

# CHILE

## 1. GOALS FOR EFFICIENCY IMPROVEMENT

### 1.1. Overall Energy Efficiency Improvement Goals

The Chilean Government has delivered a National Energy Strategy, which will be the navigation guidance for the next 20 years. This Strategy aims to achieve a cleaner, safer, and cheaper energy, and meets the energy requirements of our country. This strategy is based on a set of support, of which energy efficiency will be the first pillar of energy development.

### 1.2. Sectorial Energy Efficiency Improvement Goals

The National Energy Strategy has established a goal of 12% reduction in energy projection by 2020. In May 2013, Chile's Energy Efficiency Action Plan 2020 was launched.

### 1.3. Action Plans for Promoting Energy Efficiency

The Ministry of Energy is the institution responsible for developing public policies in energy efficiency, it centralizes the functions to develop, propose and evaluate actions in this area. The Energy Efficiency Division of the Ministry is responsible to define and promote: objectives and goals in energy efficiency, the regulatory framework that promotes energy efficiency, and long-term strategy to follow.

Chile has a number of government institutions working to achieve increased energy efficiency, one of the most important is the Chilean Energy Efficiency Agency (Agencia Chilena de Eficiencia Energética - AChEE). The mission of AChEE is to promote, strengthen and consolidate the efficient use of energy by bringing together relevant stakeholders, national and international, and implementing public-private initiatives in energy sectors. AChEE is in charge of the implementation of the energy efficiency programs according to the policies developed by the ministry.

Other important actors are: Superintendencia de Electricidad y Combustibles (Superintendency of Electricity and Fuels (SEC); Ministry of Housing; Ministry of Transport and Communications.

#### 1.3.1 Energy Efficiency Monitoring and Reporting

The Division of Energy Efficiency and AChEE have established an area of Measurement and Verification. It seeks to implement methodologies to produce reports at both macro and project level.

At the macro level, energy statistics are prepared by the Prospective and Energy Policy Division of the Ministry of Energy, while economic data (national accounts, production) are reported by both the Central Bank of Chile and by the National Institute of Statistics. In addition, Chile is participating in a project to build a base of energy efficiency indicators in Mercosur countries and partners, with the assistance of ECLAC.

At the project level, the results will be measured based on international methodologies (eg, Protocol CMVP) or by third parties (universities, consultants) to support the savings achieved by each project.

### 1.4. Institutional Structure

### 1.4.1 Central Institutional Structure

#### a) Name of organisation

Ministry of Energy - Energy Efficiency Division

#### b) Status of organisation

Design, proposal, implementation and evaluation of public policies and projects in energy efficiency

#### c) Roles and responsibilities

Development of energy efficiency policies, plans, lines of action and standards.

#### d) Covered sectors

Covered sectors are: Industry and Mining, Transportation, Building, Firewood, Appliances and Education.

#### e) Date of establishment

2010

#### f) Number of staff members

The Ministry of Energy has approximately 150 staff members. The Energy Efficiency Division has nine professionals.

#### g) Description of the Ministry of Energy

The Ministry of Energy is the highest-level government body through which the President of the Republic collaborates in the government and administrative functions of the energy sector.

The overall objective of the Ministry of Energy is to develop and coordinate plans, policies and standards for the proper functioning and development of the sector, ensure compliance and advise the Government on all matters relating to energy.

The energy sector includes all activities of study, exploration, generation, transmission, transportation, storage, distribution, consumption, efficient use, import and export, and everything else that relates to electricity, coal, gas, oil and oil products, nuclear energy, geothermal and solar and other energy sources.

### 1.4.2 Implementing Institution Structure

#### a) Name of organisation

Chilean Energy Efficiency Agency (Agencia Chilena de Eficiencia Energética) or ACHEE

#### b) Status of organisation

Implementation of specific programs and projects that drives efficiency in energy consumption.

#### c) Roles and responsibilities

The Chilean Energy Efficiency Agency's role is to study, evaluate, promote, implement and disseminate information on diverse initiatives related to energy diversification, conservation and efficiency.

#### d) Covered sectors

Covered sectors are: Building, Industry and Mining, Transport, Education and Training, Measurement and Verification, Business Development.

#### e) Date of establishment

2010

**f) Number of staff members**

30

**g) Description of AChEE**

The Energy Efficiency Chilean Agency (AChEE) is a public-private nonprofit foundation, whose mission is to promote, strengthen and consolidate the efficient use of energy by bringing together relevant stakeholders, national and international level, and implementing initiatives public private partnerships in various sectors of energy, contributing to the country's sustainable competitive. AChEE has a board comprising representatives of the Ministry of Energy, Ministry of Finance and the Confederation of Production and Trade

**1.4.3 Regional or Local Institutional Structure****a) Name of organisation**

Ministerial Regional Secretaries of Energy (SEREMIS)

**b) Status of organisation**

SEREMIS lead the implementation of energy efficiency strategies in different regions of the country.

**c) Roles and responsibilities**

Disseminate and promote the efficient use of energy at the local levels.

**d) Covered sectors**

Covered sectors are: Industry and Mining, Transportation, Building, Firewood, Appliances and Education.

**e) Starting date**

2010

**f) Number of staff members**

There are six regional ministry representatives (SEREMI).

**1.4.4 Information Dissemination, Awareness-raising and Capacity-building****a) Information collection and dissemination**

Chile has a product labelling program that leverages the European comparative labelling scheme, which breaks-down all similar models of a product into one of seven efficiency categories: A (most efficient) through G (least efficient). This labelling is currently applied to: incandescent bulbs (2007), compact fluorescent lamps (2007), refrigerators (2008), refrigerator-freezer (2008), freezer (2008), standby in: microwaves (2010) ó TVs (2012) ó Set top Box (2012) ó stereos (2012) ó DVDs (2012) ó Blu Ray (2012), electric motors to 10 hp (2011), air conditioner (2011), fluorescent tubes (2011).

Appliances that are in the process of defining labels and measurement and verification protocols are: washing machines (2013), gas water heaters (2013), gas stoves (2013), halogen lamps (2013), standby power consumption home theaters (2013), and standby consumption printers (2013).

Other products covered with energy efficiency protocols but without a label comparative are: sodium lamps, high and low pressure (2012), ballast for sodium lamps, high and low pressure, ballast for high pressure mercury lamps, and/or metal halides (2012), LED technology devices for lighting fixtures (2013).

Ministry of Energy is working with Ministry of Housing and Urbanism in volunteer housing labeling.

Another initiative that was developed is compulsory new car labeling, in operation from February 2013 that applies only to the first sale of light vehicles homologated from 2008, using diesel or gasoline with a gross vehicle weight of up to 2700 kg and are for the transport of persons, except those intended primarily to freight as trucks and vans.

#### **b) Awareness-raising**

Chile has carried out, at least once per year, communication campaigns aimed at residential users, through television, billboards and newspapers. The last campaign is called "La Energía Importada" (Energy Matters), it has emphasis in energy efficiency and it has a national scope.

In 2013 the 3rd "Energy Efficiency Exposition" was held, a place to exchange experiences and learn more about this topic. The exposition in 2013 featured almost 80 stand, 60 participating companies and more than 9, 000 visitors. In this edition, it had international five speakers.

#### **c) Capacity-building**

There are numerous opportunities for energy efficiency training for professionals of the area, including courses offered in about 20 universities, and two engineering associations with sub-groups focused on energy.

In 2012, for second consecutive year, the AChEE offered three professional certifications: i) Certified Retscreen User (CRU), in which attended seven professionals of different sectors, like industry, miner and public sector; ii) Certified Measurement & Verification Professional program (CMVP), in which 27 professionals attended and Certified Energy Manager (CEM), in which attended 24 professionals and four of them was certified. - Also the first certified "European Energy Manager" was dictated by the German-Chilean Chamber of Commerce and Industry.

### **1.5. Research and Development in Energy Efficiency and Conservation**

The Energy Efficiency Division has conducted a series of studies to evaluate the potential of energy efficiency. Research highlights include the following:

- Study of Bases for the elaboration of an Action Plan for Energy Efficiency.
- Study of energy end uses in the residential sector.
- Study of energy end uses in the hospitals.
- Study of energy end uses in the industry and mining sector.
- Study of energy end uses in the schools.

There are insipient policies on energy efficiency research, development and demonstration.

Although research is done mostly in universities, there are energy efficiency research projects and programs in the government.

## **2. MEASURES FOR ENERGY EFFICIENCY IMPROVEMENTS**

### **2.1. Government Laws, Decrees, Acts**

In February of 2010 the Ministry of Energy was created, the highest organ of cooperation of the President in the functions of government and administration of the energy sector. The ministry centralises the functions of developing, proposing and evaluating public policies, including the definition of objectives, regulatory frameworks and strategies to be applied, as well as the development of public policy instruments.

## 2.2. Action Plan

### a) Name

Action Plan for Energy Efficiency 2020

### b) Purpose

The Action Plan for Energy Efficiency aspires to be a guide for public and private sectors can tailor their actions to increase energy efficiency in their respective fields of action. It has set a target of a 12% reduction in projected energy consumption by 2020.

### c) Applicable sectors

Covered sectors are: Industry and Mining, Transportation, Building, Firewood, Appliances and Education.

### d) Outline

#### Industry and Mining

- É Promotion of the implementation of energy management systems
- É Promotion of cogeneration (CHP)
- É Promotion of technical assistance to projects
- É Incorporation of efficient technologies

#### Transport

- É Improve energy efficiency of vehicles light and medium vehicles entering the park
- É Improve operating efficiency of the fleet passenger vehicle
- É Promote the introduction of more efficient technologies in the heavy vehicle park
- É Improve the efficiency of the existing fleet of heavy vehicles
- É Promote energy efficiency throughout the supply chain of heavy vehicles
- É Promote the shift to more efficient transport
- É Starting of electric mobility

#### Buildings

- É Improve the quality of envelopes and equipment in buildings built without energy efficiency standards
- É Promote efficient energy management of buildings
- É Promote the design of buildings with high energy efficiency standard
- É Promote the supply of construction products and services with efficiency standards
- É Promote energy efficiency in street lighting of vehicular and pedestrian areas from urban areas

#### Firewood

- É Improve the knowledge regarding the firewood and its processes
- É Improve firewood burning and update appliances
- É Improve quality standard of firewood
- É Increase the efficiency of residential firewood consumption
- É Develop the firewood energy market

#### Appliances

- É Expand Energy Efficiency Labelling
- É Set minimum energy performance standards (MEPS)
- É Develop of the program of Efficient Residential Lighting

#### Cross Sector

- É Energy Efficiency Seal
- É Creation of Interministerial Committee on Energy Efficiency (CIEE)
- É Raise awareness and promote energy efficiency

- É Recognition of job skills related to Energy Efficiency
- É Promotion of the integration of energy efficiency in education
- É Promote the integration of energy efficiency in education
- É Promote I + D in energy efficiency
- É Incorporation and promotion of smart grids
- É Promote the measurement and verification (M&V) in the implementation of energy efficiency programs

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

Budget for 2013, US15MM

#### f) **Expected results**

Reduce projected energy consumption in 12% by 2020

### 2.3. Regulatory Measures

#### 2.3.1. Interministerial Committee on Energy Efficiency (CIEE)

The State must be one of the main drivers of energy efficiency and set an example for the rest of society. For this reason, the Committee coordinates energy efficiency policies within the government, integrating this element into sectorial policies. The committee reports directly to the President and was created by Supreme Decree No. 74.

#### 2.3.2. Mandatory Labelling

See point 1.4.4 a)

#### 2.3.3. Minimum Energy Performance Standards

Chile is developing a strategy to establish MEPS. The first milestone was the MEPS regulation in 2012. This regulation was published in 2012 and the first MEPS will be for Non-Directional Lamps for General Lighting, will be elaborated in 2013. The technical report is currently open for public comment.

#### 2.3.4. Minimum Thermal Standards

##### a) **Name**

Minimum Thermal Standard for Residential Buildings

##### b) **Purpose**

To improve the energy efficiency of residential buildings

##### c) **Applicable sectors**

Construction

##### d) **Outline**

In 2000, the Ministry of Housing and Urbanism began a process to establish a Minimum Thermal Standard for Residential Buildings. The first regulation that went into effect includes minimum transmittance and thermal resistance requirements. In January 2007 Building

Envelope Regulation went into effect involving to the entire building envelope including roof, walls, ventilated floor and windows.

**e) Financial resources and budget allocation**

No information available

**f) Expected results**

No information available

**g) Other regulatory measures**

No information available

## 2.4. Voluntary Measures

**a) Name**

Mining Roundtable on Energy Efficiency (MMEE)

**b) Level**

Economy-wide

**c) Purpose**

The promotion of energy efficiency research; dissemination of results coming out of energy efficiency projects in the mining sector; evaluation of energy efficiency pilot projects; fostering technology development and innovation in or the mining sector and fostering an energy efficiency culture within the mining companies that are members of the roundtable.

**d) Applicable Sectors**

Mining sector

**e) Outline**

Started in 2006

**f) Financial resources and budget allocation**

No information available

**g) Expected results**

Support management in the energy efficiency (EE) in companies and mining operations in Chile to improve its energy management by developing cross-cutting projects on energy.

**h) Description**

MMEE consists of a voluntary affiliation by the 14 largest mining companies in the economy in addition to other participants, such as the Chilean Chapter of the International Copper Association (ICA and Procobre), Mining Council, ACHEE and Mining Ministry.

**i) Other voluntary measures**

There are several other sectorial round tables such as the one established with the retail sector, where studies are underway to determine the characteristics of consumption and energy efficiency recommendations for its members.

## 2.5. Other Measures

**a) Name**

## Thermal Retrofitting Subsidy

### b) Level

For regions from the center south of the country (Region of O'Higgins to the Region of Magallanes)

### c) Purpose

To fund projects to improve enclosures (walls, windows, ceiling and floor) to the residence built before thermal regulation, at least, reaches the minimum standard required by the current rule

### d) Applicable Sectors

Construction: Residences constructed before the date when the second phase of the thermal regulations came into force in 2007, and that meet the requirements for the Ministry of Housing and Urban Planning's Family Property Protection Program.

### e) Outline

Started in 2009

### f) Financial resources and budget allocation

The Ministry of Energy has allocated budget funds since 2009, with 73 US\$MM for 15.500 beneficiaries. Since the year 2011, the Ministry of Housing and Urban Planning has incorporated this program in its budget, allocating 40 US\$MM per year.

### g) Expected results

Submit annually 8,000 subsidies

### Description

The subsidy for housing retrofitting improvements in thermal insulation of roof, walls, windows and floor.

## 2.6. Financial Measures Taken by the Government

### 2.6.1. Tax Scheme

Chile does not provide any tax scheme for energy efficiency improvements.

### 2.6.2. Other Incentives

Information not available

## 2.7. Energy Pricing

There is a government-regulated pricing mechanism for small clients. The price of electricity for regulated consumers is set by the regulator (National Energy Commission / Commission Nacional de Energia), that is calculated in the long term node price, considering the prices of distributor's energy auctions. No energy efficiency is considered in the calculation of rates.

## 2.8. Other Efforts for Energy Efficiency Improvements

### 2.8.1. Cooperation with Non-Government Organisations

There are a number of NGOs working with the Ministry of Energy and in turn, with the Energy Efficiency Division, some of them are: UNDP, United Nations Program for Development, with the replacement program for public lighting; and UNEP, United Nations Program for the Environment with en.lighten initiative to develop a strategy for the transition to efficient lighting.

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

Chile participates in COPANT<sup>1</sup> for the harmonisation of energy efficiency standards, and participated in the design discussions of the ISO 50.001 standard.

Currently being developed to generate national mirror committee of ISO / TC 242 Energy Management, this allows the participation of national stakeholders in Chile.

On the other hand, Chile has an active participation in the Energy Working Group (EWG) of the Asia Pacific Economic Cooperation (APEC). On the regional level, Chile participates in MERCOSUR's efforts to promote energy efficiency in the region, and collaborates with ECLAC in this area.

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

#### 2.8.3.1. Cooperation Agreements

Chile has several non-binding cooperation agreements that involve energy efficiency with institutions from different economies, including New Zealand, Korea and the US State of Massachusetts, among others.

## REFERENCES

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<sup>1</sup> Pan American Standards Commission ó COPANT.