ENERGY MANAGEMENT SYSTEM AND SMART CITIES: Current Situation and its Future in the Philippines

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FUTURE ENERGY SCENARIO IN THE PHILIPPINES

EEC

10% energy savings on oil products and electricity by 2040 up to 2050

+

RE

35% of power generation mix by 2030, 50% by 2040, and more than 50% by 2050

+

EMERGING TECHNOLOGIES

50% EV penetration rate in road transport by 2040; Explore alternative technologies (e.g. nuclear, hydrogen, ammonia)

+

ICT

Adopt advanced and smart grid technologies

+

ENERGY RESILIENCY

Resilient and climate-proof energy infrastructure

PH Contribution to Global Energy Transition:

Offshore Wind Development | Rights killing of Filipino Workforce & International Accreditation Initiative | Mining and Manufacturing of Green Materials

PHILIPPINE ENERGY PLAN 2023-2050

AMBISYON NATIN 2040

A STRONGLY-ROOTED, COMFORTABLE AND SECURE LIFE FOR ALL FILIPINOS

8-POINT SOCIO-ECONOMIC AGENDA

#1 PROTECT PURCHASING POWER OF FAMILIES
#4 CREATE MORE JOBS

Reduce energy cost to families

Ensure energy security

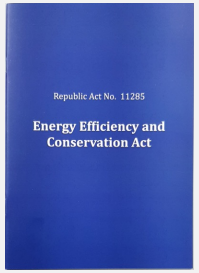
ENERGY STRATEGIC FRAMEWORK

PHILIPPINE ENERGY PLAN 2023-2050

REFERENCE	CLEAN ENERGY 1		CLEAN ENERGY 2	
• 35% RE share in power generation mix by 2030 • 50% RE by 2040-2050	(High RE with low OSW + Nuclear + Coal Repurposing)	• 35% RE share by 2030, 50% RE by 2040, more than 50% by 2050 • Coal repurposing • Nuclear capacity of 1,200 MW by 2032, 2,400 MW by 2035 and 4,800 MW by 2050 • 19 GW of OSW by 2050	(High RE with high OSW + Nuclear + Coal Repurposing)	• 35% RE share by 2030, 50% RE by 2040, more than 50% by 2050 • Coal repurposing • Nuclear capacity of 1,200 MW by 2032, 2,400 MW by 2035 and 4,800 MW by 2050 • 50 GW of OSW by 2050

ENERGY EFFICIENCY AND CONSERVATION ACT

RA 11285: ENERGY EFFICIENCY AND CONSERVATION (EEC) ACT



Institutionalizes energy efficiency and conservation, enhances the efficient use of energy, and grants incentives to energy efficiency and conservation projects

IMPLEMENTATION OF EnMS AMONG DESIGNATED ESTABLISHMENTS

DESIGNATED ESTABLISHMENTS are entities that are identified as energy-intensive consumers by the DOE from the Commercial, Industrial, and Transport Sectors pursuant to the EEC Act.

Designated Establishments are mandated to integrate an energy management policy into their business operation based on ISO 50001 or any similar framework.

GOVERNMENT ENERGY MANAGEMENT PROGRAM

1,085 Government Offices were visited for spot checks and **938 Government Offices** were audited

The GEMP was able to save **30,060.58 MWH of electricity** and **386,083.59 L of fuel.**

Digitalization of GEMP compliance of government offices covering over **7,741 registered users**.

INCENTIVES

Fiscal Incentives

- Simple Energy Efficiency Projects
- New Energy Efficiency Projects
- Complex Energy Efficiency Projects
- Expansion of Energy Efficiency Projects

Energy Efficiency Excellence Awards

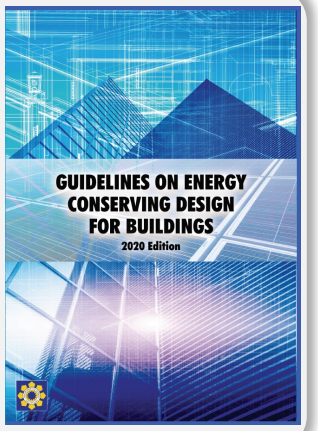
- Energy Management for Industries and Buildings
- EEE Awards for Government
- Outstanding Individual/Groups
- Special Awards for EEE

GUIDELINES ON ENERGY CONSERVING DESIGN OF BUILDINGS

Building Envelope

Electrical Systems

Mechanical Systems



BENEFITS

Cost reductions, reduce greenhouse gas emissions, create jobs, and meet growing energy demand are among the benefits.

CHALLENGES

Financing barriers, lack of awareness and understanding, regulatory and policy challenges, and split incentives problem are among the significant barriers.

SMART SUSTAINABLE COMMUNITIES AND CITIES

SMART AND GREEN GRID

SMART GREEN GRID

Ensuring the seamless integration of additional renewable energy capacity to the grid in the coming years.

The Smart and Green Grid Plan would serve as the basis for the transmission development plan.

SMART GRID VISION

SMART POWER GENERATION

Power Generation Development Plan – Distributed Energy Resources, Energy Storage Systems, Hybrid Systems, and Intermittent and Flexible Generation

TRANSMISSION MODERNIZATION

Transmission Development Plan – Automation and Network Optimization, System Enhancement, Long-term interconnection-wide expansion plans

SMART UTILITY

Distribution Development Plan – Roadmap for DUs, Smart Metering, Real Time Monitoring

SMART HOME AND CITIES

Advanced Metering infra, EVs, Demand Response, Peak Load Management

SMART AND GREEN GRID PLAN (SGGP)

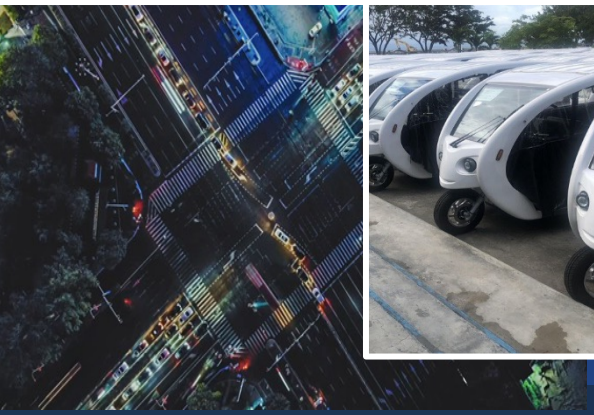
The aggressive RE targets require the **timely development of a smart and green transmission system** to integrate and manage the additional RE capacity expected to come online from 2024 to 2040

Objectives of the SGGP

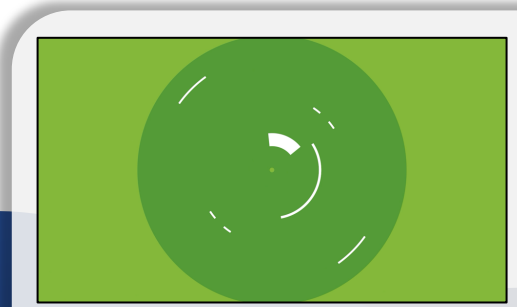
- Establish a policy and mechanism to address the timely implementation of Transmission Projects and efficient operation of the Transmission System.
- Create a framework to determine the level of completion of TDP projects and the overall performance of electric power industry stakeholders toward a holistic and comprehensive development of the country's power system.

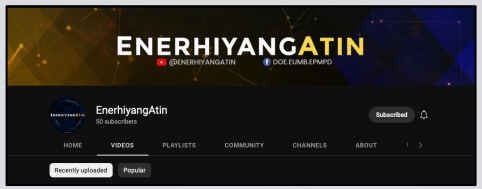
The SGGP forms part of the Philippine Energy Transition Program (PETP) and will complement the PEP 2023-2050





DOE Information Campaign Activities





Thank you!

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