

**MEMORANDUM OF UNDERSTANDING  
BETWEEN THE MINISTRY OF ENERGY OF CHILE  
AND THE CALIFORNIA AIR RESOURCES BOARD AND  
CALIFORNIA ENERGY COMMISSION OF THE STATE OF CALIFORNIA  
Energy Issues for a Joint Collaborative Program**

**COOPERATION AGREEMENT BETWEEN THE MINISTRY OF ENERGY OF REPUBLIC OF CHILE,  
CALIFORNIA AIR RESOURCES BOARD AND CALIFORNIA ENERGY COMMISSION**

**IN THE CONTEXT OF** the "Memorandum of Understanding on the Issues of Human Capital Development, Education, Environmental Protection, Energy, Agriculture, Information and Communication Technologies, and Trade: A Collaboration for the 21<sup>st</sup> Century Between the Republic of Chile and the State of California" signed in the city of Davis, California, United States of America on June 12, 2008;

**ENTHUSIASTIC** for the desire to strengthen ties of friendship and mutually beneficial cooperation;

**RECOGNIZING** that the Republic of Chile and State of California have a shared interest in the development of clean, sustainable renewable energy sources and efficient use of energy in the context of a low carbon economy;

**INTERESTED** in fostering the development of specific programs of technical cooperation to limit the increase of greenhouse gas emissions, stimulate renewable power generation, expand energy efficiency and support sustainable uses of energy;

**CONSCIOUS** of the importance of exchanging information and sharing experiences to accelerate clean energy uses;

**The parties have reached the following understanding:**

**ARTICLE I**

**1. Support the design of instruments that contribute to the development of a low-carbon development in Chile**

Greenhouse gas emissions have global impacts – emissions produced in one country affect all other countries. Chile is considering the development of a low-carbon economy. California is interested in the success of policy actions, technology applications and implementation strategies that result in limiting the increase in greenhouse gas emissions. Given the experience in California, with the successful passage of Assembly Bill (AB 32) and Chile's interest on this topic, California and Chile appreciate the opportunity to work on a joint collaboration plan to include the following elements. The California Air Resources Board will be the lead California agency for this task and the California Energy Commission will provide supporting assistance.

### Objective

As part of the Chilean government program, this activity will contribute to the design of policies and measures for the Chilean energy sector to reach the objective of limiting the increase in greenhouse gas emissions in Chile.

### Description of Activities

The proposed activities will focus on improving Chile's internal capacities for policy design through training programs, workshops and knowledge of the California experience.

Furthermore, it is expected that the Chilean private sector will be involved in these activities from an early stage.

### Expected Outputs

- a. Proposals of policies and measures to be implemented in Chile with the objective of limiting the increase of emissions, all evaluated in terms of the cost of implementation and their impact on greenhouse gas emissions.
- b. Contributions to the design of a proposal to implement an emissions cap and trade system for Chile.
- c. A permanent working group, including the public and private sectors and experts in the California experience, to discuss the measures and other related issues of shared interest.

## **2. Capacity-building program for the expansion of energy efficiency and renewable energy in Chile**

**The California Energy Commission will be the lead California agency for this task.**

### Objective

This program aims to improve the existing capacities in Chile to use cleaner sources of energy and increase energy efficiency.

### Context

The Chilean government has been working on Energy Efficiency for several years now. So far, Chile has carried out a number of successful programs, including energy efficiency labeling of selected appliances, a retrofit program in the residential sector and renewal schemes to transport cargo and goods in heavy duty vehicles. Indeed, the country's achievements in the field of energy efficiency made it the recipient of the Visionary Award bestowed by the Alliance To Save Energy in May 2010.

However, despite the success so far, certain areas of California's technical and practical expertise would be beneficial to Chile. This MOU aims to facilitate the know-how transfer between the two parties in selected areas of interest.

In addition, California has a vast experience in geothermal energy, including numerous geothermal energy companies from which Chile can learn in order to exploit its great potential.

## **Project 1: Renewable Energy**

### **Objective:**

**This activity will provide** technical assistance to help develop geothermal energy in Chile, including efforts to support:

Development of regulations and other strategies to stimulate geothermal exploration and exploitation activities. This will, at the same time, imply advancements in the geothermal well safety and environmental and resource sustainability standards and norms.

Development of guidelines to evaluate the environmental impacts of geothermal projects and procedures to close sites.

Formation of strategies to increase Chile's technical knowledge and professional capacity building in these areas.

### **Description of Activities:**

The proposed activities include exchange of information and technical assistance to help develop regulations and associated strategies to stimulate development of geothermal exploration and exploitation activities. Activities will also include advancements in geothermal well security and environmental and resource sustainability components.

The proposed activities include exchange of information and technical assistance to help develop guidelines to evaluate the environmental impacts of geothermal projects and procedures to close sites.

The proposed activities include exchange of information and technical assistance to help form strategies to increase Chile's technical knowledge and professional capacity building programs and activities.

### **Expected Outputs:**

- a. Proposed regulations for geothermal exploration and exploitation activities, which take into account security, environmental and resource sustainability components.
- b. Guidelines for the environmental evaluation of geothermal projects, including the process for closing sites.
- c. Strategies to increase technical knowledge and professional capacity building designed for these areas.
- d. Information for decision-makers to understand all the issues involved in geothermal energy generation and distribution.

## **Project 2: Energy Efficiency**

### **Objective:**

**This activity will provide** technical assistance to enhance existing energy efficiency programs in Chile, including:

Development of a thermal building code for the commercial sector: currently, in Chile this type of standard addresses only residential housing. This project would carry out the supporting work for the introduction of a standard for commercial buildings, including studies of energy-intensity (measured e.g. in kWh/m<sup>2</sup>/year) of heating and air conditioning, separated by thermal zone (the whole country is divided up into several such zones, defined mainly by latitude).

Development of an energy labeling scheme for commercial property: complementing the work to develop a thermal insulation standard, this project would produce the experimental design and norms necessary to certify commercial buildings.

Development of a certification program geared towards residential housing: next year, Chile will introduce a labeling scheme for brand new housing; this project would aim to complement the labeling with a certification system of key types of installation and/or installers (e.g., AC/heating equipment, thermal insulation, doors and windows).

### **Description of Activities**

**The proposed activities include** technical assistance and information exchange for the design, implementation, training and final evaluation for the programs.

### **Expected Outputs**

- a. A proposal for a thermal insulation building code for commercial property;
  - b. A proposal for labeling and certification norms for commercial property;
  - c. A proposal for a certification program for installations and/or installers in the residential housing sector;
  - d. Improved experience and knowledge for Chilean experts, in both public and private sector.
- 3. Support to implement a report with recommendations and a follow-up system for national sustainability indicators in the energy sector**

**The California Energy Commission will be the lead California agency for this task.**

The Chilean Ministry of Energy has begun the development of the first sustainability report of the Chilean energy sector, which will use ad hoc indicators in a technical process and include both the public and private sectors.

During the year 2011, it is expected that the first report will be presented to the public with updates continued in the future.

### **Objective**

This activity will provide technical support to help develop sustainability indicators for the Chilean energy sector.

### **Description of Activities**

This activity will include exchange of information on indicators to evaluate sustainability factors related to energy development and use in economic sectors.

In addition, this activity will include reciprocal visits of experts from California and Chile to participate in seminars and workshops with national experts and the public and private sector from both countries.

### **Expected Outputs**

A sustainability report in the Year 2011.

## **ARTICLE II Financing**

The parties will cover the activities referred in this agreement with the resources allocated in their budgets, according to their availability and budget impact by Chilean national legislation and California budget approval.

Each party shall bear its own costs of participation, except that if it is considered appropriate to use alternative financial mechanisms for specific activities or as the parties may agree to specific financial arrangements for such activities.

## **ARTICLE III Participation of Other Institutions**

Parties, if deemed appropriate, may encourage the participation of other public institutions or private entities whose activities directly affect the areas of cooperation, to strengthen and expand mechanisms to support effective implementation of this agreement.

## **ARTICLE IV Final Provisions**

This agreement shall enter into force from the date of signature and shall continue in force for a period of five (5) years, renewable for similar periods, after evaluation, unless either party expresses its decision to terminate, by written communication addressed to the other with thirty (30) days in advance. The early termination of this agreement shall not affect the conclusion of the cooperation activities that have been initiated during its active term.

The parties agree that this agreement is not intended to and does not create any legally binding rights or obligations, and will not be enforceable in any court of law or other tribunal of any sort, nor shall it amend the commitments derived from international treaties to which the respective States are Parties.

This agreement may be amended by mutual consent of the parties, formalized through written communications, which specify the date of entry.

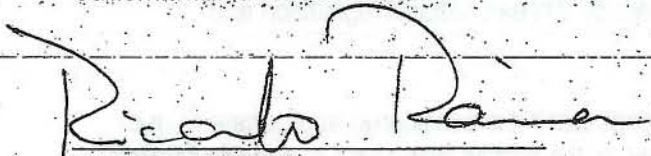
Signed in the City of Sacramento, California, on the 24<sup>th</sup> day of September 2010. Five (5) original copies in English and Spanish, each version being equally valid.



KAREN DOUGLAS  
Chairman  
California Energy Commission



MARY NICHOLS  
Chairman  
California Air Resources Board



RICARDO RAINERI  
Minister of Energy  
Republic of Chile