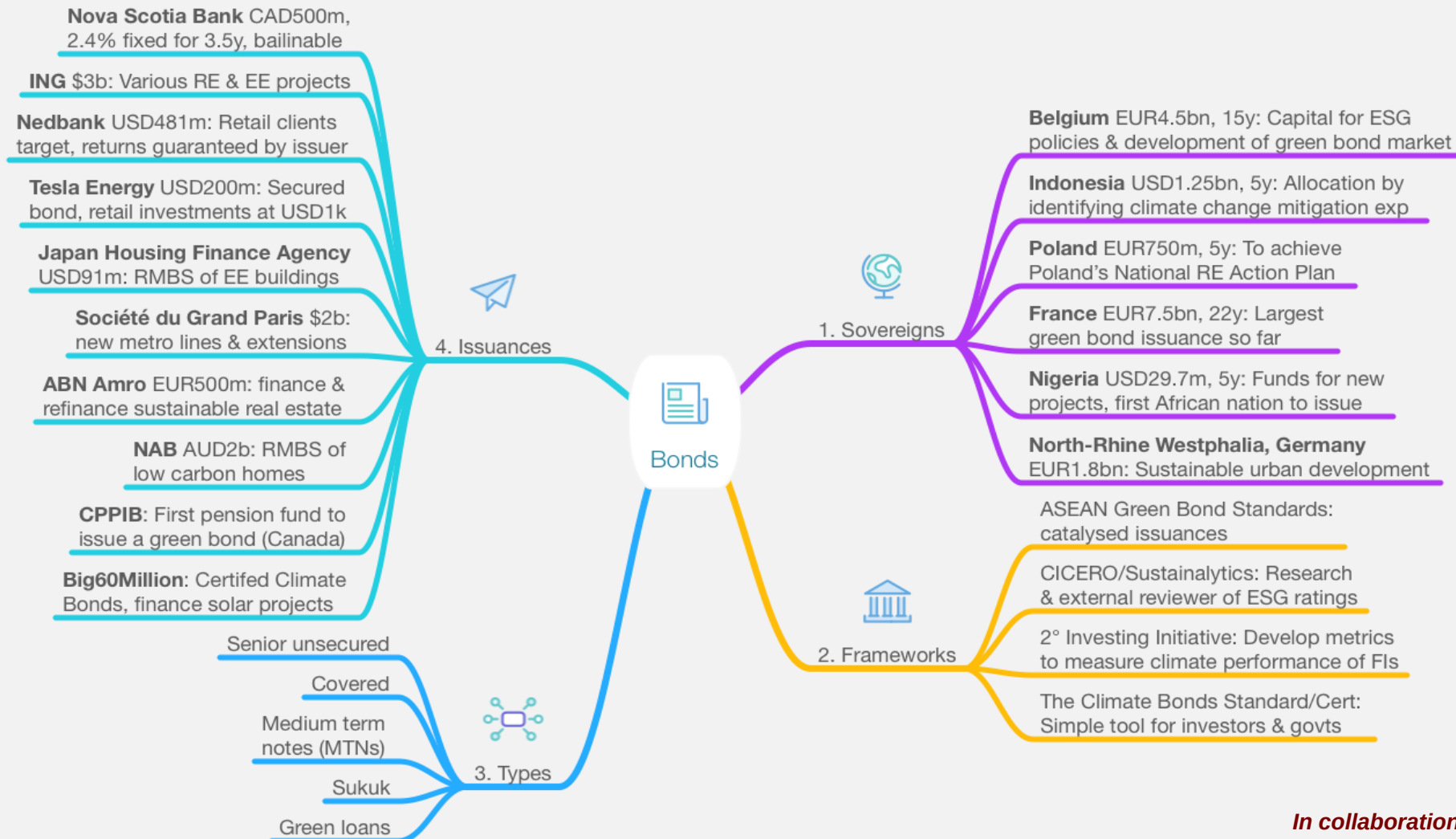
FINANCIAL INSTITUTIONS' PRACTICES/INITIATIVES

Deposit, loan and financing (2)



FINANCIAL INSTITUTIONS' PRACTICES/INITIATIVES

Green bonds



FINANCIAL INSTITUTIONS' PRACTICES/INITIATIVES

Green bond index, ETF, fund management



Green Bond Index and ETF

Solactive's ESG-screened Green Bond Index (USD & Euro) comprising 243 green bonds. The new index adds an issuer-level screen meaning it expands its focus beyond the bonds' use-of-proceeds to include the issuer's current exposure to fossil fuel-based power generation or nuclear.

Lyxor Asset Management uses Solactive Green ESG Bond Eur USD IG TR Index as the underlying for its Green Bond ESG Screened UCITS ETF, which started trading on Deutsche Börse Xetra on October 1st, 2019.



Fund management

BNP Paribas Asset Management: Institutional/professional investors can invest in fund that will be invested at least 90% in existing BNP's environment-themed funds (Water, Climate, Responsible Real Estate, etc.). The remaining maximum 10% will be invested in an investment structure dedicated to financing French and European SMEs that contribute to the energy and ecological transition



NAB Low Carbon Shared Portfolio

A closed-end offering that gives **investors an interest in a portfolio of loans to Australian-domiciled companies operating RE projects**. The loans are all denominated in Australian dollars, and have a remaining tenor of at least 15 months. The loan portfolio has an expected weighted average life of 3.2 years. NAB will retain no less than 25% of each low carbon loan on its own balance sheet for the life of the investment, and will absorb the cost of managing them.

FINANCIAL INSTITUTIONS' PRACTICES/INITIATIVES

Tool, screening and methodology



Tools, screening,
methodology

- ⌚ **Science based targets** is a collaboration between **CDP, World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and the United Nations Global Compact (UNGC)**. It is one of the We Mean Business Coalition commitments
- ⌚ **ING's sustainability linked loans and 2nd party assessment by Sustainalytics**. ING used a science-based approach to steer its business strategy towards meeting Paris Climate Agreement. See also **Deutsche Börse and BNP Paribas Positive Incentive Loan**.
- ⌚ **ING's Terra approach: PACTA methodology for corporate lending**. It looks at the **technology shift that's needed across certain sectors to slow global warming and then measures this against the actual technology clients are using** – or plan on using in the future.
- ⌚ **Shadow carbon pricing methodology in Jan 2019 by European Bank for Reconstruction and Development** to reflect the cost of pollution in financial analysis (European Investment Bank has been pricing pollution in its economic analysis since the 1990s)

FINANCIAL INSTITUTIONS' PRACTICES/INITIATIVES

Platform and other initiatives



Platforms



Triodos investment crowdfunding for RE



eQuad by Joule Assets helps ESCOs, engineering firms, and construction companies across Europe access appropriate project investment by providing **third-party valuation, performance insurance, project certification, and due diligence**



Point of sale app for home improvement projects by Mosaic Solar in the US



Mobile-enabled pay-as-you-go solar power model (PAYG) for off-grids in Africa, South Asia and Indonesia (Indonesia and Kenya are the strongest markets for PayGo). PAYG solar providers can offer lease-to-own or energy-as-a-service model.

Using mobile payment data for credit scoring

enabling predictive maintenance through Machine to Machine (M2M) connectivity and better understanding of customer power consumption profiles



Other initiatives



Aggregation method (e.g. LevelTen Energy in US): Aggregating electricity demand from SMEs to spur corporate power purchase agreements (CPPA), e.g. Norwegian state-owned utility Statkraft has recently entered into one such aggregated CPPA



SunFunder: Debt financing for solar enterprises in 21 emerging and frontier markets via collaboration with major debt fund investors globally



BNP Paribas and Gates Foundation's One Planet Fellowship – a \$15 million, five-year programme to support research into adaptation to climate change in Africa.



Kellogg-Morgan Stanley sustainable investing competition

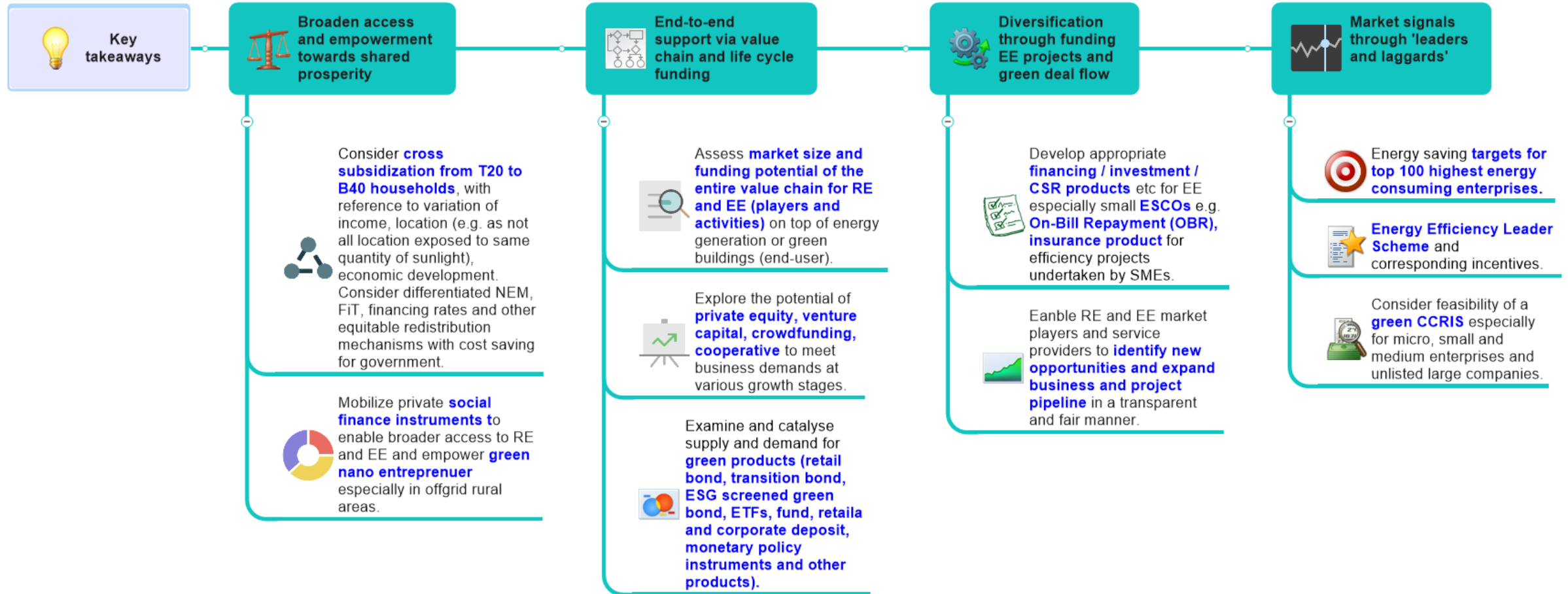


HSBC is aiming to source 100% of its electricity from renewable sources by 2030

KEY TAKEAWAYS



KEY TAKEAWAYS



POTENTIAL FINANCING AND BUSINESS MODEL FOR RE AND EE IN MALAYSIA

	 Energy Efficiency (EE)						 Renewable Energy (RE)						
	CSR	Micro-finance	Loan & Lease	PAYS	Crowd-funding	PE/ VC	CSR	Micro-finance	Loan & Lease	B2B PPA	PAYG	Crowd-funding	PE/ VC
B40	√						√				√	√	
Rural Household	√						√	√			√	√	
Non-rural household			√	√				√	√			√	
Commercial			√	√	√	√			√	√		√	√
Industry			√	√	√	√			√	√		√	√
Community	√	√	√	√	√		√	√	√	√		√	
Government/ Local Authority			√	√		√			√				√

ABOUT US

SUSTAINABILITY@CIMB



THE GROUP

Sustainable Action

How we embed sustainability principles in all our business operations and processes to reduce our negative impact such as carbon footprint and generate positive impacts through our business



OUR CLIENTS

Sustainable Business

How we generate business profits in a responsible manner, creating net positive impact through the products and services we provide, and by assisting and encouraging our customers and clients on their own sustainability journeys



SOCIETY

Corporate Social Responsibility*

How we use a portion of our profits to enhance and contribute towards sustainable long-term positive impacts in the communities around us



Governance and Risk

How we govern and report sustainability risks at CIMB; including managing economic, environmental and social risks & opportunities; and how we organise and mobilise ourselves to achieve desired outcome



Stakeholder Engagement and Advocacy

How we champion, engage, build capability and capacity, raise awareness and drive participation for sustainability, both internally and externally

* Corporate Responsibility Team and CIMB Foundation

CIMB'S SUSTAINABILITY MILESTONES

Our Commitment

7 Prioritised Sustainable Development Goals (SDGs)

All programmes, performance measures, and net impact are mapped to specific SDGs



Collective Commitment to Climate Action

As a founding signatory of the UNEP FI Responsible Banking Principles, we are committed to align our portfolio to finance a low-carbon, climate-resilient economy

Non-Product Related

Sustainability bond

First SDG bond worth US\$680 mil issued by Malaysian bank in Formosa market

External Engagements and Collaborations

UNEP FI, BNM's JC3 subcommittees, VBI Sector Guide development

Mitigating Negative Impact

Rolled out Group Sustainability Policy and Group Sustainable Financing Policy to manage environmental and social risks. 4 Sector Guides i.e. Palm Oil, Construction & Real Estate, Oil & Gas, Forestry

Community Impact

Reframed CSR strategy to align and incorporate sustainability elements and SDGs

Building Awareness and Capability

Organised The Cooler Earth: Sustainability Summit for over 1200 participants

Product Related

BIMB ESG equity & bond investment products

e.g. BIMB Arabesque I Global Dividend Fund 1, BIMB ESG Sukuk Fund-Class A

SME Renewable Energy Financing programme

Provide smaller SMEs with full financing to cover the cost of solar PV systems and installation

Sustainability Linked Loans (SLL)

Allocated RM3 bil for disbursement of SLL, which provides interest rate rebate linked to sustainability performance of borrowers

Preferential rates for green residential homes and hybrid cars

Interest rates as low as BR+0.50% p.a. and fixed rates as low as 2.34% p.a. respectively

INCEIF'S CONTRIBUTION TO VBI AND SUSTAINABLE FINANCE



Developed a sustainability strategy, financing and valuation framework including sustainable finance policy and sector guidance for CIMB Group and CIMB Islamic (2016-2018)



Source: Salaam Gateway. "INCEIF Collaborates with Key Stakeholders as It Pushes for Sustainable Financing." Salaam Gateway, https://www.salaamgateway.com/en/story/inceif_collaborates_with_key_stakeholders_as_it_pushes_for_sustainable_financing-SALAAM15032019022917/

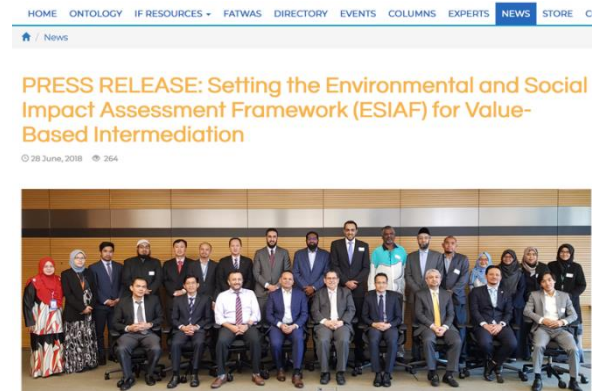


BANK NEGARA MALAYSIA
CENTRAL BANK OF MALAYSIA



WORLD BANK GROUP

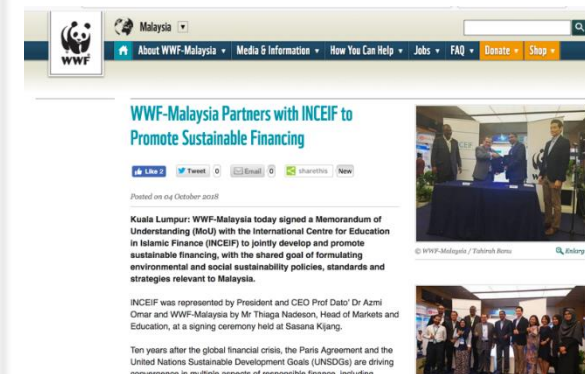
Chair of the Environmental and Social Impact Assessment Framework (ESIAF) for Value-based Intermediation



Source: ISRA. "PRESS RELEASE: Setting the Environmental and Social Impact Assessment Framework (ESIAF) for Value-Based Intermediation." I-FIKR, 28 June 2018, <https://fikr.isra.my/news/post/press-release-setting-the-environmental-and-social-impact-assessment-framework-esiaf-for-value-based-intermediation>



Collaborated with WWF to develop and promote sustainable financing, with the shared goal of formulating environmental and social sustainability policies, standards and strategies relevant to Malaysia



Source: WWF-Malaysia. "Malaysia Partners with INCEIF to Promote Sustainable Financing." WWF, 4 Oct. 2018, <http://www.wwf.org.my/?26125/WWF-Malaysia-Partners-with-INCEIF-to-Promote-Sustainable-Financing>

INCEIF'S CONTRIBUTION TO VBI AND SUSTAINABLE FINANCE



Conducted a comprehensive feasible study on innovative financing, investment platforms and business models for renewable energy and energy efficiency for the Ministry of Energy, Science, Technology, Environment and Climate Change



Conducted research on the transformation of technology-based small-medium enterprises towards becoming sustainable technopreneurs through a research consultancy project for the Malaysian Technology Development Corporation (MTDC)

INCEIF was amongst the 5 universities to be awarded research grant from MTDC

KUALA LUMPUR, 15 March 2018 – Malaysian Technology Development Corporation (MTDC) presented its Mini Social Research Grants to five (5) researcher teams and INCEIF was one of them. The projects is expected to kick off this year and will be completed within 9-24 months. [lightbox id="4"]



Source: INCEIF. "INCEIF Was amongst the 5 Universities to Be Awarded Research Grant from MTDC." INCEIF, 15 Mar. 2018, <https://www.inceif.org/2018/03/20/inceif-was-amongst-the-5-universities-to-be-awarded-research-grant-from-mtdc/>



GENERAL COUNCIL FOR ISLAMIC BANKS
AND FINANCIAL INSTITUTIONS

Consulted for the General Council for Islamic Banks and Institution (CIBAFI)'s Global Islamic Bankers' Survey 2016: Confidence, Risk and Responsible Business Practices



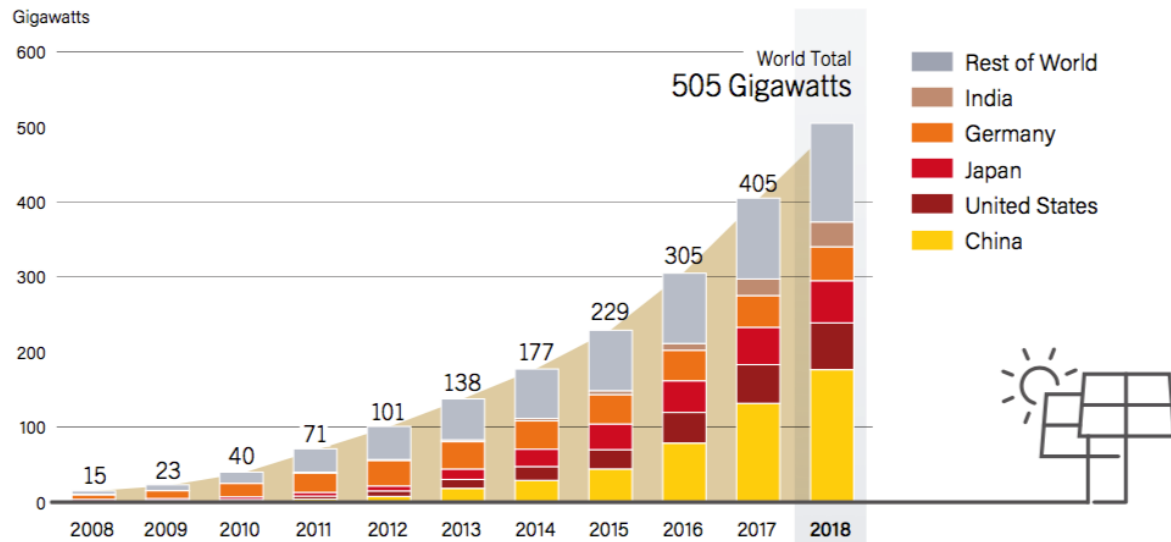
Source: CIBAFI. (2016). "CIBAFI Global Islamic Bankers' Survey: Confidence, Risk and Responsible Business Practices". <http://cibafi.org/SurveyPage?ContentId=CI1341>

APPENDIX

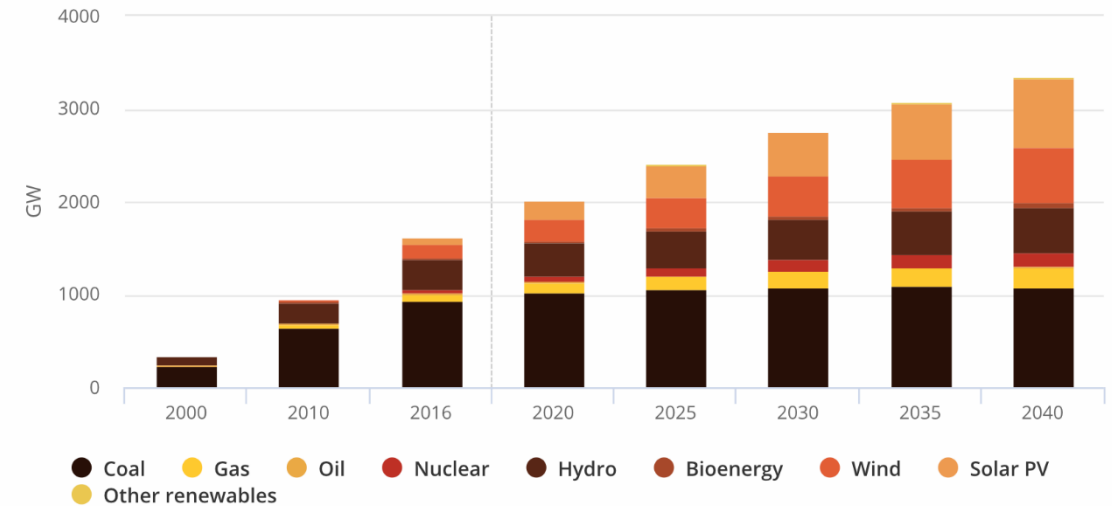
INSIGHTS FROM CHINA



China is the top country based on Solar PV Capacity



Highest growth installed capacity for solar compared to other renewable energy



Developers are transforming some of the country's dozens of existing flooded coal mines by installing floating solar PV systems.



China dominates investment in Renewable Energy

FIGURE 47. Global New Investment in Renewable Power and Fuels in Developed, Emerging and Developing Countries, 2008-2018

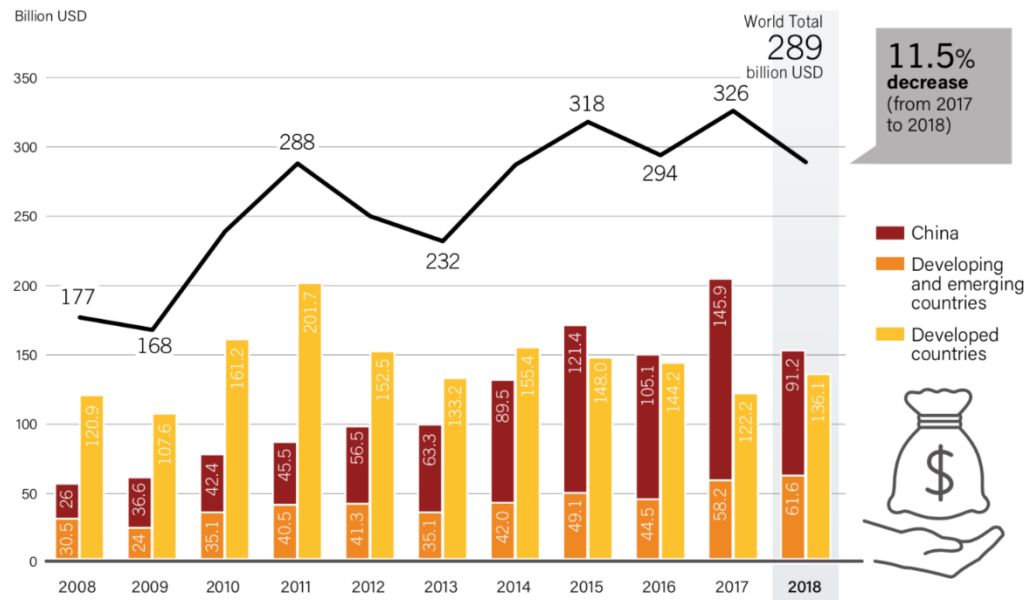
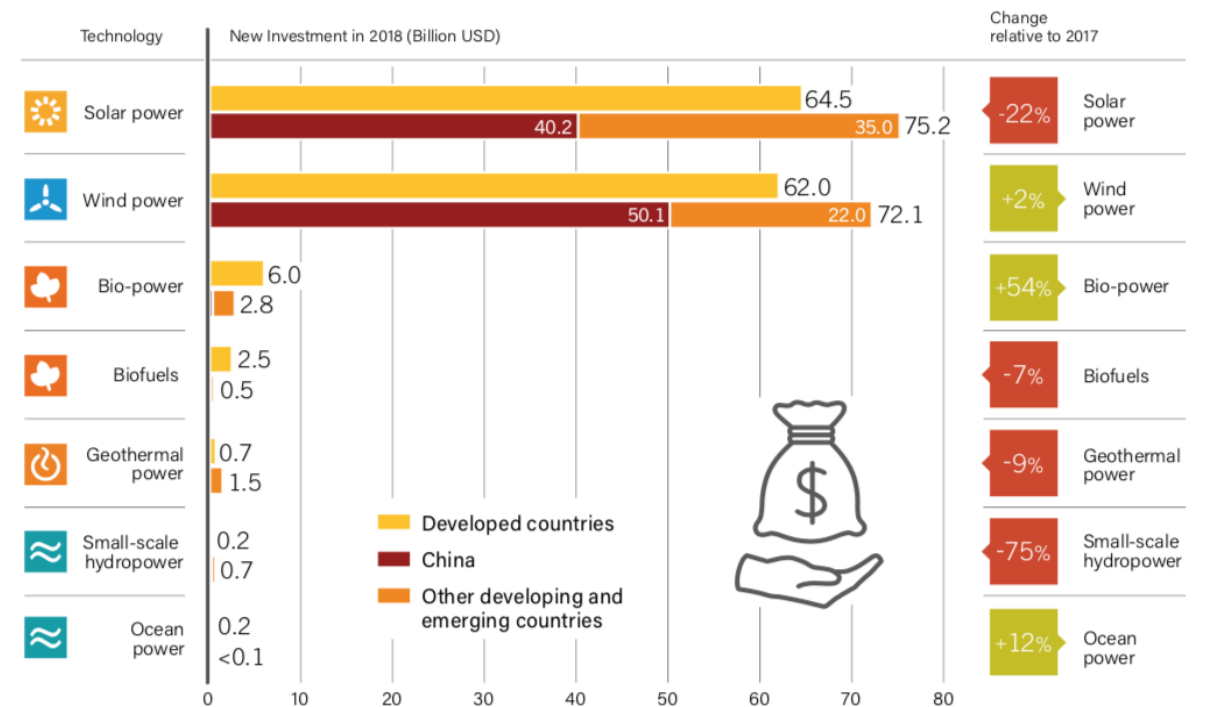


FIGURE 49. Global New Investment in Renewable Energy by Technology in Developed, Emerging and Developing Countries, 2018



Adopted from REN21 "Renewables 2019: Global Status Report"



China has taken a lead in renewable energy and is now the **world's largest producer, exporter and installer of solar panels, wind turbines, batteries and electric vehicles**. China also leads by investing in a growing number of international renewable energy projects through increasing contributions to multilateral organizations. China's National Energy Administration (NEA) and the National Development and Reform Commission (NDRC) plan to **spend over \$360 billion developing renewable energy and creating 13 million jobs in the sector by 2020**.

RENEWABLE ENERGY AND ENERGY EFFICIENCY (REEE) POLICIES

Renewable portfolio standard (RPS)

- RPS were introduced in China in 2007 by the National Development and Reform Commission (NDRC) in the Mid and Long-Term Development Plan for Renewable Energy. Targets were assigned to generators and grid companies, depending on their circumstances and capacities. RPS in China is more practical and clarified the companies' obligations.

Feed-in tariff

- FiT can substantially differ in different provinces, due to the variation in natural resources and economic development and higher FiT rates is provided for remote village installations. The type of generator also affects the rate. Hydro power plants usually have the lowest price, followed by coal, nuclear, gas, wind and solar power plants, in ascending order.

Direct subsidies

China's Ministry of Finance (MOF) rolled out two photovoltaic power subsidy programs to boost domestic demand.

- **Solar Roofs program:** which supports distributed photovoltaic projects including rooftop systems and building integrated photovoltaic (BIPV) systems. The program provides a subsidy of 50% of the bidding price for the supply of critical components.
- **Golden Sun Demonstration project:** which supports more types of photovoltaic energy projects than the Solar Roofs program, including BIPV systems, rural electrification projects, and large-scale photovoltaic power projects. The program provides 50% of the total cost for on-grid systems and 70% for off-grid systems in rural areas.



By taking the lead on renewables, China has improved its geopolitical standing by reducing its reliance on fuel imports & risks of energy disruption.

- Without the energy efficiency improvements that have been made since 2000, China would have used 12% more energy in 2017.
- Around 60% of final energy use in China was covered by mandatory EE policies in 2017, the highest coverage globally. Policy coverage is highest in industry at nearly 70%.
- EE obligation (EEO) placed on the utilities State Grid Corporation and the Southern Grid Company, which together cover the majority of the Chinese electricity market. Between 2012 and 2016, the two grid companies exceeded their mandatory energy savings, 13 GWh above 55 GWh target, and peak capacity aim through 4 GW above 13 GW target.
- Elements of the Top 1000 program include: implementation of energy audit systems, conducting EE benchmarking, continuation of phasing-out of backward technologies, improvement of energy measurement and measuring instrument, encouraging companies to build energy management control centres and to use automation and IT, and establishment of energy conservation incentive mechanisms

TAX INCENTIVES

- A separate 2016 Catalogue of Encouraged Imported Technology and Products published by the State Council grants Chinese companies import purchase discounts for a variety of wind, hydroelectric, geothermal, and solar-related technologies and equipment.
- The Chinese Ministry of Commerce's 2017 Industry Catalogue Guiding Foreign Investment lists renewable energy an encouraged area for investment, which would allow foreign investors to establish wholly-foreign owned enterprises in the country.

FINANCING

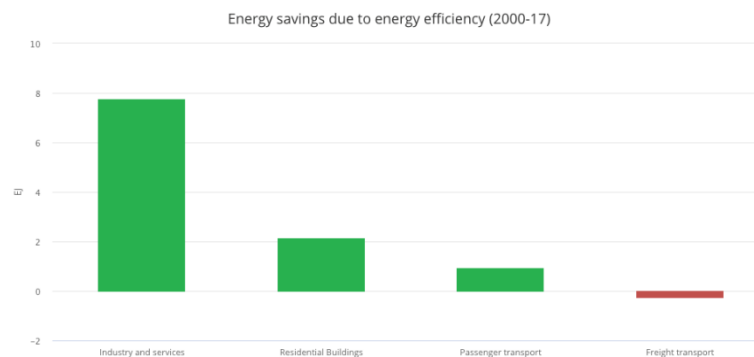
- The country currently relies mainly on **bank loans** and **corporate bonds** for financing renewable energy projects, which does not necessarily lead to high-quality results. These traditional methods of financing are more accessible to state-owned enterprises (SOE). Private Chinese companies hence not only need more capital but also need access to more financing channels.
- China needs more innovative financing alternatives which is why the Chinese government has been attempting to attract foreign financiers to employ these renewable energy investment techniques in the country.
- China is in pole position for financial **corporate green bond issuance** as the top 5 issuing entities are Chinese with a total of **USD 31 billion** through 69 issuers. Industrial Bank has already raised a whopping USD10bn in green bonds, followed by Bank of China (USD6.4bn) and Bank of Beijing (USD4.5bn).
- **Government financial support for manufacturing:**
 - Loan concessions and loan guarantees: China's state-owned banks have provided a large amount of capital support to domestic PV manufacturers.
 - Refunds of VAT and import duties on core parts, components and materials that are imported for the development and manufacturing of domestically made large-scale wind turbines
 - Subsidies for land use rights.
 - Subsidies for electricity use.



THE 13TH FIVE-YEAR PLAN FOR ECONOMIC AND SOCIAL DEVELOPMENT OF THE PEOPLE'S REPUBLIC OF CHINA (2016-2020)

Comprised of 20 Parts, the 13th five-year plan is divided into 20 sections, of which the following relate to energy:

- New systems for development
- Agricultural modernization
- Optimized modern industrial systems
- Modern infrastructure networks networks
- New urbanization
- Development coordinated between regions
- Ecosystems and the environment



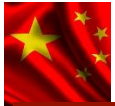
Energy Conservation

- **Promote society-wide energy conservation**, make comprehensive efforts to promote energy conservation in industry, construction, transportation, public institutions, and other areas.
- **Launch projects** to upgrade boilers, furnaces, lighting products, and electric motors and **recover waste heat for household heating**.
- Develop and spur the adoption of energy-conserving technologies and products and demonstrate the **application of major energy-conserving technologies**.
- Launch the Top “100, 1,000, 10,000” energy conservation initiative to put the **top 100 energy consuming enterprises in China under national regulation**, the top 1,000 energy consuming enterprises under the regulation of their respective provincial-level governments, and other high energy consuming enterprises under the regulation of lower-level governments
- Work to raise **building energy efficiency** and initiate eco-friendliness across the entire construction chain.

Source: [IEA Policies & Measures Database](#)

POLICIES

- **Efficient lightbulb subsidy program (2012-2013)**
- For one year, the State Council will subsidize the purchase of a variety of low-consumption household electrical appliances.
- **Action Plan for retrofitting and upgrading coal-fired power plants (2014 - 2020)**
- The plan strengthens the EE and pollutants emission standards applied to coal power plants.
- **Strategic Action Plan for Energy Development (2014 - 2020)**
- This strategy plan puts forward energy conservation as a priority in the power, industrial, building, and transport sectors.
- **Energy Efficiency Leader Scheme**
- The program aims to set up a long-term mechanism to incentivise energy-efficient “leaders”—i.e., manufacturers and brands that exceed specific energy-efficiency benchmarks set by the China Energy Label.



Renewable Energy and Energy Efficiency (REEE) Policies

BUILDINGS

Existing building retrofits

- Existing Building Retrofit and Heat Metering Reform program in December 2007. The tasks were allocated to 15 northern provinces.

Appliance energy standards and labelling

- Mandated maximum allowable energy consumption for 30 types of equipment and appliances.

Subsidies for energy-efficient and renewable energy appliances

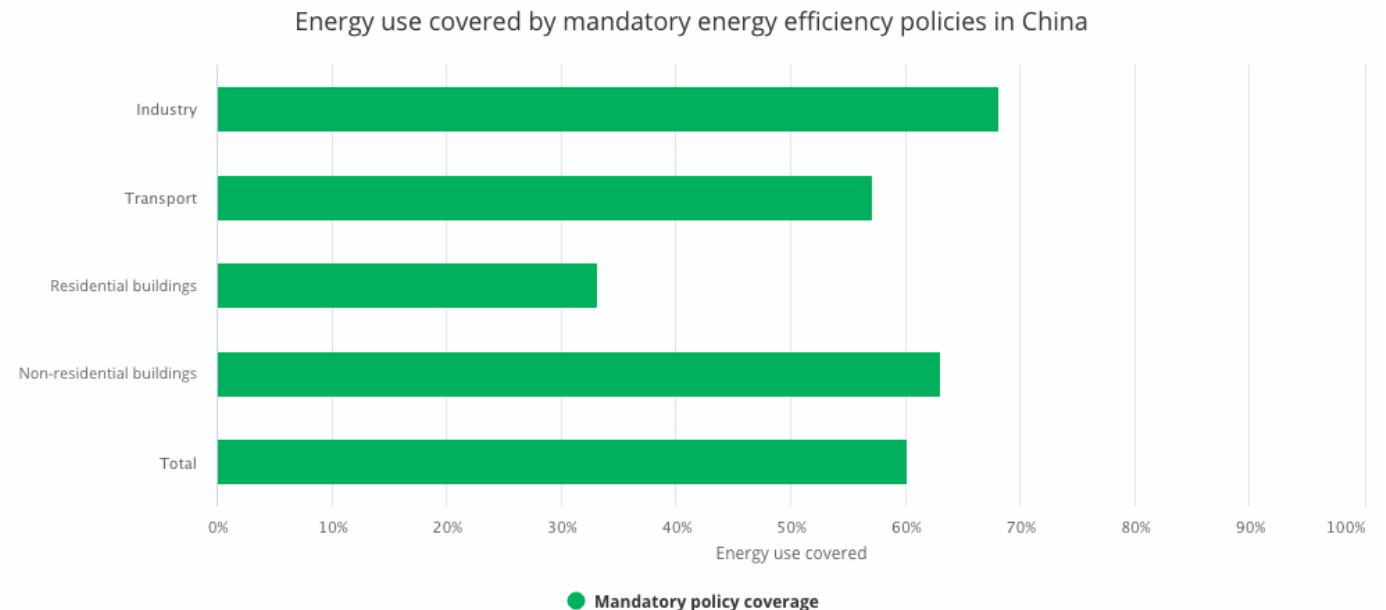
- In June 2009, the MOF and the NDRC initiated a subsidy program targeting air-conditioners and light bulbs.

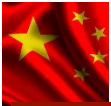
Block tariffs

- The price on the first block is subsidized to ensure residents are able to afford basic electricity. The first block is expected to cover approximately 80% of electricity consumption. The price on the second block is set to recover full costs. Finally, the price on the third block is punitive and considers resource scarcity and pollution externalities.

Energy building codes

- The codes set national standards for the design and material choice of building envelopes as well as the heating and air-conditioning systems.
- New buildings must achieve 50–65% reduction in energy consumption compared to buildings built in 1980.





Renewable Energy and Energy Efficiency (REEE) Policies

INDUSTRY

Forced closure

- Mandatory shut down energy-intensive industries.

Energy efficiency obligation (EEO) - Thousand Enterprise Energy Conservation program

- The key component of EEO is the assignment of energy-saving targets to enterprises. Enterprises would be penalized for not meeting their assigned energy-saving targets.
- The program targeted the 1008 largest enterprises in nine energy-intensive industries. The program was significantly expanded in 2011 and renamed the Ten Thousand Enterprise Low Carbon and Energy Conservation program.
- EEO proved to be effective in stimulating energy conservation practices and investments among the regulated enterprises in China. 98.3% of the 881 firms met their targets. Overall, the program achieved 183% of the original target.

Energy efficiency funds

- Funding is based on the amount of energy saving.

Differentiated electricity pricing

- Energy-intensive enterprises with outdated production technologies and/or a poor environmental record were required to pay electricity surcharges.
- The policy reduced CO2 emissions by 82.32 million tons from 2004 to 2009.

TRANSPORTATION

Fuel economy standards and labelling

- Fuel economy standards (FES) are arguably the most important measure globally for improving automobile energy efficiency. FES regulate fuel consumption or carbon emissions per distance travelled of new vehicles and thus require automakers to design more efficient products or shift sales towards more efficient models. The FEL standards require all new light-duty vehicles to be labelled with fuel consumption estimates for highway, city and overall average driving patterns.

Vehicle and fuel taxation

- Vehicles are subjected to four taxes: a 17% value-added tax, a consumption tax, a vehicle acquisition tax, and a vehicle and vessel tax. e.g. consumption tax: Vehicles with an lower engine capacity will be tax less.

Subsidies to energy-efficient vehicles and electric vehicles

- Subsidies depends on two factors: the capacity of the battery and the type of the vehicle.
- e.g. purchases of energy-efficient automobiles are subsidized 3000 RMB.

Public transportation

- Development of high-speed railways (HSR).
- Rapid development of metro rapid transit (MRT) projects in many cities.

MINI CASE STUDIES



Linked deposit loans

In the United States (US), **the state government of Ohio** partners with banks for the Deposit Linked Loan Programme where the state government will purchase a certificate of deposit (CD) at these banks with a reduced interest rate to be paid for the CD and the banks will offer below-market-rate loans to priority sector including RE and EE projects, particularly for EE installment at residential housing.

Property Assessed Clean Energy (PACE)

A **PACE loan** seeks to finance energy-efficient upgrades or the installation of renewable energy sources for private residential, commercial and industrial properties. It creates a voluntary special tax or special assessment district that funds the cost of energy improvements for commercial and industrial property owners that move to the district. The property owner will pay the district back over time through an assessment on their property taxes and the savings on the owner's utility bills will go towards the payment of the project cost. The assessment is secured by a property lien that takes priority over the mortgage and other loans if there is a foreclosure. A unique feature of PACE is that the assessment stays with the property in the event of a sale, if the buyer agrees to this transfer, and the benefits of the upgrades and the corresponding payments can be transferred to the buyer as the new owner.

Bundle mortgage loan with RE and EE financing

KfW Germany channel EE loans through commercial banks by combining home mortgage loans with solar home systems loans. This is to ease solar financing with the added advantage of allowing banks to benefit from mortgage securitization. A similar practice exists in the US where the EE mortgages combines the cost of EE and renewable energy improvements into a single primary mortgage during the purchase or refinance of residential real estate.

Green Credit Ratings

Asian Development Bank Institute suggested a credit assessment framework comprising green credit ratings as this will internalize the implicit benefits of clean energy projects. The green credit rating incorporates environmental indicators in its credit risk scoring which will consider the externalities arising from the project such as reduction of CO₂ by green energy project.

Shadow Carbon Pricing (SCP)

EBRD utilizes SCP methodology in its credit assessment, forming a part of its cost-effectiveness analysis for energy project by European Investment Bank (EIB). SCP aims to make environmental costs included in the broad economic analysis of whether to invest in a project related to highly powered and heavy industry plants by identifying the price of pollution with greater transparency. EBRD follows recommendations by the High-Level Commission on Carbon Prices when it comes to setting the “shadow price”; it recommends that carbon is to be priced at US\$ 40-80 in 2020 which will increase over time and reach US\$ 50-100 by 2030.

Blended finance

The International Finance Corporation (IFC) has introduced a blending of concessional funds with commercial funding which may reduce early-entrant costs or mitigate project risks. This re-balances the risk-reward profiles for pioneering investments. Blended financing has largely been focused on climate change where the private sector players face greater risks associated with new and yet-to-be-proven technologies or first-of-their-kind projects.

Consultancy service and payment based result

European Bank for Reconstruction and Development (EBRD) offers direct loan under the Western Balkans Sustainable Energy Direct Financing Facility (WeBSEDF) whereby the borrowers can also benefit from technical consultancy services by their Project Consultants and receive incentive payments based on the estimated reduction of carbon dioxide emissions resulting from their project implementation.

On-Bill Repayment (OBR)

OBR is the best choice for programmes that target tenants. Property owners have little incentive to pay for energy improvements if their tenants reap the savings and on the other hand, tenants have little incentive to invest in improvements to a building they do not own. The practice has always been for property owners to acquire a loan for energy improvements and pay it back over time via their utility bills. However, OBR combines the savings and loan payments in the same bill and this eliminates the split-incentives issue. OBR is also attractive for borrowers with low credit scoring as the credit decision is based on utility payment history. Additionally, the ability to disconnect power in the event of non-payment presents a novel way of mitigating non-payment risks as it serves as a powerful incentive to pay and a strong form of security.



K-Energy Saving Loan under the revolving fund for energy conservation by financial institutions project (phase 6)

- Long-term, low-interest loan for energy savings. Supported by the government.
- Projects requesting for the loan must be certified by the Department of Alternative Energy Development and Efficiency (DEDE)
- Interest rate: 3.5% or less interest rate. Special fixed rate throughout the loan term from DEDE
- Period: Not over than 7 years and a grace period of less than 12 months.
- Loan Limit: Not to exceed THB50 million per project.

K-Energy Saving Guarantee Program

- A loan program that supports investment in energy efficiency projects through service from an energy management company.
- Secure your loan repayment resource by implementing energy saving solutions guaranteed by Energy Service Company (ESCO).
- Credit limit up to 100% of the total project investment, inclusive of consultation fees and operations by expert companies.

Top-Up Loan for Energy Saving (Lighting Solution)

- A loan program that supports investment lighting solution in EE projects, with the objective of saving energy.
- Loan Limit: Maximum 100%
- Credit limit up to 100% of the total project investment, inclusive of consultation fees and operations by expert companies.

Startup and Innovation Program

- Supports businesses with products/services/processes which have been certified innovative by government agencies, such as the Software Industry Promotion Agency (SIPA)
- Loans up to three times collateral value for government-certified innovations
- Period: Max 7 years
- Loan Limit: Up to 30 million Baht guaranteed by Thai Credit Guarantee Corporation (TGC)
- Interest rate: Starting at [MRR](#) + 2% per year

The K-Energy Saving Guarantee Program (Solar Rooftop)

- Guaranteed energy savings ensured by professional solar project companies
- Installation period: 12 years
Loan limit: maximum 100%
- Credit limit up to 100% of the total project investment, inclusive of consultation fees and operations by expert companies.

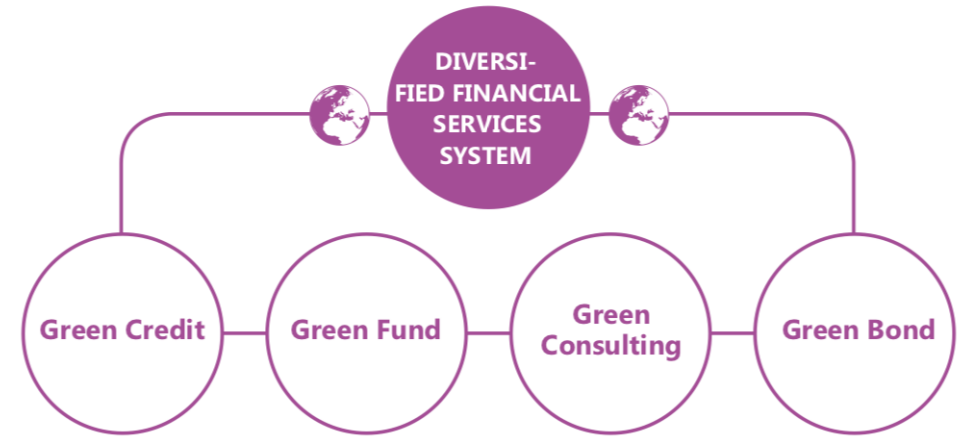
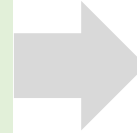
Good Innovation, Zero Interest Project

- A long-term loan for the owner of an innovation project that has been certified by National Innovation Agency (NIA)
- Period: Max 5 years
- Interest rate: maximum [MLR](#) + 2.0% for the first 3 years, after that , the bank charges rates agreed upon by the bank and borrower.
- NIA will reimburse interest payments for the first 3 years and interest payment amount not over 5 million per project.



中国进出口银行
THE EXPORT-IMPORT BANK OF CHINA

The Bank has set up a diversified financial services system comprising green credit, green fund, green consulting and green bond.



On-Lending

On-lending is a key conventional credit product of the Bank which supports green development. The On-lending Department, which is responsible for providing on-lending service for loans from foreign governments and international financial institutions, has been set up at the Head Office.

Energy-Saving and Environmental Protection Loans

These loans are aimed at enhancing the environmental friendliness of Chinese products along with promoting energy conservation, emission reduction and environmental protection. They are a special credit product of the Bank, designed for supporting green development.

Transformation and Upgrade Loans

The Bank persistently works on revitalizing the existing volume of loans while aiming for business growth. It focuses on supporting the upgrade of traditional industries and facilitating the development of emerging strategic industries.

Other Conventional Businesses

The Bank has applied the green development concept by supporting enterprises to go global and promoting the Belt and Road Initiative, and carrying out international industrial capacity cooperation. Moreover, it has urged globally operating Chinese enterprises to fulfill their green and social responsibilities, thus promoting sustainable development of the world economy.

Source: White Paper on Green Finance. The Export-Import Bank of China, 2016

Industrial Bank's environmental financing products

for energy conservation and environmental protection project financing, the operation and maintenance and equipment purchase

- Fixed Assets Loan
- Project Financing
- Current Capital Loan
- Buyer Credit
- Order Financing
- Consignment loan
- Financial leasing
- M&A loan
- Debt Financing Tools
- Equity Financing Service

ESCO

- Future Usufruct under EPC Pledged Financing
- Contract Environmental Service Based Financing

Others

- Carbon Assets Pledge Based Financing
- Emission Rights Pledged-based Financing
- Energy Conservation and Emission Reduction (CHUEE) Financing for SMEs
- Special Assets Management for Carbon Finance customers



China's first carbon credit card by Industrial Bank

- Industrial Bank joined hands with China Beijing Environment Exchange (CBEEEX) to launch China low-carbon credit card, China's first low-carbon thematic affinity credit, marking an innovative initiative of China's banking sector to address climate change and fulfil energy conservation and emission reduction, and also a substantive step of China's personal consumption towards low-carbon arena.
- The card aims to erect a platform for individuals to purchase credit card carbon emission reduction, serving as the first bank-based trading channel for individuals to purchase carbon emission transactions; secondly, to establish China's first "personal green record" system to achieve traceable inquiry of personal low-carbon transaction records, encourage card holders to take active part in carbon emission reduction, and advocate low-carbon living.
- Customers who get low-carbon credit card before June 30 can get a Starbucks accompanying cup for free if first card-based consumption reaches 199 yuan, with a view to advocating less use of one-off cups in daily life; Gold Card customers whose card-based consumption in six consecutive natural months after the month of the first card-based consumption takes place reaches 2,000 yuan can get a Giant folding bike for free, with the purpose of encouraging customers to choose environmentally friendly transport means.



Bank of China's Sustainability Series Bonds

- First issuance Green bond in July 2016.
- Proceeds have been used for electrified metro projects, wind power generation projects, government-sponsored student loan, personal startup loan, farmer household microbusiness loan, waste water treatment project, solar power generation project, clean transportation, waste and water treatments, employment generation and access to essential services.
- Location wise, most of the proceeds go to China with the remaining few allocated overseas in Poland and Netherlands.
- The largest issuance was in July 2016 with CNY 20,265 million



Sustainable finance and infrastructure

Financing renewable energy projects

Actively participate in the financing of RE projects, such as photovoltaic plants, wind farms or thermosolar and / or hydraulic power plants, among others. These projects are developed in countries such as the United Kingdom, the United States, Brazil, Belgium, Spain, Chile or Uruguay. Ranked as one of the leading entities in the financing of RE projects internationally according to the Dealogic League tables.

Energy efficiency projects

In cooperation with multilateral entities –such as the Development Bank of the Council of Europe, the Development Bank of Latin America (CAF) and the European Bank for Reconstruction and Development (EBRD) – , offer customers credit lines for EE and renewable projects in Spain, Brazil, Poland and Peru.

Products and services for sustainable arable and livestock farming

Fund agricultural initiatives that promote sustainable practices. Santander Brazil provides funding to businesses and individuals to help them develop environmental projects relating to EE in the agricultural sector. Bunge, Santander Brazil and The Nature Conservancy offer soy farmers long-term loans to expand production without clearing native habitat in the Brazilian region of Cerrado. In Spain, app agro brings farmers breaking news about agriculture, especially news related to government subsidies and information about crop prices as well as agricultural products.

Financing for electric vehicles (EV), hybrid and low carbon emissions

The bank support the evolution of the automotive sector towards an economy with low CO₂ emissions through the financing of vehicles, hybrids and electric in the countries where they operate, with a special focus in Spain and Germany.

In Brazil, the Bank offers all customers who take a loan to buy a car, a tool to offset the emissions of the financed vehicles, as well as their personal activities through the acquisition of carbon credits, through the 'Reduces e Compensation' program.

Likewise, Santander in countries such Spain, Germany or the United Kingdom sponsors eco-friendly alternatives to a car, like, for example, electric bicycles.

Green bonds & ESG loans

Through Santander Corporate & Investment Banking division, they act as joint bookrunner in numerous emissions of green & sustainable bonds and ESG loans.

Internal

Responsible procurement

The bank have a model and policy for managing our suppliers, setting out a common methodology for all countries to follow when selecting, approving and evaluating suppliers. In addition to traditional criteria such as price and quality of service, sustainability issues are included in this methodology. Where necessary, both the supplier and Santander are advised to change processes and practices.



Finance approach

The Terra approach

The bank have a loan book of about €600 billion euros across many sectors, which we have now begun steering towards meeting the Paris Agreement's two-degree goal.

ING Groenbank

From green-label greenhouses to sustainable home construction, ING Groenbank finances sustainable projects in the Netherlands and impact finance in developing countries using funds from both corporate clients and retail customers.

ING's Green Bond Programme

To support the strong growth of Sustainable Finance portfolio, and to meet the green funding needs, the bank designed a Green Bond Framework that meets the highest standards on transparency and disclosure, and aligns with the ICMA Green Bond Principles (GBP). ING intends to allocate the net proceeds of the green bonds issued under its Green Bond Framework to an Eligible Green Loan Portfolio of new and existing loans including renewable energy projects and green buildings.

Internal

Environmental programmes to achieve internal sustainability commitments:

- Commitment to 100% renewable energy powered buildings via the [RE100 initiative](#).
- Offset 100% of our operational carbon emissions through the purchase of Voluntary Carbon Units (VCUs), with the majority originating from a high impact REDD+ project in Borneo.
- New headquarters is based on an innovative design, providing an open and inspiring place of work & public space with the latest in sustainable use of waste, materials and energy. The design has been [awarded the highest sustainability rating](#) by BREEAM.

Circular economy: ING's Orange Circle programme

Covers knowledge, operations, deals, ecosystem and innovation. ING joined the CE100 programme of the [Ellen MacArthur Foundation](#) (EMF), a global thought leader on the circular economy, in 2016. ING is also a member of Circle Economy, a cooperative that provides practical tools, insights and collaboration opportunities for its members to engage with the circular economy.

Environmental and social risk management

When the bank assess potential clients and deals, their approach is to have a dialogue and support them in improving their environmental and social impact where possible. ING's ESR management is in 3 steps: creating and maintaining policy framework; conducting the screening of transactions and clients; and monitoring the relationship after an agreement is reached.

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