



MERALCO
***M*SERV**

GEARING UP FOR
ENERGY EFFICIENCY
& CONSERVATION



The Energy Efficiency & Conservation (EE&C) Act or R.A. 11285 has been approved and the first submission is due by April 15, 2021.

BREAKING NEWS

What's the latest news in Energy Efficiency?



Objectives of the EE&C Law

Institutionalize Energy Efficiency and Conservation

Formulate, develop, and implement **energy efficiency and conservation plans and programs**

Secure **sufficiency and stability of energy** supply in the country

Minimize the effects of global **fuel price fluctuations** in the country

Promote the development and utilization of efficient renewable **energy technologies**

Protect the environment in support of the economic and social development goals of the country

Features of the EE&C Law

- 1 Compulsory Energy Management Professionals
- 2 Energy Performance Obligations for the Public and Private Sector
- 3 Energy Audit Requirement for Designated Establishments
- 4 Engineering Compliance with the Guidelines on Energy Conserving Design (GECD) 2008
- 5 Energy Labelling Program for Products and Equipment based on Energy Performance
- 6 Load Side Management Program
- 7 Fiscal Incentives for Energy Efficiency Projects

1 Compulsory Energy Management Professionals

PROFESSIONAL CERTIFICATION:

Certified Energy Conservation Officer (CECO)

- Certification guidelines are to be developed by TESDA and DOE
- Employed by a Type 1 Designated Establishment to monitor energy efficiency

Certified Energy Manager (CEM)

- Certification guideline to be developed by CHED, in coordination with TESDA and DOE
- Employed by a Type 2 Designated Establishment to monitor energy efficiency

QUALIFICATIONS:

- ✓ Two (2) years of experience in energy management
- ✓ Must pass the certification and assessment of TESDA

- ✓ Licensed engineer or college graduate with three (3) years of experience on energy management
- ✓ Must pass the certification and assessment of the DOE



RESPONSIBILITIES OF PROFESSIONALS:

ESCO

Technical & Managerial competencies

Energy audits

Design

Financing

Construction

Operations & Maintenance

Verification of savings

CECO / CEM

Manage the energy consumption

Administer energy management programs

Other responsibilities under EEC Act, EEC-IRR

Public Sector – Government Energy Management Program (GEMP)

- All government buildings, departments, GOCCs, state colleges / universities and hospitals must comply with the GEMP (AO 110)
- Appointment of Energy Efficiency and Conservation Officer (EECO)
- Financial arrangements: Government Procurement, BOT, NEDA JV

Private Sector

- Integrate an Energy Management Policy based on ISO 50001 or any similar framework
- Meet an annual energy consumption reduction target
- Submit annual reports energy consumption reports
- Employ a CECO or CEM



Required Audits by ESCOs

- Determine Energy Efficiency performance and compliance
- Type 1 & 2 Designated Establishments have to submit to regular Energy Audits
- **Energy Audits** must be performed by ESCOs or other DOE certified Auditors **every 3 years**

GECD Standard Inclusions:

Lighting

- General Requirements of Energy efficient Lighting Design

Electric Power and Distribution

- Electrical Equipment
- Power Distribution

Steam and Hotwater Systems

- System Design and Sizing
- Minimum Equipment Efficiency
- Hot water Temperature
- Controls
- Piping Insulation
- Waste Heat Recovery and Utilization

Air Conditioning and Ventilating System

- Load Calculation
- System Design and Sizing
- Fan System Design Criteria
- Pumping System Design Criteria
- Air Distribution System Design Criteria and Equipment

Overall Thermal Transfer Value (OTTV) of Building Envelope

- Building Envelope
- Roof

Mandatory Energy Efficiency Rating and Labeling System (MEERLS)

- Required testing of energy consuming products and equipment to ensure compliance with DOE Standards
- The **Minimum Energy Performance (MEP)** is a standard Energy Efficiency performance for industries, companies, building, products and equipment determined by the DOE
- Calculation method to be developed by DOE



- *No product, equipment or transport vehicle shall be sold without compliance*
- *Mandatory energy labeling for room air conditioners, refrigeration units, television sets and lighting products*



Demand Side Management (DSM) Program

- Reduction of energy consumption through load management
- Migration of power demand from peak to off-peak periods
- Use of energy efficient and/or renewable energy technologies and systems

7 Fiscal Incentives for Energy Efficiency Projects

ENERGY EFFICIENCY PROJECT GUIDELINES:

Items	Details
1 Installation or retrofit of equipment, system, or component that will realize substantial savings	<i>Minimum energy savings threshold of 15% 5% if the energy savings is measured relative to the whole consumption of the facility</i>
2 Energy savings threshold	<i>Energy savings must be declared by a third-party energy audit done by the DOE or DOE-certified party</i>
3 Endorsement of Energy Efficiency project by the Department of Energy (DOE)	<i>DOE shall determine if the proponent is compliant with the percentage savings requirement</i>
4 Application of registration to the BOI	<i>Application must be accompanied by an endorsement from the DOE</i>
5 Income tax holiday (ITH)	<ul style="list-style-type: none"><i>ITH shall be reckoned on the date the EE&C Project becomes operational</i><i>For "Self-financed" – ITH is limited to the income of the firm's business activity</i><i>For "ESCO-financed" – ITH is limited to the income of the provider for implementing the project</i>

PROHIBITED ACTS AND PENALTIES

PROHIBITED ACTS

- On energy label a) failing to comply or b) removing, defacing, altering
- Non-appointment or designation of CECO or CEM
- Refusal to inspections
- Non-compliance with the orders of DOE
- Non-submission of reports



FINES AND PENALTIES

- P10,000.00 to P1,000,000.00

CRIMINAL LIABILITY

- Imprisonment of 1 year to 5 years
- P100,000.00 to P100,000,000.00

Compliance with the EE&C Law

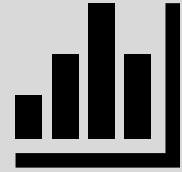


Certified
Energy Manager or
Energy Conservation
Officer



Energy Management
Framework

Regular Monitoring,
Reports and
Compliance Audits



6 year Record
Consumption Data



Projects to improve
efficiency and
achieve targets



Summary of Compliance Requirements

Type 1 Designated Establishment

Type 2 Designated Establishment

Annual Energy Consumption

500,000 kilowatt-hours (kWh) to 4,000,000 kWh

more than 4,000,000 kWh

Compliance Requirements

Certified Energy Conservation Officer (CECO)

- Certification guidelines to be finalized by TESDA and DOE
- Must have experience with Energy Consumption Management

Certified Energy Manager (CEM)

- Certification guidelines to be finalized by CHED, TESDA and DOE
- Must be a licensed engineer

✓ Manpower / Professional Requirement

✓ Online Registration with DOE

<https://bit.ly/DOE-Designated-Establishments>

Report of Energy

✓ Use/Consumptions and Improvement Plan

Every 15th of April

✓ Report on Energy Audit

Every 3 years, beginning 15th of April 2024

- Must be performed by DOE accredited ESCOs

Implementation of ISO 50001 or

✓ Energy Management Framework

Upon finalization of guideline by DOE

✓ Penalties for non-compliance

- Fines: Php 10,000 to 1,000,000
- Criminal Liability: Imprisonment 1 to 5 years; with fees of Php 100,000 to Php 100,000,000

Summary of Reporting Requirements

	Type 1 Designated Establishment	Type 2 Designated Establishment
Annual Energy Consumption	500,000 kilowatt-hours (kWh) to 4,000,000 kWh	more than 4,000,000 kWh
Reporting Requirements		
<u>EEC Form 1</u>		
✓ Company Information and Certified Energy Manager	Not required	REQUIRED Annual submission every 15th of April
<u>EEC Form 2</u>		
✓ Company Information and Certified Energy Conservation Officer	REQUIRED Annual submission every 15th of April	Not required
<u>EEC Form 3</u>		
✓ Annual Energy Efficiency and Conservation Report (AEECR)	REQUIRED Annual submission every 15th of April	
<u>EEC Form 4</u>		
✓ Annual Energy Utilization Report (AEUR)	REQUIRED Annual submission every 15th of April	
✓ Submission Method	https://bit.ly/DOE-Designated-Establishments	

In summary, the EE&C Act...

Requires



OBLIGATION

Enforces



MANAGEMENT

Provides

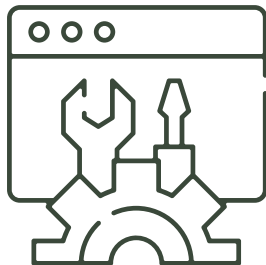


INCENTIVES



Are you ready for the EE&C Law implementation?

ENERGY EFFICIENCY SERVICES



ENERGY MANAGEMENT

Introduction

Awareness & Compliance

Energy Management
Framework

Energy Improvements

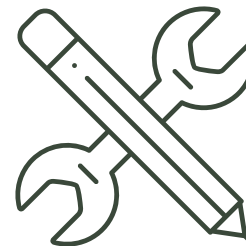


AUDIT & ADVISORY

Energy Audit

Investment Grade
Audit

Equipment Reliability
Audit



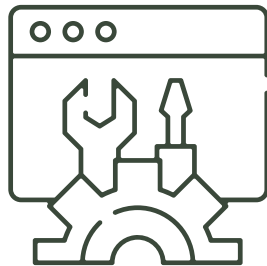
DESIGN & BUILD

Electrical

HVAC

Lighting

Automation



ENERGY MANAGEMENT SERVICES

Phase 1: INTRODUCTION TO EE&C

General Overview on EE&C Law

Phase 2: EE&C AWARENESS & COMPLIANCE

*Orientation for Key Personnel and
Assistance in Accomplishment of Annual Energy Reports*

Phase 3: ENERGY MANAGEMENT FRAMEWORK

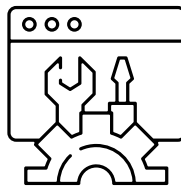
*Development and Implementation of Energy
Management Framework*

Phase 4: ENERGY EFFICIENCY IMPROVEMENTS

*Design & Build, Operations & Maintenance, Energy
Performance Contracts*

ENERGY MANAGEMENT SERVICES

Program Objectives



Phase 1:
**INTRODUCTION TO
EE&C**

- Overview on Energy Efficiency and Conservation (EE&C) Law, its Impact and Energy Management
- Proposed Solutions (One MERALCO)

Phase 2: **EE&C
AWARENESS &
COMPLIANCE**

- Orientation and Briefing for Management and Key Personnel
- Assistance in Accomplishment of Annual Energy Reports
- Consultancy Service for Annual Reports Submission

Phase 3: **ENERGY
MANAGEMENT
FRAMEWORK**

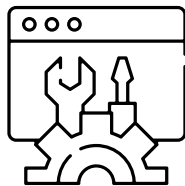
- Gap Analysis and Assessment of Existing Framework
- Training Modules for Energy Management Framework
- Development of New/Improved Framework
- Implementation and Audit of Framework

Phase 4: **ENERGY
EFFICIENCY
IMPROVEMENTS**

- Recommendations
- Equipment, Technology, Behavioral Improvements
- Operations & Maintenance Services
- Energy Performance Contract (ESCO)

ENERGY MANAGEMENT SERVICES

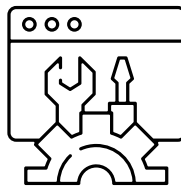
Phase 2: EE&C Awareness & Compliance



Duration	
Training Modules <ul style="list-style-type: none">• Energy Efficiency and Conservation Law and its Impact to the Company• Adopting an Energy Management Framework based on ISO 50001:2018 for Sustainability• Guide on EE&C Compliance and DOE Reporting	2 Days
EnMS Consultancy Services (thru online) <ul style="list-style-type: none">• Gap Analysis and Implementation Plan• Assistance in EnMS Implementation• Review of EE&CC Compliance/Report Submission• Improvement and Corrective Measures	2 Months (with 1 man-day per week allocation)

ENERGY MANAGEMENT SERVICES

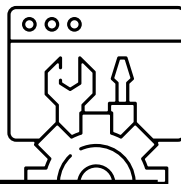
Phase 2: EE&C Awareness & Compliance



Training Modules	Duration
Energy Efficiency and Conservation Law and its Impact to the Company <ul style="list-style-type: none">• Salient Features of the Law• Implications of the Law to your organization• Frequently Asked Questions	0.5 Day
Adopting an Energy Management Framework based on ISO 50001:2018 for Sustainability <ul style="list-style-type: none">• Introduction and Key Rationale/Benefits• Energy Management System Approach following ISO 5001:2018• Implementation Strategy and Plans	1 Day
Guide on EE&C Compliance and DOE Reporting <ul style="list-style-type: none">• Organization Preparation and Roles• Run-through on Templates• Typical Data Sources• Report Considerations (to avoid future issues)	0.5 Day
Other Training Modules (if needed)	TBD

ENERGY MANAGEMENT SERVICES

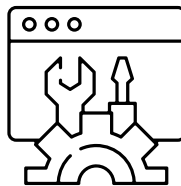
Phase 2: EE&C Awareness & Compliance



Activities	Objective	Deliverables	Days
Gap Analysis	To assess the client's readiness to implement an EnMS, gaps and potential issues (thru interviews, walk-thru and document/data sharing) and prepare implementation plan recommendations	<ul style="list-style-type: none"> EnMS Assessment Readiness Implementation Plan and Timetable 	1
Assistance in EnMS Implementation	To assist the company in the implementation of EnMS through personnel discussions, consultations, and review of relevant documents	<ul style="list-style-type: none"> Initial Review of Documents Proposed EnMS Framework 	3
Review and Validation of EE&C Compliance and Reports	To assess and check the documents, reports and other requirements accomplished by the company, as well as provide feedback to improve existing documentation. Also to provide advices and feedback on accomplished reports including potential future issues and implications	<ul style="list-style-type: none"> Review of Accomplished Templates/Reports Checklist of Remaining Requirements 	2
Follow-up Validation	To monitor agreed action items on remaining documentation requirements are accomplished and addressed	<ul style="list-style-type: none"> Feedback on Status of Documentation Checklist 	1
Final Checking of Documents	To ensure proper hand-over of required reports and proposed EnMS framework to client	<ul style="list-style-type: none"> Final Accomplished Report 	1
Total Days			8 Days

ENERGY MANAGEMENT SERVICES

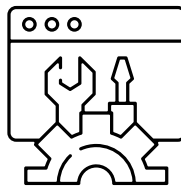
Phase 3: Energy Management Framework



Duration	
Training Modules <ul style="list-style-type: none">• EnMS Awareness for management and supervisors• EnMS User Implementation and Workshop• EnMS Post-Implementation and System Audit Assessment• Other Training Modules (if needed)	8 Days
Consultancy Services (thru on-line) <ul style="list-style-type: none">• Gap Analysis and Implementation Plan• Assistance in EnMS Implementation• Review/Validation of System Implementation• Review of EEC Compliance and Reporting• Improvement and Corrective Measures	3 Months (with 1 man-day per week allocation)

ENERGY MANAGEMENT SERVICES

Phase 3: Energy Management Framework



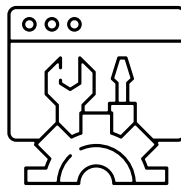
Standard Training Modules

Energy Management Training	Duration
Module 1: Awareness Workshop	1 Day
Modules 2 and 3: EnMS Implementation	4 Days
Modules 4 and 5: Energy Audit and Post EnMS Implementation Assessment	3 Days
Industrial System Optimization	Duration
Module 1: Awareness Workshop	1 Day
Modules 2 User Training (Pumps or Steam or Compressed Air)	3 Days
Modules 3 Post SO Project Implementation & Audit	2 Days
Other Trainings	Duration
EE Financing and Cost Evaluation	2 Days
Project Financing and Modelling	5 Days
RE Project Development	3 Days

ENERGY MANAGEMENT SERVICES

Phase 3: Energy Management Framework

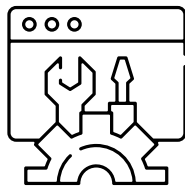
Consultancy Services



Activities	Days
Verification of Gap Analysis and Preparation of Final Implementation Plan	1
Documentation Development	4
Validation/Checking of Documentation Implementation	1
Follow-up Validation	1
Final Checking of Documentation	2
Formulation of Corrective Actions based on Desk Study Findings of Certifying Body	1
Compliance/Main Audit Preparation	1
Formulation of Corrective Actions based on Compliance Audit/Main Assessment of Certifying Body	1
Total Days	12 Days

ENERGY MANAGEMENT SERVICES

Phase 4: Energy Efficiency Improvements



Equipment, Technology, Behavioral Improvements

- Design & Build of new equipment, systems and technologies
- Behavioral changes in operation and maintenance to improve efficiency

Operations & Maintenance Services

- Regular Operations and Preventive maintenance of equipment
- Provision of required daily manpower, tools and consumables
- Service Level Agreement (downtime, emergency response time)

Energy Performance Contract (ESCO)

- Design & Build of Energy Efficient systems
- Guaranteed Energy Performance
- Ensure working systems
- Financing options



AUDIT & ADVISORY

ENERGY AUDIT

Baseline measurements for Energy Audit compliance and identification of energy conservation measures

INVESTMENT GRADE AUDIT (IGA)

Thorough and detailed assessment of all individual building equipment as feasibility of ESCO project implementation

SYSTEM / EQUIPMENT RELIABILITY AUDIT

Testing for equipment performance and power supply parameters including power quality and equipment functionality



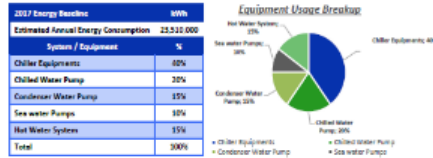
AUDIT & ADVISORY

Introduction

energize has performed a preliminary energy assessment at the central plant on 14 February 2018. The purpose of this assessment is to understand the system operation with the aim of identifying energy saving potentials in order to assist the plant achieve saving targets.

Energy Baseline

energize was not provided with electricity utility bills as requested; however, based on the information gathered during the walkthrough assessment and provided by the facility staff, an energy baseline was developed. An estimated breakdown of different energy use for major equipments is presented below:



Energy Saving Potentials

The summary table below illustrates the cost saving potentials identified. Detailed assessment is required to further improve the accuracy of the figures before proceeding to implementation.

EMO	System	EMO Description	kWh Saving	Cost Saving (RM)	% Site Electricity savings	Total Project Cost (RM)	SFR
1	HWAC WaterSide	CHW Pump Speed Optimization	481,000	\$541,000	2.1%	\$800,000	1.8
2	HWAC WaterSide	CDWP Pump Speed Optimization	368,000	\$405,000	1.6%	\$770,000	1.8
3	HWAC WaterSide	Sea Water Pump Speed Optimization	284,000	\$183,000	0.7%	\$570,000	2.0
4	HWAC WaterSide	Automatic Chiller Staging	573,000	\$613,000	2.4%	\$1,080,000	1.7
Utilization of Monitoring board							

Energy Baseline

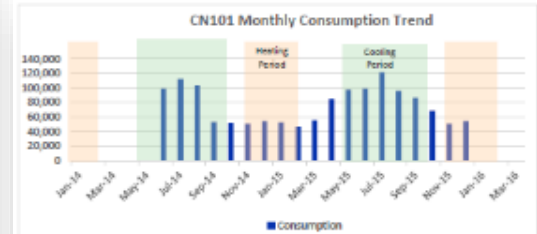
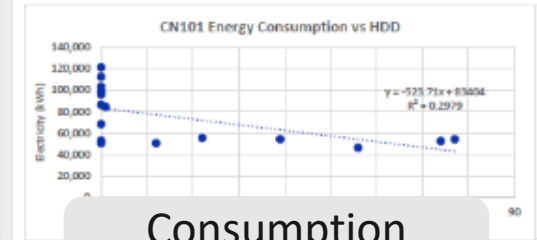
Table 9. Chillers summary							
Model	Qty	Make	Rated Cooling Capacity	Condenser Cooling	Refrigerant	Rated Input Power	Rated COP
YKES065CKGS	3	York	1,407 kW	Fresh Water-Cooled	R134a	247 kW	5.69
YEW5100HASOE	1	York	352 kW	Fresh Water-Cooled	R134a	72 kW	4.89
Plant Total	4		4,573 kW			813 kW	5.62

Table 10. CHWP summary						
Equip. Code	Make and Model	Quantity	Motor Drive	Rated Input Power	Rated flow Rate	Performance (W per l/s)
CHWP-T-1 to 4	Paco 29-4013-7 KP	4	Fixed speed	37 kW	67 l/s	552
CHWP-T-5	Paco 29-3014-5/6 KP	1	Fixed speed	15 kW	17 l/s	882
Total		5		163 kW	285 l/s	578 *

Table 11. Condensing water pump summary						
Equip. Code	Make and Model	Quantity	Motor Drive	Rated Input Power	Rated flow Rate	Performance (W per l/s)
CWP-T-1 to 4	Paco 29-5015-9/0 KP	4	Fixed speed	37 kW	79 l/s	468.3
CWP-T-5	Paco 29-3014-5/6 KP	1	Fixed speed	15 kW	21 l/s	714.3
Total		5		163 kW	337 l/s	489.7 *

Table 12. Cooling towers summary						
Equip. Code	Make and Model	Qty	Motor Drive	Rated Input Power (Electrical kW)	Rated Heat Rejection Capacity (Thermal kW)	Cooling Tower rated performance (Thermal kW / Electrical kW)
CT-T-1 to 3	Marley NCB403RAN1	3	2 Speed	19.5/5 kW	1,652 kW	84.7/330.4
CT-T-4						
Total						

Equipment/
System Summary



Consumption
Trends



AUDIT & ADVISORY

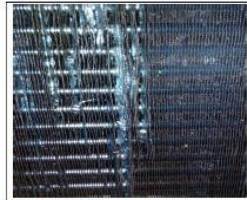
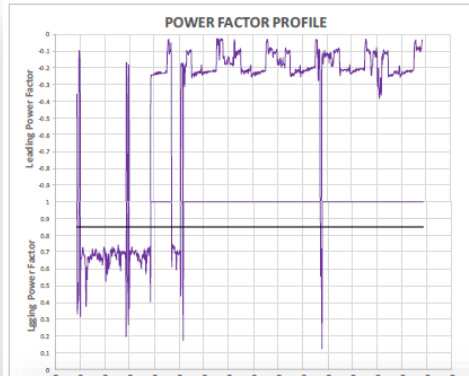


Photo No: 0036
Location: Hallway
Caption: Dilapidated Fins (Discharge Side)



Photo No: 0037
Location: Hallway
Caption: Fair Condition Fan Belt

Equipment Condition



Power and Power Factor		Minimum	Maximum	Average
Total(kW)	Magnitude	0.29	266.27	50.35
	Time	01/27/2020 07:20:00	01/25/2020 06:30:00	Entire Duration
Total(kVA)	Magnitude	11.17	358.27	82.21
	Time	01/31/2020 06:20:00	01/25/2020 06:30:00	Entire Duration
PowerFactor	Magnitude	0.14	-0.03	0.25
	Time	01/29/2020 09:20:00	01/27/2020 07:20:00	Entire Duration

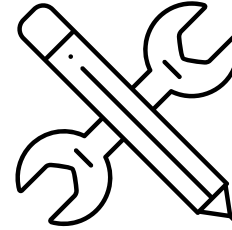
Power Factor and Harmonics

Table 2. Summary of Energy Management Opportunities for H&M 228 Stores

System	Description	Total Energy Savings (kWh)	Total Cost Savings (\$/kWh/year)	Potential Savings (%)	Estimated Total Project Cost (\$/kWh)	Average Energy Payback Period (year)	Category by Simple Payback Year
Lighting	On-Lamping when area lighting	6,004,313	8,264,400	0.2%	25,700	Less than one year	Short-term
Lighting	Replace metal halide light with LED at sales area	1,413,055	7,566,800	7.7%	\$7,877,900	12.4	Long-term
Lighting	Replace incandescent at BOH	244,472	265,700	0.2%	250,000	2.0	Short-term
Lighting	Replace T8 tubes with LED at BOH	850,307	1,181,300	1.2%	\$65,300	0.5	Short-term
Lighting	Replace T5 tubes with LED at Sales Area	2,860,470	2,425,400	3.3%	5,480,900	1.6	Medium-term
Lighting	Apply occupancy control for stock room and office	96,176	135,600	0.1%	\$17,000	3.8	Long-term
Lighting	Apply dimming control for window side lighting	8,415	13,100	0.01%	\$17,000	0.0	Long-term
Lighting	Re-wiring T8 lighting circuit for occupancy control	1,347,744	1,671,800	1.8%	\$62,400	0.1	Short-term
HVAC	Replace AC fan with EC fan on REC/CAU	1,303,879	1,715,000	1.6%	9,347,900	5.8	Long-term
HVAC	Review the temperature setting of VAV	158,720	286,400	0.2%	6,500	Less than one year	Short-term
HVAC	Review the operation time of FCU/VAV	177,814	308,000	0.2%	23,600	0.5	Short-term
HVAC	Freeze the temperature setting of A/C unit in IT Room	59,006	78,000	0.2%	\$3,900	0.4	Short-term
HVAC	Apply Demand Control Ventilation	204,446	110,000	0.4%	1,276,400	2.5	Medium-term
HVAC	Apply Variable Frequency Drive (VFD) control on AHU/FAN	184,837	172,900	0.2%	263,800	2.2	Medium-term

Energy Management Opportunities

DESIGN & BUILD



ELECTRICAL



MECHANICAL



LIGHTING



AUTOMATION



ELECTRICAL

SOLUTIONS

High Efficiency Motors

Better built motors that consume less power and can adjust to variable load conditions

Sag Correctors

Protective devices that takes care of voltage fluctuations and momentary outages

Capacitor Banks

Electrical equipment used to counteract or correct the effects of inductive loads in the power factor

Harmonic Filters

Electrical equipment that limit harmonics that cause significant distortions in the system





MECHANICAL

SOLUTIONS

HVAC System

Energy efficient design of Chillers, AHU, FCU, Pumps, Cooling Towers including Oil-free Magnetic Chillers, VRF and VFD systems

District Cooling System

Central chiller plant and piping network to buildings

Inverter System

Energy efficient inverter technology AC units

Heat Recovery System

Utilization of waste heat to generate energy





LIGHTING

SOLUTIONS

LED Lighting

Latest lighting technology for improved energy efficiency

LED Streetlights

LED streetlights with dimming capabilities for maximum efficiency

Smart Lighting

Energy saving features such as automatic on/off, dimming and occupancy sensors





AUTOMATION

SOLUTIONS

MSERV Energy Management System

Detailed monitoring of energy consumption with alarms and notifications for errors of unusual consumptions

Building & Facility Management System

Integration of different systems of a building or multiple facilities into one Management Software for easy Monitoring and Control

Chiller Management System

Optimizes operation of plant room to improve energy efficiency performance

Lighting Management System

Automated Monitoring and Controlling Lighting fixtures





MSERV ENERGY MANAGEMENT SYSTEM (EMS)

Features & Benefits

Monitor & Control with One EMS

Energy
Electrical, HVAC, Lighting
CCTV & Security
Fire Detection & Alarm System
Indoor Air Quality
Operation & Maintenance

Centralized monitoring for multiple sites

Head Office
Warehouse
Stores

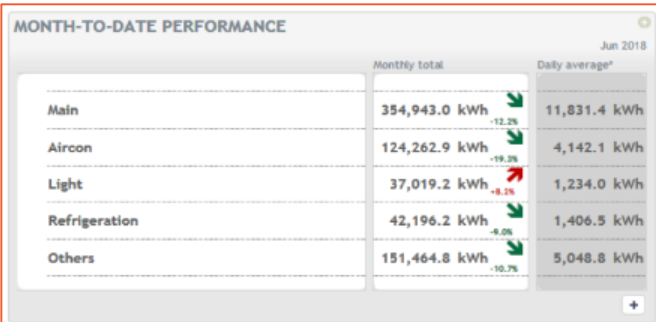
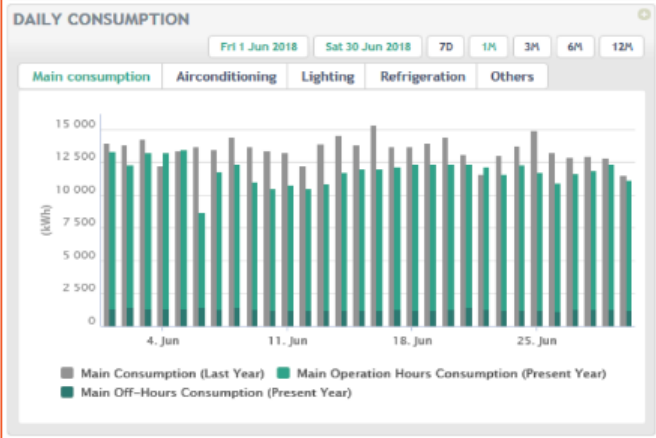
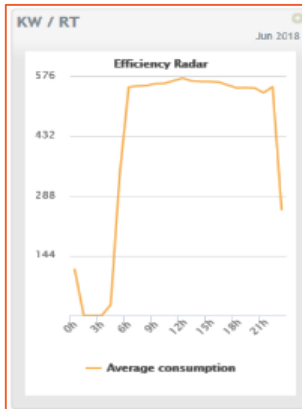
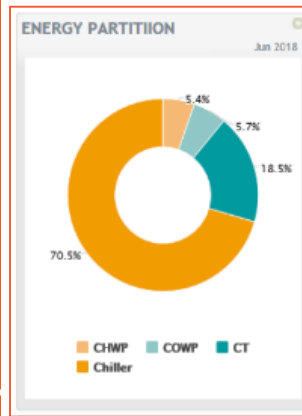
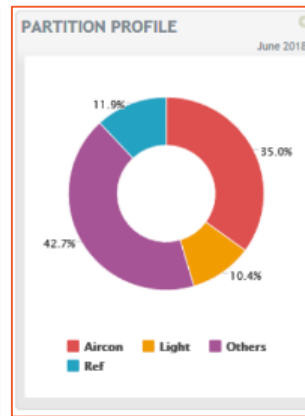
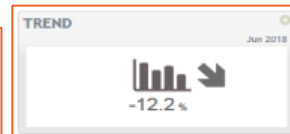
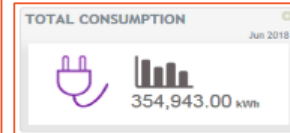
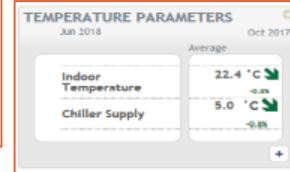
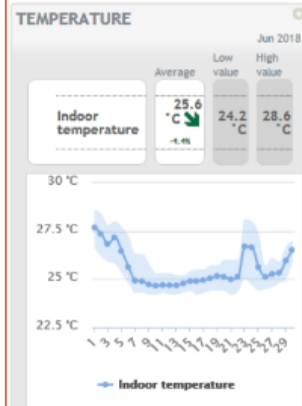
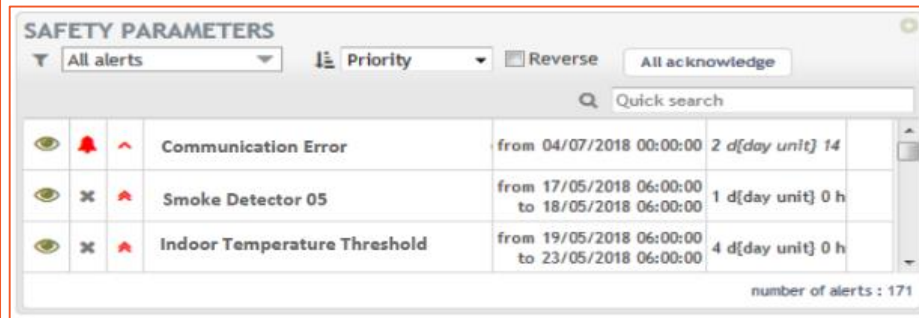
Achieve Savings & Performance Operating Costs

Energy
Maintenance
Manpower





MSERV ENERGY MANAGEMENT SYSTEM (EMS)





EMS KITS & APPLICATION

SMALL STORE KIT



- 1 Optical Pulse Reader
- 3 Current Sensors (for AC)
- 2 Temperature & Humidity

OFFICE KIT



- 1 Optical Pulse Reader
- 2 Power Meter (2 sets of CTs)
- 1 Indoor Air Quality
- 3 Temperature & Humidity

ELECTRICAL PLANT ROOM KIT

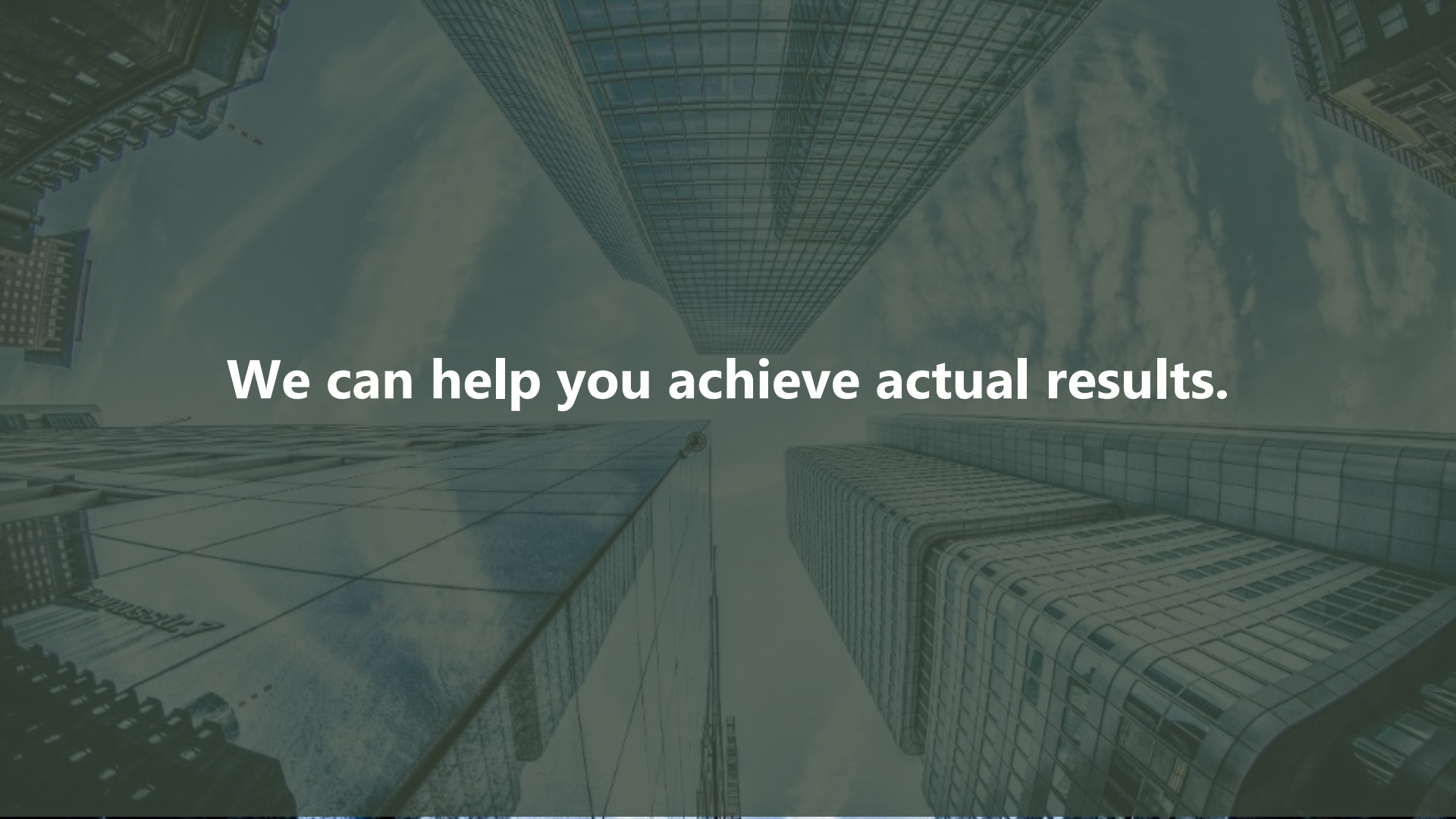


- 1 energyBox (concentrator)
- 1 Power Quality Meter
- 1 set of open CTs 2500A
- 2 Power Meter
- 2 set of open CTs 1000A

CHILLER PLANT ROOM KIT



- 1 energyBox (concentrator)
- 1 Power Quality Meter (Bacnet & Modbus)
- Temperature & Pressure sensor
- Ultrasonic Flow Meter
- Meter with CTs

A low-angle, upward-looking perspective of several modern skyscrapers with glass facades, reaching towards a cloudy sky. The buildings are arranged in a way that creates a sense of height and scale. The image has a slightly desaturated, teal-blue color palette.

We can help you achieve actual results.



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