



The ESCO Market in the Philippines: New Frontier for Evaluators



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Energy Evaluation Asia Pacific Webinar 18

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

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



PHILIPPINE ENERGY EFFICIENCY ALLIANCE, INC.



EE policy reform



EE market development



International collaboration



Expanding B2B networks

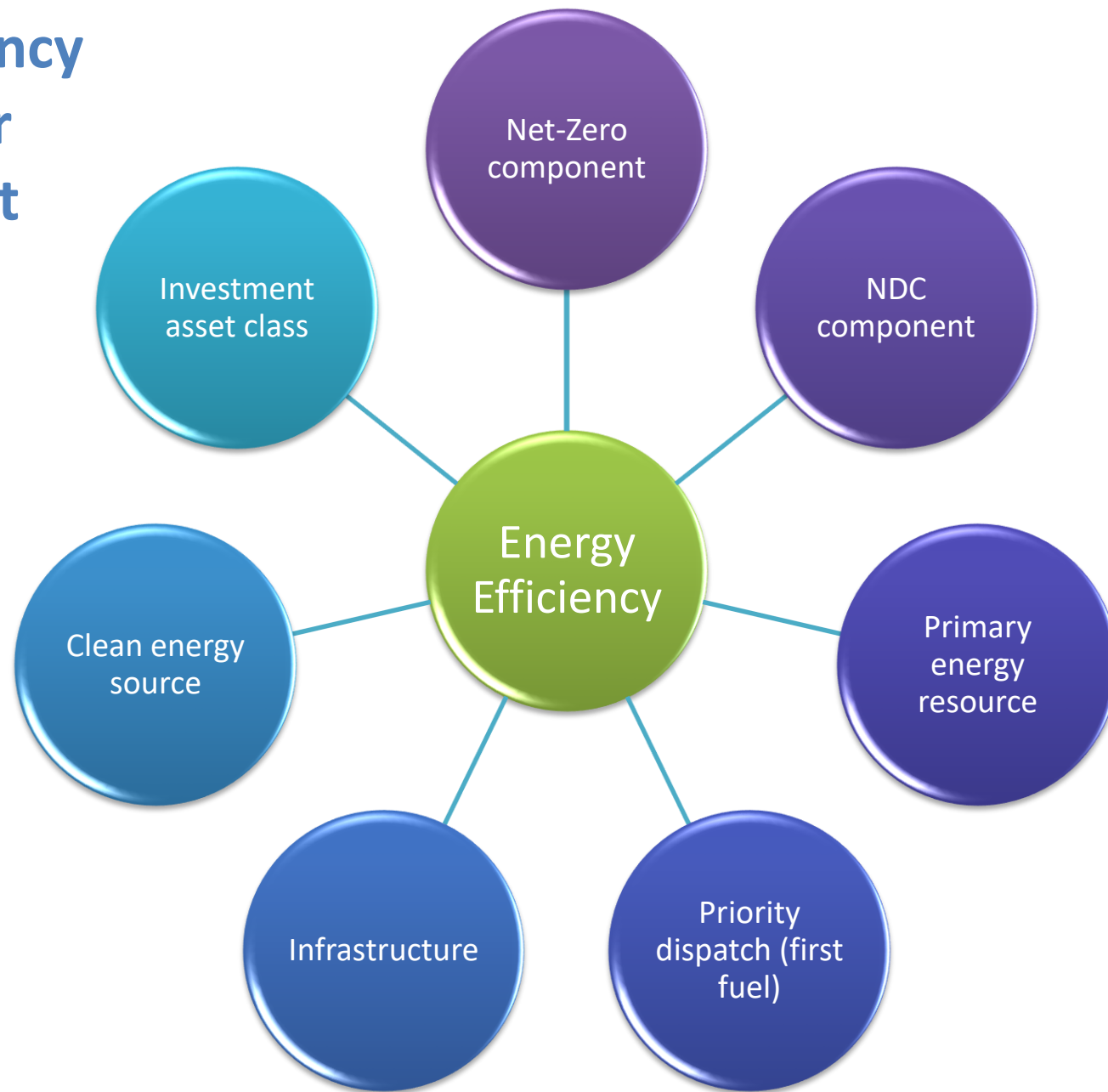
** PE2 welcomes energy efficiency companies which are still registered or incorporated overseas.*



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)

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



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

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



- 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 CO ₂ e 16.15%	3.31 Mt CO ₂ e 15.81%	25.06 Mt CO ₂ e 14.48%
Commercial	Philippine Energy Labeling Programs (PELP) /Minimum Energy Performance for Products (MEPP)	7.51 Mt CO ₂ e 16.15%	13.28 Mt CO ₂ e 15.81%	100.50 Mt CO ₂ e 14.48%
Residential	PELP/MEPPs	18.56 Mt CO ₂ e 34.65%	32.79 Mt CO ₂ e 31.66%	248.21 Mt CO ₂ e 23.17%
Industrial	PELP/MEPPs	17.43 Mt CO ₂ e 19.38%	30.81 Mt CO ₂ e 19.17%	233.18 Mt CO ₂ e 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 CO ₂ e 8.22%
Utilities & End use	Power Sector Efficiency	4.34 Mt CO ₂ e 27.95%	7.53 Mt CO ₂ e 27.95%	54.03 Mt CO ₂ e 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

1990:

HB29056,
HB32655 &
HB32781 filed
in 8th 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.***

1985:

BP872
extends
EnerCon Act
by 5 years

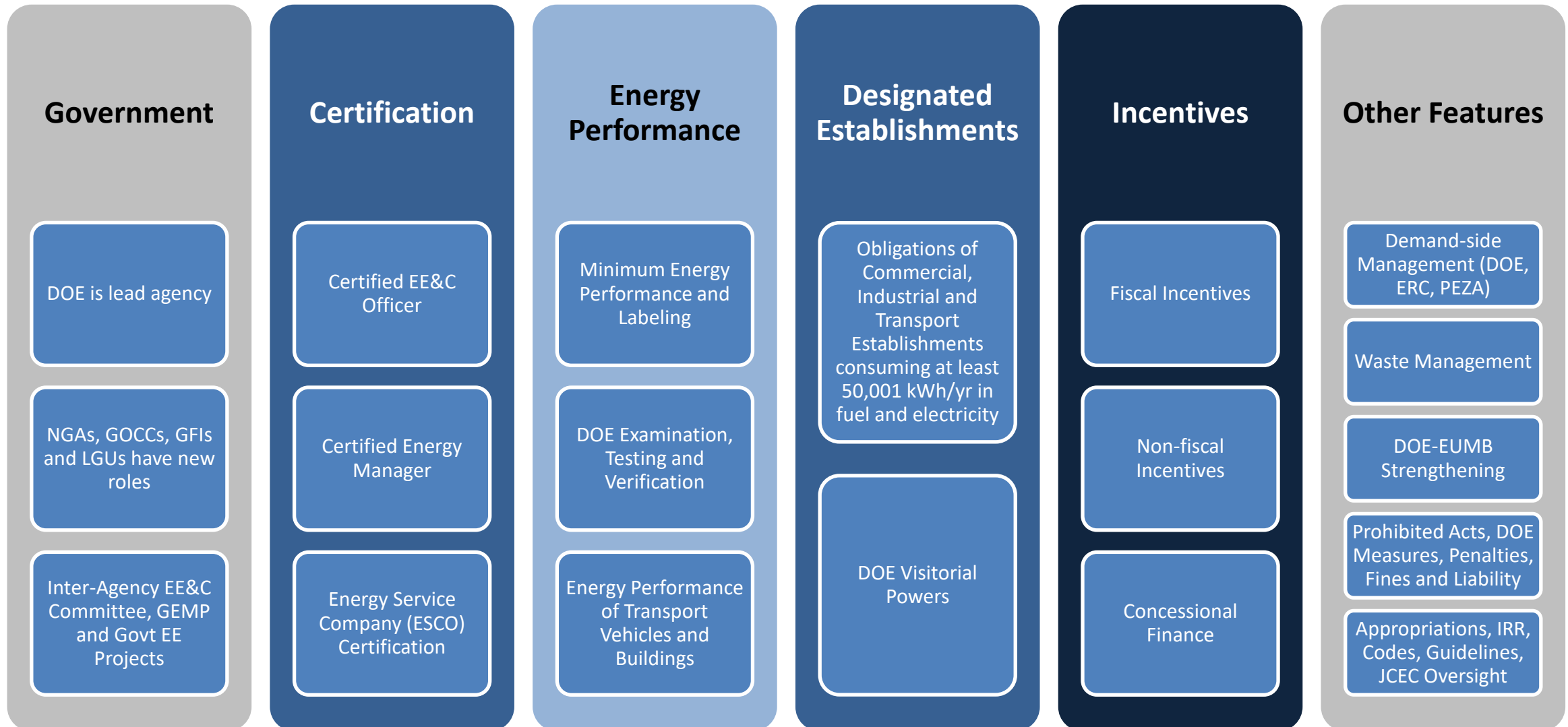
2019:

RA11285 is passed
from SB1531 &
HB8629 of 17th
Congress

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.

Republic Act No. 11285

Energy Efficiency and Conservation Act



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)

The Government Energy Management Program (GEMP) for Local Government Units

made easy

GOVERNMENT ENERGY MANAGEMENT PROGRAM (GEMP)

Republic Act No. 11285 or the Energy Efficiency and Conservation Act (EEC Act) and its Implementing Rules and Regulations (Department Circular No. DC2019-11-0014) provide strategic direction in the implementation of the Government Energy Management Program (GEMP).

GEMP refers to the government-wide program of reducing the monthly consumption of electricity and petroleum products. This is achievable through efficiency and conservation in electricity use and fuel use of government vehicles, as well as the employment of renewable energy systems, among others.

In 2019, the EEC Act, through Section 43 of its Implementing Rules and Regulations (IRR), extended the scope of the GEMP to all Local Government Units (LGUs).

GEMP'S OVERALL GOAL



MANDATORY REPORTORIAL REQUIREMENTS FOR ALL LGUS

- Designation of Energy Efficiency and Conservation Officer (EEC OFFICER)
- Designation of Energy Efficiency and Conservation Focal Person (EEC FOCAL PERSON)
- Monthly Electricity Consumption Report (MECR)
- Monthly Fuel Consumption Report (MFCR)
- Annual Inventory Report of Air-Conditioning Units, Lighting Equipment, and Motor Vehicles

STEP 1 Establish an Energy Efficiency & Conservation Office (EECO)



WHY?

The EECO serves as the office of the EEC Officer. This is mandated under Section 28 of the EEC-IRR and the DILG Memorandum Circular No. 2020-082.

HOW?

The EECO may be part of the planning and development office using appropriations from General Funds established under the Local Government Code. It can also stand separately.

Within three years from the EEC-IRR effectivity or until December 21, 2022, the planning and development office of an LGU shall be considered as its EECO.

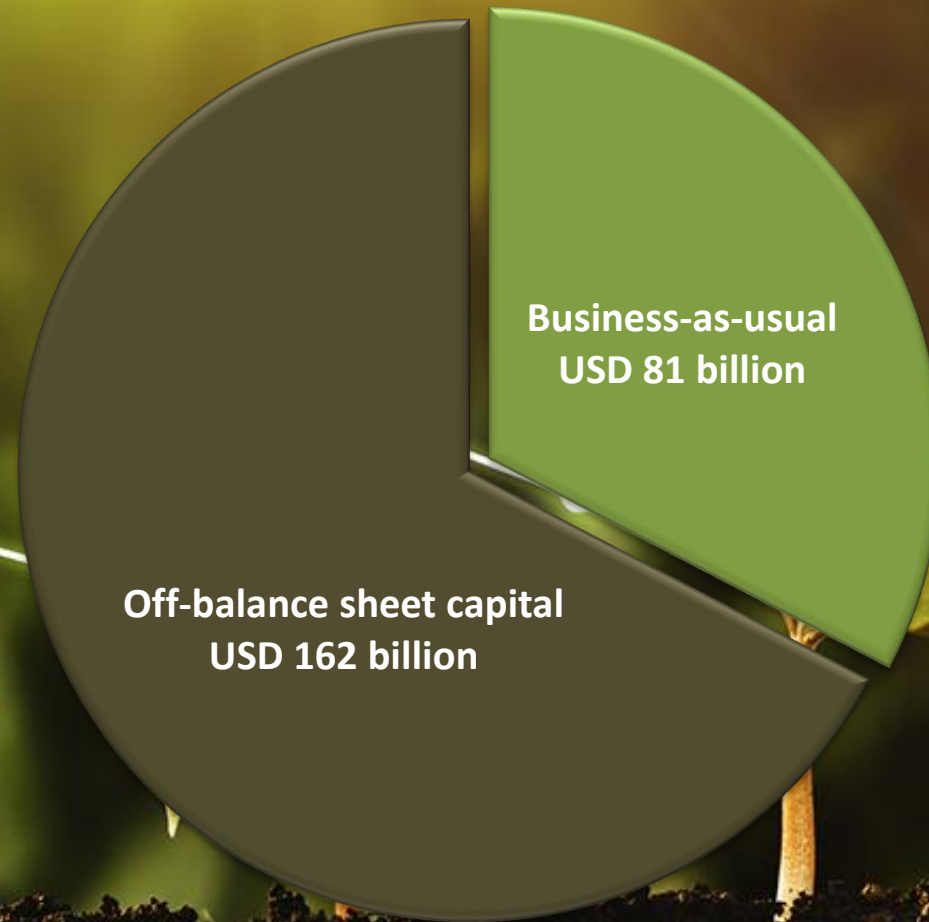
Philippines' EE capital requirements, 2017-2040

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



The ESCO market

It's growing!

A close-up photograph of a man wearing an orange hard hat and clear safety glasses. He is looking down at a tablet computer he is holding. He is wearing a black jacket and a bright yellow safety vest. The background is blurred, showing industrial lights and structures.

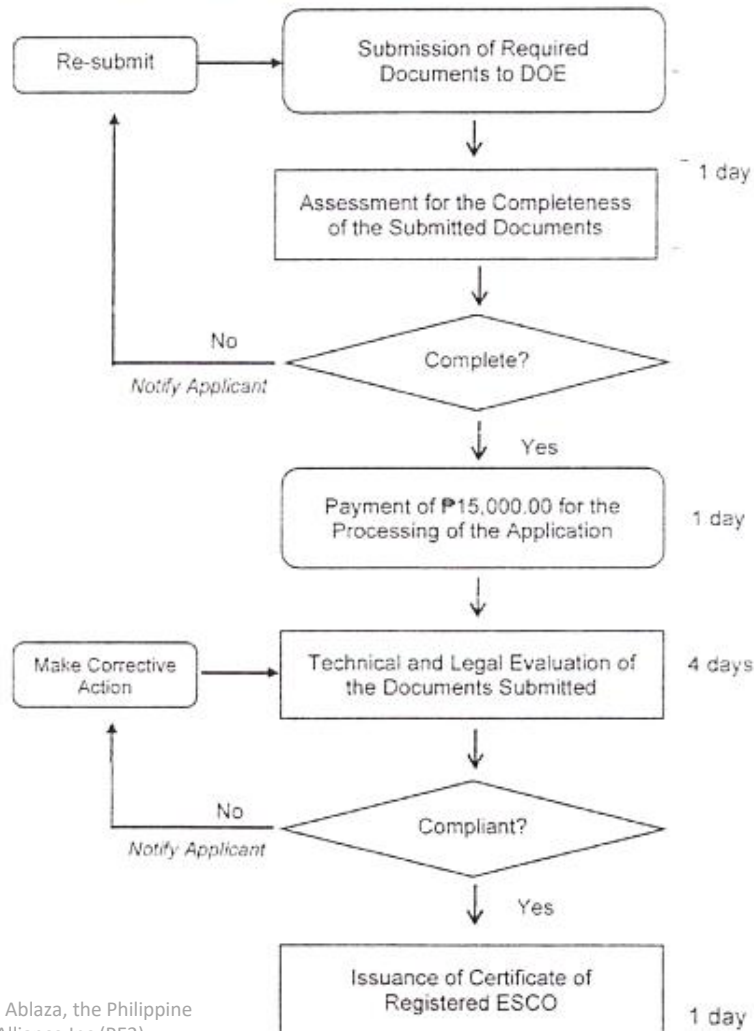
The Government, through the Department of Energy (DOE), defines an **energy service company (ESCO)** as “a juridical entity that offers multi-technology services and goods towards developing and designing energy efficiency projects, delivering and guaranteeing energy savings, and ensuring cost-effective 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.”

ESCO Definition in the Philippines

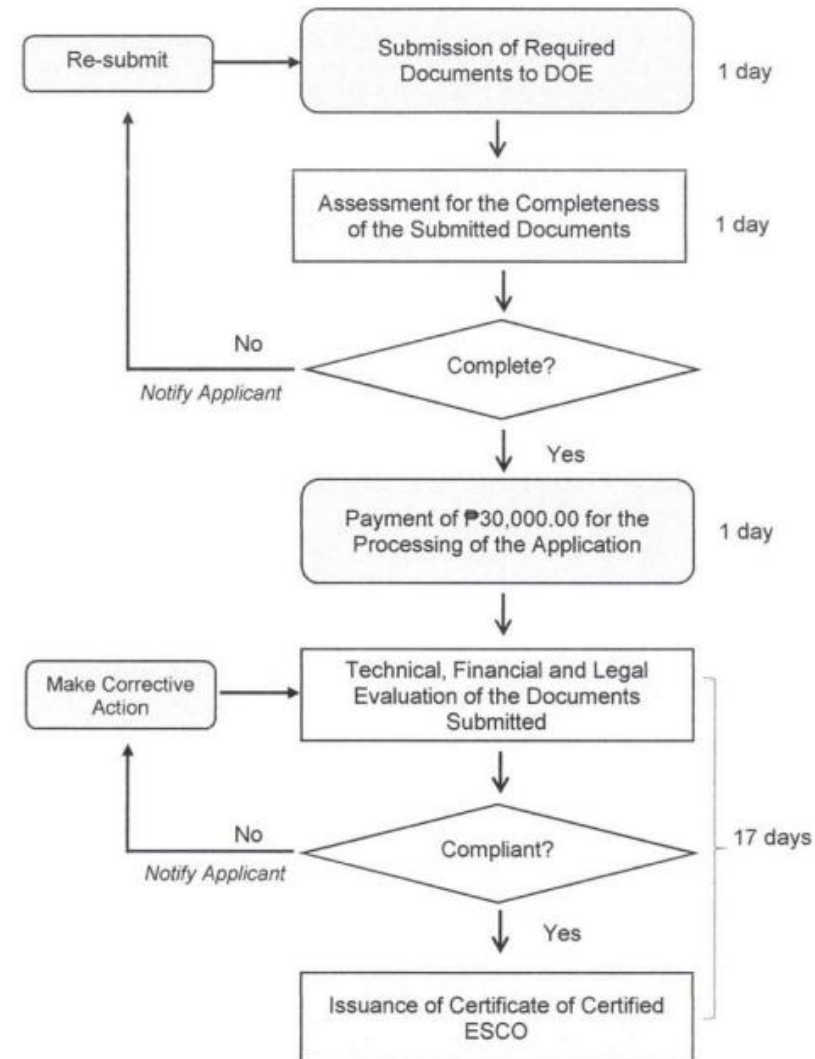
DOE now maintains parallel application processes for Registered ESCO and Certified ESCO



Application Process for Registered ESCO

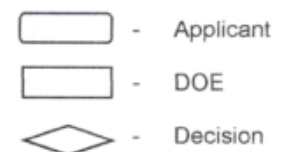


Application Process for Certified ESCO

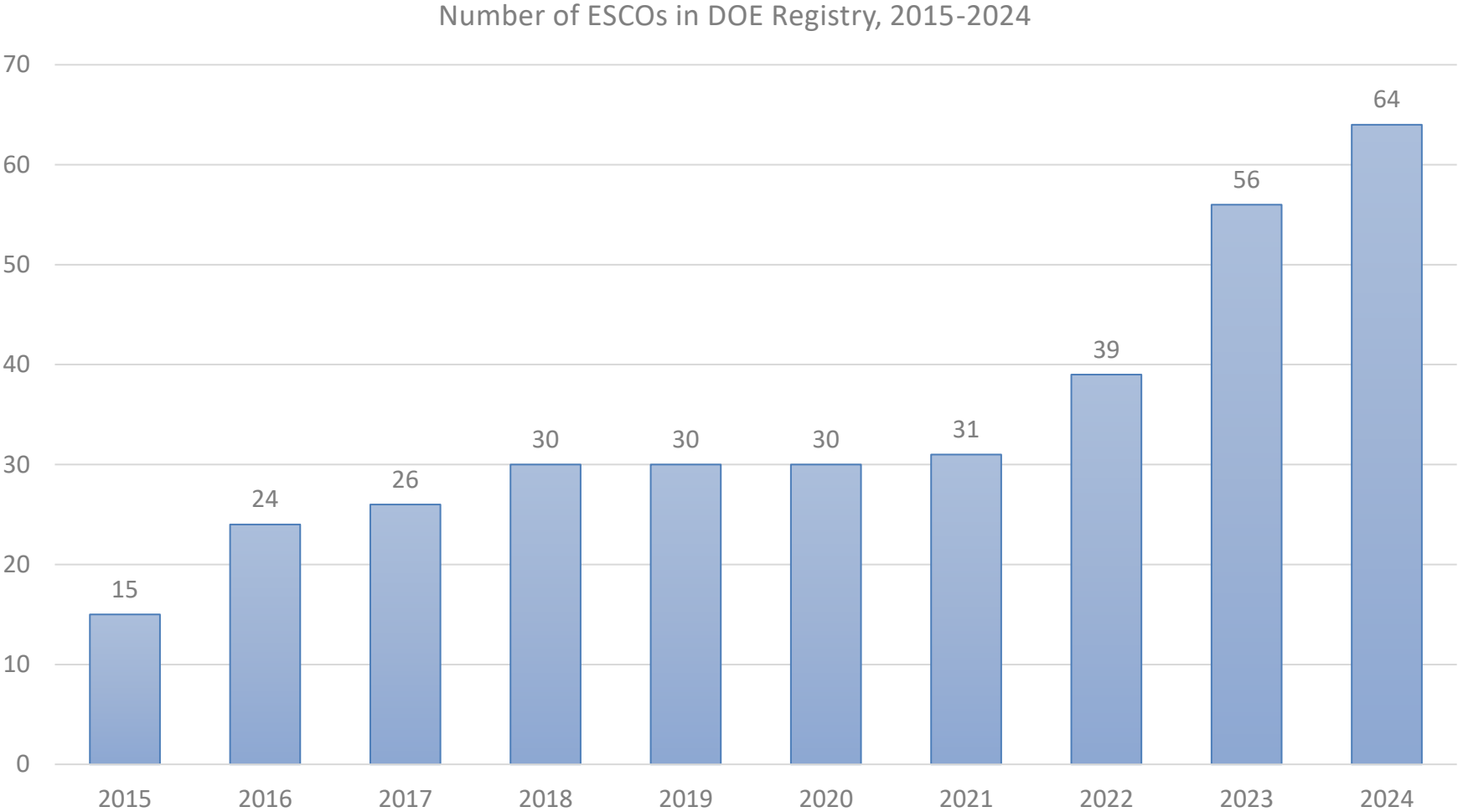


Unlike Registered ESCOs, Certified ESCOs are required to provide descriptions of ESCO services and energy efficiency projects performed, with details which include scope of work, monetary value and actual versus estimated results.

* Legend:

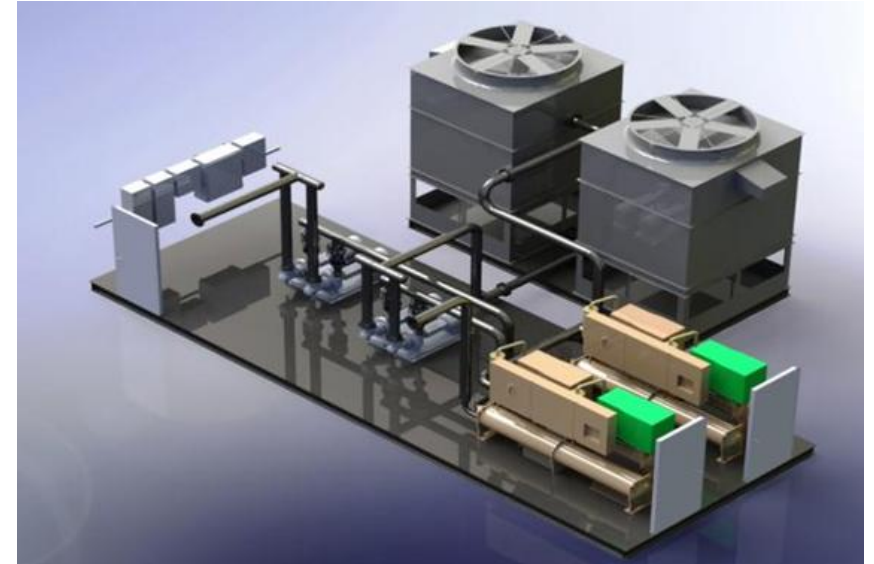


DOE Registry of ESCOs has been growing steadily in the last decade



ESCO project types

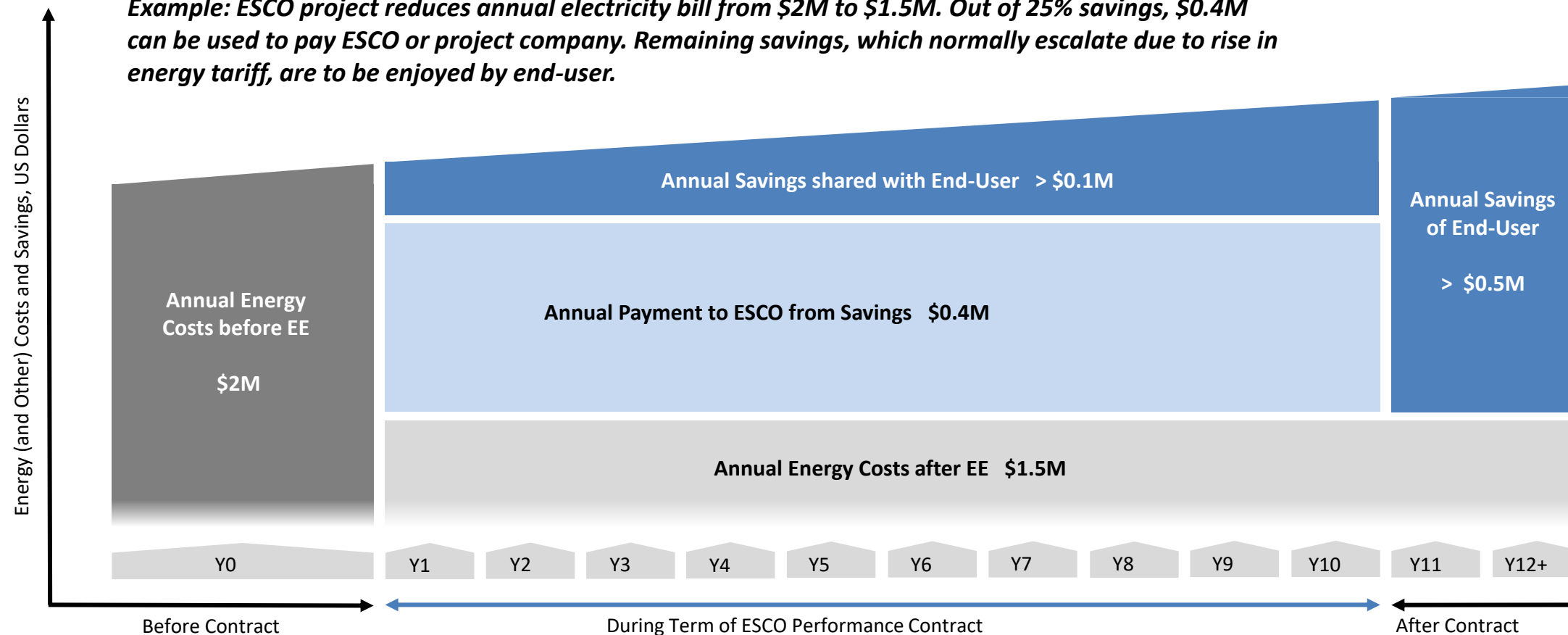
- Chiller plant upgrades, HVAC/cooling, refrigeration, heating, ventilation, lighting, motor, drives, pumps, compressors
- District energy (cooling) systems / Cooling-as-a-Service
- Smart controls, chiller optimization, building management systems, smart/micro grids, harmonics and PF correction
- Own-use 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.

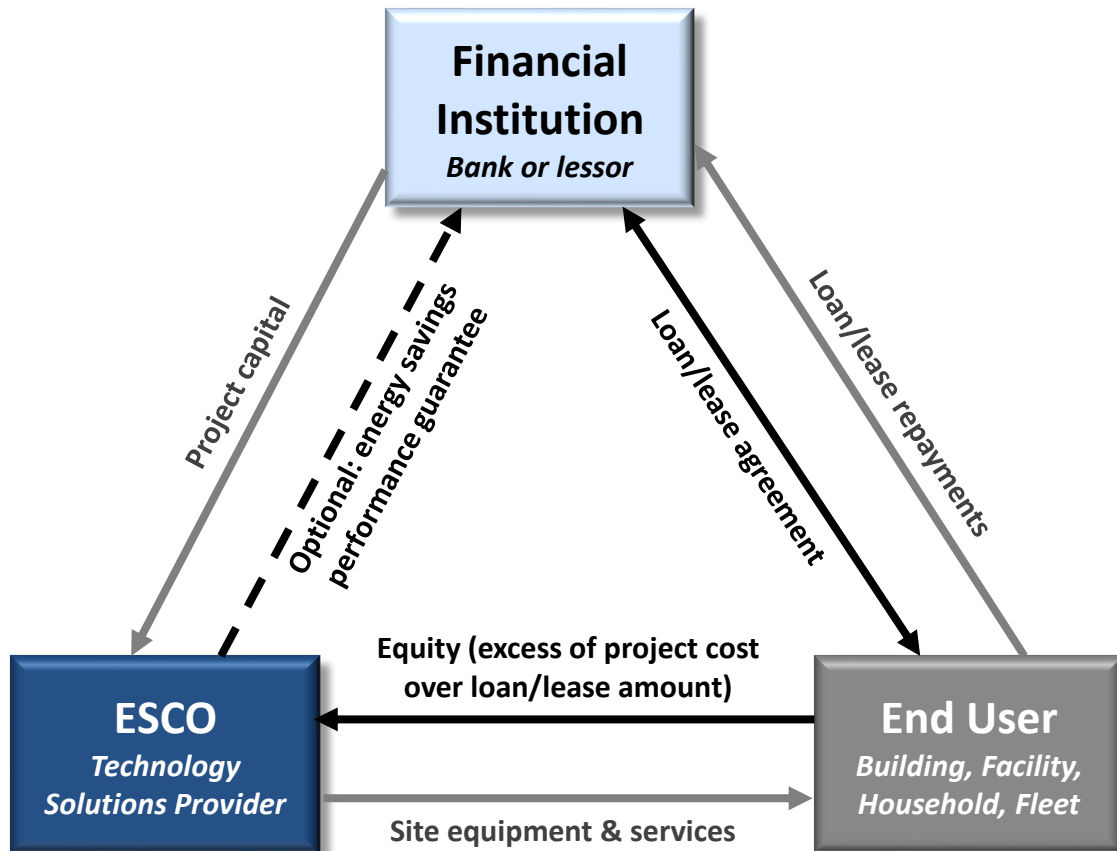


Self-financed EE projects

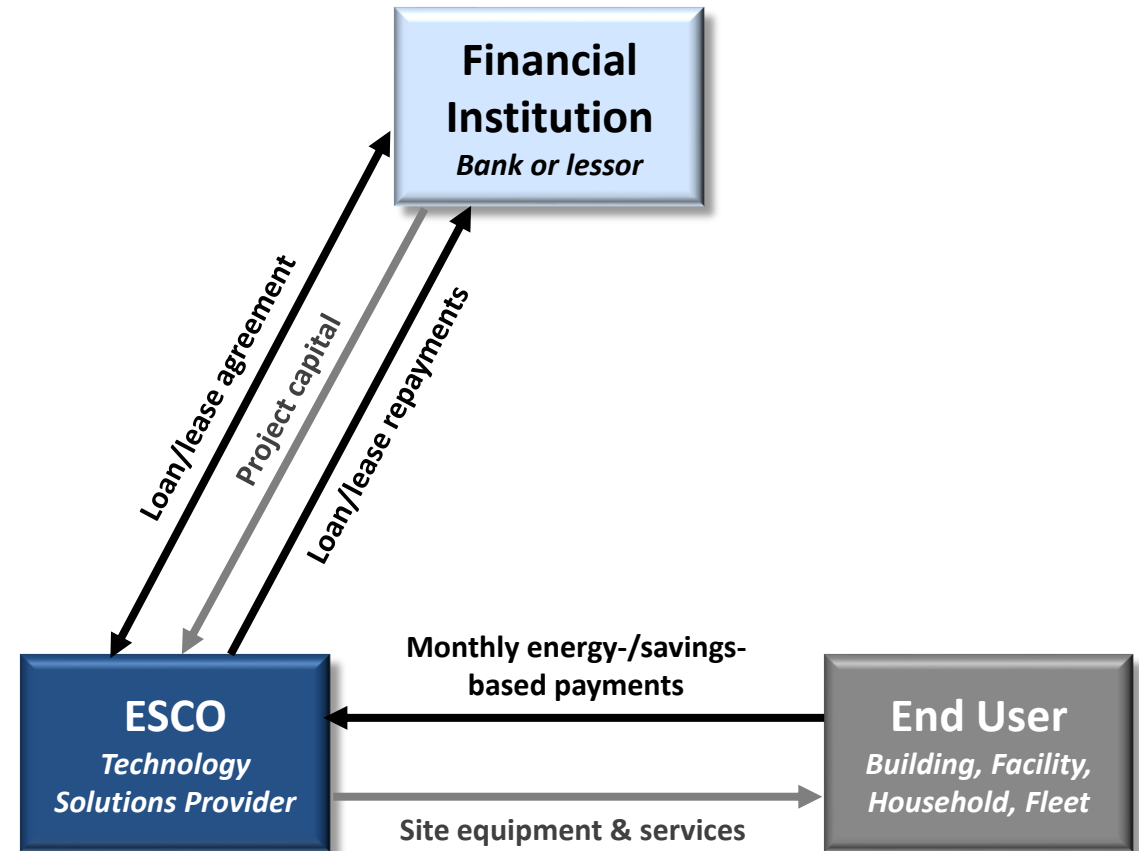


Debt- and lease-financed EE projects

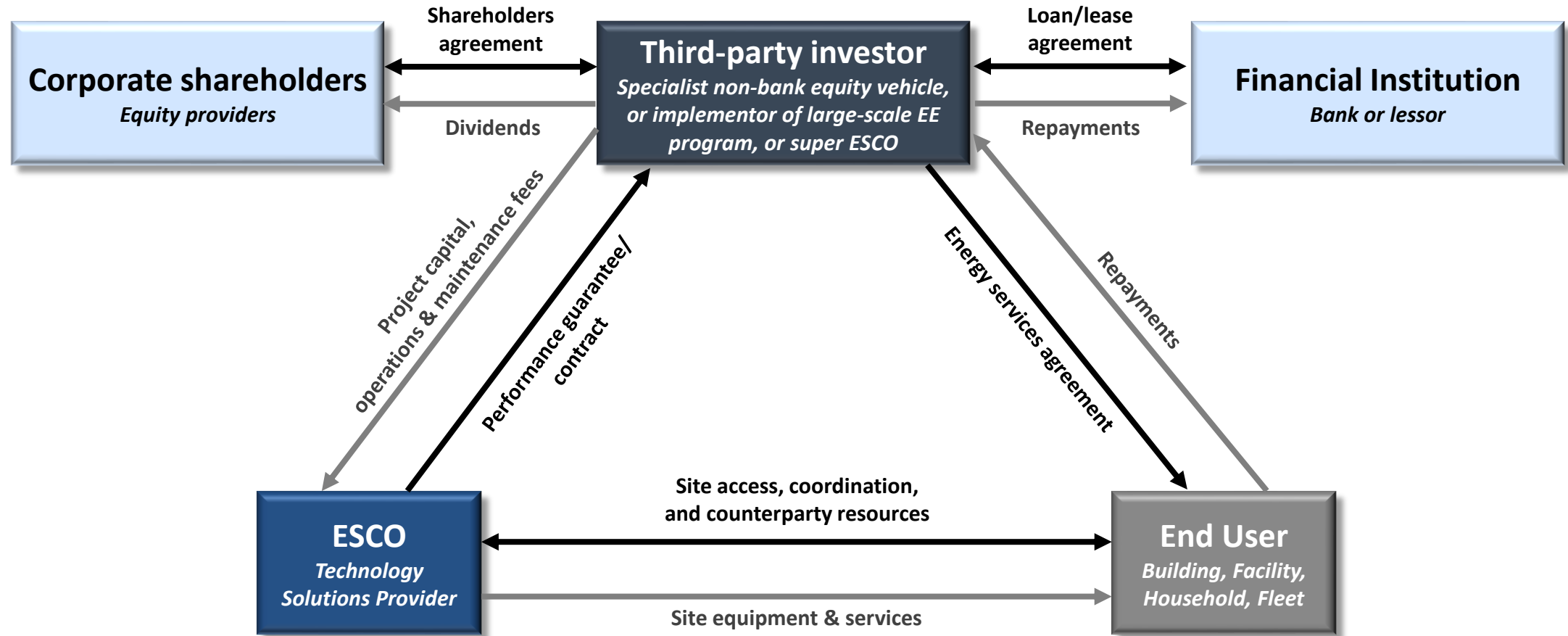
GUARANTEED SAVINGS MODEL (Borrower/lessee is End user)



SHARED SAVINGS MODEL (Borrower/lessee is ESCO)

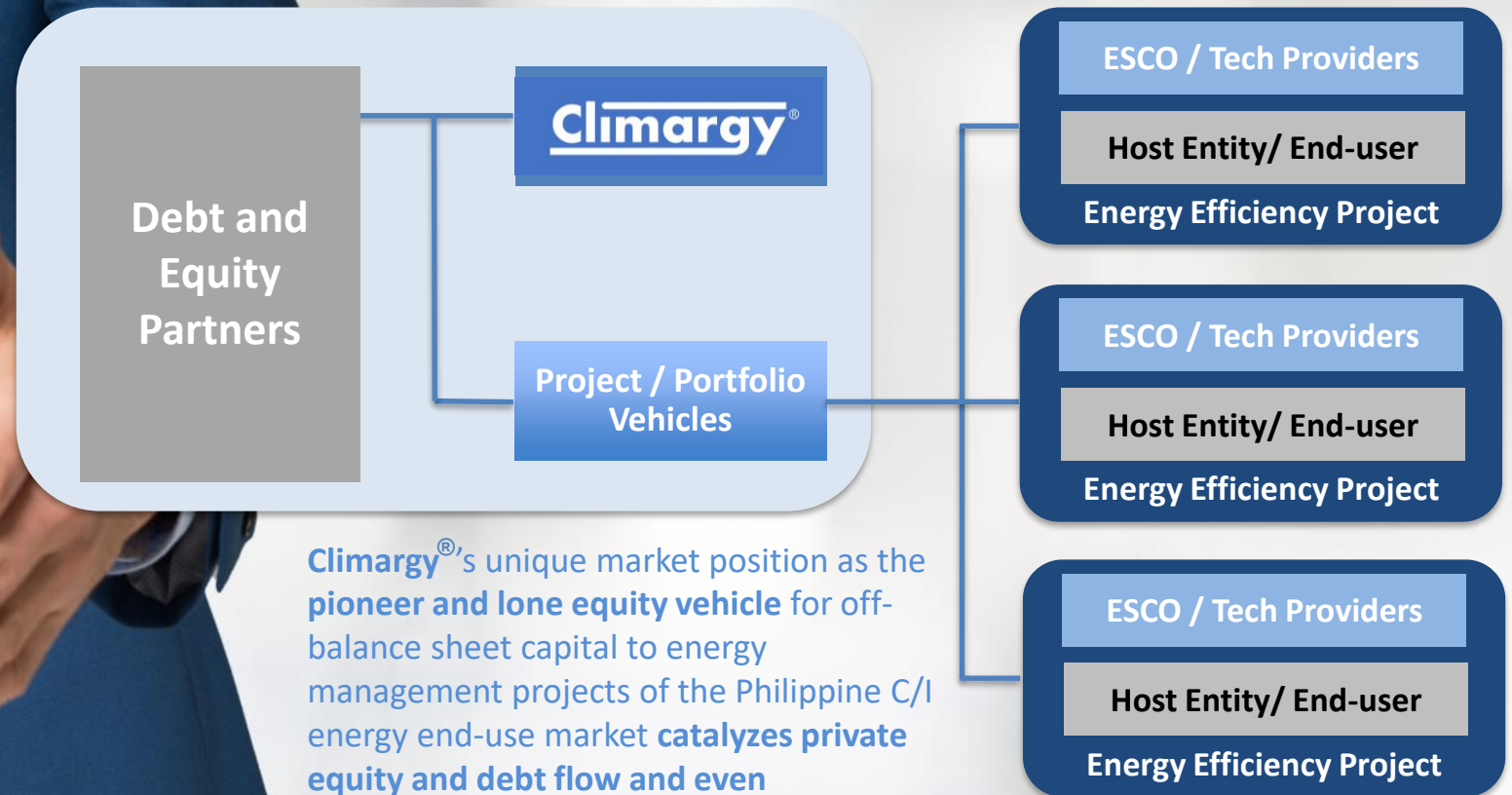


Third Party Investor (Project Company) provides capital through ESCO



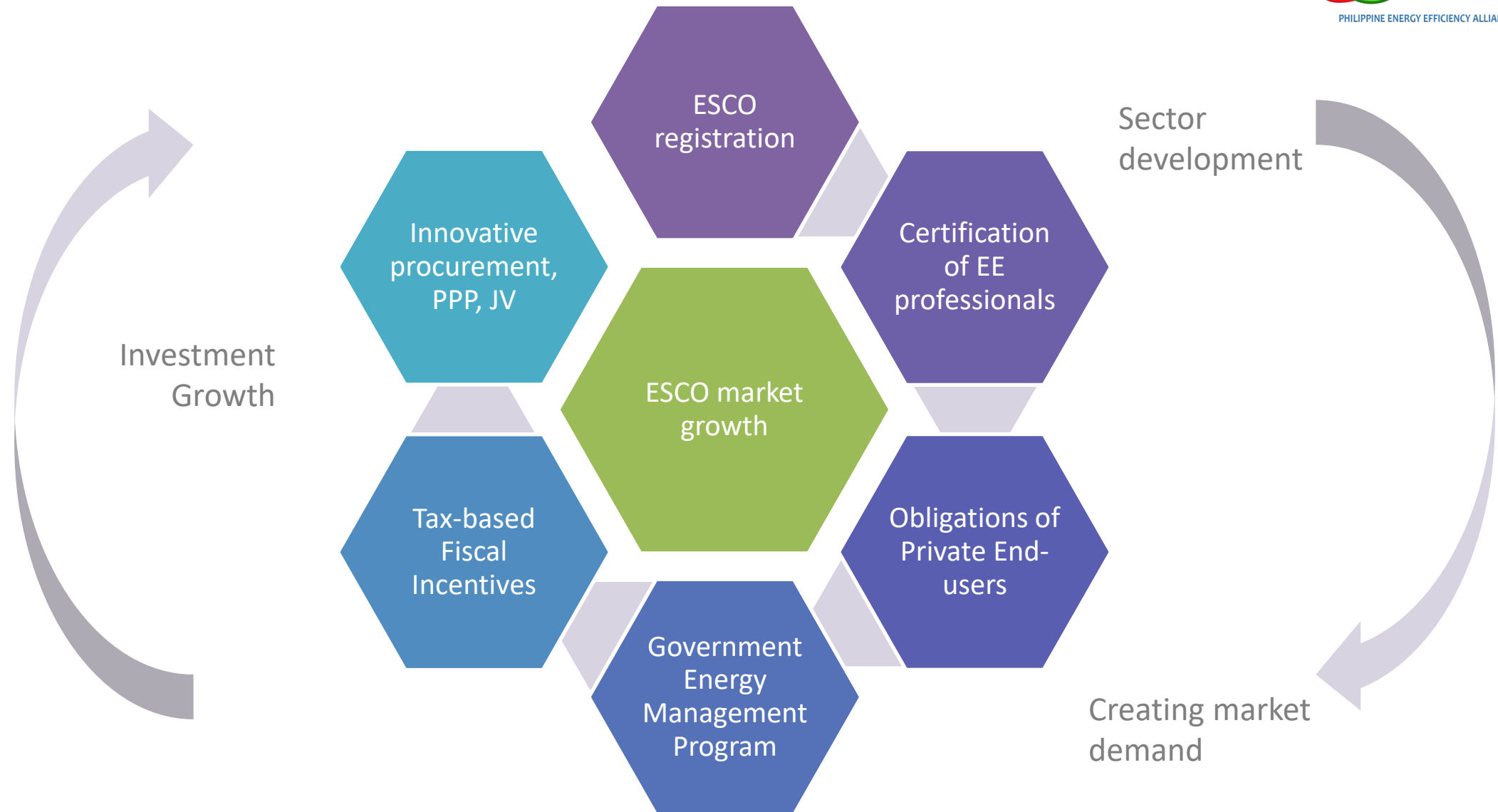
Among the world's firsts in private sector ESCO project portfolio investments

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



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





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