

## 1. Project Data

Summary project data			
GEF project ID		4176	
GEF Agency project ID		CH-X1009	
GEF Replenishment Phase		GEF-4	
Lead GEF Agency (include all for joint projects)		IADB	
Project name		Encouraging the Establishment and Consolidation of an Energy Service Market in Chile	
Country/Countries		Chile	
Region		LAC	
Focal area		Climate Change	
Operational Program or Strategic Priorities/Objectives		CC-SP1; CC-SP2	
Executing agencies involved		Agency for Sustainable Energy (formerly the Chilean Agency for Energy Efficiency)	
NGOs/CBOs involvement		Agency for Sustainable Energy (lead executing agency)	
Private sector involvement		Pellet S.A and Bluenow (project developers/beneficiaries)	
CEO Endorsement (FSP) /Approval date (MSP)		Not available	
Effectiveness date / project start		December 12, 2011	
Expected date of project completion (at start)		December 30, 2018	
Actual date of project completion		Not available	
Project Financing			
		At Endorsement (US \$M)	At Completion (US \$M)
Project Preparation Grant	GEF funding		
	Co-financing		
GEF Project Grant		2.36	Not available
Co-financing	IA own	.03	.03
	Government	3.96	1.07
	Other multi- /bi-laterals		
	Private sector	4.86	1.31
	NGOs/CSOs		
	Other	23.93	
Total GEF funding		2.36	Not available
Total Co-financing		32.78	2.41
Total project funding (GEF grant(s) + co-financing)		35.14	Not available
Terminal evaluation/review information			
TE completion date		December 5, 2019	
Author of TE		Victoria Galeano	
TER completion date		June 15, 2020	
TER prepared by		Laura Nissley	
TER peer review by (if GEF IEO review)			

## 2. Summary of Project Ratings

Criteria	Final PIR	IA Terminal Evaluation	IA Evaluation Office Review	GEF IEO Review
Project Outcomes	U	NR	MU	
Sustainability of Outcomes		NR	UA	
M&E Design		NR	MS	
M&E Implementation		NR	UA	
Quality of Implementation		NR	MU	
Quality of Execution		NR	MU	
Quality of the Terminal Evaluation Report		---	MU	

## 3. Project Objectives

### 3.1 Global Environmental Objectives of the project:

The project's objective was to "Contribute to the creation of an energy efficiency market in Chile by promoting the active participation of engineering firms (EF) and energy services companies (ESCOs) as intermediaries in the development of energy savings and efficiency projects" (TE pg. 16).

### 3.2 Development Objectives of the project:

The development objectives of the project was to "Contribute to reducing the financial obstacles facing the EE [energy efficiency] market in Chile through the formulation and implementation of a Partial Credit Guarantee (PCG) aiming to promote the active participation of EC/ESCOs [Engineering Companies and Energy Services Companies] as intermediaries in achieving energy savings and implementation of EE projects, based on EPC [Energy Performance Contracting]" (TE pg. 14).

### 3.3 Were there any **changes** in the Global Environmental Objectives, Development Objectives, or other activities during implementation?

Given the findings of the midterm evaluation, the executing agency and the implementing agency agreed to adjust the administration and management structure of the Partial Credit Guarantee (PCG) in order to increase demand (2017 PIR, pg. 2). The TE indicates that these adjustments were unsuccessful and led to a modification of the project in 2019 (pg. 31). The modification of the project was used as the basis for the Exit Strategy, the main objective of which was to "expand, promote, and strengthen an advanced culture of EE in the industrial, mining, and commercial sectors of Chile through the implementation of EMS [energy management systems]; supporting the establishment of an EE market, which will help to improve the energy productivity and competitiveness of these sectors through the better use of energy, contributing to reduce GHG emissions" (pg. 33). Specifically, the TE indicates that the Exit Strategy seeks to (pgs. 33-34):

1. Train energy managers in technologies available for EE, including requirements for the implementation of EMS and EE projects
2. Provide the tools to multiply the implementation of EMS in end users, as well as provide financial and technical support in its implementation and certification
3. Create tools for the early detection of potential opportunities of EE

4. Foster a market of EE consultants by increasing their capacities to provide personalized services

#### 4. GEF IEO assessment of Outcomes and Sustainability

Please refer to the GEF Terminal Evaluation Review Guidelines for detail on the criteria for ratings.

Relevance can receive either a Satisfactory or Unsatisfactory rating. For Effectiveness and Cost efficiency, a six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess. Sustainability ratings are assessed on a four-point scale: Likely=no or negligible risk; Moderately Likely=low risk; Moderately Unlikely=substantial risks; Unlikely=high risk. In assessing a Sustainability rating please note if, and to what degree, sustainability of project outcomes is threatened by financial, sociopolitical, institutional/governance, or environmental factors.

Please justify ratings in the space below each box.

4.1 <b>Relevance</b>	Rating: <b>Satisfactory</b>
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The TE does not assess or rate project relevance. The Request for CEO Endorsement indicates that the project was “expected to accelerate the development of the energy services market in Chile, increasing the number of EE projects/programs implemented, thus boosting the energy consumption savings obtained and the volume of GHG emissions reductions” (pg. 32). As such, the project design is consistent with the GEF-4 Climate Change focal area strategy, particularly Strategic Program 1, *Promoting Energy Efficient Buildings and Appliances*, and Strategic Program 2, *Promoting Industrial Energy Efficiency*. The Request for CEO Endorsement also notes that the project is aligned with Chile’s efforts to “stimulate the development of energy efficiency projects and programs and to expand a culture of energy savings and rational use in the country” (pg. 34). In particular, the project’s objective is aligned with Chile’s 2005 National Energy Efficiency Program, as well as the National Action Plan for Energy Efficiency. In 2006, the National Energy Commission’s Plan for Energy Security further reinforced energy efficiency as one of Chile’s short-term priorities. Overall, this TER rates project relevance as **Satisfactory**.

4.2 <b>Effectiveness</b>	Rating: <b>Moderately Unsatisfactory</b>
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The TE does not provide a rating for project effectiveness, although it does assess and rate the project’s performance at each level of change. Overall, the TE indicates that progress toward the objective was **Moderately Unsatisfactory** by project end (pg. 16). Although the project was largely successful at designing a financial mechanism to support energy efficiency projects, the mechanism failed to attract demand. The project team attempted to make modifications to the Partial Credit Guarantee Program (PCGP), however these changes were ultimately unsuccessful. An exit strategy, detailed above, was developed in order to strengthen the culture of energy efficiency in the industrial, mining, and commercial sectors in Chile.

Despite significant challenges implementing the PCGP, the TE indicates that the project was successful in increasing awareness and capabilities of different stakeholders on opportunities in the energy services market (pg. 15). In light of this, and the successes in designing the PCGP, this TER provides a rating of **Moderately Unsatisfactory** for overall project effectiveness.

A summary of the project's achievements, by component and outcome, is provided below:

### **Component 1: Design of a financial mechanism geared toward Energy Firms and Energy Services Companies (EF/ESCOs)**

#### *Outcome 1.1: Institutional Framework for promotion and implementation of energy efficiency projects and programs through EF/ESCOs operational and permanently functional*

Under this outcome, it was expected that Memorandums of Understanding would be signed to determine the collaboration framework between ACHEE and (1) ESCOs associations; (2) financial institutions; (3) power distribution companies; and (4) professional associations. The TE indicates that this outcome was achieved satisfactorily, although Memorandums of Understanding were not signed with power distribution companies as they were "interested in becoming ESCOs" (TE pg. 17).

#### *Outcome 1.2: A structured financial mechanism to support energy efficiency projects based on EPCs available*

Expected results under this outcome included: (1) legal documentation to support PCGP structuring; (2) financial documentation to support PCGP structuring; (3) PCGP Operational Manual designed and implemented; (4) defined process to verify the viability of the projects covered by the PCGP; (5) and EPC models adapted to the Chilean context. The TE indicates that all results under this outcome were achieved by project end, warranting a Highly Satisfactory rating (pg. 18).

#### *Outcome 1.3: Improved capacities of participating stakeholders and increased awareness of the existing opportunities of the energy efficiency market*

Under this outcome, it was expected that EF/ESCOs, bank professionals, power distribution companies, and end users would attend the PCGP business model information sessions. By project end, attendance targets for EF/ESCOs and end users were met. Attendance targets for bank professionals were partially achieved and attendance targets for power distribution companies were not achieved. Overall, the TE rates this outcome as Moderately Satisfactory (pg. 19).

### **Component 2: Implementation of the financial mechanism to support the activity of the EF/ESCOs**

#### *Outcome 2.1: PCGP contributes to facilitate the access to financing for EF/ESCOs*

Under this outcome it was expected that at least 12 EF/ESCOs would be participating in the market by project end and 120 guarantees for loans would be granted. Additionally, it was expected that at least 6 banks would be involved in financing the energy service market. By project end, 38 EF/ESCOs were participating in the market, exceeding the target. However, only 2 PCGs were issued (for a biomass thermal system for heating water and an energy efficient lighting project), and only 1 bank participated in financing the model. The TE indicates that the achievement of this outcome was Highly Unsatisfactory (pgs. 20-23).

### *Outcome 2.2: Increase of energy savings reached by energy efficiency projects*

Under this outcome, it was expected that at least 120 energy efficiency projects would establish a baseline energy consumption level as well as have savings Measurement and Verification Plans (MVPs). By project end, only 7 energy efficiency projects established a baseline and only 3 projects had a MVP. The TE indicates that the achievement of this outcome was Highly Unsatisfactory (pg. 20).

4.3 Efficiency	Rating: <b>Moderately Unsatisfactory</b>
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The TE does not directly assess project efficiency. The TE indicates that the executing agency, AgenciaSE (formerly ACHEE), experienced significant staff turnover, most notably in the project manager position, which changed over four times during implementation. The TE also indicates that AgenciaSE and the fund administrator, Congarantia, did not have sufficient resources to adequately administer the Partial Credit Guarantee Program (PCGP) (pg. 31). Furthermore, the TE notes that the flow of information between AgenciaSE and Congarantia deteriorated overtime, affecting implementation (pg. 29). The TE indicates that another barrier to the success of the PCGP initially was the “lengthy, burdensome and costly” application process (pg. 27). On the other hand, the TE indicates that the adjustments made to the PCGP in 2015, and again in 2016, were “appropriate and timely” (pg. 31). These changes did not result in the achievement of the project’s objective, however, and therefore this TER provides a rating of **Moderately Unsatisfactory** for project efficiency.

4.4 Sustainability	Rating: <b>Unable to Assess</b>
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The TE does not assess project sustainability. The TE does however, detail the project’s exit strategy, which was to be carried out over a period of 48 months with a budget of \$2.1 million (TE pgs. 35-36). It is unclear from the TE if the proposed strategy, to be financed by the Global Environment Facility and the Inter-American Development Bank, had been approved by project end.

## **5. Processes and factors affecting attainment of project outcomes**

5.1 Co-financing. To what extent was the reported co-financing essential to the achievement of GEF objectives? If there was a difference in the level of expected co-financing and actual co-financing, then what were the reasons for it? Did the extent of materialization of co-financing affect project’s outcomes and/or sustainability? If so, in what ways and through what causal linkages?

Actual co-financing (\$2.41 million) was significantly less than anticipated (\$32.79 million). The TE indicates that the Chilean Development Corporation’s (CORFO) credit line for EE projects was cancelled during implementation due to the lack of demand for projects (pg. 9). Parallel financing from the

financial institutions also did not materialize given the failure of the Partial Credit Guarantee Program (PCGP).

5.2 Project extensions and/or delays. If there were delays in project implementation and completion, then what were the reasons for it? Did the delay affect the project's outcomes and/or sustainability? If so, in what ways and through what causal linkages?

The TE does not indicate the date of the operational closure of the project. The 2017 PIR indicates that the original closing date was December 30, 2018. The 2017 PIR also indicates that the anticipated closing date was December 12, 2019, given that the agreement between the executing and implementing agencies was not signed until the end of 2011 (pg. 1). The TE does not indicate that the project received any extensions.

5.3 Country ownership. Assess the extent to which country ownership has affected project outcomes and sustainability? Describe the ways in which it affected outcomes and sustainability, highlighting the causal links:

The TE does not address country ownership.

## 6. Assessment of project's Monitoring and Evaluation system

Ratings are assessed on a six point scale: Highly Satisfactory=no shortcomings in this M&E component; Satisfactory=minor shortcomings in this M&E component; Moderately Satisfactory=moderate shortcomings in this M&E component; Moderately Unsatisfactory=significant shortcomings in this M&E component; Unsatisfactory=major shortcomings in this M&E component; Highly Unsatisfactory=there were no project M&E systems.

Please justify ratings in the space below each box.

6.1 M&E Design at entry	Rating: <b>Moderately Satisfactory</b>
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The TE does not assess M&E design at entry. The project's results framework, while logical and hierarchical, appears to equate results with indicators. For example, the expected outcome statements are included in the list of outcome indicators. At the output level, there are simply output indicators without results statements. The indicators themselves are generally SMART (specific, measurable, achievable, relevant, and timely), however some are more useful than others. For example, "improved capacities" of participating stakeholders is measured only by attendance, which is of limited usefulness. The Request for CEO Endorsement does include a M&E plan which details key activities, staffing arrangements, and a timeline for M&E. A budget of \$150,000 was also provided for M&E activities, specifically the Midterm and Terminal Evaluations (Request for CEO Endorsement pgs. 4-5). Given the weaknesses of the project's results framework, this TER provides a rating of **Moderately Satisfactory** for M&E Design.

<b>6.2 M&amp;E Implementation</b>	Rating: <b>Unable to Assess</b>
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The TE does not directly assess M&E implementation. The TE does note that a Midterm Evaluation took place, which greatly informed the Exit Strategy developed by the project (pg. 33). However, no information on the day to day monitoring activities is provided, and therefore this TER is unable to assess M&E implementation.

## **7. Assessment of project implementation and execution**

Quality of Implementation includes the quality of project design, as well as the quality of supervision and assistance provided by implementing agency(s) to execution agencies throughout project implementation. Quality of Execution covers the effectiveness of the executing agency(s) in performing its roles and responsibilities. In both instances, the focus is upon factors that are largely within the control of the respective implementing and executing agency(s). A six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess.

Please justify ratings in the space below each box.

<b>7.1 Quality of Project Implementation</b>	Rating: <b>Moderately Unsatisfactory</b>
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The TE does not directly assess the quality of project implementation. The implementing agency for this project was the Inter-American Development Bank (IADB). The TE notes that the project design, while relevant to the country context, did not fully account for the stage of maturity of the Energy Services Companies (ESCO) market in Chile. The TE indicates that it is critical to provide incentives to develop an ESCO market before introducing an instrument such as the Partial Credit Guarantee Program (PCGP) (pg. 41). The TE also indicates that IADB disbursed all project resources in order to set up the PCGP, and notes that this “affected the monitoring and supervision activities that IDB usually executes on its operations” (pg. 43). On the other hand, the TE does note that IADB worked diligently with the executing agency to restructure the PCGP in an effort to increase demand. When these efforts were unsuccessful, IADB worked with the executing agency to develop an exit strategy “whose final purpose aligned to the original project purpose, which is to encourage the development on an EE market” (pg. 32). Overall, this TER assesses quality of project implementation as **Moderately Unsatisfactory**.

<b>7.2 Quality of Project Execution</b>	Rating: <b>Moderately Unsatisfactory</b>
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The TE does not directly assess the quality of project execution. The executing agency for the project was the Agency for Sustainable Energy (AgenciaSE), formerly the Chilean Agency for Energy Efficiency

(ACHEE). The TE indicates that AgenciaSE is a relatively young institution which is still building its capacities in the energy efficiency sector. The TE notes that the agency experienced significant turnover during implementation, particularly in the project manager position. Additionally, AgenciaSE staff noted during the evaluation that the agency did not have sufficient resources to adequately administer the Partial Credit Guarantee Program (PCGP) (pgs. 30-31). Additionally, the Supervisory Committee was inactive for a large part of implementation and did not appoint new members when there were vacancies or hold regular meetings (pg. 30). Overall, this TER assesses quality of project execution as **Moderately Unsatisfactory**.

## 8. Assessment of Project Impacts

***Note - In instances where information on any impact related topic is not provided in the terminal evaluations, the reviewer should indicate in the relevant sections below that this is indeed the case and identify the information gaps. When providing information on topics related to impact, please cite the page number of the terminal evaluation from where the information is sourced.***

8.1 Environmental Change. Describe the changes in environmental stress and environmental status that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

The TE indicates that the project resulted in 4,676 MWh in energy savings over a ten-year period. Additionally, the project resulted in a direct CO<sub>2</sub> emission reduction of 4,086.47 tCO<sub>2</sub> over a ten-year period (pg. 16).

8.2 Socioeconomic change. Describe any changes in human well-being (income, education, health, community relationships, etc.) that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

The TE does not indicate any socioeconomic changes that occurred by project end.

8.3 Capacity and governance changes. Describe notable changes in capacities and governance that can lead to large-scale action (both mass and legislative) bringing about positive environmental change. “Capacities” include awareness, knowledge, skills, infrastructure, and environmental monitoring systems, among others. “Governance” refers to decision-making processes, structures and systems, including access to and use of information, and thus would include laws, administrative bodies, trust-building and conflict resolution processes, information-sharing systems, etc. Indicate how project activities contributed to/ hindered these changes, as well as how contextual factors have influenced these changes.

a) Capacities



The TE indicates that a PCGP Operational Manual designed and implemented. Additionally, the process to verify the viability of the projects covered by the PCGP was defined, and EPC models were adapted to the Chilean context (TE pg. 18). TE also indicates that the project was successful in increasing awareness and capabilities of different stakeholders on opportunities in the energy services market (pg. 15). Two PCGs were issued by project end, for a biomass thermal system for heating water and an energy efficient lighting project. Seven EE projects also established baseline energy consumption levels, and three projects developed a Measurement and Verification Plan (TE pg. 20).

#### b) Governance

The TE indicates that Memorandums of Understanding were signed to determine the collaboration framework between ACHEE and ESCOs associations, financial institutions and professional associations (pg. 17). Additionally, legal and financial documentation to support PCGP structuring was secured (TE pg. 18).

8.4 Unintended impacts. Describe any impacts not targeted by the project, whether positive or negative, affecting either ecological or social aspects. Indicate the factors that contributed to these unintended impacts occurring.

The TE does not indicate any unintended impacts by project end,

8.5 Adoption of GEF initiatives at scale. Identify any initiatives (e.g. technologies, approaches, financing instruments, implementing bodies, legal frameworks, information systems) that have been mainstreamed, replicated and/or scaled up by government and other stakeholders by project end. Include the extent to which this broader adoption has taken place, e.g. if plans and resources have been established but no actual adoption has taken place, or if market change and large-scale environmental benefits have begun to occur. Indicate how project activities and other contextual factors contributed to these taking place. If broader adoption has not taken place as expected, indicate which factors (both project-related and contextual) have hindered this from happening.

The TE does not indicate any adoption of GEF initiatives at scale.

## 9. Lessons and recommendations

9.1 Briefly describe the key lessons, good practices, or approaches mentioned in the terminal evaluation report, including how they that could have application for other GEF projects.

The TE provides the following lessons learned (pgs. 39-43):

The following are some limitations in the ESCO market observed in Chile before the implementation of the PCG:

1. High transaction costs between energy-end users and ESCOs, derived from the fact that ESCOs are expected to first make the investments and demonstrate the savings, before energy savings flows are paid for.
2. ESCOs lack of capital preventing them from financing large investments. ESCOs lack the capital and technical ability to access credit. Local banks are unwilling to consider the projected energy savings provided by the ESCOs as collateral. This greatly limits the ability to obtain financing from financial institutions (FIs).
3. A banking system that only lends against real collateral of companies and/or assets of its owners, not against projects' future cash flows, coupled by the lack of knowledge in the banking sector in the technical assessment of EE project risks, and more so, most banks aren't familiar with the ESCO business model and operation of EPC.
4. The significant demand for EE in the public sector is difficult to transform into projects because of the atomization of public budget associated to energy consumption, which is divided among multiple agencies responsible for such expenses.

Additional lessons include:

1. Careful analysis of project risks with regards to energy price trends and forecasts, including price of fuels for auto-generation is of utmost importance
2. The introduction of a PCG, as a single instrument to reduce the main obstacles facing ESCOs to obtain financing for EE projects, doesn't really work, let alone in a country whose banking industry is not used to lend against project cash flows.
3. Stage of maturity of the ESCO Market should be more advanced before introduction of an instrument such as a PCG.
4. Absence of baseline data can inhibit the development of the EE market
5. The final cost of the guarantee has a big impact on the viability of the instrument:
6. In 2013, the IDB carried out the disbursement of all the project resources in order to set up the FOGAEE. This affected the monitoring and supervision activities that the IDB usually executes on its operations. For future projects it will be advisable to analyze legal alternatives for the Guarantee Funds setting up which allow matching the equity disbursements with the advancing in the technical execution activities and the progress in achieving results.

9.2 Briefly describe the recommendations given in the terminal evaluation.

The TE does not provide recommendations separate from those embedded in the lessons learned.

## 10. Quality of the Terminal Evaluation Report

A six point rating scale is used for each sub-criteria and overall rating of the terminal evaluation report (Highly Satisfactory to Highly Unsatisfactory)

Criteria	GEF IEO comments	Rating
To what extent does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives?	The TE does a thorough job of assessing the project's effectiveness, although a rating is not provided. Project relevance is not addressed. Some information regarding efficiency can be gleaned from the report but it is not directly assessed, and no rating is provided.	<b>MS</b>
To what extent is the report internally consistent, the evidence presented complete and convincing, and ratings well substantiated?	The report is consistent, and the conclusions are supported by evidence. However, there are many gaps in the report (M&E, sustainability, relevance, efficiency, country ownership, etc.). No ratings are provided.	<b>MU</b>
To what extent does the report properly assess project sustainability and/or project exit strategy?	The report presents the project's exit strategy; however, other aspects of the project's sustainability are not directly addressed.	<b>MS</b>
To what extent are the lessons learned supported by the evidence presented and are they comprehensive?	The lessons learned are comprehensive and supported by the evidence in the report.	<b>S</b>
Does the report include the actual project costs (total and per activity) and actual co-financing used?	Actual co-financing is provided; however, the figures do not tally. Some information on actual project costs but it is unclear how much of the GEF budget was executed.	<b>MU</b>
Assess the quality of the report's evaluation of project M&E systems:	The TE does not assess M&E design or implementation.	<b>HU</b>
<b>Overall TE Rating</b>		<b>MU</b>

## 11. Note any additional sources of information used in the preparation of the terminal evaluation report (excluding PIRs, TEs, and PADs).