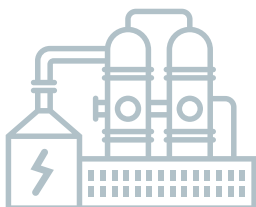
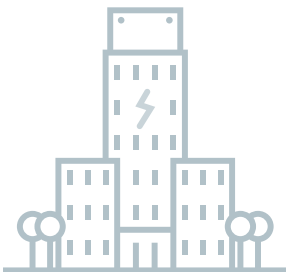




Philippines  
2016-2030

# Energy Efficiency Roadmap



# Philippines Energy Efficiency Roadmap 2016-2030

Version 1 (September 2016)

## Published by

### Department of Energy

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Philippines

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# Foreword

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The Philippines has dedicated programmatic activities to advance energy efficiency since 2004. Over the last decade there have been numerous energy efficiency policy initiatives by the Government; while these initiatives have been consistent and complimentary, room to narrow gaps and improve implementation and monitoring exists.

The Energy Efficient Roadmap, Philippines 2014 – 2030 guides the Philippines in building an energy-efficient nation, and in making energy efficiency and conservation a way of life for all Filipinos. Energy efficiency will advance the country's economic development and help ensure energy security, optimal energy pricing and sustainable energy systems. The development of this Roadmap commenced with a review of the energy demand context of the Philippines and its current energy efficiency programs. This review considered the effectiveness of current programs, identified gaps and unrealized opportunities based on international best practice.

A first version of the Roadmap was completed in 2014. However, it has been deemed essential to revise the roadmap in 2016 prior to publishing. This Roadmap is a consolidated national level document of policy instruments to enhance energy efficiency in the Philippines for the period 2016-2030. It integrates identified opportunities with existing energy efficiency policy instruments and strategies.

The first part of this document sets the background to the integration process and the development of the road map. Policy targets, opportunity and priority areas and further considerations are discussed. The second part of the document embarks on the road

map with introductory statements of overall vision; objectives and targets; short, medium and long term potential actions plans and strategies for monitoring and evaluation of progress and the way forward.

The successful attainment of the goals and targets set is highly dependent on the corresponding and complementing sector-based action plans, which will detail the approach of implementing the recommendations of the roadmap, including allocating roles and responsibilities and financial resources.

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# Executive Summary

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# 1 Planning: Background

## 1.1 Introduction

The Energy Efficiency Roadmap for the Philippines 2016-2030 is a detailed outline of the strategic plans and actions required to create a more energy-efficient Philippines across all sectors of economic activity. The road map was developed based on a recent pragmatic re-view of current state with respect to implementation and existing policies, targets and opportunities

### Review

Analysis -  
Long Term Plans & Targets

Evaluation - Execution &  
Targets Achieved

### Foresight

Identification -  
New Opportunities

Integration -  
Current Plans & New  
Opportunities



**Figure 1** Roadmap Development Process



# Review of Existing Energy Efficiency Policies Targets and Objectives

## Setting the scene

The Philippine Government has emphasized on energy efficiency since 1975 via a wide range of statements of strategic intent on energy efficiency (Annex 1) and the Republic Act 7638 which was the basis for the formation of the Department of Energy (DoE). These statements have both built on and augmented the mandates given to the DoE and other bod-ies to pursue energy efficiency activities at various levels.

In more recent times, the 2008 Philippine Energy Summit discussion on Energy Efficiency and Conservation resulted in the drafting of several major priority action plans. Consequent upon the summit The Energy Reform Agenda have been instrumental in the current missions, visions and strategies of Energy Efficiency and Conservation Division (EECD) to further enhance energy efficiency in the Philippines.

## Targets

The Philippines has two long term statements on energy efficiency clearly documented in the National Energy Efficiency & Conservation Program (NEECP) and the Energy Efficiency and Conservation Division (EECD) of the DOE. These existing vision statements remain highly relevant and served as a concrete platform for this roadmap.

However the review process of these documents also identified gaps and room for improvement. These targets need re-calibration for consistency and to provide clarity and enable tangible results. Among other issues identified are;

There are approximately 34 existing statements of Philippine government strategies and pri-orities for energy efficiency implementation which have been categorized as immediate or short term, medium and long term.

### ECCD OBJECTIVES

Judicious conservation and efficient utilization of energy resources through adoption of the cost-effective options toward the efficient use of energy to minimize environmental impact

### NEECP VISION

To make energy efficiency and conservation "a way of life" for Filipinos.

**Figure 3** Strategies and Priorities for Energy Efficiency

**Immediate / Short Term**

The **establishment** of a legal policy framework for energy efficiency in the supply and demand side of the energy market sector

**Re-file/finalization** of the Energy Conservation Bill

**Review and amendment** of the Procurement Law/Guidelines for Energy Efficiency related procurement

**Medium Term**

The **reinstatement** of Demand-Side-Management (DSM) practices among Distribution Utilities

**Creation** of an Energy Efficiency & Conservation Center (EECC)

**Long Term**

**Redesigning or introduction** of new interventions

**Expansion** of NEECP program

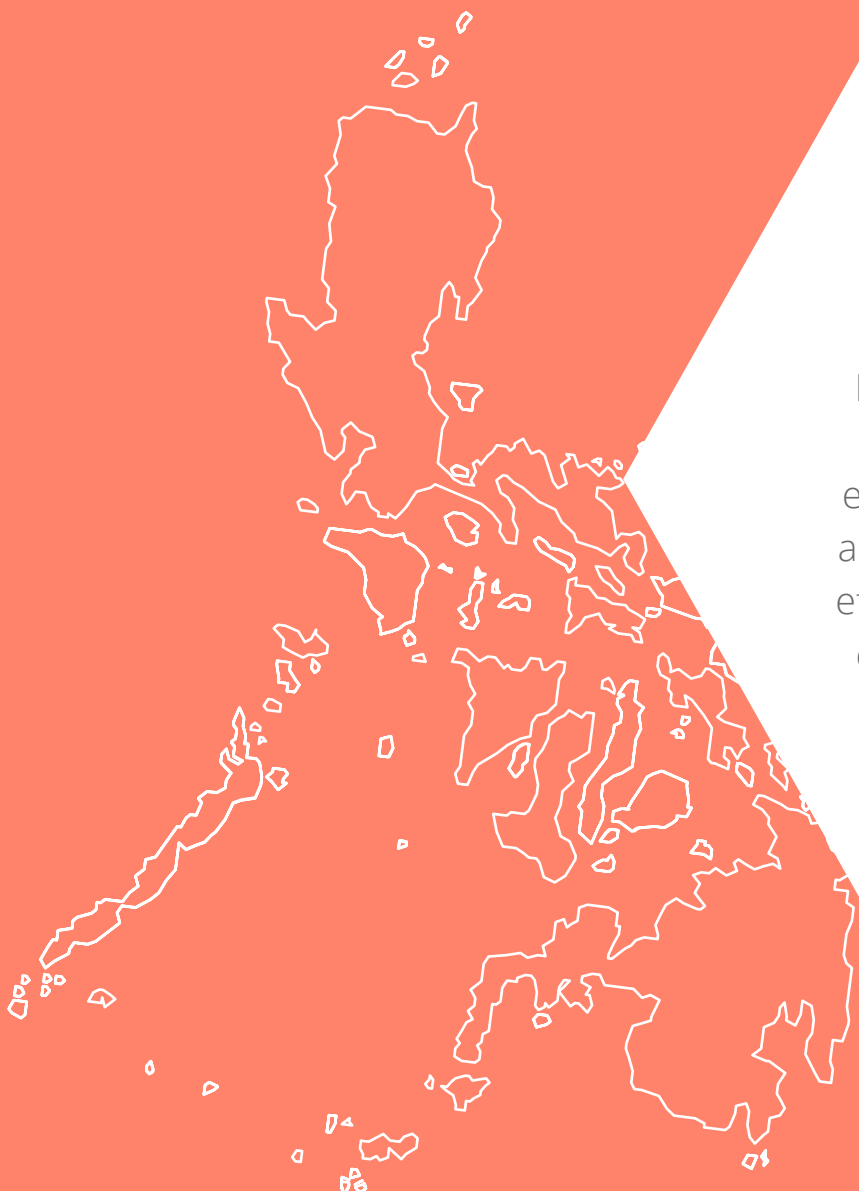
**Monitoring** compliance of the action plans

# 2 Embark: Philippines Energy Efficiency Roadmap 2014-2030

## 2.1 Intendment

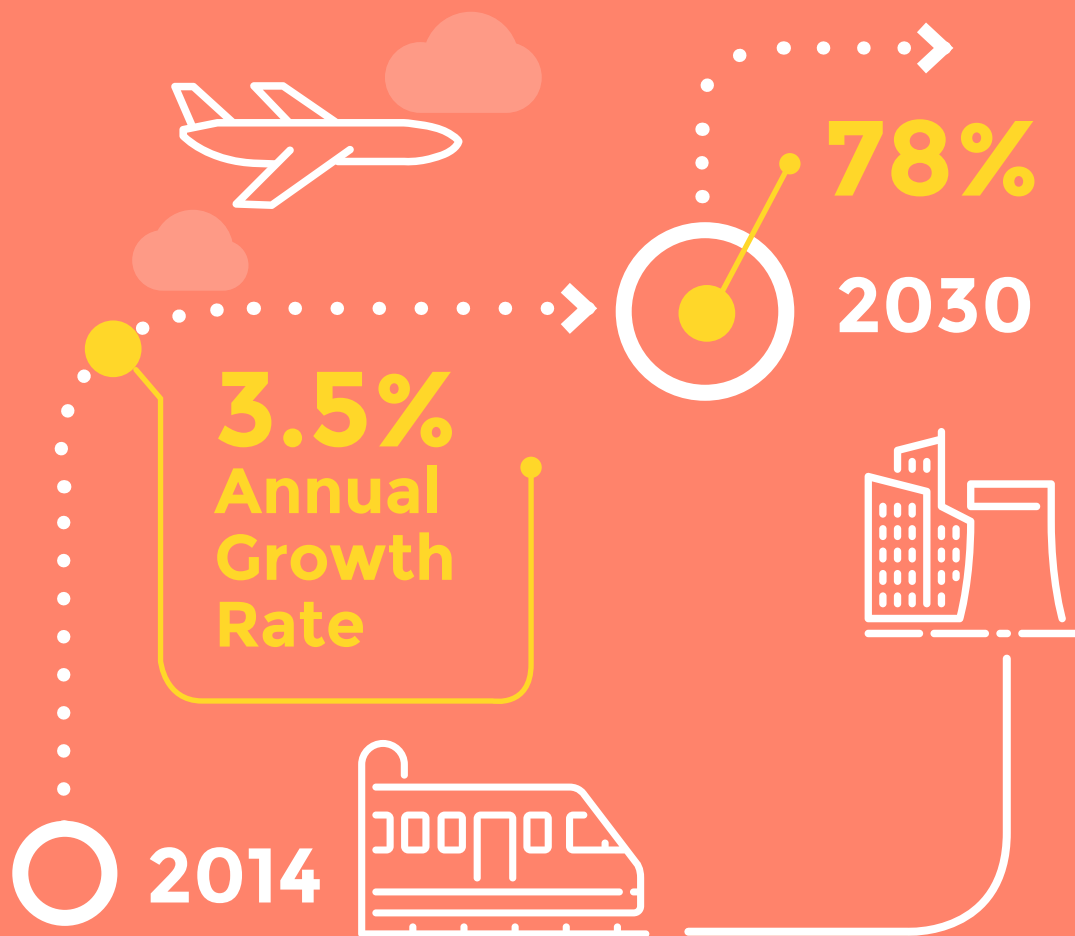
### vision

This Roadmap guides the Philippines in building an energy-efficient nation, and in making energy efficiency and conservation a way of life for all Filipinos. Energy efficiency will advance the country's economic development and help ensure energy security, optimal energy pricing and sustainable energy systems.



# target

Targets are set in the context of strong economic growth and energy demand growth expected during the period. Demand is forecast to grow by 78% between 2014 and 2030, an average annual growth rate of 3.5%; transport and industry are the dominant end use sectors.



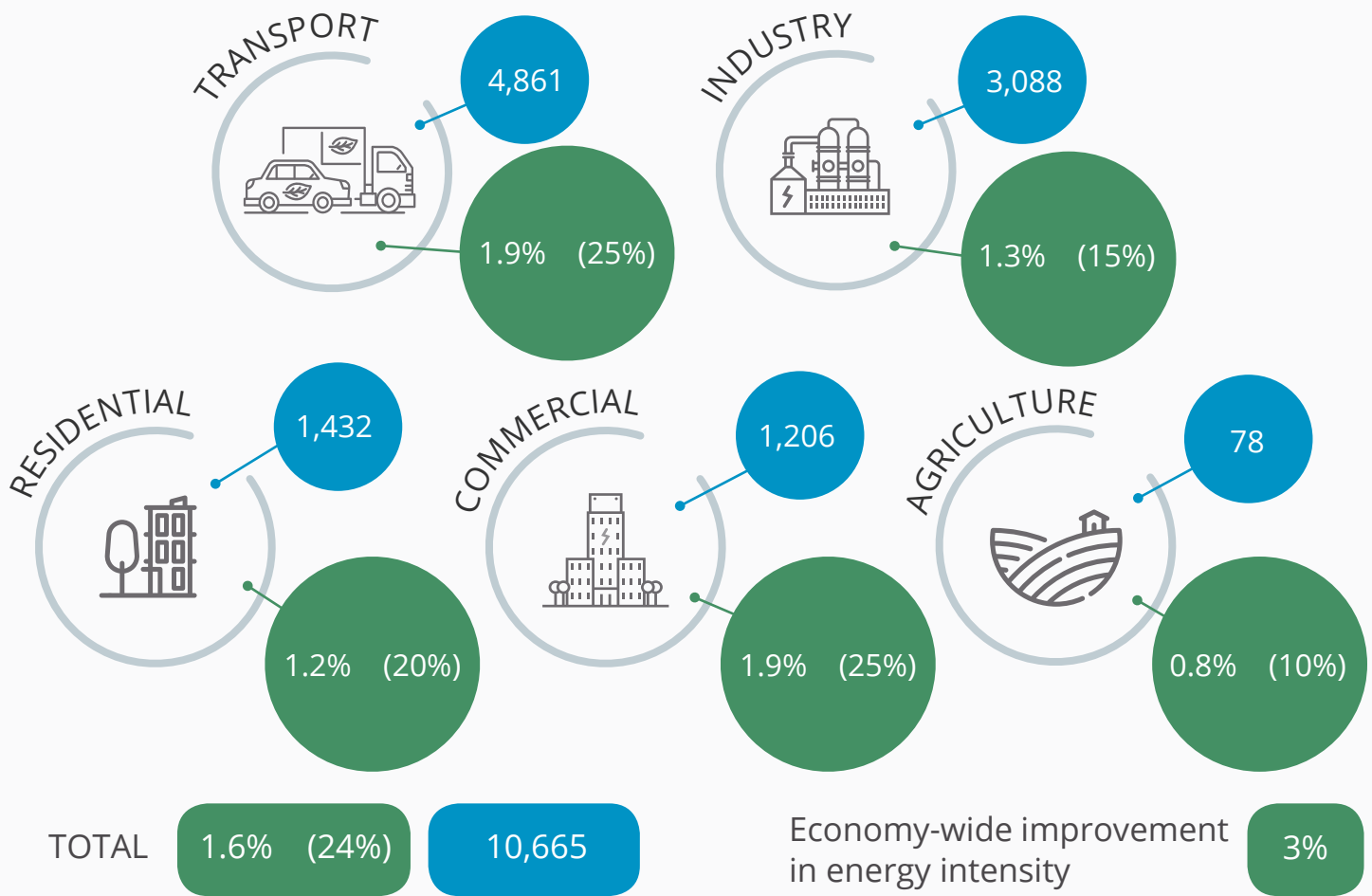
Targets are based on an assessment of achievable potential, grounded in international experience and knowledge of existing levels of efficiency in the country<sup>1</sup>.

To eliminate exogenous causes of variation in energy demand, and to align with internationally accepted

energy efficiency benchmarks, it is proposed that economy-wide targets are consistently denoted in terms of percentage improvements in energy intensity (units of energy input per unit of GDP output). This should be measured at a constant economic structure<sup>2</sup>.

<sup>1</sup> Methodologies and justifications for the chosen sector target levels are provided in detail as part of the sister document to this Roadmap, Review of Philippines Energy Efficiency Policy and the National Energy Efficiency and Conservation Program: Progress, Targets, and Future Opportunities, December 2013, and beyond that evidence base target levels reflects the author's own considered judgment. <sup>2</sup> Further analytical work is required to determine a basis for measuring changes in energy use due to shifting economic composition separate from the impacts of energy efficiency programs (Refer Part 2.3).

**Table 2** Philippine Energy Efficiency Targets to 2030



● Annual energy saved by 2030 (KTOE) ● Implied annual % savings (total savings by 2030)

\* This level of efficiency improvement is assumed through endogenous technology advancement; no initiatives are proposed for the agricultural sector given its small percentage share of national energy use.

## 2.2 Milestones

### Short Term (2014-2015)

#### Transport Sector

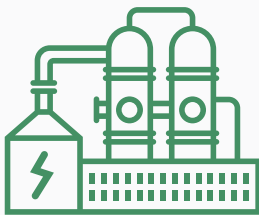


Closer support to manage identified risks in vehicle conversion and e-vehicle/e-trike programs – existing funded initiatives target key energy use sectors in transport such as tricycle and taxi fleets.

Fuel Efficiency Standards developed for light-duty vehicles, vans/jeepneys, tricycles and heavy vehicles (trucks) – a long-stated objective, this could be a very effective mechanism for increasing the efficiency of vehicles in a given category, though its impact through new vehicles could take time.

**Re-formulated coordination mechanisms with other agencies** – reinstating talks and coordination bodies with Department of Trade Industry Bureau of Product Standards (DTI-BPS), Department of Transportation and Communications (DOTC) and other agencies regarding road transport fuel efficiency will be important to implement and align with overall energy efficiency goals.

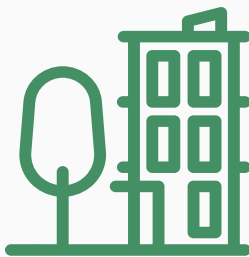
## Industrial Sector



**Link existing training projects with Energy Service Companies (ESCO) capacity building** – at present the Philippine Industrial Energy Efficiency Project (PIEEP) and ASEAN Energy Management Scheme (AEMAS) training programmes are focused on training individual energy managers. DoE can play a role in coordinating training programs are coordinated and providing information on individuals with skills in energy efficiency.

**Develop sectoral focus programs to facilitate EE in energy intensive industries (cement and construction, sugar)** – specific programs for energy intensive industries need to be developed. Sugar processing and cement/construction are suggested as first priorities. This could include specific expertise and advice for industry on motors and drives, or on efficient cement production through dry kiln processes, and facilitation of industry-specific retrofit project development and financing in order to create showcase industry projects.

## Commercial Buildings Sector



**Reformulate group to oversee EE measures in Building Code** – inclusion of EE measures in the national building code is a key policy measure for better performance of commercial buildings. In the short term, working group discussions need to be re-invigorated between departments especially DoE and Department of Public Works and Highways (DPWH) to achieve this aim, and the stated objective of benchmarking commercial building energy use information.

**Retro-commissioning program for existing buildings** – this would involve supplementing existing training workshops and seminars with stronger information and guidance on building management systems, to ensure that available energy savings are realized without the need to allocate budget to building retrofit.

**Benchmarking and ratings for building information and reporting** – while not saving energy directly, this benchmarking activity is essential to future efforts to measure and monitor energy efficiency activity, and to specify thresholds for building performance in the Philippine Building Code. It is also a key contributor to processes such as the development of Nationally Appropriate Mitigation Actions (NAMAs) by the Climate Change Commission, which is considering the potential energy savings of the commercial building sector. A green building ratings system has been established through the Philippine Green Building Council in 2012-13.