

# PERU

## 1. GOALS FOR EFFICIENCY IMPROVEMENT

### 1.1. Overall Energy Efficiency Improvement Goals

#### a) Key indicator

Total Primary Energy Supply/GDP, Energy Elasticity to GDP, Total Energy Use, etc.

#### b) Goals

To reduce energy consumption by up to 15 percent by 2018

#### c) Base year

2005

#### d) Goal year

2018

#### Description

The Peruvian Government through the Ministry of Energy and Mines (MINEM) will formulate the economy's goals in the next years according to Law No. 27345 Promoción del Uso Eficiente de la Energía (Law of Promotion for the Efficient Use of Energy) and its regulatory measure, which is the energy efficiency framework for the economy.

### 1.2. Sectoral Energy Efficiency Improvement Goals

#### a) Sector

The Referential Plan for the Efficient Use of Energy 2009–2018 (Plan Referencial para el Uso Eficiente de Energía—PRUEE) in Peru contemplates goals in four sectors, where the energy efficiency improvements are to be approached from the energy demand point of view. The sectors to be considered are:

- Residential
- Industry (productive and services)
- Public
- Transport.

#### b) Goals

The Peruvian Government has established the goal of 15% energy savings among the residential, industry (productive and services), public and transport sectors. To achieve this goal, all action plans will be implemented in each sector as proposed in the Referential Plan (see Table 1).

Also, as a result of the energy efficiency programs in each sector, carbon dioxide (CO<sub>2</sub>) emissions have been estimated. The total CO<sub>2</sub> emission reduction is expected to be 35.6 million tonnes.

#### c) Base year

2005

#### d) Goal year

2018

**Table 1. Reduction of energy demand with the implementation of energy efficiency programs in each sector from 2009 to 2018**

Sector	Total (PJ)
Residential	143.63
Industry (Manufacturing & Services)	147.14
Public	0.91
Transport	80.95
<b>Total</b>	<b>372.64</b>

Source: Referential Plan for the Efficient Use of Energy 2009 – 2018, Ministry of Energy and Mines (MINEM), Peru.

### 1.3. Action Plans for Promoting Energy Efficiency

#### 1.3.1 Action Plans or Strategies for Promoting Energy Efficiency

##### a) Name

Referential Plan for the Efficient Use of Energy 2009-2018

##### b) Objectives

To promote and disseminate the features and benefits of energy efficiency at all levels through visual media, print media, and so on

##### c) Applicable sectors

The Referential Plan for the Efficient Use of Energy in Peru contemplates goals in four sectors, and energy efficiency improvements were taken from the energy demand point of view. The sectors are:

- Residential
- Industry (manufacturing and services)
- Public
- Transport.

##### d) Outline

The Peruvian government has actively pursued energy efficiency since the 1980s and 1990s, through the creation of the Energy and Environment Centre (CENERGIA) in 1986 and Energy Conservation Program (PAE) in 1994. The Government Decree regulating the Law for the Promotion of Efficient Use of Energy, which requires MINEM to formulate an energy efficiency policy (as part of the economy's energy policy), was established in 2000. As a result of this policy, the government has elaborated the Referential Plan for the Efficient Use of Energy 2009–2018, which is the main instrument to achieve the energy efficiency goals through the action plans proposed in each sector. From the Referential Plan, different action plans in four sectors were contemplated, which are described as follows:

*Residential sector:* There are several proposals in order to achieve the energy saving goal in the sector; however, only four projects have been taken into account which could have high impact within the sector:

- 1) Modernisation of lighting
- 2) Improved energy consumption habits of people
- 3) Replacement of electric water heaters with solar water heater systems
- 4) Replacement of traditional stoves with improved stoves.

*Industry sector (productive and service sector):* According to the Efficient Use of Energy and Energy Diagnosis Guidelines of 2008, equipment with high energy demand includes motors, heaters and lighting equipment, and for this reason, the action plans are focused on these. Four major impact projects are considered:

- 1) Replacement of conventional motors with efficient electric motors
- 2) Optimisation and modernisation of high-pressure heaters
- 3) Modernisation and improvement of lighting
- 4) Implementation of cogeneration projects.

*Public sector:* According to the Efficient Use of Energy and Energy Diagnosis Guidelines of 2008, higher electricity demand comes from lighting and computers, as well as air conditioners in buildings. One of the principal projects here is the Efficient Lighting in the Public Sector.

*Transport sector:* In Peru, most of the energy consumption in transport sector is related to road transport (80%), which is the sub-sector where energy efficiency improvements should be developed. Two of the most important projects that have been quantified in the Referential Plan are Efficient Driver Project and One Day without a Car Project.

#### **e) Financial resources and budget allocation:**

There is currently no budget allocation for new action plans. However, the Peruvian Government is working to establish a financing mechanism for the energy efficiency market. In case of the sectoral programs in industry (production and service sectors), the mechanisms are:

- Promotion of financing mechanisms for medium- and large-size enterprises by means of commercial banks
- Implementation of a trust fund for the promotion of the efficient use of energy (Fideicomiso para la Promoción del Uso Eficiente de Energía).
- Financing programs from International Technical Cooperation for medium- and small-size enterprises.

#### **f) Method for monitoring and measuring effects of action plans:**

In the framework of Law No. 27345 (Ley de Promoción del Uso Eficiente de la Energía) of 8 September 2000, and its Supreme Decree No. 053-2007-EM of 2007, the Peruvian Government designated Energy Consumption Indicators as a Ministerial Resolution, which was published as RM No. 038-2009-MEM/DM on 21 January 2009. The purpose of the Energy Consumption Indicators is the development of a fundamental tool to achieve the economy's goals on energy efficiency.

#### **Activities for monitoring and reporting**

On 1 January 2009, the Peruvian Government published the Ministerial Resolution (or Supreme Decree) No. 038-2009-MEM/DM, which approves the Energy Consumption Indicators and monitoring methodology for key economic sectors.

#### **Departments/agencies for monitoring and reporting**

Currently, the General Directorate of Electricity of the Ministry of Energy and Mines (MINEM) is responsible for the energy efficiency and renewable energy policies and monitoring activities.

#### **Outputs of monitoring**

The Supreme Decree on Energy Consumption Indicators and its Monitoring Methodology will establish disaggregated indicators for each sector with the purpose of developing Energy Action Plans encouraged by the Ministry of Energy and Mines (MINEM) in the coming years.

Several energy indicators have been developed for residential, industry and commercial sectors, as well as the public and transport sectors. Also, global indicators have been identified to be followed.

### **Outcomes of monitoring**

The Supreme Decree was approved recently, as well as the management application.

### **Financial resources and budget allocation for monitoring**

Will be developed with the National Government Budget

### **Description**

The goal is to become acquainted through sectoral indicators with the necessary considerations to establish directives or guidelines in the Referential Plan of the Efficient Use of Energy.

#### **g) Expected results**

To achieve the goals outlined in Section 1.2

#### **h) Future tasks**

The current Referential Plan will provide the goals and will be regularly revised and updated according to recent available data.

## **1.4. Institutional Structure**

### **1.4.1 Central Institutional Structure**

#### **a) Name of organisation**

Ministry of Energy and Mines (MINEM) by means of the General Directorate of Electricity (DGE) of the Vice-Ministry of Energy

#### **b) Status of organisation**

Government

#### **c) Roles and responsibilities**

The main goal is to promote sustainable development and a competitive power sector, giving priority to private investments and energy matrix diversification, in order to satisfy energy requirements in an efficient and effective way to enable the development of productive activities and improve the living conditions of the population.

The activities are coordinated with state sectors that share an interest in energy efficiency and are also showing interest in participating, such as the Ministry of Education, Ministry of Production, Ministry of Housing, Universities, Local and Regional Governments, among others.

#### **d) Covered sectors**

All economic sectors

#### **e) Established date**

Time interval: 1996–2003 and 2005–present

#### **f) Number of staff members**

In the General Directorate of Electricity, there are now five professionals, three engineers, and two graduates in education.

### 1.5. Information Dissemination, Awareness-Raising and Capacity-Building

#### a) Information collection and dissemination

In the coming years, this activity should be implemented according to the Law on Promotion of Energy Efficiency (Law No. 27345) statements and its regulations.

#### b) Awareness-raising

No information available

#### c) Capacity-building

No information available

### 1.6. Research and Development in Energy Efficiency and Conservation

#### 1.6.1. Specific Policies on Energy Efficiency RD&D

In the coming years this activity should be implemented according to the Law on Promotion of Energy Efficiency (Law No. 27345) statements and its Regulations.

#### 1.6.2. Programs on Energy Efficiency RD&D

Same as above

## 2. MEASURES FOR ENERGY EFFICIENCY IMPROVEMENTS

### 2.1. Government Laws, Decrees, Acts

#### a) Name

The Law for the Promotion of Efficient Use of Energy of 2000 (Law No. 27345), to be implemented by Government Decree No. 053-2007-EM of 23 October 2007, assigns the Ministry of Energy and Mines (MINEM) as the competent authority to promote the efficient use of energy by creating a culture for the rational use of energy, the elaboration and implementation of sectoral energy efficiency programs, and the promotion of energy efficiency consultancy services and ESCOs.

In addition, through the Supreme Decree No. 034-2008-EM of 19 June 2008, the Peruvian government established support for energy saving measures in the public sector by replacement of inefficient lamps (incandescent lamps) with compact fluorescent lamps (CFLs), as well as the acquisition of equipment with energy efficiency labels.

#### b) Purpose

The promotion of the efficient use of energy that will be in the economy's interest for energy security supply, consumer protection, encouragement of competitiveness and reduction of the negative environmental impacts from energy consumption.

#### c) Applicable sectors

All economic sectors

#### d) Outline

The law was approved on 8 September 2000; and one of the main barriers is the financing of energy efficiency audits.

#### e) Financial resources and budget allocation

Funding comes from the Ministry of Energy and Mines.

#### f) Expected results

In the coming years this activity should be implemented according to the Law on Promotion of Energy Efficiency and the Regulations approved in 2007.

## 2.2. Regulatory Measures

### a) Name

Regulatory Measure of Law No. 27345, Law for the Promotion of the Efficient Use of Energy—Supreme Decree No. 053-2007

### b) Purpose

The primary goal is to develop the regulatory measures to promote the efficient energy consumption.

### c) Applicable sectors

All economic sectors

### d) Outline

It was approved on 23 October 2007; one of the main barriers is the financing of energy efficiency.

### e) Financial resources and budget allocation

Funding comes from the Ministry of Energy and Mines.

### f) Expected results

In the coming years, this activity should be implemented according to the Law on Promotion of Energy Efficiency and its Regulations, which were approved in 2007.

#### 2.2.1. Minimum Energy Performance Standards and Labelling

The Law for the Promotion of the Efficient Use of Energy (Law No. 27345 of 2000) requires mandatory energy efficiency labelling of energy consuming equipment and appliances. This requirement has been confirmed by Supreme Decree No. 053-2007-EM of 23 October 2007 regulating Law No. 27345/2000. The Ministry of Energy of Mines (MINEM) intends to develop and implement energy efficiency standards and labelling for a wider range of end-use appliances and to develop and implement a comprehensive market transformation strategy, based on mandatory energy efficiency labelling, minimum energy performance standards (MEPS), and the development of testing infrastructure and procedures and consumer awareness. The proposed project will build on the achievements so far and provide support in developing and implementing all those measures that are necessary to overcome the institutional, technical and awareness-related barriers that impede the implementation of this strategy, in particular:

- 1) Increase the awareness and strengthen technical and managerial capacities of government and other key public and private agents
- 2) Carry out a market study in order to establish a comprehensive and detailed data base of energy end-uses and end-use technologies
- 3) Develop a market transformation strategy for the introduction and dissemination of energy efficiency standards and labelling
- 4) Design and implement market transformation instruments (additional technical and energy efficiency labelling standards, MEPS)
- 5) Foster the development of the required infrastructure and procedures for product testing and certification, in particular test laboratories
- 6) Develop and implement an enabling legal and regulatory framework, in particular government regulations for mandatory energy efficiency labelling and MEPS
- 7) Develop a consumer communication strategy including awareness campaigns, incentives to consumers and training of equipment sales personnel
- 8) Develop and implement an appropriate monitoring and evaluation system.

Furthermore, the establishment of the Regional Energy Efficiency standards and labelling Committee and the Regional Energy Efficiency S&L Information System will foster exchange of experience and coordination of economy-wide programs with other economies in the region.

### 2.3. Voluntary Measures

#### 2.3.1. Energy Efficiency Labelling

##### a) Name

Guideline for Labelling

##### b) Level

Central

##### c) Purpose

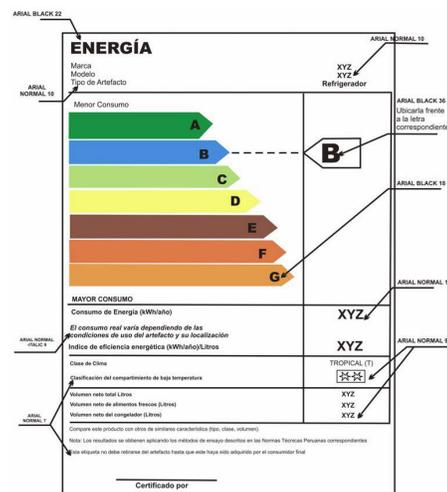
To gather information on energy efficiency of households and their minimum performance standards with the goal of promote the culture on energy efficient consumption

##### d) Applicable sectors

All economic sectors

##### e) Outline

The elaboration of test procedures and energy efficiency labelling standards in Peru was initiated in 1996 by the Technical Committee of Standardization for Rational and Efficient Use of Energy (CTNUREEE) and its respective subcommittees, with the participation of relevant public and private agents. So far, energy efficiency test procedures have been developed for refrigerators and freezers, lighting equipment (lamps and ballasts), electric motors, electric water heaters, industrial boilers and solar thermal and photovoltaic systems. Energy efficiency labelling standards are in place for refrigerators and freezers, household lamps and electric motors, in addition to minimum efficiency performance standards for CFLs.



It is a voluntary measure, and it came into effect in January 2009.

#### 2.3.2. Energy Saving in the Public Sector

##### a) Name

Supreme Decree on Energy Savings in Public Sector; D.S. No. 034-2008-EM

##### b) Level

Central

##### c) Purpose

To induce the public sector to reduce its energy demand through energy efficiency campaigns and promote the use of more efficient equipment

##### d) Applicable sectors

All economic sectors

**e) Outline**

It is a mandatory measure, which was published in June 2008.

**f) Financial resources and budget allocation**

Funding comes from the Ministry of Energy and Mines.

**g) Expected results**

In the coming years, this activity should be implemented as it is part of the Law on Promotion of Energy Efficiency and its Regulations, which were approved in 2007.

**2.3.3. Technical Norms (Standards) on Energy Efficiency****a) Name**

Technical Norms (Standards) on Energy Efficiency (Essays, Limits, and Labels)

**b) Level**

Central

**c) Purpose**

To provide the minimum energy efficiency standards, (especially norms, limits, and labels) for lighting, water heaters, heater boilers, motors, solar energy, etc.

**d) Applicable sectors**

All economic sectors

**e) Outline**

They are voluntary norms (standards), which have been published from 2000 to the present.

**f) Financial resources and budget allocation**

Funding comes from the Ministry of Energy and Mines.

**g) Expected results**

No information available

**2.4. Financial Measures Taken by the Government****2.4.1. Tax Scheme**

No information available

**2.4.2. Low-Interest Loans**

No information available

**2.4.3. Subsidies and Budgetary Measures**

No information available

**2.4.4. Other Incentives**

Information not available

**2.5. Energy Pricing**

Pricing is energy market based in form of marginal cost.

There is an inversely proportional relationship, whereby if the price of energy increases, there will be recession in the economy. In order to develop the economy, a move to complementary energy sources could be considered to offset this.

## 2.6. Other Efforts for Energy Efficiency Improvements

### 2.6.1. Cooperation with Non-Government Organisations

There is no financial support for NGOs.

### 2.6.2. Cooperation through Bilateral, Regional and Multilateral Schemes

Peru has cooperation through bilateral schemes with international organisations such as:

- Japan International Cooperation Agency (JICA)
- German Technical Cooperation (GTZ)
- United Nations Development Program (UNDP)
- Inter-American Development Bank (IADB)
- The Global Environment Facility Trust Fund (GEF) of the UNDP.

### 2.6.3. Other Cooperation/Efforts for Energy Efficiency Improvements

No information available

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