

INDONESIA

1. GOALS FOR EFFICIENCY IMPROVEMENT

1.1. Overall Energy Efficiency Improvement Goals

The National Energy Policy (2014)¹ (*Kebijakan Energi Nasional* or KEN) states that Indonesia's energy conservation goals are to achieve energy elasticity of less than 1 by 2025 and decrease energy intensity by an average of 1% per year to 2025.

1.2. Sectoral Energy Efficiency Improvement Goals

The Government of Indonesia has identified the following sectoral energy-efficiency goals:

- Industrial sector: 15% to 30%.
- Transport sector: 15% to 35%.
- Commercial building sector: 10% to 30%.
- Residential sector: 15% to 30%.

1.3. Action Plans for Promoting Energy Efficiency

a) Objectives

The objective of Indonesia's energy conservation program is to maintain and increase the value and diversity of energy resources in its supply and utilization.

b) Applicable sectors

Industrial, commercial building, households, transport, government (local and central).

c) Outline

Energy programs:

- **Mandatory Energy Management Program:** The government imposed a mandatory energy management program for large energy users, with consumption of 6,000 TOE² or more. The program requires companies to set up an energy management system, appoint an energy manager, perform regular energy audits, implement energy conservation programs, and report to the government. The government also provides support for companies to adopt the ISO 50001:2011 Energy Management System Standard.
- **Mandatory Government Energy Reporting Program:** This is an energy consumption reporting scheme that requires central and local government organizations as well as state-owned companies to report monthly energy use to the president every 6 months.³
- **Partnership Program on Energy Conservation:** Aimed to support energy conservation by providing government-funded energy audits for buildings and industries. This program started in 2003, and by 2014, a total of 1,274 audits were performed. Participating industries and buildings are required to implement the recommended energy-saving measures identified in the energy audit. In 2005, with the enactment of the mandatory energy management program, this program designates approximately 10 buildings each year as "energy efficient."
- **Energy Managers and Auditors:** The government issued a Ministerial Decree on

¹ Government Regulation No. 79/2014 regarding National Energy Policy.

² Government Regulation No. 70/2009 on Energy Conservation.

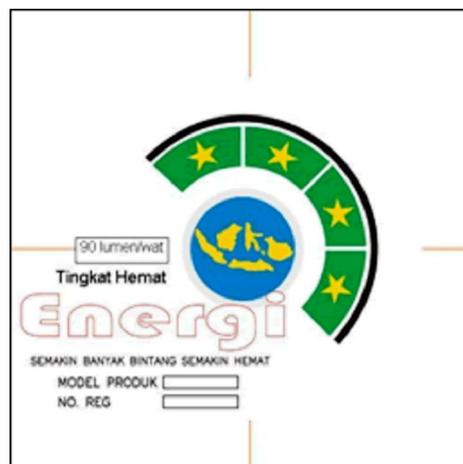
³ Presidential Instruction No. 13/2011 regarding Energy and Water Saving.

Competency for energy managers and auditor in the industrial and building sectors.⁴ The Ministry of Energy and Mineral Resources has provided capacity-building to train energy managers and auditors. Energy managers and auditors are certified by the Association of Energy Conservation Experts (*Himpunan Ahli Konservasi Energi* or HAKE).

- Energy Standard and Labeling: Indonesia implements Minimum Energy Performance Standards (MEPS) and the Comparative Label to promote the use of energy-efficient appliances.

The energy labeling system design shows: 1) product performance, such as kWh per year; and 2) a star-rating system with four stars for top-performing products.⁵

The star rating is assigned by an independent and accredited test facility. The new energy label design (shown to the right) is an example for compact fluorescent lamps (CFLs). The energy label also provides information on the lumens produced per watt.



MEPS were introduced to provide energy efficiency products to Indonesians. This standard prevents inefficient products, produced locally or abroad, from entering the Indonesian market.

The government imposes both or either MEPS or label for other appliances. For example, in lighting appliances, such as CFLs, the government imposes labeling⁶

but for air conditioners, both MEPS and labeling are applied.⁷

- Energy Efficiency and Conservation Clearing House Indonesia (EECCHI): Created as a media and information center for energy efficiency, it conducts outreach programs in homes, schools, government buildings, and private organizations. By 2016, EECCHI will be expanded to include renewable energy.
- Energy Awards: Indonesia is an active participant in the ASEAN Energy Award program, especially the Best Practice Competition for Energy-Efficient Buildings, and the Best Practice Competition for Energy Management in Buildings and Industries. Indonesia has won several awards in these programs. Since 2011, the Ministry has held the Indonesia Energy Efficiency Awards program (*Penghargaan Efisiensi Energi Nasional* or PEEN) in order to stimulate energy efficient local industries and building owners to participate in the competition. Winners and runners-up of the PEEN are subsequently invited to participate in the ASEAN Energy Award competition.

d) Financial resources and budget allocation

⁴ Ministry of Labor and Transmigration Decree No. 614/2012 on Competency for Energy Auditors, Ministry of Labor and Transmigration Decree No. 321/2011 and No. 323/2011 on Competency for Energy Managers in the Industry and Building Sector.

⁵ CLASP (2008).

⁶ Ministerial Decree No. 6/2011 on CFLs.

⁷ Ministerial Decree No. 7/2015 on MEPS and Labels for ACs.

The government allocated a budget for energy conservation of IDR 72 billion in FY2012 (approximately USD 8 million), 80 billion IDR in FY2013 (around USD 8 million), and 89 billion IDR in FY2014 (roughly USD 8 million).⁸

e) Method for monitoring and measuring the effects of action plans

The Center of Data and Information Technology (*Pusat Data dan Teknologi Informasi* or Pusdatin) of the Ministry of Energy and Mineral Resources collects energy supply and consumption data on a regular basis. The Mandatory Energy Management Program and the Government Energy Reporting Program provide online reporting systems that assist in data collection. Data regarding energy use in buildings of government departments and agencies as well as those of regional governments is also obtained on a regular basis.

f) Expected results

Indonesia's energy conservation program expects to realize the goal of energy savings identified in the National Energy Conservation Master Plan (RIKEN), which is based on studies of energy saving potential and energy audits.

g) Future tasks

Continuing the energy conservation program, which includes the following: developing and implementing of energy conservation policy, providing both incentives and disincentives to promote energy conservation activities, developing standards and labels for energy-efficient appliances, promoting energy management systems, supporting energy managers and auditors, developing an Energy Service Companies (ESCOs) market, conducting activities related to public awareness and training, and engaging in international cooperation to support energy efficiency and conservation activities.

1.4. Institutional Structure

Under the Energy Law, energy policies are formulated by the National Energy Council (*Dewan Energi Nasional*, or DEN), which was established in 2008. The DEN consists of seven ministers and high-ranking government officials, eight stakeholder members from the industrial, academic, and technological fields, and representatives of environmental concerns and consumers.

The Ministry of Energy and Mineral Resources is the focal point of economy-wide energy conservation and energy efficiency programs. The regional governments are responsible for implementing energy efficiency and energy conservation programs within their jurisdiction.

a) Name of organization

The Ministry of Energy and Mineral Resources (MEMR), the Directorate General of New Renewable Energy and Energy Conservation, and the Directorate of Energy Conservation.

b) Status of organization

Government.

c) Role and responsibility

Formulating energy conservation policies; implementing energy conservation policies; establishing norms, standards, processes, and criteria regarding energy conservation; and providing technical training and evaluations of energy conservation programs.

d) Covered sectors

Industry, transport, commercial, and residential.

e) Established dates

August 2010.

⁸ Exchange rates sourced from the World Bank for each year.

f) Number of staff

The number of staff members of the Directorate of Energy Conservation is approximately 50.

1.5. Information Dissemination, Awareness Raising and Capacity Building**a) Information collection and dissemination**

The MEMR established EECCHI as a one-stop shop for expertise and outreach to the private sectors, schools, and the public. EECCHI is the center for data and information on energy efficiency and renewable energy. The Government of Indonesia received bilateral assistance from the Danish International Development Agency (DANIDA) in the development of EECCHI.

b) Awareness-Raising

The National Energy Efficiency Movement of the MEMR promotes energy conservation awareness through seminars, workshops, talk shows, public advertisements, brochures, and leaflets, which are specifically directed toward households, specific industries, and the transport sector. PLN Electricity, the state-owned electricity company, promotes energy conservation in electricity use. Other institutions also promote awareness, including the Agency for the Assessment and Application of Technology (BPPT), the Association of Energy Conservation Experts (HAKE), and Indonesian Scout as well as various universities and nongovernment organizations.

c) Capacity Building

Indonesia is instituting mandatory training and accreditation for energy managers and energy assessors. In addition, training is provided to government officials responsible for mandatory energy saving and reporting. The Education and Training Center for Electricity and New Renewable Energy of the MEMR (*Pusdiklat Ketenagalistrikan dan Energi Baru Terbarukan* or PPPKEBT) actively organizes training in energy efficiency and energy conservation, new and renewable energy technologies, and energy planning and modeling.

1.6. Research and Development in Energy Efficiency and Conservation

The R&D Centre of the Ministry of Mineral Resources conducts research and development of several appliances, particularly to support the standards and labeling for energy-efficient appliances. The PLN Electricity R&D Centre (PLN-LITBANG) conducts research and development related to the power industry, and it provides testing services for certain electric appliances and electric lighting, including CFLs. The Agency for the Assessment and Application of Technology (BPPT) has developed an energy audit mobile unit to perform energy audits and assessments of energy saving potential in industrial and commercial buildings.

2. MEASURES FOR ENERGY EFFICIENCY IMPROVEMENTS**2.1. Government Laws, Decrees, and Acts****a) Name**

Law No. 30/2007 regarding Energy (The Energy Law)

b) Purpose

The Energy Law is the key strategic planning legislation. The Energy Law highlights energy security as a key issue for Indonesia and it aims to develop domestic resources including natural gas, biofuels, and geothermal resources, while reducing their dependence on foreign oil resources. The law also considers the environment with provisions for the promotion of renewable energy and energy efficiency.

c) Applicable sectors

All sectors of the economy, including government departments and agencies as well as regional governments.

d) Outline

The Energy Law states the principles regarding the utilization of energy resources and final energy use, security of supply, energy conservation, protection of the environment with regard to energy use, pricing of energy, and international cooperation.

The Energy Law defines the principle under which the National Energy Policy (KEN) was developed. This includes the roles and responsibilities of the government and regional governments in planning, policy and regulation, energy development priorities, energy research and development, and the role of enterprises.

Under the Energy Law, the National Energy Policy addresses the sufficiency of domestic energy resources to meet the economy's needs, energy development priorities, utilization of indigenous energy resources, and energy reserves.

e) Financial resources and budget allocation

The government allocates the budget for its energy efficiency and conservation programs.

f) Expected results

Achieve significant energy-saving levels identified in the KEN and in the RIKEN.

Regulatory Measures

On November 16, 2009, the government issued Governmental Regulation No. 70/2009 regarding energy conservation.

The regulatory measures include:

- Formulation of the RIKEN, to be updated every five years or annually, as required.
- Mandatory assignment of an energy manager, energy auditing, and the implementation of an energy conservation program for users of at least 6,000 TOE (tons of oil equivalent) of energy
- Mandatory energy efficiency standards and energy labeling.
- Implementation of government incentives, including tax exemptions and fiscal incentives for imports of energy-saving equipment and appliances, and special low-interest rates for investments in energy conservation.
- Implementation of government disincentives, including written notices to comply, public announcements of non-compliance, monetary fines, and reductions in energy supply for non-compliance.

In 2011, Indonesia issued several regulations related to energy efficiency and conservation:

- Presidential Instruction No. 13 on Energy and Water Saving.
- Presidential Regulation No. 61 on the National Action Plan on Greenhouse Gas Emissions Reduction.
- Presidential Regulation No. 71 on National Greenhouse Gas Emissions Inventories.

In 2012, a set of implementing regulations were issued:

- Ministry of Energy and Mineral Resources Regulation No. 12/2012 on Control of Fuel Utilization.
- Ministry of Energy and Mineral Resources Regulation No. 13/2012 on Electricity Saving.

- Ministry of Energy and Mineral Resources Regulation No. 14/2012 on Energy Management.

2.1.1. Minimum Energy Performance Standards and Labeling

a) Name

Indonesia has MEPS and comparative labels for select electrical appliances, based on the Indonesia National Standard (*Standar Nasional Indonesia* or SNI) and other energy performance testing standards (EPTS) for electrical appliances.

b) Purpose

To specify technical requirements with regard to energy efficiency, and prevent inefficient technology in Indonesia. The comparative label is the guideline for consumers to choose electrical appliances based on its energy efficiency level.

c) Applicable sectors

Applicable to residential and commercial sectors: appliances, lighting, and equipment.

Table 1: Regulated Appliances and its Energy Performance Testing Standards

	Product	EPTS
1.	Ballast (magnetic)	SNI IEC 60929-2009
2.	Fluorescent lamps	SNI IEC 60901-2009
3.	Incandescent lamps	SNI IEC 60432-1-2009
4.	Room air conditioners - split type	ISO 5151
5.	Room air conditioners - window	ISO 5151
6.	Household refrigerators	SNI IEC 15502-2009
7.	Clothes washers	SNI IEC 60456-2009
8.	Electric irons	SNI IEC 60311-2009
9.	Vacuum cleaner	SNI IEC 60312-2009

d) Outline

The SNI standard on electrical appliances and equipment is drafted and registered under a strict system through the National Standardization Agency (*Badan Standardisasi Nasional* or BSN). Additional energy standards on electrical appliances are being developed.

2.1.2. Building Energy Codes

Government Regulation No. 36/2005, under Law No. 28/2002 requires all buildings to comply with standards. Indonesia includes four energy standards (SNI) for buildings: 1) building envelope; 2) air conditioning; 3) lighting; and 4) building energy auditing. Energy building standards have yet to be mandated. However, voluntarily energy conservation and efficiency measures in commercial buildings are widely implemented.

a) Name

SNI for Buildings

b) Purpose

The building energy codes are designed to improve building energy performance.

c) Applicable sectors

Residential and commercial buildings.

d) Outline

The standards outline the following:

- Building envelope: design criteria, design procedures, and energy efficiency standards.
- Air-conditioning systems: technical calculation, selection, measurement assessment, and energy efficiency standards.
- Lighting systems: lighting guidelines for optimal and efficient operation.
- Energy-audit procedures: energy-audit procedures for offices, hotels, shopping centers, hospitals, apartments, and residences.

The standards/codes provide recommendations that take into account productivity, comfort, and cost-effectiveness.

Table 2: SNI for Buildings

1.	SNI 03-6389-2000	Energy conservation for building envelopes <i>(Konservasi energy selubung bangunan pada bangunan gedung)</i>
2.	SNI 03-6390-2000	Energy conservation for air-conditioning systems in buildings <i>(Konservasi energy system tata udara pada bangunan gedung)</i>
3.	SNI 03-6197-2000	Energy conservation for lighting systems in building structures <i>(Konservasi energy system pencahayaan pada bangunan gedung)</i>
4.	SNI 03-6196-2000	Energy auditing procedure for buildings <i>(Prosedur audit energy pada bangunan gedung)</i>

e) Financial resources and budget allocation

The government provides funding for the Partnership Program, while follow-ups of the program and voluntary EEC measures are self and commercially financed.

f) Expected results

The standards are expected to initiate construction of more energy-efficient buildings and improve overall energy efficiency of existing buildings (through retrofitting).

2.1.3. Fuel Efficiency Standards

Currently, Indonesia does not have minimum fuel-efficiency standards. However, fuel-efficiency standards are expected to be implemented in the near future.

Current emissions standards are equivalent to Euro II compliance, implemented in 2006. Indonesia must advance to Euro-IV equivalent emission standards by 2012. Pertamina, the state-owned oil company, is working on plans to upgrade their refineries in order to produce Euro-IV-compliant gasoline. The refinery upgrading projects are expected to be completed during the 2014-2016 time period.

2.2. Voluntary Measures

Voluntary energy efficiency and conservation measures are being implemented by industrial and commercial buildings through commercial financing. Certain energy-intensive industries, such as the fertilizer, cement, pulp and paper, and steel industries as well as certain commercial buildings have implemented EEC measures, including the installation of automated energy management.

2.3. Financial Measures Taken by the Government

2.3.1. Tax Scheme

Currently, the government does not have a tax scheme, such as tax deductions, regarding investments in energy efficiency and conservation.

2.3.2. Low-Interest Loans

Currently, the government does not have low-interest loans for investments in energy efficiency and conservation.

2.3.3. Subsidies and Budgetary Measures

Government subsidies and budgetary measures are provided for energy conservation programs, including the following: 1) the Partnership Program on Energy Conservation in energy auditing; 2) Investment Grade Audits (IGAs) for selected industries; 3) capacity-building for financial institutions; and 4) other programs that promote information dissemination and awareness-raising.

2.3.4. Other Incentives

The government is expected to introduce incentives that include tax exemptions and fiscal incentives on imports of energy-saving equipment and appliances, especially low-interest rates on investments in energy conservation in the near future (Governmental Regulation No. 70/2009). The MEMR is also developing community credit (*Kredit Usaha Rakyat* or KUR) and the regulatory framework for ESCO implementation in Indonesia. As part of educating financial institutions, the ministry is developing guidelines for energy efficiency financing.

2.4. Energy Pricing

The government hopes to gradually remove fuel and electricity subsidies, and have their retail prices reflect the costs of supply.

The government subsidy for gasoline, RON 88 octane, and diesel oil, which are primarily consumed in the transport sector, has been removed since the end of 2014. However, there is the remaining government subsidy for automotive diesel oil for transport, kerosene for households (particularly in eastern Indonesia), liquefied petroleum gas (LPG) in the government kerosene-to-LPG conversion program for households, and electricity price (only for low-income households).

2.5. Other Efforts for Energy Efficiency Improvements

2.5.1. Cooperation with Non-Government Organizations

Currently, most non-government organizations that are working in the field of energy are involved in small-scale new and renewable energy development. Thus, their programs still help conserve fossil energy reserves, especially through the use of locally available energy resources.

2.5.2. Cooperation through Bilateral, Regional, and Multilateral Schemes

Ongoing cooperation in energy efficiency and conservation include the following: 1) Indonesia-JICA (Japan): Study on Energy Conservation and Efficiency Improvement in the Republic of Indonesia; 2) Indonesia-NEDO (Japan): Demonstration Project for Smart Communities in Industrial Parks; 3) Indonesia-Denmark: Energy Efficiency in Industrial,

Commercial, and Public Sector (EINCOPS); 4) Indonesia-German(GIZ): Development of a NAMA for Energy-Efficient Cooling Systems and Cold Supply in Indonesian Industry and Commerce; 5) Indonesia-ASEAN: Promotion of Energy Efficiency and Conservation; and 6) Indonesia-UNIDO: Promoting Energy Efficiency in the Industries through System Optimization and Energy Management Standards.

2.5.3. Other Cooperation/Efforts for Energy Efficiency Improvements

Indonesia has reviewed the APEC-Energy Working Group (EWG) Peer Review on Energy Efficiency in 2011.

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