The ESCO market in the Philippines – A recipe for success

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PHILIPPINE ENERGY EFFICIENCY ALLIANCE, INC.

APEIA
Asia-Pacific ESCO Industry Alliance

THE GLOBAL ESCO NETWORK

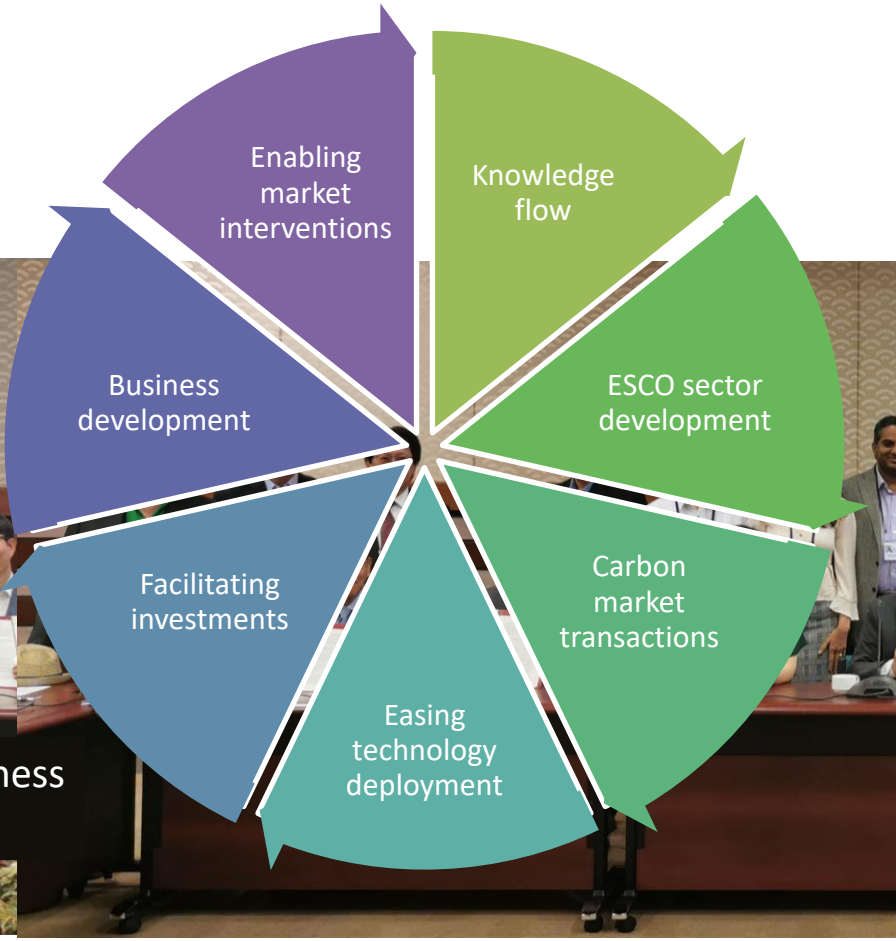
Alexander Ablaza

9 April 2025
Global ESCO Network Webinar

APEIA

Asia-Pacific ESCO Industry Alliance

A regional platform intended to facilitate the flow of knowledge, capacity building and business development resources with the end goal of growing ESCO markets in Asia-Pacific



China | India | Indonesia | Japan | Korea | Malaysia | Philippines | Singapore | Taiwan | Thailand

PE2 is a non-profit organization of energy efficiency market stakeholders interested to grow energy efficiency adoption in the Philippines

www.pe2.org

Two decades of transforming the energy efficiency market in the Philippines

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Membership Categories

Regular A	•DOE-registered/certified energy service companies (ESCOs)
Regular B	•EE technology, solutions and service providers •EE consultants, auditors, contractors, professional service firms
Regular C	•EE financial services, financial institutions •EE investors, super-ESCOs, project developers
Associate D	•Foreign chambers, industry associations, non-profit organizations •Academe, scientific and policy research institutes
Associate E	•EE end-users which have mainstreamed energy efficiency in its core operations

** PE2 welcomes energy efficiency companies which are still registered or incorporated overseas.*

EE policy reform

EE market development

International collaboration

Expanding B2B networks

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PE2 convenes a wider range of energy efficiency market stakeholders to sustain a long-term market transformation

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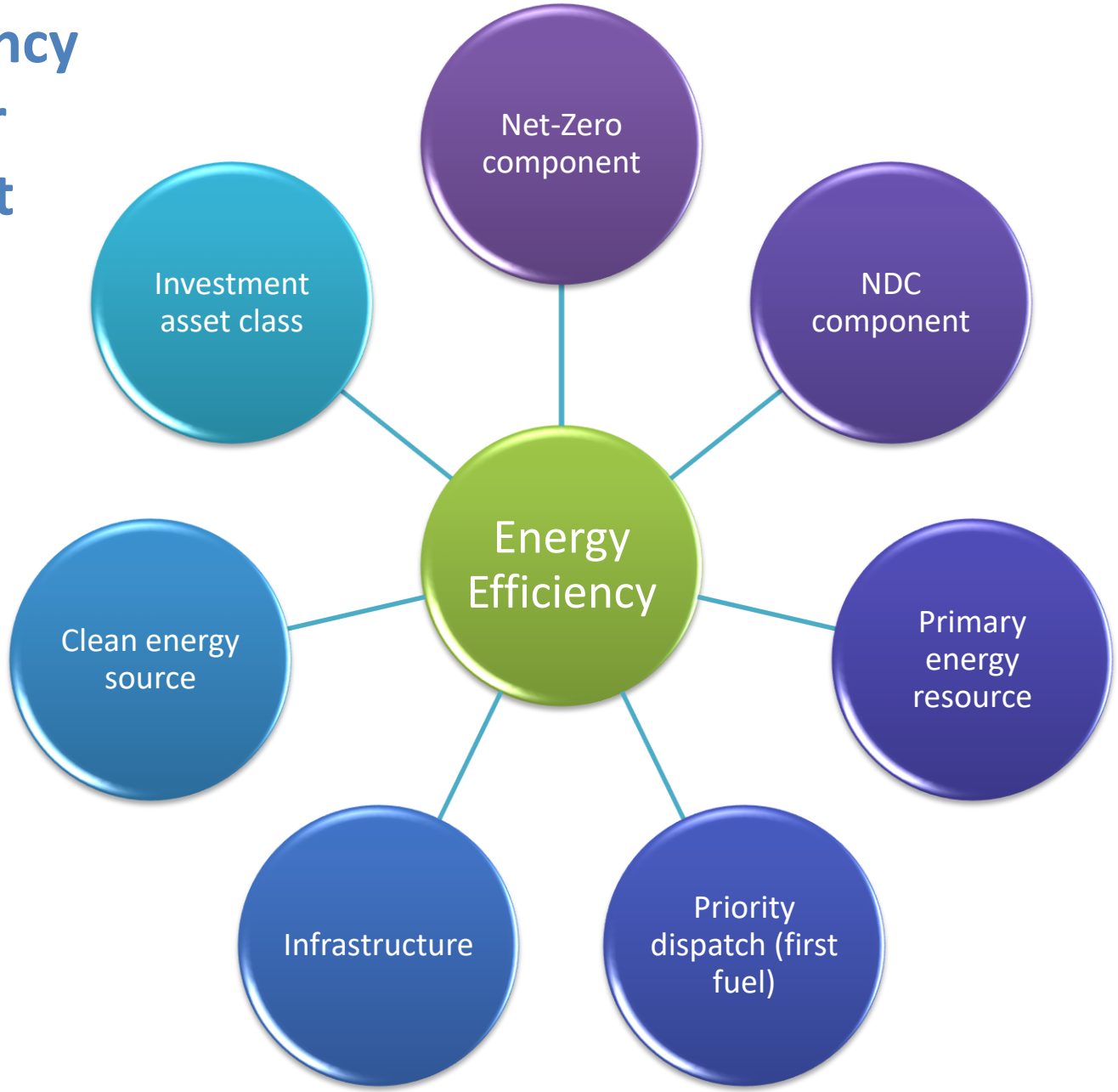
EE policy in the Philippines

Using policy to deploy energy efficiency as the "first fuel"

Energy efficiency needs a major paradigm shift

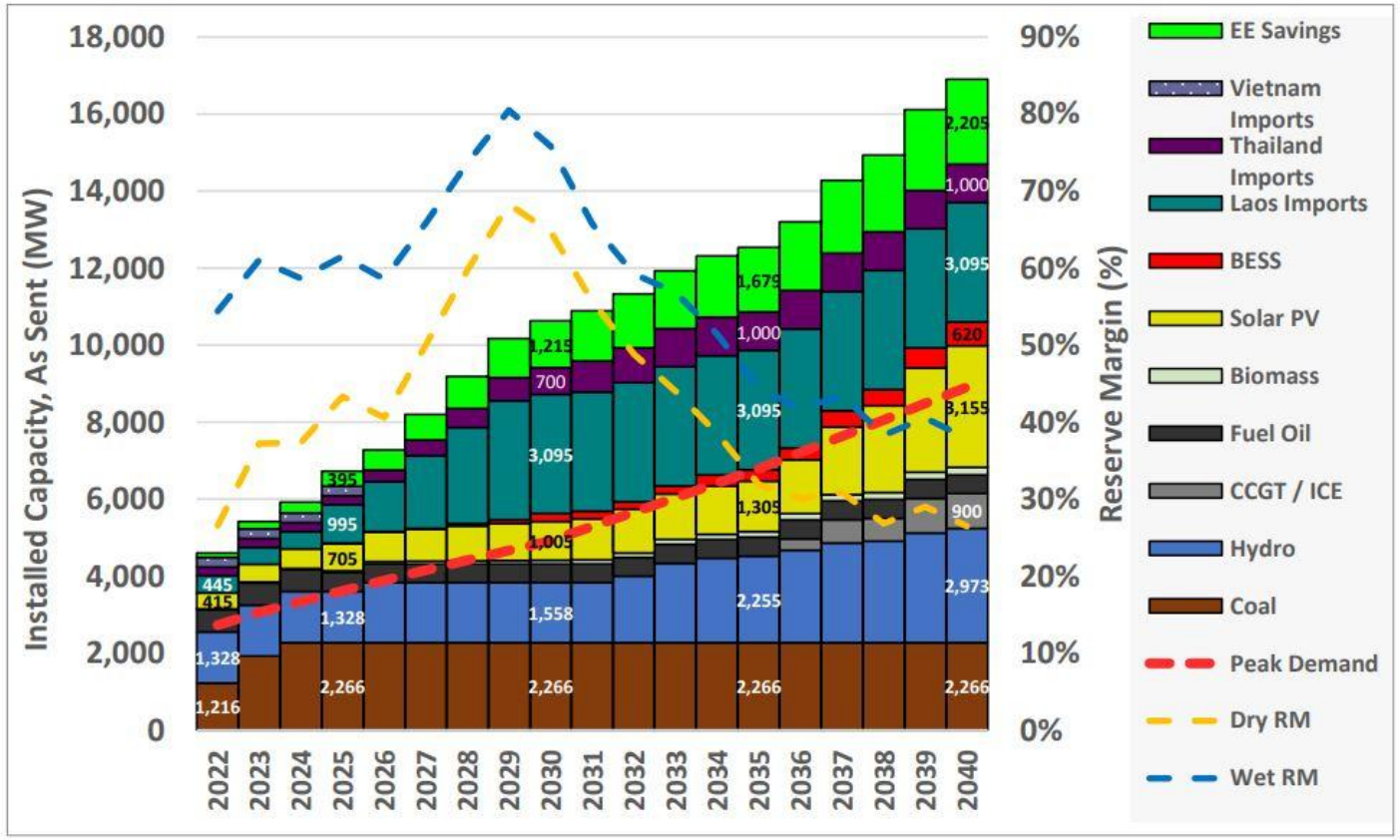


The Philippines will need to bridge a USD 243 billion energy efficiency investment gap to shave off 182 Mtoe in energy demand through 2040. (Ablaza, PE2)

Global energy markets should gravitate toward planning energy efficiency as a primary energy resource – an indigenous fuel to be dispatched with priority.

Generation Expansion Development Plan 2022-2040

Figure 4 Cambodia's PDP Generation Plan / Installed Power Capacity (2022-2040)



Source: ADB, Regional: Southeast Asia Energy Sector Development, Investment Planning and Capacity Building Facility, 2024.

Philippines: Economic and development impacts of reducing 182 Mtoe in final energy consumption through EE&C by 2040

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Economic

- USD 720 billion in end-use savings
- Reduced dependence on imported fossil fuels
- Incremental GDP growth
- 9 million green jobs
- Over 500% Gov't recovery of fiscal incentives through additional tax revenues

Energy Security

- 45,900 MW deferred energy infrastructure capital requirements for energy production, transmission and distribution
- Decelerated rise in energy prices

Climate Change Mitigation

- Up to 1.7 GtCO2e in greenhouse gas emission reduction
- Contributing to Paris climate agreement obligations
- Attracts climate funding

Energy efficiency can generate 45% more jobs than infrastructure projects for the same amount of stimulus or capital funding.

Comparison of Labor Intensities between Build, Build, Build Program and Energy Efficiency Investments in the Philippines

	Build, Build, Build (BBB) Program 2019-2022	Proposed BBB component of PESA Bill 2021-2023	Energy Efficiency and Conservation Roadmap 2017-2040	Proposed Energy Efficiency component of PESA Bill 2021-2023
Estimated Investments	PHP 8,500 billion* (USD 170 billion)	PHP 650 billion (USD 13 billion)	PHP 12,190 billion (USD 245 billion)	PHP 55 billion (USD 1.1 billion)
Jobs Created	4.4 million jobs**	336,400 jobs***	9.123 million jobs	41,200 jobs
Labor Intensity (Jobs / PHP 50 million)	25.88 jobs / PHP 50 million (25.88 jobs / USD million)		37.42 jobs / PHP 50 million (37.42 jobs / USD million)	

*Calculated from average of DBM estimates of PHP 8 trillion – PHP 9 trillion investment target through Duterte administration.
**Calculated for a 4-year period from DBM estimate of 1.1 million jobs created annually.
***Calculated using labor intensity of entire BBB program.

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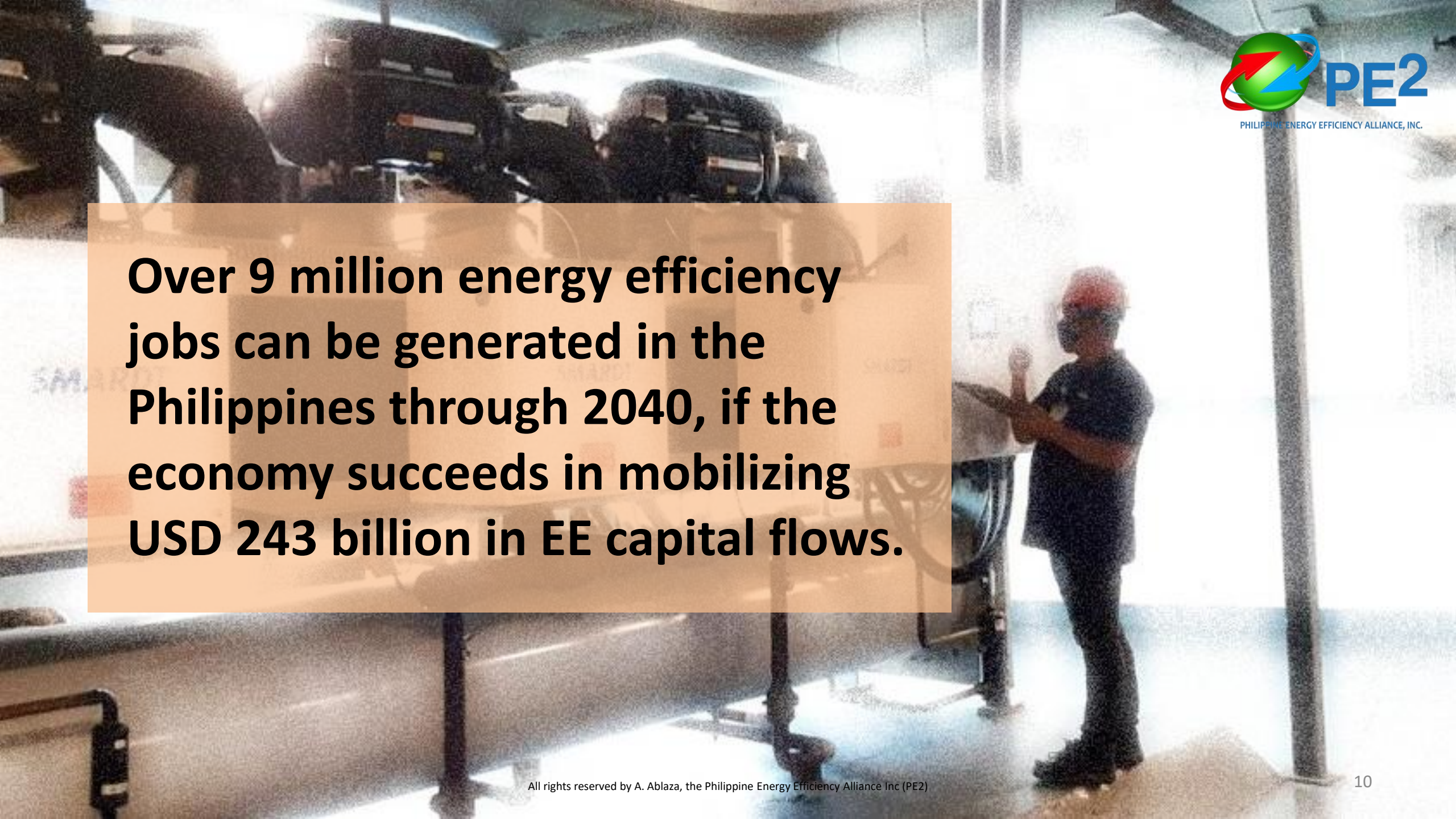

Over 9 million energy efficiency jobs can be generated in the Philippines through 2040, if the economy succeeds in mobilizing USD 243 billion in EE capital flows.

Philippines: Through NEECP and Roadmap 2023-2050, the country now has short-, medium- and long-term EEC emission reduction targets

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- The National Energy Efficiency and Conservation Plan (NEECP) is a national framework to institutionalize the EEC Act as well as define and outline all EEC programs to be implemented, their objectives and associated emission reduction targets over various time horizons.
- The revised Philippine Energy Efficiency and Conservation Roadmap 2023-2050 provides an updated outline of the strategic plans and actions for EEC in the Philippines across all sectors, including implementing key provisions of the EEC Act, and its accompanying Implementing Rules and Regulations (EEC-IRR).

Sector	Programs	Short-Term Emissions Savings (2023 – 2024)	Medium-Term Emissions Savings (2025 – 2028)	Long-Term Emissions Savings (2029 – 2050)
Government	Government Energy Management Programs (GEMP)	1.87 Mt CO2e 16.15%	3.31 Mt CO2e 15.81%	25.06 Mt CO2e 14.48%
Commercial	Philippine Energy Labeling Programs (PELP) /Minimum Energy Performance for Products (MEPP)	7.51 Mt CO2e 16.15%	13.28 Mt CO2e 15.81%	100.50 Mt CO2e 14.48%
Residential	PELP/MEPPs	18.56 Mt CO2e 34.65%	32.79 Mt CO2e 31.66%	248.21 Mt CO2e 23.17%
Industrial	PELP/MEPPs	17.43 Mt CO2e 19.38%	30.81 Mt CO2e 19.17%	233.18 Mt CO2e 18.35%
Transport	Fuel Efficiency Standards (under PELP)	Pending data	Pending data	Pending data
	Electric Vehicle and Charging Stations (EVCS)	Pending data	Pending data	Pending data
	10% EV penetration by 2040	N/A	N/A	116.54 Mt CO2e 8.22%
Utilities & End use	Power Sector Efficiency	4.34 Mt CO2e 27.95%	7.53 Mt CO2e 27.95%	54.03 Mt CO2e 27.95%

Source: DOE, NEECP and Roadmap 2023-2050

The 4-decade journey of the Energy Efficiency and Conservation Act

1980:

BP73 EnerCon Act effective for 5 years

1985:

BP872 extends EnerCon Act by 5 years

1990:

HB29056, HB32655 & HB32781 filed in 8th Congress

2019:

RA11285 is passed from SB1531 & HB8629 of 17th Congress

The EE&C policy evolved in the last 4 decades:

- ***EE emerged as a stronger intervention than EC***
- ***EE&C is mainstreamed as a "way of life."***
- ***ESCO and third-party investors are incentivized.***

29 years of voluntary energy efficiency market through constant refiling and push for an EE&C bill. In most cases, EE&C bill was neither an administration measure nor certified urgent.

Source: A. Ablaza, 2019

Republic Act No. 11285
Energy Efficiency and Conservation Act

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Government

- DOE is lead agency
- NGAs, GOCCs, GFIs and LGUs have new roles
- Inter-Agency EE&C Committee, GEMP and Govt EE Projects

Certification

- Certified EE&C Officer
- Certified Energy Manager
- Energy Service Company (ESCO) Certification

Energy Performance

- Minimum Energy Performance and Labeling
- DOE Examination, Testing and Verification
- Energy Performance of Transport Vehicles and Buildings

Designated Establishments

- Obligations of Commercial, Industrial and Transport Establishments consuming at least 50,001 kWh/yr in fuel and electricity
- DOE Visitorial Powers

Incentives

- Fiscal Incentives
- Non-fiscal Incentives
- Concessional Finance

Other Features

- Demand-side Management (DOE, ERC, PEZA)
- Waste Management
- DOE-EUMB Strengthening
- Prohibited Acts, DOE Measures, Penalties, Fines and Liability
- Appropriations, IRR, Codes, Guidelines, JCEC Oversight

Republic Act No. 11285
Energy Efficiency and Conservation Act

Whole-of-Government

All public entities are covered under the Government Energy Management Program (GEMP)

Inter-Agency Energy Efficiency and Conservation Committee (IAEECC) steers policy directions

All commercial, industrial and transport end-users consuming at least 50,001 kWh/yr now have to comply with DE obligations (or face penal provisions)

Private sector coverage is inclusive

Removal of foreign ownership restrictions

Up to 100% foreign-owned EE projects can be registered and are eligible for fiscal incentives

Up to 100% foreign-owned ESCOs with domestic subsidiaries can be registered or certified by DOE

Obligations of Commercial, Industrial and Transport Establishments under EEC Law

Typology	Annual fuel and electricity consumption (previous year)	Submit Annual EEC Report (AEECR) and Annual Energy Utilization Report (AEUR) through DE Online Submission Portal?
Other DEs	50,000 kWh equivalent and below	Optional / Encouraged
Type 1	50,001 kWh equivalent to 500,000 kWh equivalent (Commercial & Transport) 50,001 kWh equivalent to 1,000,000 kWh equivalent (Industrial)	Mandatory
Type 2	500,001 kWh equivalent to 4,000,000 kWh equivalent (Commercial & Transport) 500,001 kWh equivalent to 8,000,000 kWh equivalent (Industrial)	Mandatory
Type 3	4,000,001 kWh equivalent or more (Commercial & Transport) 8,000,001 kWh equivalent or more (Industrial)	Mandatory

Typology	Required Energy Efficiency Practitioner	Recommended Support Staff
Other DEs	None	None
Type 1	Certified Energy Manager (CEM)	Certified Energy Conservation Officer (CECO)
Type 2		
Type 3		CEM and/or CECO

Other Obligations:

- Meet DOE Energy Utilization Index (EUI), Building Energy Index (BEI), Vehicle and Fleet Fuel Economy Performance Rating (FEPR)
- Mandatory Level 2 Energy Audit every 3 years
- Energy Management System (e.g. ISO 50001)

EEC law allows DOE to enforce penal provisions (up to 5 years imprisonment or up to USD 2 million in fines) for violations

Government Energy Management Program (GEMP)

- Mandatory reporting of energy consumption and designation of EEC officer and focal person
- Inter-Agency Energy Efficiency and Conservation Committee (IAEECC)
  - Mandatory audits and 10% reduction in energy consumption
  - 5-year phase-out of low-efficiency air conditioning and lighting systems
  - GEMP Guidelines enables innovative procurement such as ESCO performance contracting, PPP/BOT and Joint Ventures
  - Other strategic policy issuances
- Administrative Order No. 15 – accelerating GEMP implementation across all government entities

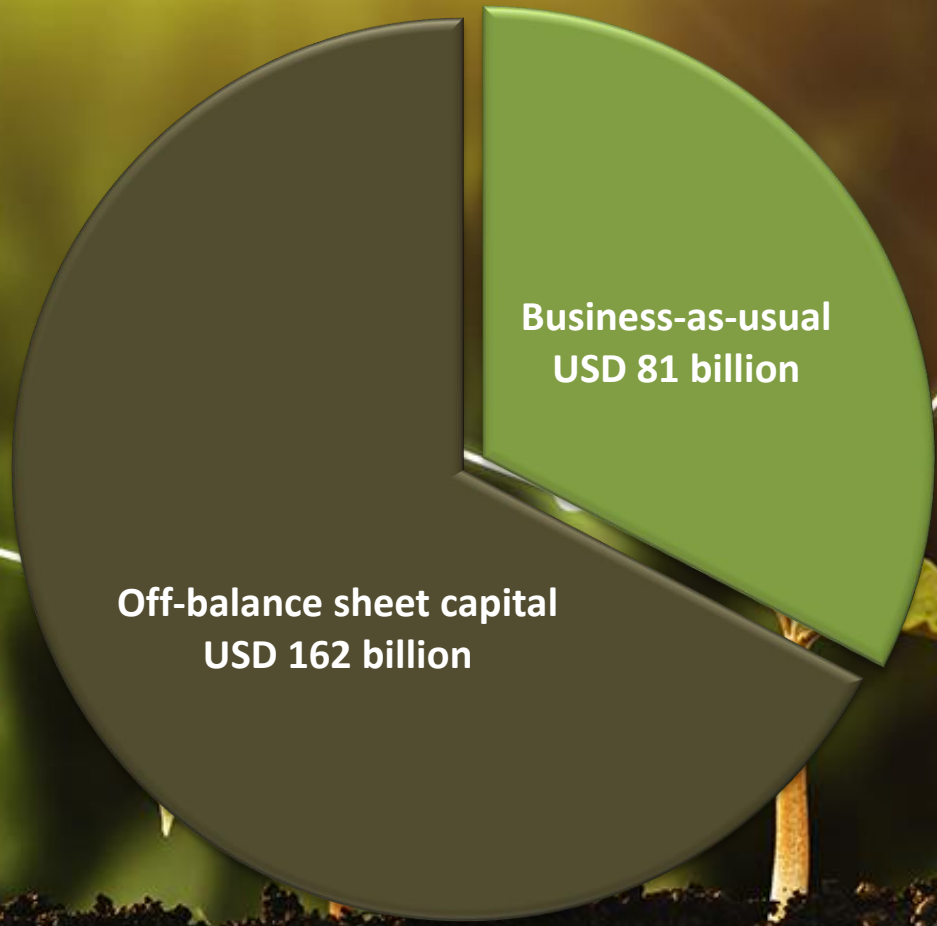
INTER-AGENCY ENERGY EFFICIENCY AND CONSERVATION COMMITTEE (IAEECC)

Philippines' EE capital requirements, 2017-2040

Republic Act 11285, Energy Efficiency and Conservation Act, will enable new modalities of public and private sector energy efficiency capital flows

Off-balance sheet* EE capital flows through:

- ESCO performance contracts
- PPP transactions
- JV agreements
- Government, large-scale retrofit programs
- Other off-balance-sheet* modalities

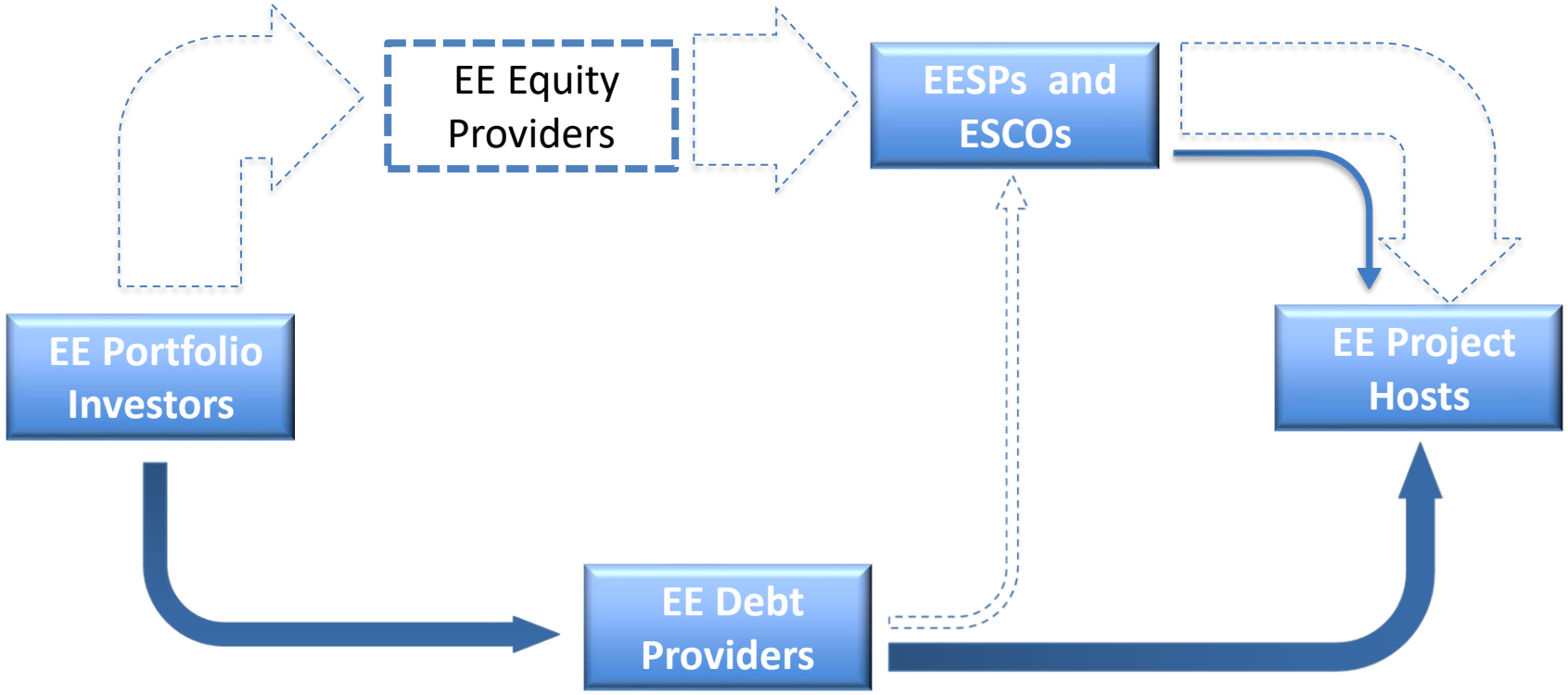


Business-as-usual EE capital to be mobilized through:

- Self-financed
- Debt-financed
- Lease-financed
- Other on-balance-sheet* modalities

* Balance sheet of host or end-user of EE project

Philippines needs USD 243 billion in equity and debt capital flows to EE projects to shave off 182 Mtoe in energy demand by 2040



The ESCO market

It's growing!

ESCO Definition in the Philippines

The Government, through the Department of Energy (DOE), defines an **energy service company (ESCO)** as “a juridical entity that offers multi-technology services and goods towards developing and designing energy efficiency projects, delivering and guaranteeing energy savings, and ensuring cost-effective and optimal performance. Their services include energy supply and management, energy financing, technical engineering expertise and consultancy, equipment supply, installation, operation, maintenance and upgrade, and monitoring and verification of performance and savings. Their goods include lighting, motors, drives, heating, ventilation, air conditioning systems, building envelope improvements, and waste heat recovery, cooling, heating, or other usable forms of energy control systems.”

DOE now maintains parallel application processes for Registered ESCO and Certified ESCO

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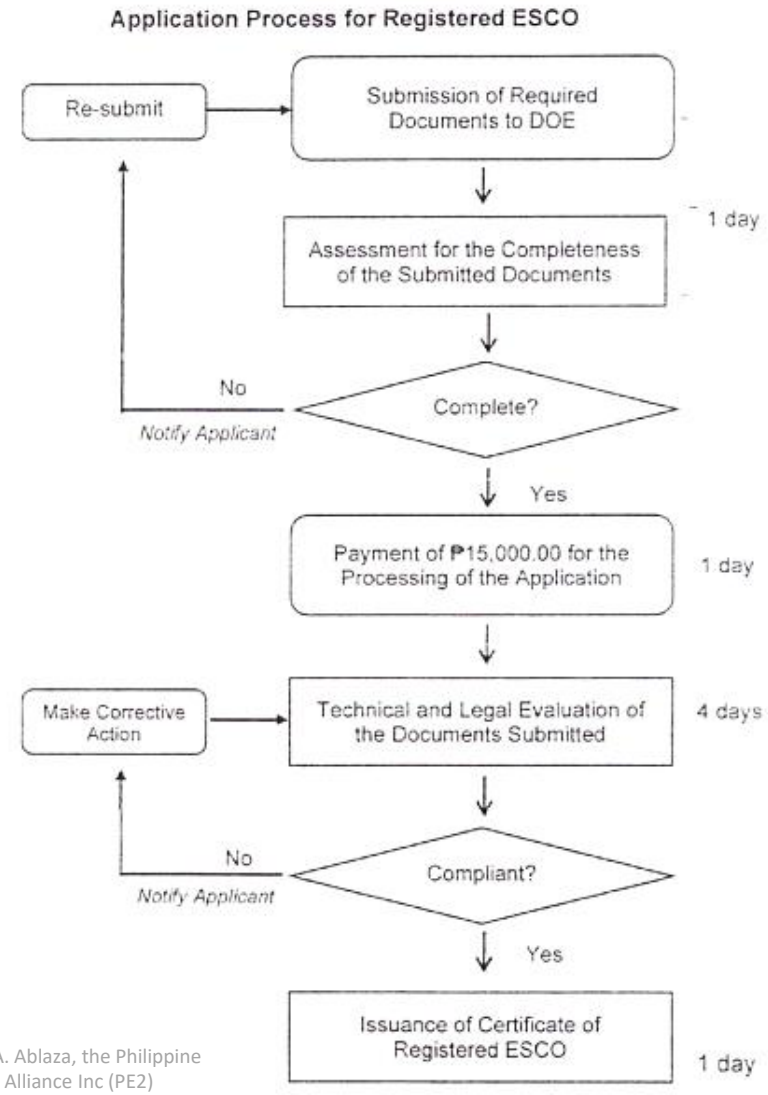
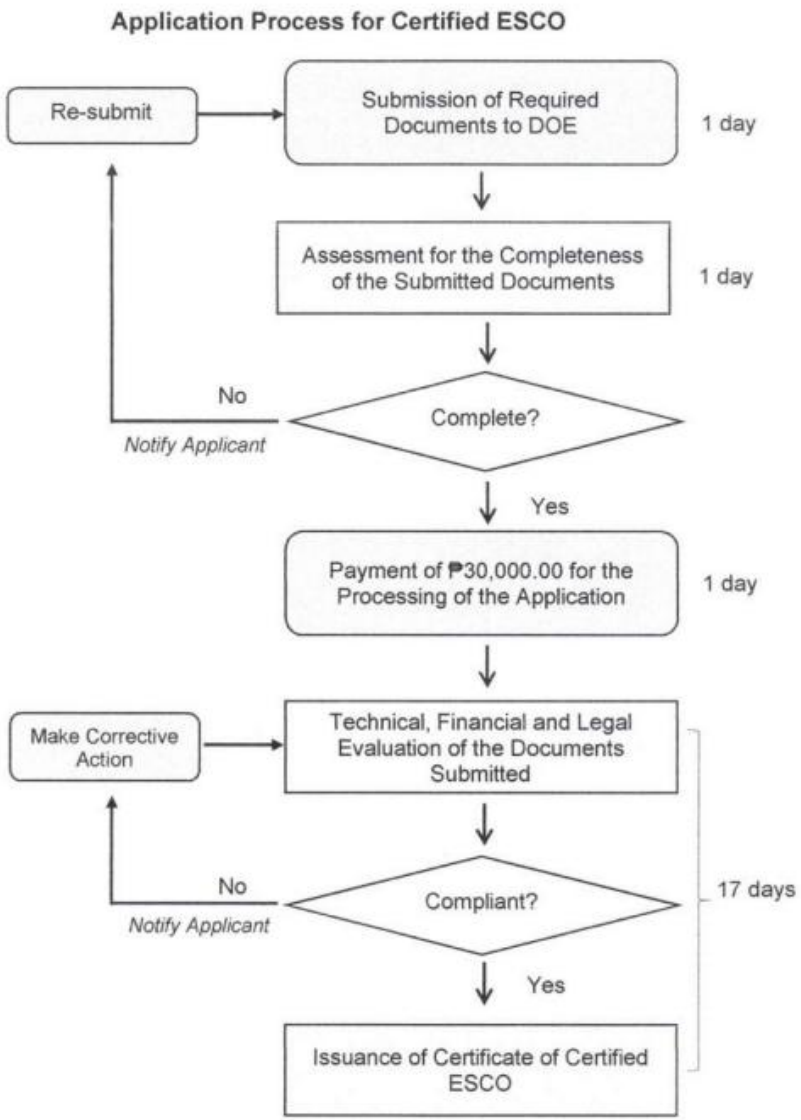


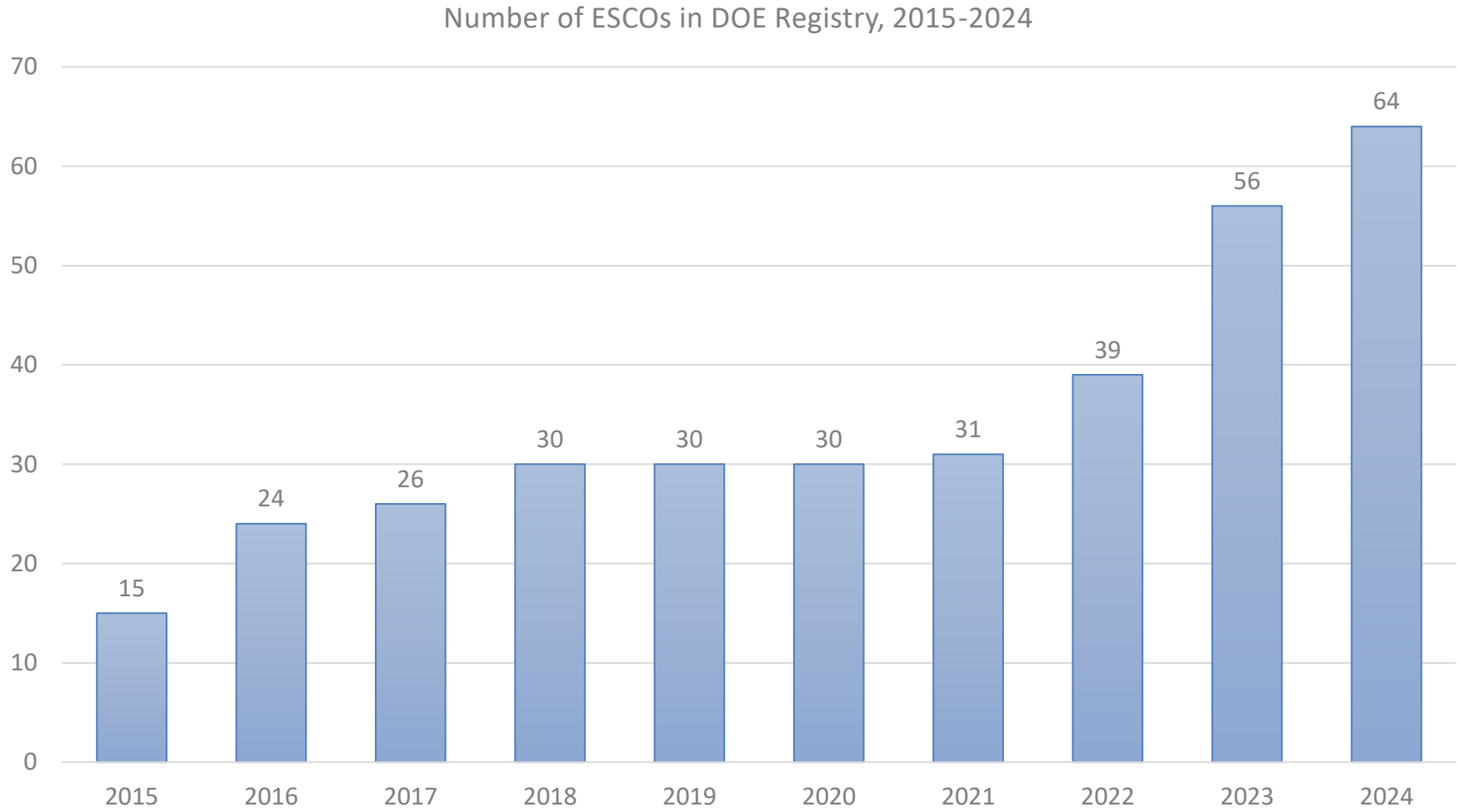


Unlike Registered ESCOs, Certified ESCOs are required to provide descriptions of ESCO services and energy efficiency projects performed, with details which include scope of work, monetary value and actual versus estimated results.

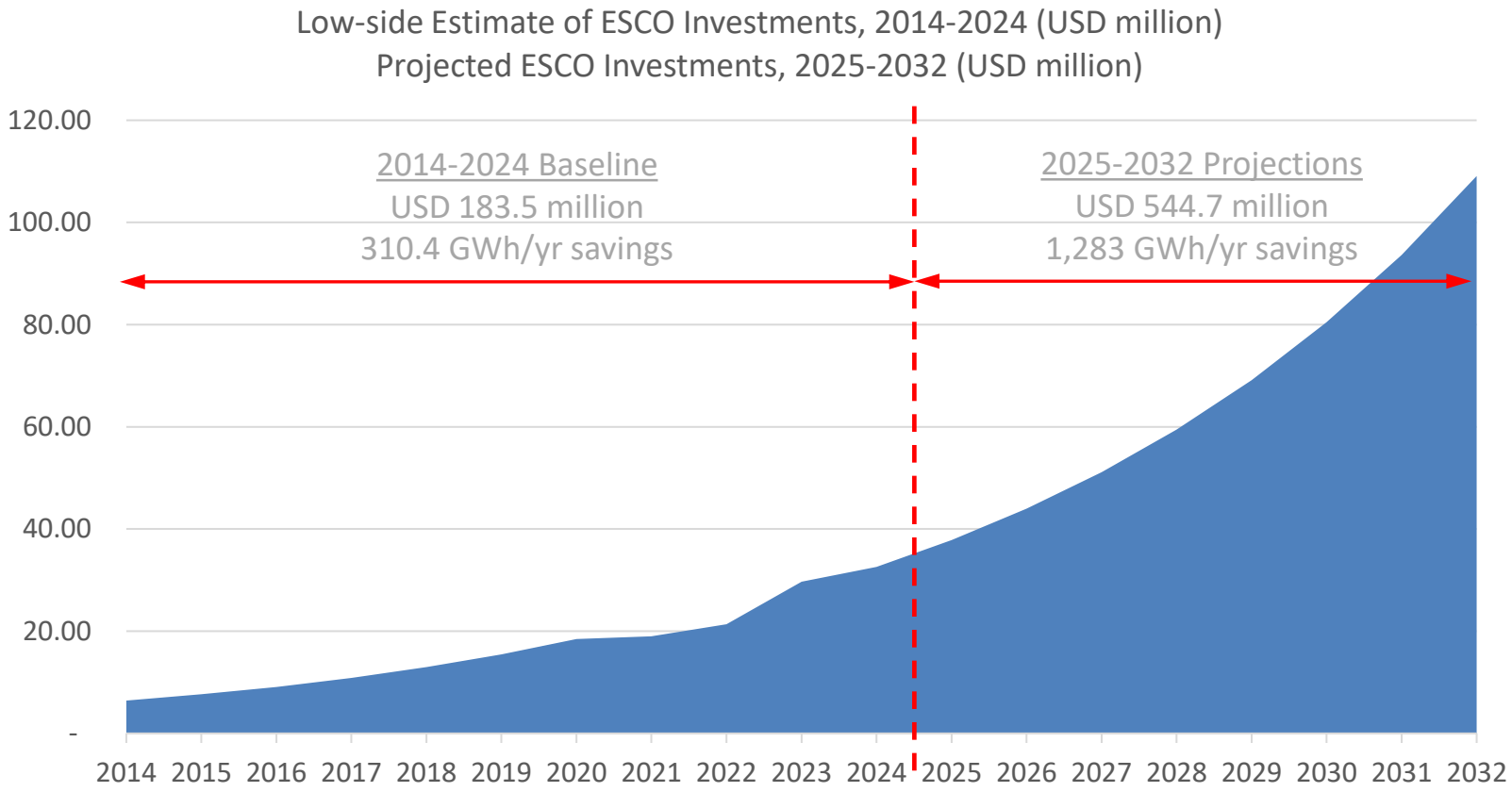
* Legend:

- Applicant
- DOE
- Decision

DOE Registry of ESCOs has been growing steadily in the last decade



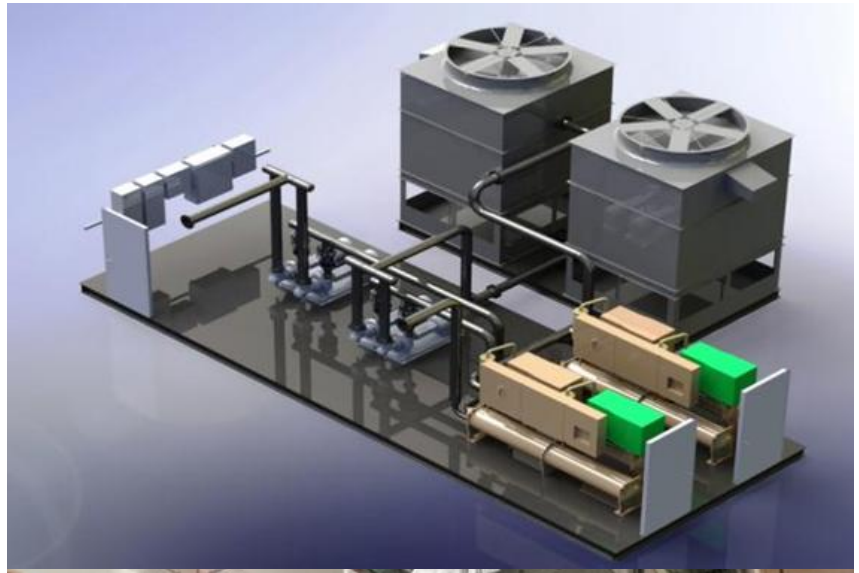
Philippine ESCO investments growing at an average 17.4%



Conservative estimates based on reports received from ESCOs

ESCO project types

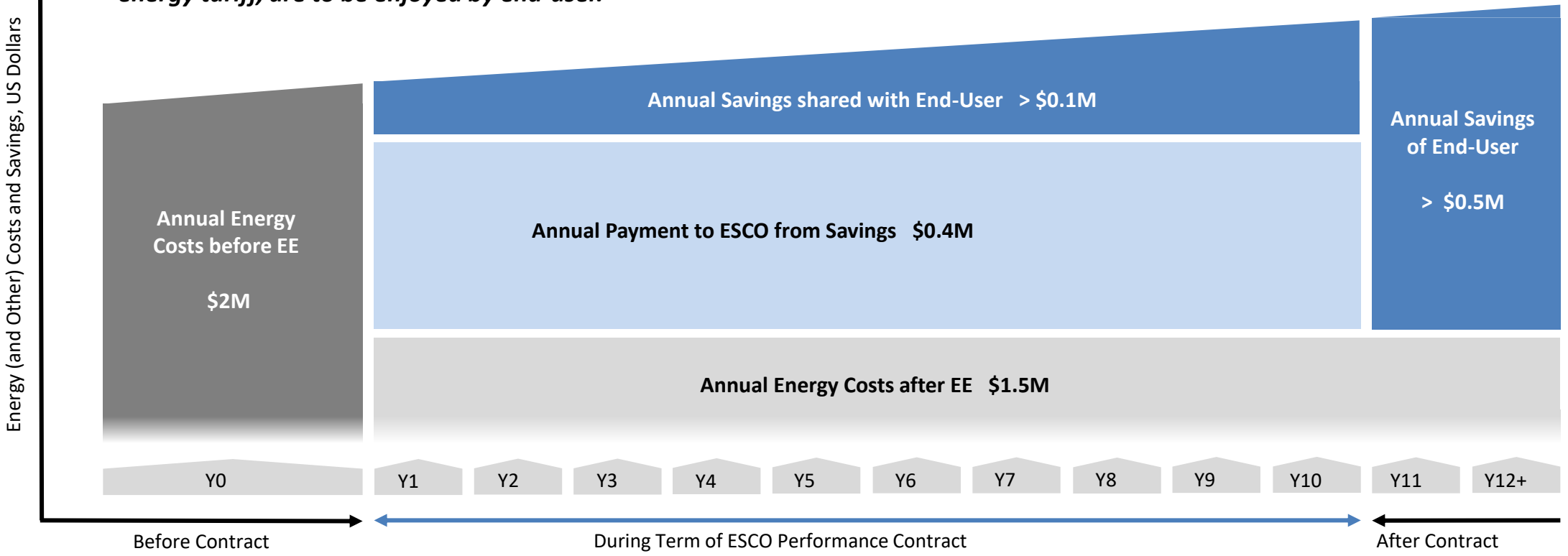
- Chiller plant upgrades, HVAC/cooling, refrigeration, heating, ventilation, lighting, motor, drives, pumps, compressors
- District energy (cooling) systems / Cooling-as-a-Service
- Smart controls, chiller optimization, building management systems, smart/micro grids, harmonics and PF correction
- Own-use renewables (e.g. solar PV, solar thermal, biomass/biogas power, waste-to-energy, wind, etc.)
- Waste heat recovery, combined heat & power, co/tri/polygeneration
- Industrial fuel switching (transition fuels)
- District energy (cooling, heating) and energy storage systems
- Process efficiency improvements (e.g. boilers, kilns, presses, molding, assembly/process lines, etc.)
- Replacing or upgrading ancillary systems or utilities (e.g. chilled water, compressed air, steam, etc.)



Using energy savings to pay ESCOs and other third-party investors

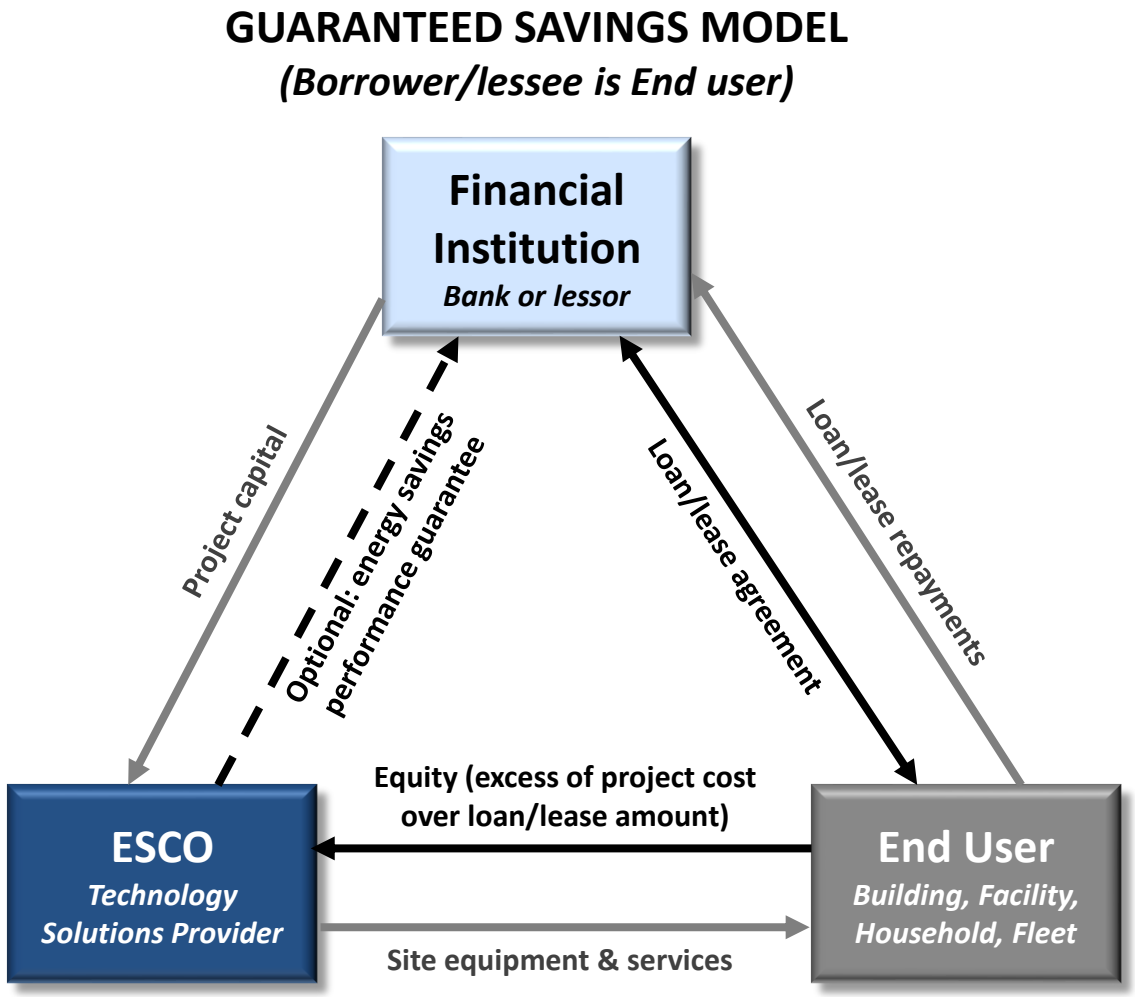
Energy (and other OPEX) savings can be used to finance EE projects implemented by ESCOs and third party project companies under shared savings performance contracts.

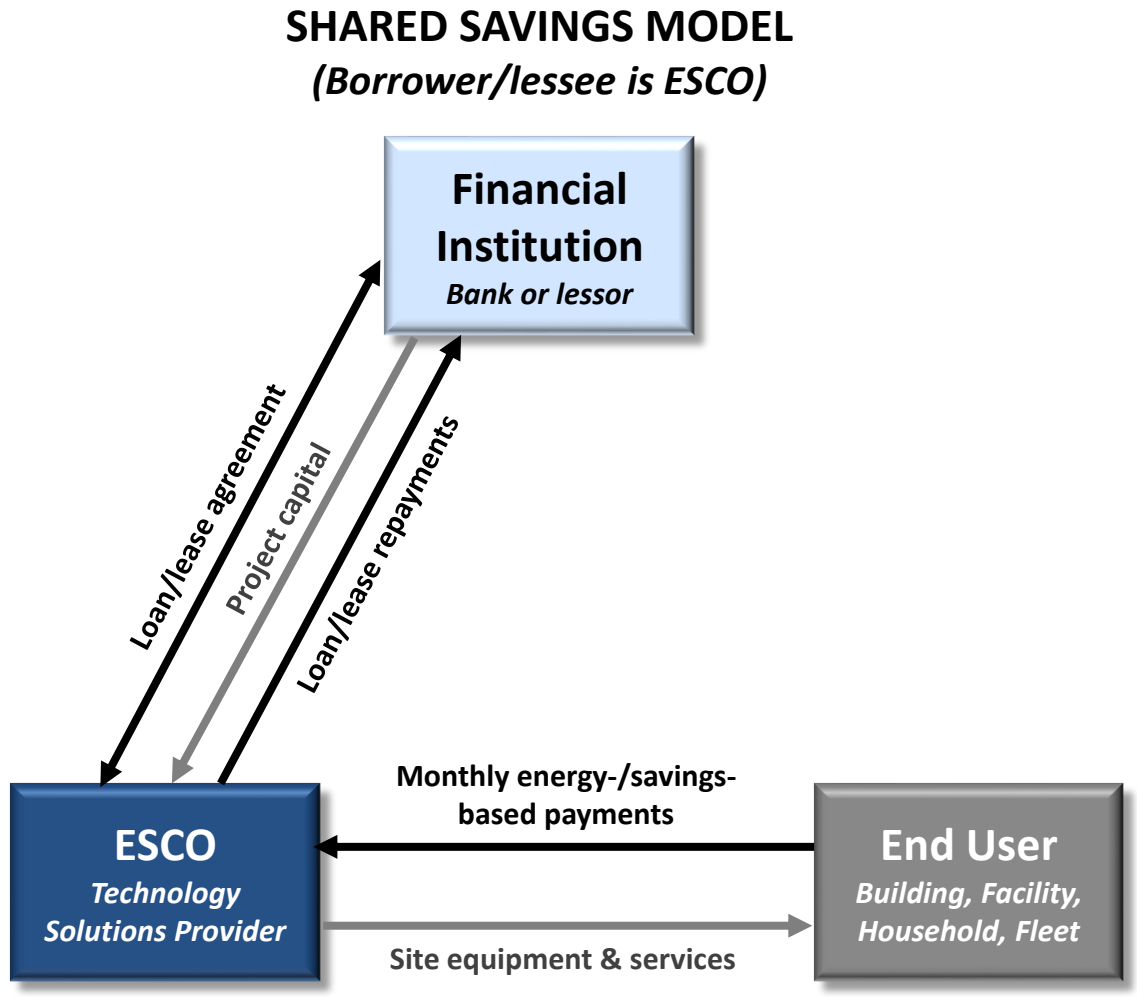
Example: ESCO project reduces annual electricity bill from $2M to $1.5M. Out of 25% savings, $0.4M can be used to pay ESCO or project company. Remaining savings, which normally escalate due to rise in energy tariff, are to be enjoyed by end-user.



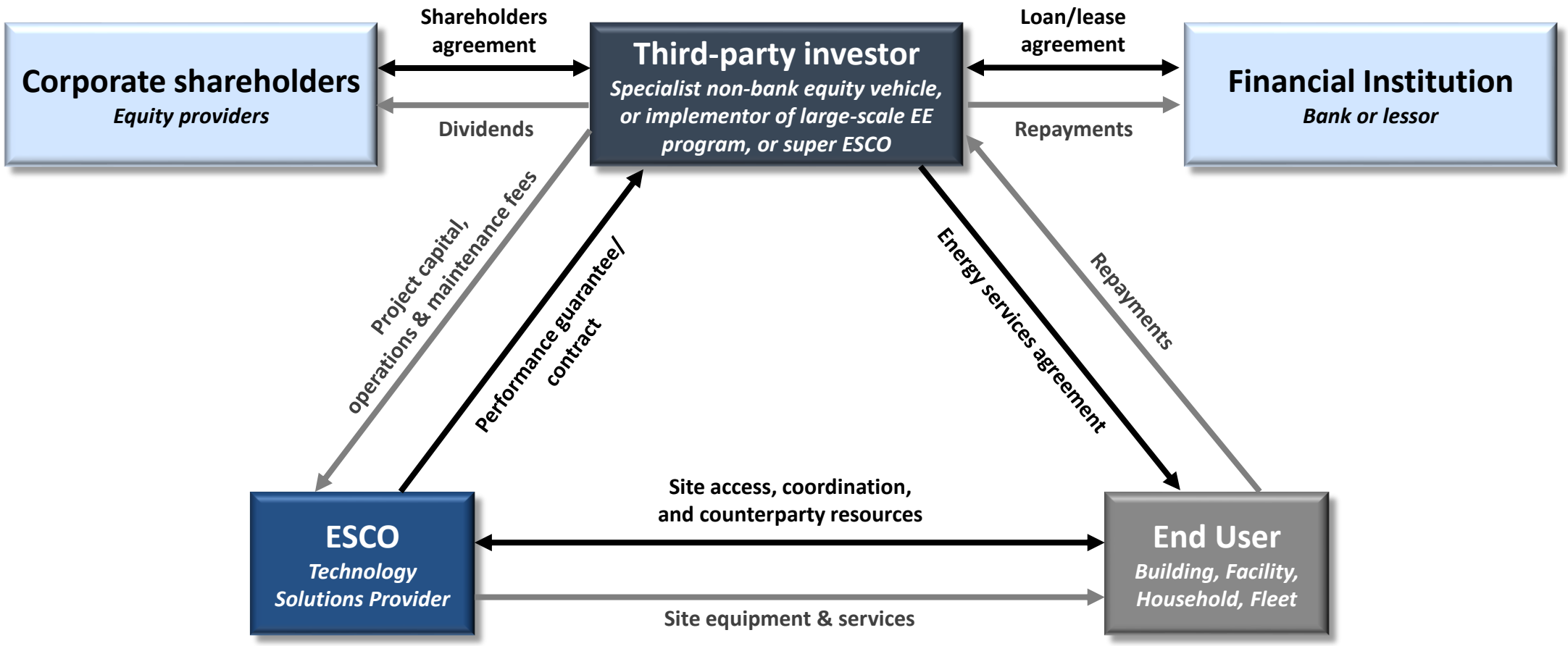
Self-financed EE projects

Debt- and lease-financed EE projects





Third Party Investor (Project Company) provides capital through ESCO



Among the world's firsts in private sector ESCO project portfolio investments

Asia's pioneer private Super-ESCO aggregator of ESCO project assets in emerging markets

Debt and Equity Partners

Climargy®

Project / Portfolio Vehicles

- **ESCO / Tech Providers** — Host Entity/ End-user — Energy Efficiency Project
- **ESCO / Tech Providers** — Host Entity/ End-user — Energy Efficiency Project
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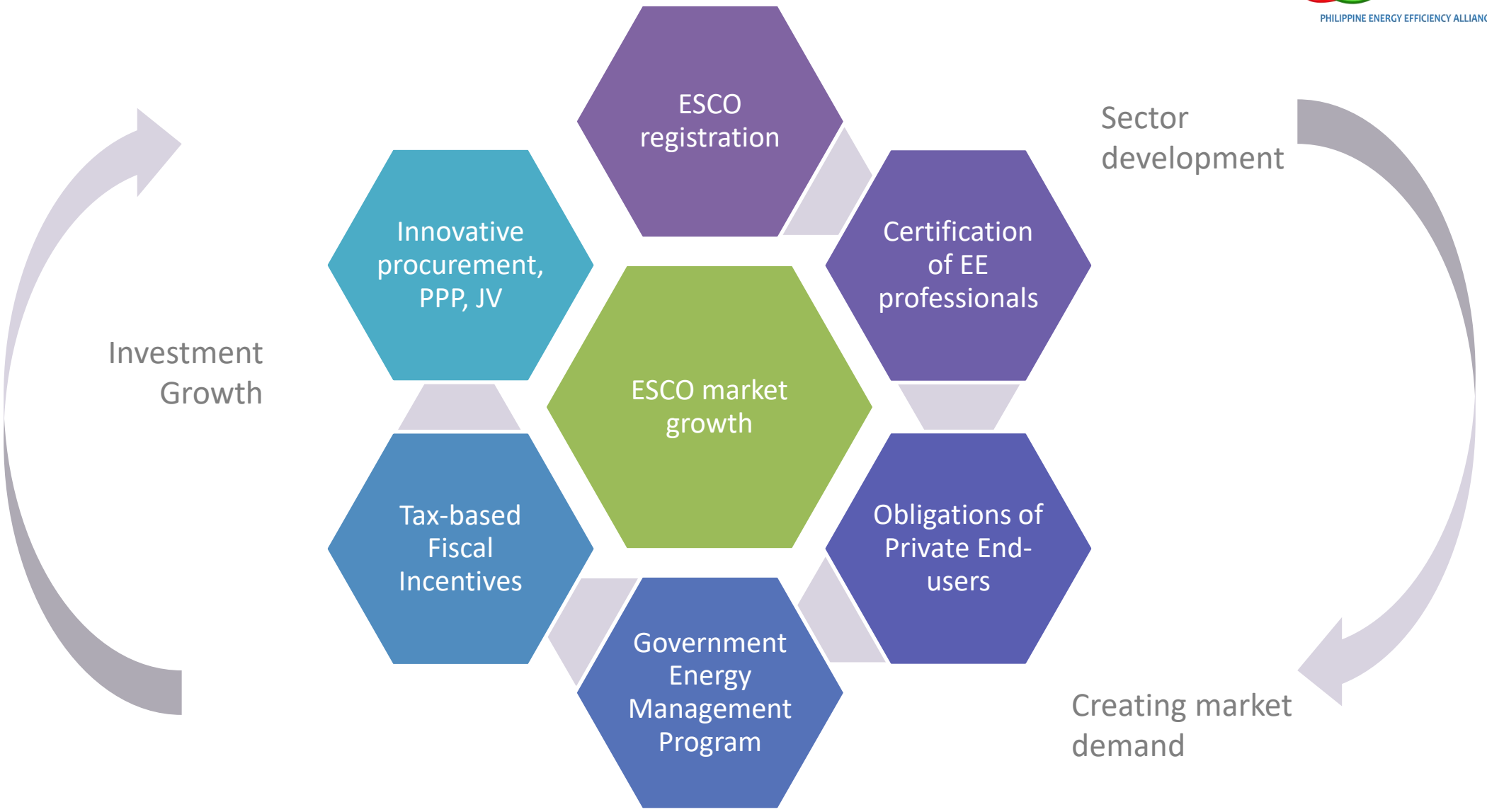
Climargy®'s unique market position as the **pioneer and lone equity vehicle** for off-balance sheet capital to energy management projects of the Philippine C/I energy end-use market **catalyzes private equity and debt flow and even developmental grants to the sector**

How the EEC law is helping grow the ESCO market



Policy-driven market potential to mobilize up to USD 5 billion of private sector EE investments in the Government sector through new procurement modalities

ESCO Performance Contract Procurement under the Government Energy Management Program (GEMP) Guidelines and New Government Procurement Act (NGPA)

ESCOs and Portfolio Investors as Lead Proponents in Public-Private Partnership (PPP) Transactions under the PPP Code and Build-Operate-Transfer (BOT) Law

ESCOs can enter into Joint Venture Agreements with State-Owned Enterprises (Government-Owned and Controlled Corporations) under the NEDA Guidelines

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