ENERGY AUDITOR
PHILIPPINES

ENERGY AUDIT OVERVIEW

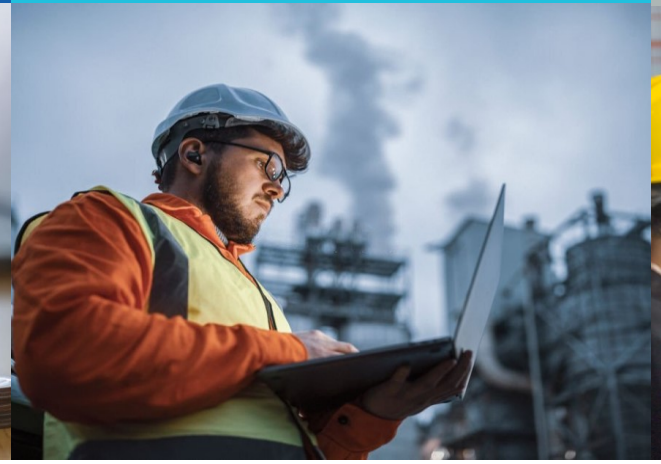
RA 11825 EEC Regulation and Energy Management Awareness - YEAR 2024

INTRODUCTION

ENERGY AUDIT OVERVIEW

WHAT IS ENERGY AUDIT	BENEFITS / OBJECTIVES	TYPES OF ENERGY AUDIT	EnMS TOOLKIT






“You can't improve what you don't measure.”

WHAT IS ENERGY AUDIT?

ENERGY AUDIT OVERVIEW

An ***energy audit*** is basically a technique used to establish the patterns of energy use, identifying how and where losses are occurring and suggest measures for enhancing energy efficiency with the economic implications.

The *overall objective of the energy audit is to review the existing energy consumption* practices in the industry, identify key potential energy efficiency and conservation areas and provide detailed recommendations on **energy optimization** and **cost savings.**

An energy audit is carried out for energy accounting of ***electricity, fuels, steam, heat, compressed air and other similar media*** leading to suggestions on measures for energy efficiency improvement.

BENEFITS

BENEFITS

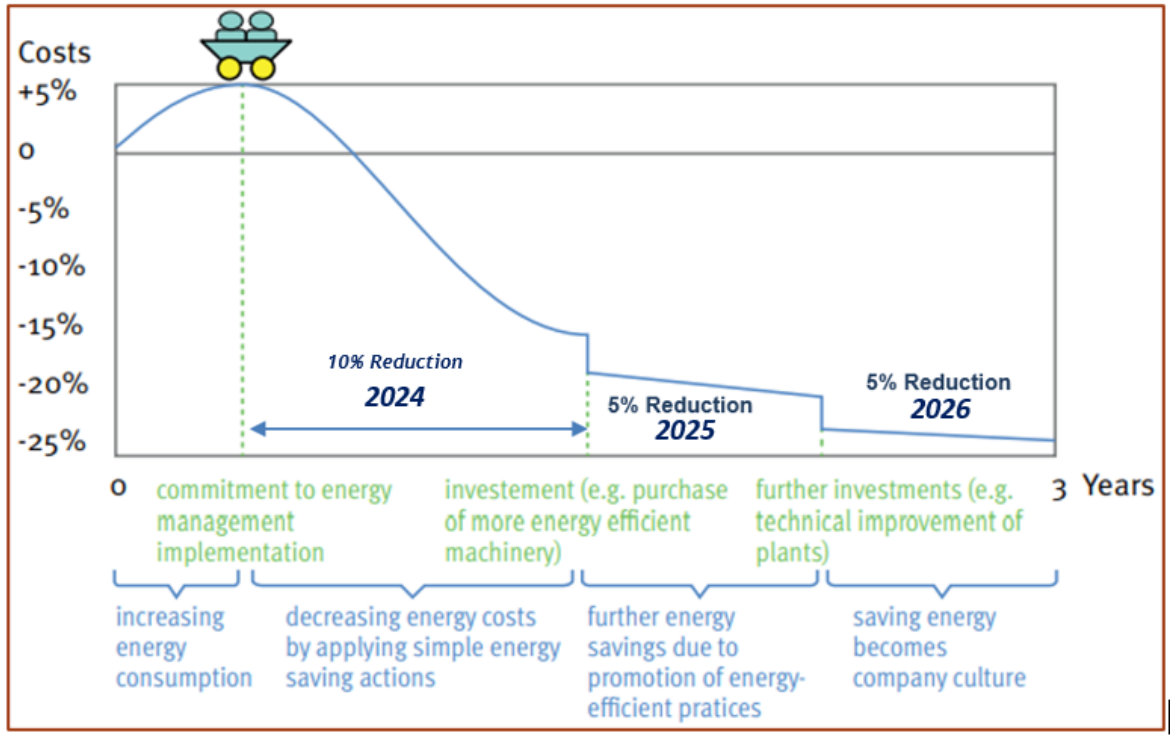
ENERGY AUDIT OVERVIEW

The **energy costs** are soaring high and if you won't do anything about it then your business and budget will mostly likely be at risk. ***How can an energy audit help in this kind of situation?*** An investigation will be conducted and determine how you use energy as well as your consumption.

Some key benefits in conducting energy audit:

1. Identifying energy-saving opportunities
2. Improving energy efficiency
3. Identifying safety issues
4. Meeting regulatory requirements

(**Republic Act No. 11285 Energy Efficiency and Conservation Act**)



BENEFITS

DOE REQUIREMENTS

ENERGY AUDIT OVERVIEW

Republic Act No. 11285 Energy Efficiency and Conservation Act

Section 32. Fines and Penalties.— The DOE is empowered to impose fines and penalties for any violation of the provisions of this Act, its IRR and other related issuances. The fines and penalties shall range from a minimum of Ten thousand pesos (₱10,000.00) to a maximum of One million pesos (₱1,000,000.00):

Obligations of Designated Establishments (DE):

1. To submit 3 reports via online using DOE DE portal

a. **AEECR – Annual Energy Efficiency and Conservation Report**

b. **AEUR – Annual Energy Utilization Report** by every ***April 15th of the year;***

c. ***Energy audit once every three (3) years,*** by engaging either a ***certified energy auditor*** or an ***accredited ESCO (***Energy Service Company)

BENEFITS

NEW TYPES OF DESIGNATED ESTABLISHMENTS (DE)

ENERGY AUDIT OVERVIEW

NEW DE THRESHOLD AS OF JANUARY 2024

Classification of Designated Establishments			Dept. Circular No. DC2023-12-0036	Dept. Circular No. DC2023-12-0037	Dept. Circular No. DC2023-12-0038
			Commercial	**Industrial**	**Transport**
	Other Designated Establishment	**NONE**	50,000 kWh equivalent or below	50,000 kWh equivalent or below	50,000 kWh equivalent or below
	Type 1 Designated Establishment	**Certified Energy Manager (CEM)**	50,001 to 500,000 kWh equivalent	50,001 to **1,000,000 kWh** equivalent	50,001 to 500,000 kWh equivalent
	Type 2 Designated Establishment	**Certified Energy Manager (CEM)**	500,001 to 4,000,000 kWh equivalent	1,000,001 to **8,000,000 kWh** equivalent	500,001 to 4,000,000 kWh equivalent
	Type 3 Designated Establishment	**Certified Energy Manager (CEM)**	4,000,001 kWh equivalent or more	**8,000,000 kWh** equivalent or more	4,000,001 kWh equivalent or more

ENERGY AUDIT REPORT

Conditions	DE Type 3	DE Type 2	DE Type 1	Other DEs
Compliant with the submission of AEECR and AEUR and **with Level 1** Energy Audit Report submitted to the DE Online Submission Portal during the previous compliance period	**Level 1** Energy Audit on the next submission then Level 2 Energy Audit on the succeeding compliances		**Level 1** Energy Audit until further guidance by the DOE	Encouraged, but not required, to conduct a Level 1 Energy Audit
Compliant with the submission of AEECR and AEUR and **with Level 2** Energy Audit Report submitted to the DE Online Submission Portal during the previous compliance period	**Level 2** Energy Audit on the next submission and every succeeding compliance		**Level 1** Energy Audit until further guidance by the DOE	Encouraged, but not required, to conduct a Level 1 Energy Audit
Compliant with the submission of AEECR and AEUR **and with NO** Energy Audit Report submitted to the DE Online Submission Portal during the previous compliance period	**Level 2** Energy Audit on the next submission and every succeeding compliance		**Level 1** Energy Audit until further guidance by the DOE	Encouraged, but not required, to conduct a Level 1 Energy Audit
Newly covered entities (those that are consuming less than 100,000 kWh equivalent per year	-		**Level 1** Energy Audit until further guidance by the DOE	Encouraged, but not required, to conduct a Level 1 Energy Audit
Not compliant with EEC Act during the previous compliance period	**Level 2** Energy Audit and every succeeding compliance		**Level 1** Energy Audit until further guidance by the DOE	Encouraged, but not required, to conduct a Level 1 Energy Audit

FINES AND PENALTIES AS OF JANUARY 2024

Violation	PHP 100,000.00	PHP 500,000.00	PHP 1,000,000.00
Failure to submit their AEECR and AEUR to DOE	1st Offense	2nd Offense	3rd Offense with endorsement to Local Government Units for Administrative Sanctions
Forge, alter, counterfeit, or falsely make any submission for the purpose of compliance	1st Offense	2nd Offense	3rd Offense with endorsement to Local Government Units for Administrative Sanctions
Failure to comply with the obligations under Section 66 of the EEC-IRR	1st Offense	2nd Offense	3rd Offense with endorsement to Local Government Units for Administrative Sanctions
Failure to appoint the proper EE Practitioners	1st Offense	2nd Offense	3rd Offense with endorsement to Local Government Units for Administrative Sanctions
Failure to submit to monitoring, verification, enforcement, and post-evaluation	1st Offense	2nd Offense	3rd Offense with endorsement to Local Government Units for Administrative Sanctions

BENEFITS

CRIMINAL LIABILITY

ENERGY AUDIT OVERVIEW

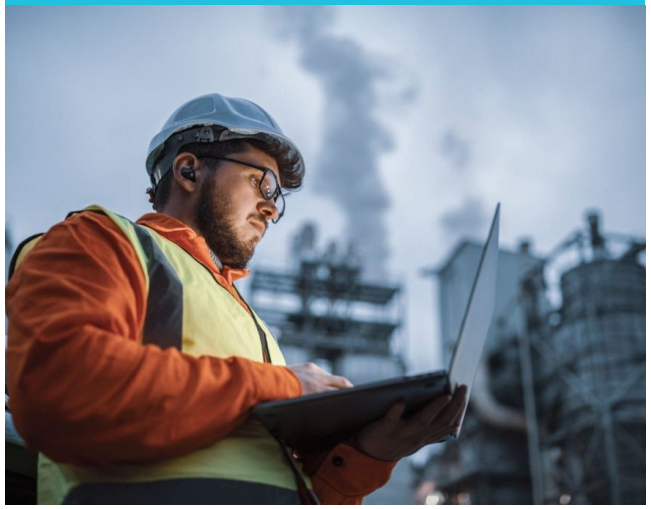
Republic Act No. 11285 Energy Efficiency and Conservation Act

Section 33. *Criminal Liability.*— The responsible officers and employees of any establishment or organization who willfully commits any of the prohibited acts under Section 30 of this Act shall, upon conviction, suffer the penalty of imprisonment of one (1) year to five (5) years, or a fine ranging from a minimum of One hundred thousand pesos (₱100,000.00) to One hundred million pesos (₱100,000,000.00) or twice the amount of costs avoided for noncompliance, whichever is higher, or both, upon the discretion of the court.

Any person who willfully aids or abets the commission of the prohibited acts under Section 30 of this Act, or who causes the commission of such acts by another, shall be liable in the same manner as the principal.

In cases of association, partnership or corporation, the penalty shall be imposed on the partner, president, chief operating officer, chief executive officer, director, or officer responsible for the violation.

TYPES OF ENERGY AUDIT



TYPES OF ENERGY AUDIT

ENERGY AUDIT OVERVIEW

- The **ASHRAE** *(American Society of Heating, Refrigeration and Air Conditioning Engineers)* guidelines is use as reference for the **Audit Process**.

Each level of energy audit has different level of activities in determining the possible ***energy savings.***

Figure 2: Audit Process (ASHRAE Guidelines)

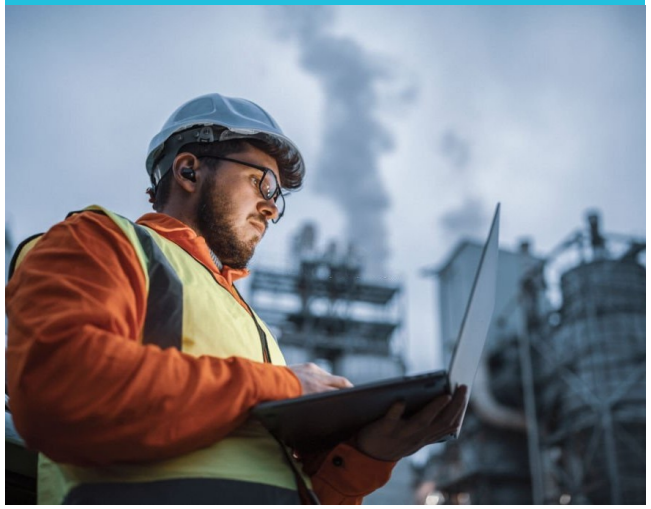
Preliminary Energy Use Analysis	Analysis of Historic Energy Consumption & Cost – Energy Utilization Index
Level I: Walk-Through Analysis	Survey of building to determine low-cost/no-cost measures and capital improvements.
Level II: Energy Survey & Analysis	Detailed building survey, energy analysis and breakdown, capital improvements, savings, and pay-back period.
Level III: Detailed Analysis of Capital Intensive-Modifications	Focus on capital-intensive projects identified in Level II and detailed engineering-works and data gathering.

**Increasing intensity of man-power, analysis, resources, and investment is required by going from a Level I to Level III Energy Audit.*

- The first step in **Energy Audit** is ***analyzing energy consumption patterns*** – and most importantly, determining where improvements can be made.

The **Energy Audit** process can be summarized on a scale of increasing intensity of man-power, analysis, resources, and investment.

TYPES OF ENERGY AUDIT



THE ENERGY AUDIT REPORT (LEVEL 1)

ENERGY AUDIT OVERVIEW

I. Executive Summary
II. Building/Facility Description
III. Energy Audit Objectives, Scope and Boundaries
IV. Energy Resource Analysis, Use Breakdown and Energy Balance
V. Energy Baseline, Use Intensity and Performance Benchmark
VI. Select Significant Energy User (SEUs) Analysis and Assessment
VII. Potential Improvement and Savings Opportunities
VIII. Energy Management System and Program Assessment
IX. Regulatory Compliance, Strategic Issues and Business Risk
X. Other Opportunities

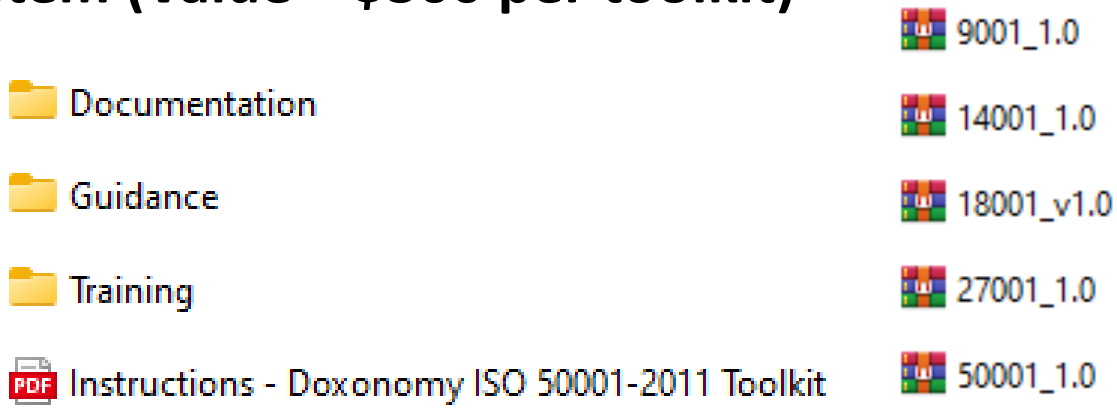
ESCO COMPANY

ADDED VALUE TO CLIENTS

ENERGY AUDIT OVERVIEW

1. **Guide the client for their first-time submission of reportorial requirements from DOE.**
   A. **AEECR – Annual Energy Efficiency and Conservation Report**
   B. **AEUR – Annual Energy Utilization Report**
   C. **Energy Audit Level 1 and Level 2**

2. **Giveaway of ISO EnMS Toolkit to help them to get started in implementing the ISO 50001 EnMS Energy Management System (Value = $300 per toolkit)**



DOE Certified Energy Auditor:

Engr. Jhonsen Sales, ECE, CEM, CEA, CECO

- **DOE Certified Energy Auditor (DOE-CEA-230200200)**
- **AEMAS Certified Energy Manager (MN: R-221222-0257)**
- ASEAN Energy Management Scheme (AEMAS CEM)
- Technical Consultant, S.Y. Industrial Corp. (CESS Technology)
- Program Consultant, Meralco Power Academy
- **Electronics Engineer (RN. 0037652)**
- Formerly Quality Management and Instrumentation Engineer at Philippine Foremost Milling Corporation (PFMC)
- Former Design Engineer at Emerson Network Power (5 years) and Flextronix Pte Ltd, Singapore (2.5 years)
- Member of Philippine Institute of Energy Management Professionals, Inc. (PIEMPI)
- 13+ years of experience in the instrumentation, control, quality management and energy audit

Sample Energy Audit Report = 70+pages

This

Certificate

is awarded to

JHONSEN D. SALES

as an

ENERGY AUDITOR

DOE-CEA-230200200

after having been assessed and evaluated in accordance to Section 9 of Department Circular No. DC2022-03-0006 or the Energy Auditor Certification Process.

By virtue of this Certificate, the CEA shall comply with all obligations provided under Section 6 of DC2021-01-0001 or the Certification Guidelines for CECO, CEM, and EA.

This Certificate is issued this 13 February 2023 and is valid until 12 February 2026 subject to continuing conformity with the Criteria and Conditions of the Energy Auditor Certification Process.

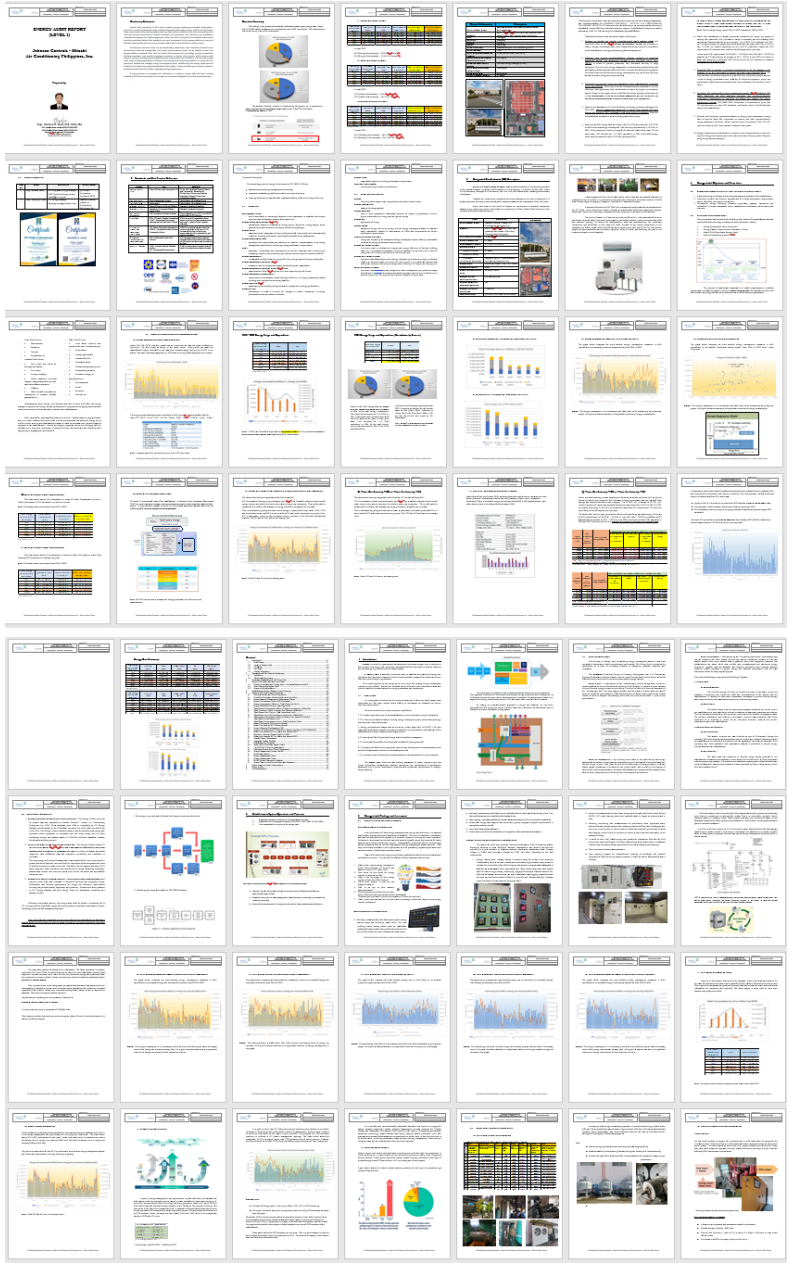
Signed at Taguig City, Metro Manila.

PATRICK T. AQUINO, CESO III
Director IV
Energy Utilization Management Bureau

LIST OF CLIENTS

LIST OF SOME OF OUR AUDITED CLIENTS:

1. Philippine Resins Industries, Inc. (PNOC Industrial Park)
2. Mitsumi Philippines Inc. (Mariveles, Bataan)
3. Yong Shin Precision Interphils., Inc.
4. SMK Electronics (Phils.) Corporation
5. Makati Medical Center (MMC)
6. Johnson Controls - Hitachi Air Conditioning Philippines, Inc. (Subic)
7. Petron Corporation - JOCASP (NAIA Terminal 2)
8. Igloo Supply Chain Philippines, Inc (Cold Storage)



THANK YOU