Philippines Energy Service Company (ESCO) Market Research

By:

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Abbreviations

In addition to the below list, several single-use abbreviations and acronyms are also defined throughout the document text.

ASEAN	Association of Southeast Asian Nations
ASHRAE	American Society of Heating, Refrigerating and AC Engineering
AEECR	Annual Energy Efficiency and Conservation Report
AEUR	Annual Energy Utilization Report
BOI	Board of Investments
BPO	Business Process Outsourcing
CEA	Certified Energy Auditors
CECO	Certified Conservation Officer
CEM	Certified Energy Manager
COP	Conference of Parties
DOE	Philippines Department of Energy
DOH	Philippines Department of Health
DPWH	Department of Public Works and Highways
DSM	Demand Side Management
EBSEA	ESCO-in-a-box® for Southeast Asia
EE&C	Energy Efficiency and Conservations Act of 2019
ECCR	Annual Energy Consumption and Conservation Report
ESCO	Energy Service Company
ESP	USAID Energy Secure Philippines
ESPC	energy savings performance contract
EUI	energy use intensity
EUMB	(DOE Office of) Energy Utilization Management Bureau
HVAC	heating, ventilation, air conditioning
LGU	Local Government Unit
MEPS	Minimum Energy Performance Standards
M&V	measurement and verification
Meralco	Manila Electric Company
NEECP	National Energy Efficiency and Conservation Program
PE2	Philippine Energy Efficiency Alliance
PEEP	Philippine Energy Efficiency Project
PGBI	Philippine Green Building Initiative
PIEEP	Philippine Industrial Energy Efficiency Project
PSA	Philippine Statistics Authority
RTI	Recognized Training Institutions
TESDA	Technical Education and Skills Development Authority

Executive Summary

This report assesses the current market situation for energy service companies (ESCOs) in the Philippines to gain market entry insights and identify key market segments and priority activities for the ep Group "ESCO-in-a-Box® for Southeast Asia" project, which aims to facilitate ESCO development in the region.

The Philippines currently has favorable policy conditions and market entry parameters due to the recently enacted Energy Efficiency and Conservation Law (RA 11285), which institutionalizes energy efficiency and conservation, enhancing energy use and granting incentives to energy efficiency and conservation projects. The law enhances the market climate for ESCO opportunities by mandating all designated establishments to submit Annual Energy Efficiency and Conservation Reports (AEECRs) and Annual Energy Utilization Reports (AEURs) and compels them to set energy savings targets. Energy efficiency projects in the country that meet the minimum 15% project boundary and a minimum project investment cost of US$ 176, 300 enjoy fiscal and tax incentives from the Board of Investments with recommendations from the Department of Energy.

The ESCO industry in the Philippines comprises 37 registered ESCOs, and 6 are identified as Certified ESCO by the DOE. ESCOs offer more than one business activity, with consulting and technology installations being predominant. At the same time, energy audits gained traction in the past years because of the government's mandate and policies.

ESCO's most significant revenue streams, at 83%, are technology solutions and energy audits. For 2021 alone, ESCOs were able to implement US$ 10.8 million of EE projects, which translates to 7.56 million kWh of energy savings from implemented energy efficiency projects. The industry is estimated to have a US$ 160 billion potential until 2040, dominated by the 'shared savings' ESCO business model. However, challenges and barriers from lack of commercial financing for small and medium ESCOs, and risk aversion of financial institutions against energy efficiency projects need to be addressed.

The manufacturing subsector, mainly electronics manufacturing and food and beverage, are the highest potential for ESCO activities. This subsector's heavy utilization of large cooling technologies and machinery makes them the best candidate for energy-saving opportunities.

The Philippines' love for shopping mall culture is another considerable potential for ESCO opportunities. The country's medium to large commercial establishments is often complex multi-use spaces with dining and leisure amenities focusing on efficient cooling and cooking technologies. Some of these spaces require large space cooling systems serving 24 hours daily. The Philippines' well-established IT-BPO sector is another candidate for energy-efficient projects because of its dynamic and growing industry.

With the Government Energy Management Program, government agencies at national and local levels will be a priority target for the ESCO market segment. Government mandates and initiatives will drive the government sector's demand for energy efficiency services.

1 INTRODUCTION

Study background and objectives

Energy Service Companies (ESCOs) and energy performance contracting models are well established as a delivery modality across China, the United States, and Europe (Irsvad, M. et al. 2020). ESCOs have a well-established track record of substantial energy and economic savings in the public and institutional buildings sector through energy performance contracts (Larsen et al., 2012; Goldman et al., 2005; Hopper et al., 2005). However, ESCOs in Southeast Asia remain nascent and need help to deploy performance-based project delivery models.

The Energy Pro (ep) group engaged Asia Clean Energy Partners (ACE Partners) to conduct market research for the ESCO industry in the Philippines. The study aims to determine the ESCO market size and identify key priority market segments and activities for ESCOs in the country. Market entry insights will provide opportunities and trading conditions to develop the ep group's ESCO-in-a-Box® for Southeast Asia (EBSEA) market segmentation strategies for the Philippines, before its intended launch there and across other countries in Southeast Asia.

The report is also intended for local policymakers, ESCO industry executives, energy efficiency technology and service providers, and commercial and industrial end users. The report highlights the Philippines' energy efficiency policies and strategies, ESCO market size, and the challenges encountered by local ESCOs in Section 2. Section 3 provides an estimate of the potential market segment for ESCO, and Section 4 provides recommendations on target market segments and focus technologies based on the analyses in the report.

Approach, Methodology and Data Sources

In conducting a market assessment and determining the ESCO market size in the country, the Philippines Department of Energy (DOE) Energy Utilization Management Bureau (EUMB)definition of an energy service company (ESCO) was followed, which defines an ESCO as "*a business that develops, installs and arranges to finance projects designed to improve facilities' efficiency and maintenance cost.*" DOE-EUMB's umbrella term for ESCOs includes

- businesses that develop, design, and arrange to finance energy efficiency projects;
- companies that install and maintain energy-efficient technologies;
- firms that perform the measurement, monitoring, and verification of the project's energy savings; and

- companies that assume the risk of energy efficiency project.

By DOE's definition, a comprehensive list of 37 firms qualified as ESCOs is publicly available on DOE's website. The list serves as a starting point for surveys and interviews regarding the ESCO business activities and market segment participation.

The Philippine Energy Efficiency Alliance (PE2)'s website also lists other businesses not yet registered with DOE, but conducting similar business activities to DOE's ESCO definition. Desktop research was conducted to determine which businesses from the list were still operating and were not subsidiaries of other respondent ESCOs.

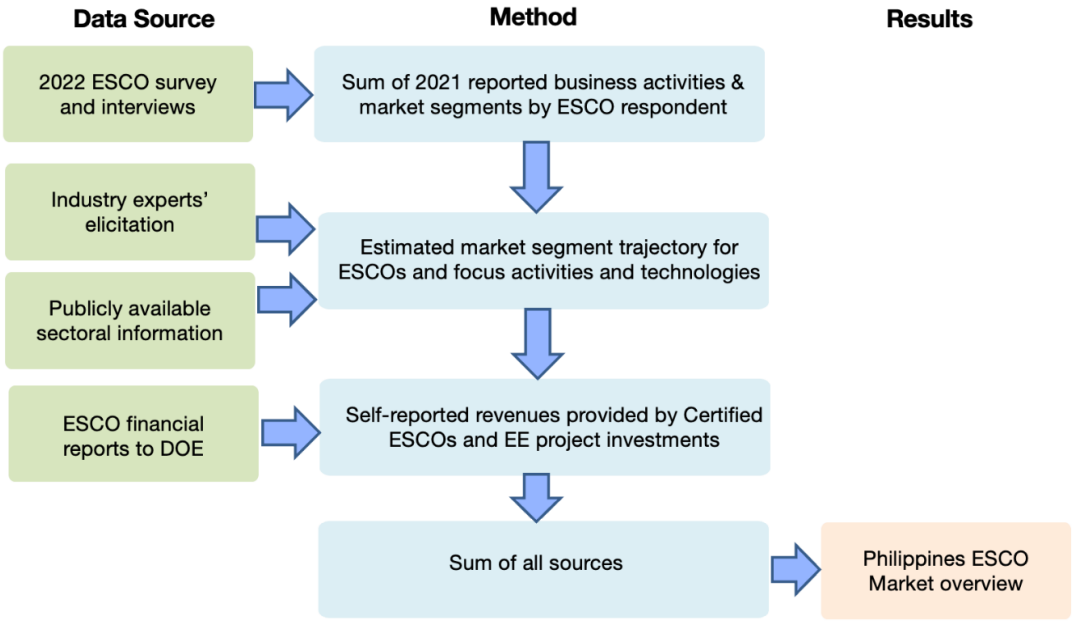
Table 1 provides a summary of contacts and data sources that were used in this study.

Table 1. Data Sources

Source	Description
DOE	List of qualified energy service providers (June 2022)
	Certified ESCO Financial reports from 2019-2021
PE2	Member list and core business activities
Desktop research	Other businesses that are engaged with EE services
	List of sectoral establishments in the Philippines (PSA)
	Updates on the EE&C Law implementation (DOE)
Meralco	2018-2019 energy efficiency audit report for commercial retail and office establishments
ep group	Initial list of firms engaged by ep group
PIEEP	Expert interviews for insights on the Philippine EE landscape

Figure 1 summarizes the approach to conducting the ESCO market study in the Philippines. We characterized ESCOs and PE2 member lists from the list of DOE-qualified ESCOs and determine which business activities are predominantly in the local market. To estimate which business activities and market segment revenues, a survey was sent out to the list of ESCOs that met DOE's definition. An event co-organized by DOE and USAID's Energy Secure Philippines (ESP) program activity gathered all ESCO-certified energy managers and auditors, which allowed the research team to interview some ESCOs regarding the challenges and opportunities they face, and areas for market improvement. Internal reports shared by Meralco also helped to estimate energy use intensities for commercial establishments in Metro Manila, and was used to determine focus technologies in this sector.

Figure 1. Flowchart illustrating the approach for conducting ESCO market research



To determine which ESCO activities are likely to be more prevalent and deserving of focus in the country, expert interviews were carried out with different energy efficiency country experts. To determine qualified ESCO revenues, DOE furnished the research team with a financial report on ESCOs and a summary of ESCO-implemented EE projects for 2021, which augmented other publicly available information to provide a solid understanding of ESCO market insights in the Philippines.

Limitations and challenges

It is appropriate in this brief report to acknowledge some of the limitations and research challenges in the information presented. ESCO business activities and market segment revenues estimates are based in part on self-reported estimates from ESCO respondents. It would have been preferable to estimate aggregated revenue reports from actual filings, and back up evidence-based derivations with further expert corroboration to best represent the market potential for ESCOs in the country. However, the Securities and Exchange Commission (SEC) filings are not freely available. Although qualified ESCO self-reported DOE revenues were granted for this study's merits, the values only represent 16% of ESCO activities, in that they only cover 6 of the 37 registered ESCOs. Furthermore, the country's Data Privacy Law compels us to redact the identities of businesses from their reported financial reports.

Due to time constraints in undertaking the study, an underwhelming response from the survey is also observed, with a response rate of 40.5%. It would be best to chase responses from the populated ESCO list to have granular data visibility and representation.

2 THE PHILIPPINES ESCO MARKET CHARACTERISTICS

The Philippines' Strategies and Policies for Energy Efficiency

At the national level, there has been a range of legislative, policy, and strategy measures since the 1980's that encourage energy efficiency implementation in the county, including more recently:

• National Energy Efficiency and Conservation Program

NEECP consists of a comprehensive EE plan with nine components, which include the promotion of energy management and energy audits through technical assistance (evaluate and recommend EE measures) provided by a team from the Department of Energy (DOE) as well as the establishment of the Philippines Energy Management System based on the ISO 50001 framework. This is an essential strategic plan to rationalize the country's petroleum products demand, lessen the impact of its escalating price on the national economy, and make EE&C a way of life for every Filipino. Moreover, the NEECP provides the framework for the government to promote efficient energy utilization. The NEECP also sets out the aim to reduce the final Energy Demand of the country by 10 percent annually from 2011 to 2030.

• Presidential Decree No. 1096 (The Philippine Green Building Code of 2015)

The DPWH launched the Philippine Green Building Code with the World Bank – IFC and technical support from the Philippine Green Building Initiative. It seeks to improve the efficiency of building performance through a framework of standards that will enhance the building's life cycle, and aims to inform technical professionals and developers to ensure buildings are planned, designed, and constructed to the required energy efficiency levels. The Green Building Code also mandates that retrofitting of old buildings will be checked for compliance. In contrast, for permitting purposes, new building constructions need to conform with the "Guidelines on Energy Conserving Design on Buildings" issued by the DOE in consultation with the Department of Public Works and Highways.

• Administrative Order No. 110 (Government Energy Management Program)

The GEMP is a government-wide program that aims to reduce the government's monthly consumption of electricity and petroleum products by 10% through energy efficiency and conservation (EE&C) strategies. This has applied to national government facilities since 2011, and through the passing of the new EE&C Law (see below), DOE has further highlighted the importance of establishing an LGU EE&C Office to lead planning and adoption of local EE&C strategies and that each LGU needs a Local Energy Efficiency and Conservation Plan (LEECP), which was launched last 2021. A supporting LEECP Guidebook has an overarching goal to institutionalize energy efficiency and conservation as a national way of life, promote the efficient use of energy and integrate EEC into the sustainable local development agenda of each LGU

in the country. However, the recommendations outlined in the guidebook may be challenging to achieve for some LGUs.

In January 2022, the IAEECC passed Resolution No. 5, which institutes the Guidelines for the Government Energy Management Program (GEMP). The GEMP Guidelines document has explicit language for ESCO-led government energy efficiency projects and defines standard terms and conditions for an energy savings performance contract (ESPC) with government entities

- Energy Efficiency Roadmap for the Philippines 2017-2040

The Roadmap consolidates a national-level document of policy instruments to enhance energy efficiency in the Philippines for 2017-2040. Policy targets, opportunities, priority areas, and further considerations are discussed in the roadmap, followed by short-, medium-, and long-term strategies to achieve national energy efficiency objectives. The roadmap integrates identified opportunities with existing energy efficiency policy instruments and strategies.

- Republic Act 11285 (Energy Efficiency and Conservation Act of 2018)

The EE&C Law is a seminal piece of EE legislation that aims not only to mitigate the effects of climate change but would also serve to lower the power costs of consumers. Signed into law on April 12, 2019, the act institutionalizes energy efficiency and conservation, enhancing energy use and granting incentives to energy efficiency and conservation projects. The Act also requires mandatory energy efficiency reporting and implementation activities by large energy-intensive private industries referred as Designated Establishments (DE) and further classified into: Other DE (at least 100,000 kWhE up to 500,000 kWhE) Type 1 (500,001 kWhE – 4,000,000 kWhE) and Type 2 (above 4,000,001 kWhE) annual energy consumption, that must submit an Annual Energy Consumption and Conservation Report (EECR) to DOE by April 15 of every year. The Department of Energy is actively promoting and partnering with agencies and stakeholders to educate local government units on how they can be energy efficiency and conservation agents. After delays in implementation due to the COVID-19 pandemic, development of Implementing Rules and Guidelines (IRR) for the EE&C Law are now well underway.

- DC-2020-09-0018 on ESCO Accreditation enforces the requirement for ESCO in engaging any EE-related performance contracting

The department circular requires all ESCOs to secure accreditation from the Department of Energy following the accreditation criteria. Accredited ESCOs shall submit reports on the status of the projects undertaken by the ESCO.

Under the department circular, the classification of ESCOs is also introduced. The DOE classifies ESCOs into two classifications; a Registered ESCO refers to a business seeking accreditation for professional services to DOE for the first time that meets the minimum requirements on legal and technical capacity, and the certificate of

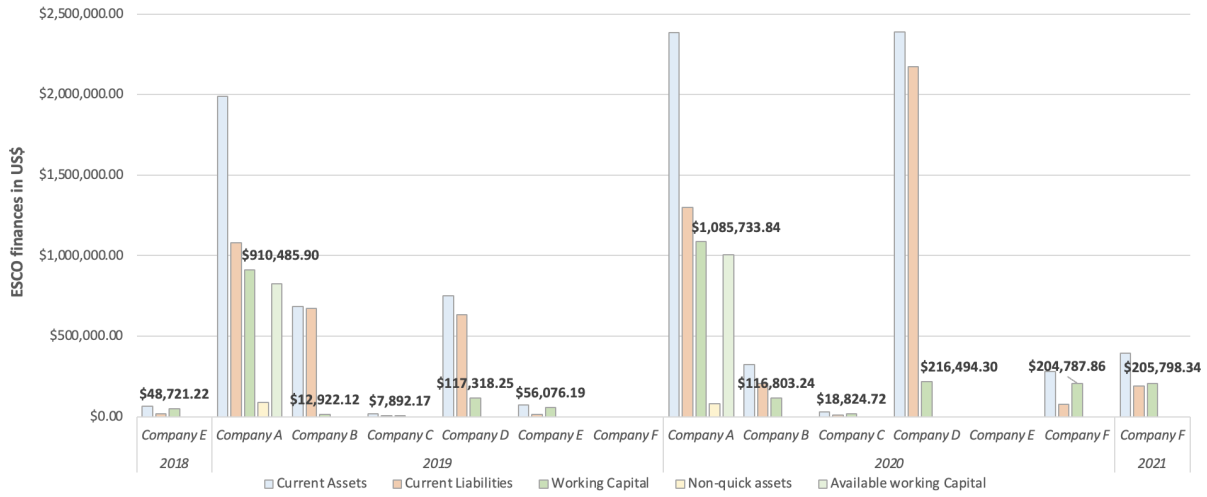
registry is valid for three years. A Certified ESCO, however, has proven performance or results-based projects savings experience and proven customer experience, which has a certificate validity of 5 years. The proven performance savings experience classifies all energy-efficient approaches the business can introduce into the market.

ESCO Industry Size

ESCO Industry Size and Financial Performance

The DOE provided the financial performance of certified ESCOs, and to adhere to the country's data privacy law, ESCO identities are redacted in Figure 2 below. It is also worth noting that under the DOE guidelines on ESCO reporting, only the six certified ESCOs are required to submit their financial performance, and the other 31 classified registered ESCOs are not required to comply with this requirement.

Figure 2. Qualified ESCO reported financial report (2018-2021)



Source: Philippines Department of Energy, 2022

Figure 2 shows that among the six certified ESCOs, Company A and Company D's financial metrics eclipsed those with other four other certified ESCOs. It is also observed that aggregated working capital of these six certified ESCOs increased 48.7% from 2019 to 2020. However, all certified ESCO companies remain relatively small in scale.

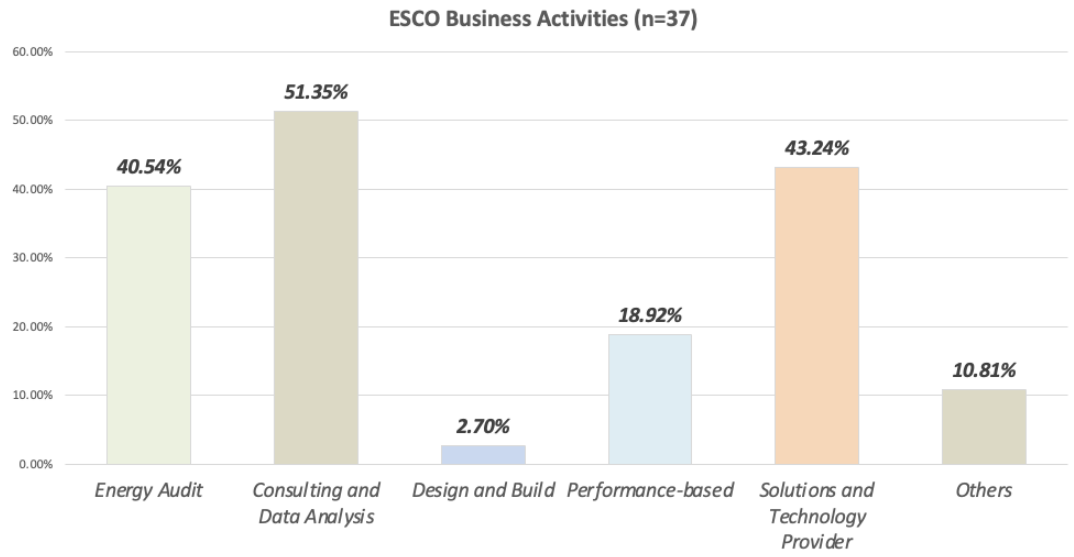
ESCO Business Activities

From data collected through DOE's entire list of registered ESCOs and PE2 members, it is clear that many ESCOs in the Philippines offer more than one business activity in the market. Figure 3 shows that 51% of ESCO's self-reported business activity is principally consulting, management, and data analysis. The second activity with the most engagements from ESCOs is providing solutions, technology procurement, and installation.

With the recent DOE mandate through memorandum circular 2020-05-0001 directing all designated establishments under commercial, industrial, and transport sectors to submit energy consumption reports annually in compliance with the EE&C Law, energy audit activities have gained traction in the past years and currently comprise 40.54% of ESCO activities in the country.

Although Energy Performance-based Contracting (EPC) was declared as part of core business activity to 18.92% of ESCOs in the country, there needs to be more evidence that EPCs have already been implemented in the Philippines. One prominent example is the case of Climargy, which aims to be a 'Super ESCO', and organize contracts to be delivered by other ESCOs as a way of scaling up implementation of EPC into the market. Performance-based contracting remains accessible to ESCOs that are subsidiaries or associations with established international ESCOs with large asset bases who have been offering EPCs in their core businesses in other countries (e.g., Engie Services-Philippines, which has experience with EPCs in France). Stand-alone ESCOs face the challenge of securing finances and technical expertise to offer EPC into the market, and to secure performance-based finance compared to the traditional asset-backed lending that most financiers still demand.

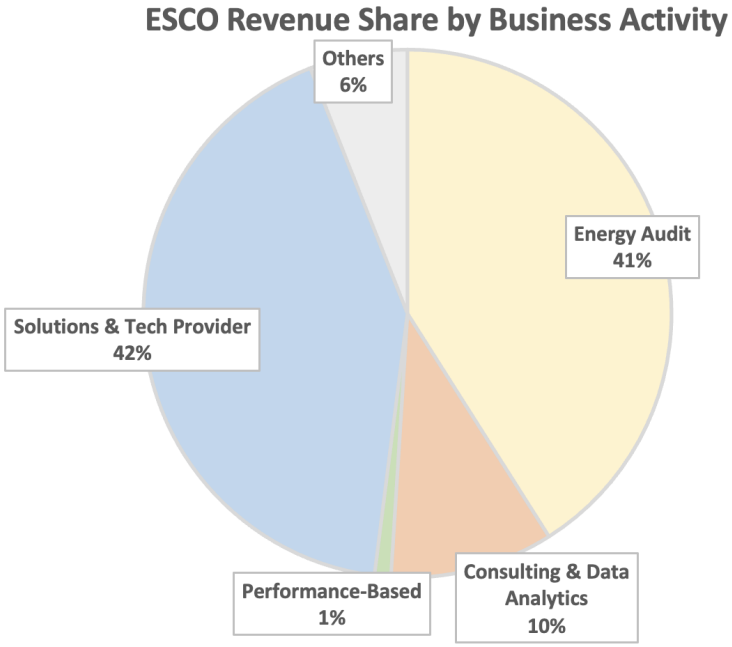
Figure 3. ESCO business activities in the Philippines (2022)



Source: Department of Energy, 2020

Figure 4 is based on information collected on through the survey conducted for this study, from a smaller sample. It shows that solutions and technology installations and energy audits represent 83% of the total revenue share by business activities for ESCOs. Although 51.3% of ESCOs offer consulting and data analytics, it only translates to 10% of all revenue by ESCO business activities. From this we can conclude that the market for consulting and data analytics remains small and acts mostly as an adjunct to auditing, product sales and installation revenue.

Figure 4. ESCO self-reported revenue share by business activity (2022)



Source: Philippines ESCO Market Research survey, 2022

EPCs remain an underwhelming business line for ESCOs. Aside from the fact that only 19% of ESCOs declare EPCs on their product offerings, there is little evidence of robust demand for this product line. Although energy audits have been in the market for a while, many ESCOs report a stronger resultant demand for rooftop solar PV installations with net metering over energy efficiency measures.

ESCO Market Segments

The industrial sector accounts for ESCO's largest customer base, making up 73% of all revenues (Figure 5). The manufacturing subsector comprises the bulk of the customer pool for ESCOs, followed by the power generation subsector. In comparison, commercial establishments like retail and office buildings account for 20% of ESCO revenue. Table 2 breaks down some representative EE projects undertaken by ESCOS with related investment costs and equivalent energy savings. With industrial tariffs in the region of USD 0.12/kWh for many users, in all cases it is clear that EE project opportunities are potentially lucrative in the Philippines, due to relatively high energy tariffs and high energy savings from replacement of very inefficient existing plant and equipment.

Table 2. Sample EE Projects undertaken by ESCOs as of 2021

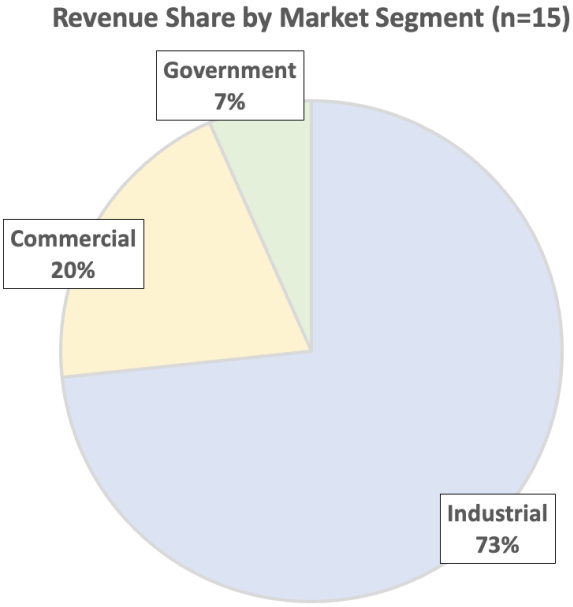
Project	Project Cost (USD m)	Energy Savings (kWh/yr)
Office building Air-cooled conversion	1.36	2,565,696
Chilled Water plant retrofit	0.84	1,939,798
Water-cooled packaged AC System retrofit	1.79	2,674,736
Replacement of Centrifugal Water-Cooled Chiller	0.33	635,000
Chilled Water plant and BMS retrofit	4.54	5,212,000
Conversion of Air-cooled Chiller Plant to Water-cooled Chiller Plant	0.61	4,380,000
Industrial Refrigeration Retrofit	0.99	2,564,640
Replacement of standard efficiency motors with high efficiency motors	1.45	3,010,200
Lighting System Retrofit	0.24	330,341

Source: Department of Energy, 2022

The majority of EE projects undertaken by ESCOs are refrigeration and cooling-related solutions. The industrial sector mainly acquires large-scale processing equipment, chiller systems, and high-efficiency motor replacements. System retrofitting with the installation of temperature, pressure sensors, and transmitters for system optimization is also undertaken by ESCOs. These activities conform with the significant revenue stream from the industrial and commercial sectors for ESCOs.

With DOE's Government Energy Management Program (GEMP), national and local government agencies must adopt energy efficiency plans and implement opportunities. Hence while remaining at only 7% customer share for 2021, government offices are a very fast-growing segment for ESCOs.

Figure 5. ESCO self-reported revenue share by market segments (2022)



Source: Philippines ESCO Market Research survey, 2022

3 THE PHILIPPINES ESCO MARKET POTENTIAL

In its NEECP, The Philippines targeted to achieve 10,000 kilo-Tonne of oil equivalent (KToe) annual energy savings by 2040. The economy needs to reduce final energy demand by an aggregated 182 Mtoe between 2017 to 2040. To achieve this level of reduction in final energy demand by 2040, PE2 has estimated that the country needs US$ 243bn worth of investments (Ablaza et al., 2021).

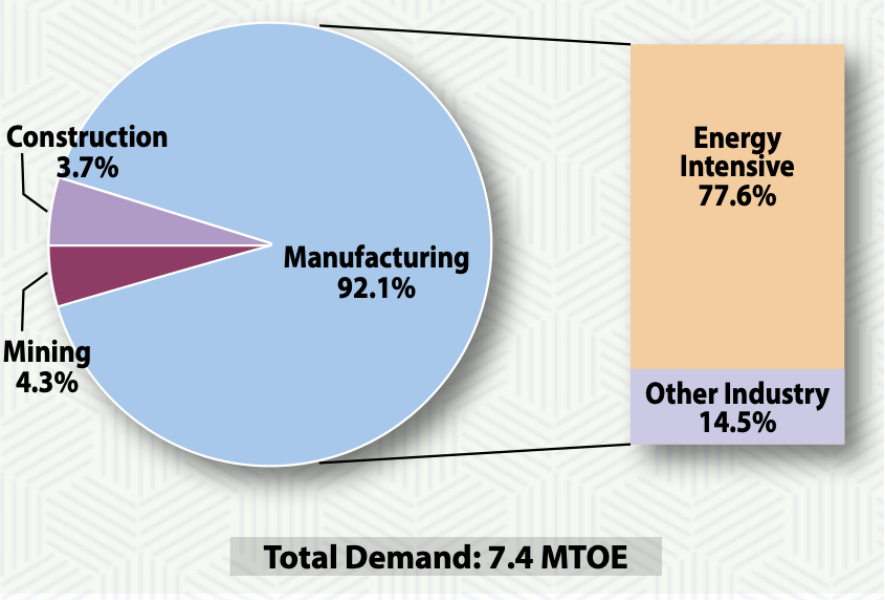
Survey results and expert interviews says that energy audit and consulting services will remain the core business activities of ESCOs and energy firms in the country, especially since the Energy Efficiency and Conservation Act of 2019 (RA 11285) requires designated establishments to perform energy benchmarking and savings strategies. Performance-based services will slowly gain traction in the next three years as designated establishments progressively establish energy benchmarks and implement their energy saving strategies.

The following market segments have the greatest potential for the Philippine ESCO market exploitation:

Industrial Sector

The manufacturing sector remains the market segment with the most significant potential for energy savings strategies. In 2019, the manufacturing subsector accounted for 92.1% of energy consumption in the industrial sector, and 77.6% of these are energy intensive, as shown in Figure 6. The industry accounts for 31% of total energy consumption among sectors for 2020.

Figure 6. Industrial Sector

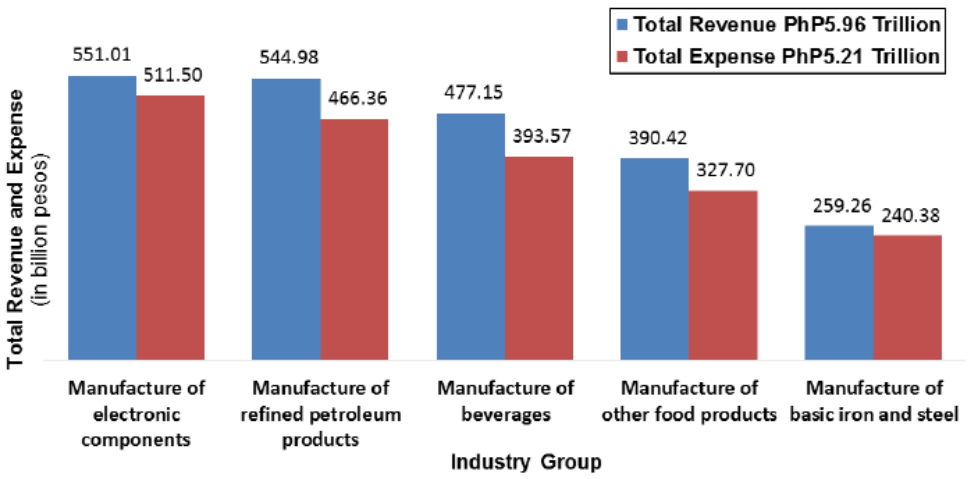


Source: Department of Energy, 2021

The largest segments within the Philippines' manufacturing industry are shown in Figure 7. Based on Philippine Statistics Authority (PSA) Reports, the Manufacturing Sector has 23,861 addressable establishments. Reports for the specific energy use of each subsector nationally are not available; however, overall manufacturing subsector operational expenses of US$ 89.25M were reported in 2019. These expenses are attributed to production and operational costs, which often include costs of energy use for production purposes, so is a proxy for market size of each of these subsectors.

As shown in Figure 7, electronic component manufacturers have the most operational expenditure reported for 2019. There is also massive potential for food and beverage manufacturing since these manufacturing subsectors rely heavily on cooling solutions.

Figure 7. Manufacturing Subsector Expenditures in 2019



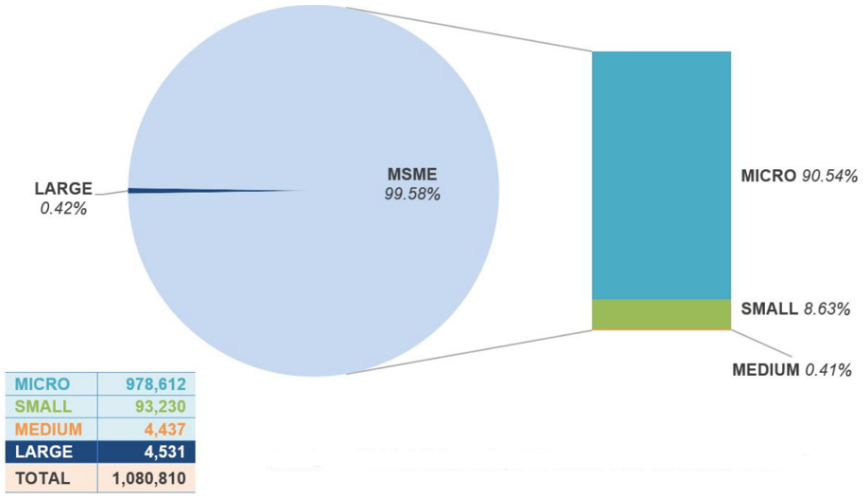
Source: Philippine Statistics Authority, 2022

Commercial Sector

The commercial sector is the next biggest potential for energy savings strategies. The commercial sector accounts for 23% of total energy consumption among sectors for 2020. The sector has an estimated YOY growth of 1.3%, affected by the past pandemic restrictions. However, it is projected to grow at a pace of 5.28% annually.

As of 2021, the Department of Trade and Industries (DTI) recorded 1,080,810 business enterprises operating in the country from Philippine Statistics Authority 2021 data. Of these, 91,076,279 (99.58%) are Micro, Small, and Medium Enterprises (MSMEs), and 4,531 (0.42%) are large enterprises. A full breakdown of enterprise statistics in the country is shown in Figure 8.

Figure 8. Number of Establishments in the Philippines



Source: Philippine Statistics Authority List of Establishments, 2021

The overwhelming presence of micro-enterprises in the commercial sector creates difficulties for EE project implementation using ESCO models. Although there is a considerable addressable EE potential for micro and small enterprises, it is often composed of sari-sari stores (sundry neighborhood stores) and single-proprietorship enterprises. These establishments do not merit fiscal incentives from the Board of Investments (BOI), which requires EE projects to be able to meet the minimum 15% project boundary and a minimum Project Investment Cost of US$ 176,300 (BOI, 2022). They are better targeted along with public and residential awareness

campaigns, compared to ESCO sector project design and financing. Therefore, it is more beneficial for ESCOs to focus on medium to large commercial establishments, which often comprise specialty shops and very large shopping malls, the latter of which is a considerable part of local culture in the Philippines commercial landscape.

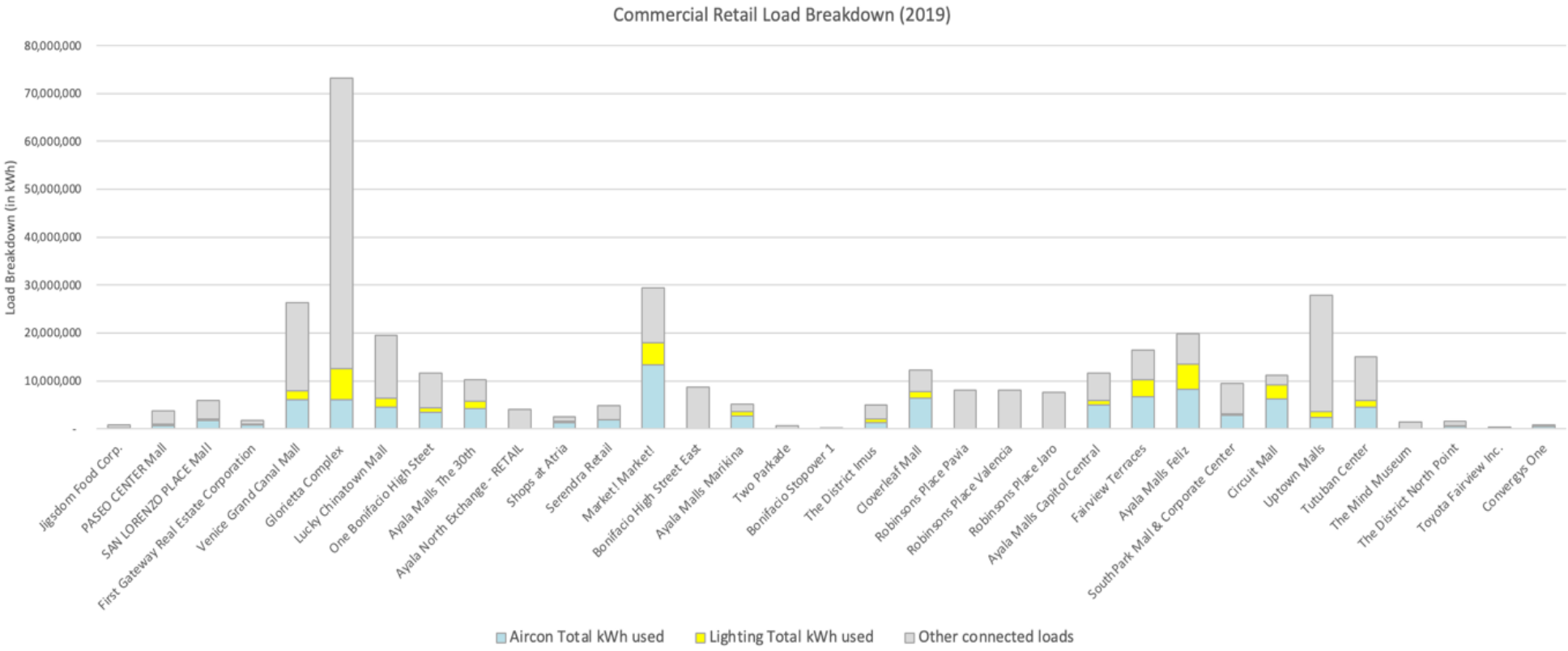
Shopping malls in the Philippines are often complex multi-use spaces with dining, relaxation, entertainment, and leisure amenities. Malls often are touted as privatized public spaces in the country, serving as an avenue for escapism from humid tropical weather for most Filipinos. Hence, these establishments feature cooling technologies and many dining features for consumers.

From Meralco's Commercial Profiling in 2022, cooking loads and HVAC have the highest potential for energy-saving strategies in malls, as shown in Figure 9. Focusing on efficient cooling and cooking technologies in these establishments is highly recommended.

Moreover, office buildings remain another potential target for the ESCO sector, with a supply of 1.48 million square meters (Statista Research Department, 2021). The service sector in the country is often dominated by Information Technology–Business Process Outsourcing (IT-BPO), with many establishments operating 24 hours a day. The IT-BPO industry is one of the country's most dynamic and fastest-growing industries, which has prompted the government to highlight it as a priority development sector.

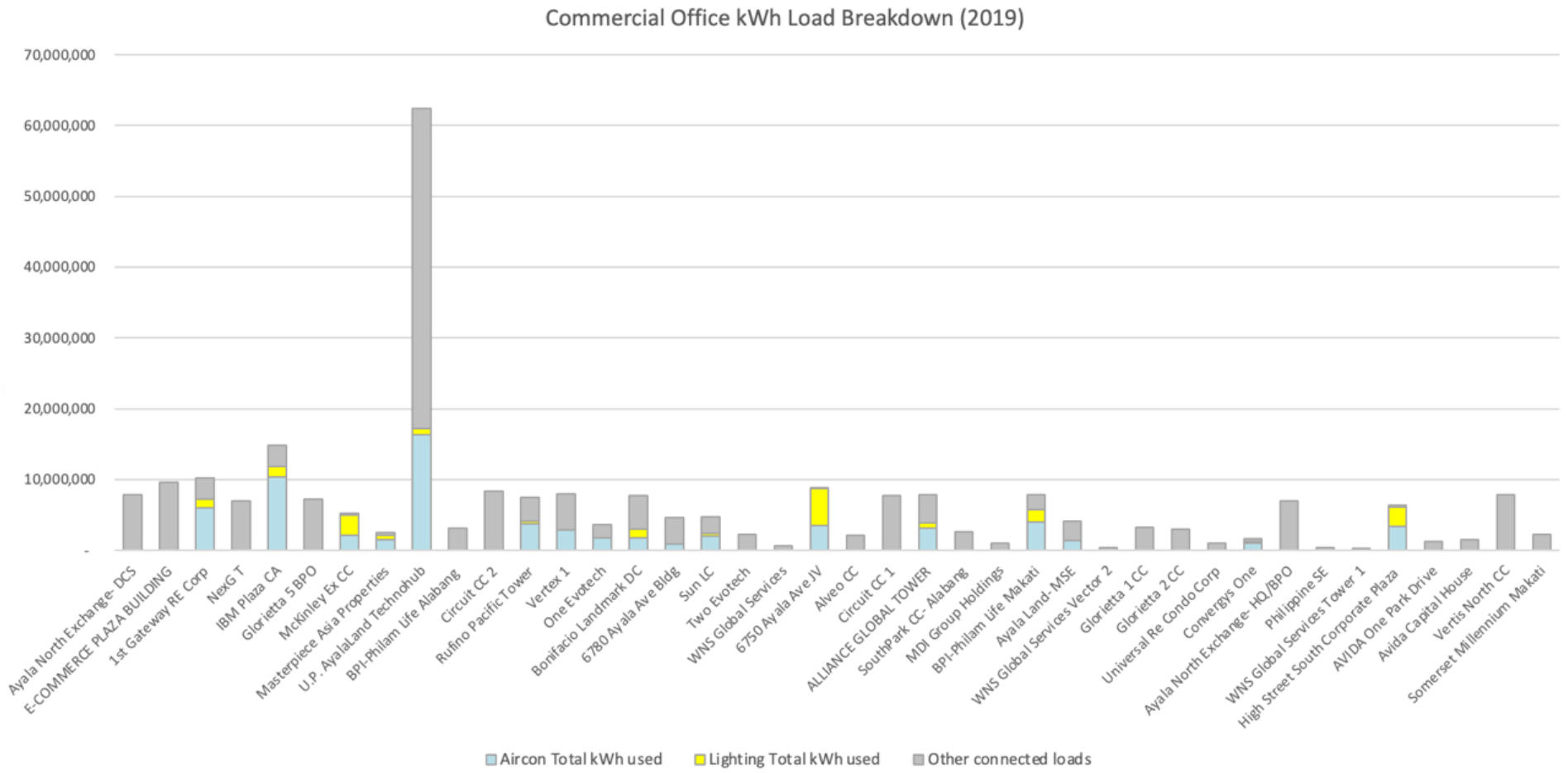
Figure 10 shows the Metro Manila commercial office load breakdown from the Meralco survey done in 2019. Several office buildings are complex spaces with dining features. Hence, the potential for saving strategies will be on efficient space and server cooling technologies, and office equipment.

Figure 9. Commercial Retail Sector Load Breakdown as of 2019



Source: Meralco, 2022

Figure 10. Commercial Office Sector Load Breakdown as of 2019



Source: Meralco, 2022

Government Sector

The national and local government sector also has great potential for energy savings strategies. Although the sector's energy consumption is eclipsed by the residential, industrial, and commercial sectors, government mandates and initiatives will drive the demand for energy efficiency services.

RA 11285 and departmental mandates obliged government agencies at national and local levels to develop energy savings programs. The Government Energy Management Program (GEMP) will also drive the demand for energy efficiency technologies since government agencies are mandated to reduce the monthly cost of electricity and fuel by 10%.

There are currently 1,139 government offices, of which 15.31% have designated their EEC officers and EEC Focal persons. A full breakdown of government office classification is shown in Table 3.

Table 3. Classification of Government Offices and Compliance to EEC Officer designation as of 2021

Classification	No. of Offices	% of Compliance for designating EEC officers
National Government Agencies	1,212	36.14%
Government-owned and Controlled Corporations	1,133	47.75%
State Universities and Colleges (SUCs)	113	13.27%
Local Government Units (LGU)	1,717	2.62%
Constitutional Commission	672	14.73%
Judiciary Branch	2,592	0.04%
Legislative Branch	2	0%

Table 3 suggests that addressable government offices for energy efficiency will lean towards LGUs, Judiciary branches, National Government Agencies, and Government-owned and Controlled Corporations. These offices are the best candidates for system retrofitting for efficient lighting and cooling systems. With IAEECC Resolution No. 5, government offices can procure ESCO-led government projects.

4 CONCLUSIONS

This study provides updated estimates of the ESCO industry and market segment revenues and priority potential in markets served by the ESCO industry in the Philippines.

The Philippines ESCO industry comprises 37 registered ESCOs, and 6 are identified as Certified ESCO by the DOE. Energy service companies in the Philippines offer more than one business activity. Predominant business activity includes management, consulting, data analytics, solutions, and technology installation. With the recent DOE mandate directing all designated establishments to submit annual energy reports, energy audit activities exploded in the past years.

Technology solutions, installations, and energy audits posted the most considerable revenue stream for ESCOs in the country at 83% of their total revenue. For 2021 alone, ESCOs were able to implement a total of US$ 10.78 million of EE projects translating to 7.65 million kWh of energy savings. Although financial performance is mandatory only for Certified ESCOs, the aggregated working capital of Certified ESCOs increased to 48.7% from 2019 to 2020. By 2040, it is estimated that the ESCO industry in the country will be worth US$ 160 billion industry with 'shared savings' as the dominant ESCO business model.

The industrial sector is ESCO's most extensive customer base and contributes 73% of all ESCO revenues. The sector also has the highest potential for ESCO activities because of the country's large manufacturing subsector at 92.1% of the entire industrial sector, of which 77.6% are energy intensive and addressable 23,861 establishments. Because of its heavy reliance on cooling solutions, there are considerable energy-saving opportunities in electronic manufacturing and food and beverages.

The commercial sector is the next most significant potential for energy-saving strategies. ESCOs would benefit from focusing on medium and large commercial establishments, whereas shopping malls have a massive opportunity for energy-saving solutions because of their complex multi-use spaces. Focusing on efficient cooling and cooking in these establishments is highly recommended. The established IT-BPO industry in the Philippines is another target for the ESCO sector, where many establishments operate 24 hours a day.

Government mandates and initiatives will drive the demand for energy efficiency services in the government sector. The law obliges government agencies at national and local levels to develop energy savings programs. With the Government Energy Management Program, system retrofitting and efficient lighting and cooling systems will be the priority energy efficiency programs for LGUs, Judiciary branches, and National Government Agencies.

It is recommended to continue to explore and update other timely issues that will affect the evolution of this study.

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Appendix. List of Department of Energy-accredited ESCOs in the Philippines (June 2022)

No.	Classification	Company Name	Company Address	Website	Contact Person	Position	Telephone No	Email Address
1	Class A	Energy Integrated Systems and Support Services Inc	Unit 609 #50 Semicon Bldg., Marcos Highway Brgy. Dela Paz, Pasig City.	https://www.energyiserve.com/	Arnel Moreno	Technical Consultant	7369-7062	arnel.moreno@energyiserve.com info@energyiserve.com
2	Class C	Tri-Sky Link Sales and Services, Inc.	7th Floor One Joroma Place No. 45 Congressional Avenue, Quezon City 1106	www.triskylink.com/	Jake G. Tual/ Harold G. Tual	Executive Director	0917 328 6495/ 09173720161	jaketual@yahoo.com hgtual@yahoo.com info@trickylink.com
3	Class A	Santos Knight Frank, Inc.	10th Floor National Life Insure Bldg., Ayala Avenue Makati City 1226 Philippines	www.Santos.KnightFrank.ph	Gerald Malit	Energy Manager	09059991625	Gerald.Malit@santos.knightfrank.ph
4	Class A	Engie Services (Philippines)	19th Floor IBP Tower Jade Drive, Ortigas Center, Brgy. San Antonio 1605, Pasig City	https://www.engie-sea.com/	Mycel Lava-Olesco Paulo Palencia Fortunato Davantes	Business Development & External Relations Officer Business Development Manager Technical Director	+63 8255 2912 – 13 / 0999 228 4782	Mycel.Lava@engie.com Paulo.Palencia@engie.com Fortunato.Davantes@engie.com
5	Class A	Design Science Inc.	BT&T Center, 20 E. Rodriguez Jr. Avenue, Bagumbayan, Quezon City	www.designscience.biz/index.html	Mohamad Tambak	Safety Engineer	911-5386	daonuvuongchinhhang.vn@gmail.com
6	Class A	Meralco Energy, Inc.	17th & 18th Floor, Marco Polo, Ortigas, Manila, Sapphire Road, Barangay San Antonio, Ortigas Center, Pasig City	www.mserv.com.ph	Cecile Marvilla	Vice President - Energy Efficiency Services Group	+632 8672 8100	cgmarvilla@meralcoenergy.com/ info@meralcoenergy.com
7	Class A	Tekno Centrix Corporation	Unit 407 Page 1 Bldg., 1215 Acacia Ave., MBP, Muntinlupa City	www.teknocentrix.com	Willy Toledo	President	8865-1150 / 0998-5480058	info@teknocentrix.com socbotictic@yahoo.com
8	Class A	Wisenergy, Inc.	Unit D, One Oasis Bldg., Jackielouville Ave. Corner President's Ave., Parañaque	www.wisenergyph.com/	Adolfo L. Mirasol, PEE	President	7799 8493	wisenergy.inc@gmail.com
9	Class A	Concepcion Carrier Air Conditioning Company – Alstra Division	Km. 20 East Service Road, SSH, Alabang, Muntinlupa City	www.alstra.com	Paul Jeremiah De Leon Nino Falamig	Audit Lead Head of AdvanTEC Team	09989683920 09992202807	paul.deleon@alstra.com nino.falamig@alstra.com
10	Class A	Beyond Energy Solutions & Techonology, Inc.	2282, Leon Guinto St., Malate, Manila City	https://www.primergrp.com/industrial/BEST	Mr. Bienvenido Gonzales	General Manager	+63(2) 5 303 1234	bienvenido.gonzales@primergrp.com
11	Certified ESCO	Filairco Technical Services Co., Inc.	JJM Bldg 5 Ninoy Aquino Avenue Barangay San Dionisio Parañaque City		Norman Villanueva	Country General Manager	(632) 8820 3097	MANNYVR@trane.com
12	Certified ESCO	Total Renewable Energy Efficiency Solutions Corp.	Unit A, 6th Floor, Glass Tower Bldg., 115, Palanca St., Makati City, Metro Manila	https://trees-kaltimex.com.ph/#management	Mr. Oscar A. Torralba	President & CEO	+632 8856 2010; +632 8856 1996	trees@trees-kaltimex.com.ph

No.	Classification	Company Name	Company Address	Website	Contact Person	Position	Telephone No	Email Address
13	Certified ESCO	Eascorp Powerplant Services, Inc.	Unit 804 Cityland Shaw Tower, Mandaluyong City	www.eascorp.com.ph	Reynaldo D. Legada / Jasmine Almario	President / Business Development	8631-5726 +63 9982690389 / +63 9178874545	eascorp@katumbal.com
14	Certified ESCO	EconoServ Solutions International, Inc.	10F One Global Place corner 5th St and 25th St BGC Taguig City	www.econoservsoln.com	Engr. Raymond A. Marquez	Managing Director	0279786700 / 0917 535 2491	raymarquez@econoservsoln.com
15	Certified ESCO	Upgrade Energy Philippines, Inc.	Unit 318B LRI Business Plaza, 210 N. Garcia, Bel-Air, Makati City	www.upgrade-energy.com	Ruth Yu-Owen	President And CEO	(02) 851-7660 (02) 403-6389	aiko@upgrade-energy.com
16	Certified ESCO	WESTCO Electrical & Equipment Corp.	8F, 68 Kalayaan VCP Building, Kalayaan Avenue,Teachers' Village West, Diliman, Q.C.	www.westco-phil.com	Engr. Rodolfo R. Penalosa	President	(632) 8365 0068	roddy.penalosa@westco-phil.com
17	Certified ESCO	OSP-ESCO International, Inc.	4A Malaya St. Brgy. Malanday, Marikina City		Jedrick C. De Jesus	Vice President	8234-0045	osp_escoacctng@yahoo.com.ph
18	Registered ESCO	Alpha Centauri Electrical Services	A12-H Kingswood Arcade, Vito Cruz Extension, Makati City	www.centaurielectrical.com	Engr. Erwin U. Que	President	09173021394	info@centaurielectrical.com
19	Registered ESCO	Exquis Electrical Services & Supplies Company	106 Eulogio Rodriguez Jr. Ave. Libos, Ugong Norte, Quezon City	https://exquisengineering.com/	Nazario Salvador Ang/Christian Marc Tabios	Business Development Manager/Technical Manager	(02) 7904 0041 / 09178299441	sales@exquisengineering.com allan.ang@exquisengineering.com
20	Registered ESCO	First Gen Energy Solutions	6F Rockwell Business Center Tower 3, Ortigas Avenue, Pasig City 1604, Philippines	www.firstgen.com.ph	Niccolo Miguel Rosadia Gian Karla Canales-Gutierrez	Power Economics Analyst / Power Economics - IRA Manager	(632) 3449-6400	rcoafges@firstgen.com.ph power_economics@firstgen.com.ph
21	Registered ESCO	EP Solutions, Inc.	14 Jacqueline St Pleasantview Subdivision Tandang Sora Quezon City	www.ep2000.com	Evangeline San Andres	President	(02) 7752 4712	epsolutionsphil@ep200.com
22	Registered ESCO	Enercon Systems International Philippines Corp.	Unit UG10 Cityland 10 Tower 2 154 HV Dela Costa St. Cor 6815 Ayala Ave, Salcedo Village Makati City	https://bit.ly/3ASLVuZ	Sonny Magana	Engineering Head	02-808-9380	dexter@enercon-engr.com.sg
23	Registered ESCO	Buskowitz Finance, Inc.	3rd floor, Dominion Building, 833 A. Arnaiz Avenue, Makati City	https://www.buskowitz.com/	Allan Gumiran	Lead Auditor	+63288010074	allan.gumiran@buskowitz.com
24	Registered ESCO	Greenergy Development Corporation	Oro Chamber Business Development Center, Macapagal Drive, Carmen, Cagayan de Oro City	http://greenergydev.net/	Andrew Donggay	General Manager	(088) 881 5250	info@greenergydev.net
25	Registered ESCO	Renesons Energy Polillo, Inc.	Sitio Bigyan, Brgy. Sibulan, Polillo, Quezon		Gerwyn P. See	President and CEO	+632 8819 6174	gps@maseholdings.com
26	Registered ESCO	Mase Power Corporation	Treston Building 32nd St. cor. C5 Road, Bonifacio Global City, Taguig City		Gerwyn P. See	President and CEO	+632 8819 6174	gps@maseholdings.com
27	Registered ESCO	Stratcon Power Services Philippines, Inc.	7F Finman Centre, 131 Tordesillas Makati	www.stratcon.ph	Colin Steley	Chief Sustainability Officer	09499958633 / +63 288381958	colin.steley@stratcon.asia

No.	Classification	Company Name	Company Address	Website	Contact Person	Position	Telephone No	Email Address
28	Registered ESCO	Signify Philippines, Inc.	10th Floor Sunlife Centre, 5th Avenue, corner Rizal Drive, Bonifacio Global City, Taguig City	https://www.signify.com/en-ph	Raghuraman Chandrasekhar	Commercial Leader – CSI	(632) 87795900	raghuraman.c@signify.com
29	Registered ESCO	PNOC-Renewables Corporation	PNOC Bldg 5, Energy Center Rizal Drive, Bonifacio Global City, Taguig City	www.pnoc-rc.com.ph	Pedro L. Lite, Jr	VP-Operations	(02)840-3079	wfdalipe@pnoc-rc.com.ph
30	Registered ESCO	Navitas Energy Services, Inc.	29/F & Penthouse World Plaza Bldg., 5th Avenue, Fort Bonifacio, City of Taguig	www.navitas-ph.com	John V. Alcordo	Chairman	(632) 8511 5710	navitas@navitas-ph.com
31	Registered ESCO	TS-i Energy Solutions Corp.	5th F Sycamore Arcs 1, Buencamino St. Alabang-Zapote Rd., Muntinlupa City	www.tsi-esco.com	Rae Shelle C. Baldeo	Asst. Vice President	+632-771-0541	info@tsi-esco.com
32	Registered ESCO	Accelence Consulting, Inc.	Sofia Commercial Center, Brgy. Cutcot, Pulilan, Bulacan		Ronaldo G. Rillon	COO	09209287095 / 09231325773	ron.rillon.accelence@gmail.com
33	Registered ESCO	Thermal Solutions, Inc.	5th Flr. Sycamore Arcs 1 Bldg. Buencamino St. Alabang Zapote Rd. Cupang, Muntinlupa City		Tito G. Soledad	President	8771-0541 / 8771-0542	titosoledad@appliedthermal.ph
34	Registered	Pi Energy Inc.	6/F Floor, Rockwell Business Center Tower 3, Ortigas Avenue, Pasig		Ariel S. Villasenor	Vice President	(02) 3449 6132	customer.support@pienergy.com.ph
35	Registered	CEMKS UK PHILS. LTD. CORP.	Level 6, Ayala Triangle Garden Tower 2, Paseo De Roxas Cor. Makati Avenue, Makati City	https://www.cems.co	Herman Robles	Certified Energy Manager/Energy Auditor	09171077181	herman.robles@cems.co
36	Registered	Vega Energy Services	Level 24, Philippine Stock Exchange Tower, One Bonifacio High Street 5th Ave. cor. 28th St. BGC, Taguig	https://vega.ph	William Alcantara	Managing Director	09175200593	william.alcantara@vega.ph