Final Evaluation of the

Technical Cooperation GEF ATN/FM-12650-CH,

Project No. CH-X1009

GEF ID: 4176

"ENCOURAGING THE ESTABLISHMENT AND CONSOLIDATION OF AN ENERGY SERVICES MARKET IN CHILE"

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I. Project Description

- **Project Components**

The Inter-American Development Bank (IDB) supported the Government of Chile (GoCh), through the operation "Encouraging the Establishment and Consolidation of an Energy Services Market in Chile", "The Project" (ATN/FM- 12650-CH). The project was funded by the Global Environmental Facility (GEF) and by parallel financing by various financial organizations. The Executing Agency (EA) and direct beneficiary was the Chilean Energy Efficiency Agency (ACHEE). The Energy Division (INE/ENE) of IDB and Country Office in Chile (CID/CCH) provided the technical and fiduciary support. The Project Implementation Unit (PIU), staffed with a Project Manager and personnel provided by the EA, who were assigned the technical and administrative activities of the project.

The project consisted of the following two components:

Component I. - Formulation and structuring of a Partial Credit Guarantee Program (PCG) to support the participation of Engineering Companies and Energy Services Companies (EC/ESCOs) in promoting energy saving and implementation of energy efficiency projects based on Energy Performance Contracting (EPC). Activities of this component included: to analyze the technical, legal and financial aspects of the PCG; to develop a Manual of Operations detailing the roles, responsibilities and activities of each participating institution; to train stakeholders in the operation and activities of the PGPC; to develop an EPC model adapted to the Chilean context; and to develop a disclosure plan. Funding of this component is US$299.073, to be funded by GEF and parallel financing.

Component II.- Implementation of the PCG to support the activities of engineering companies and ESCOs. The objective of this component was to create a guarantee to cover the technical risk associated with energy efficiency projects developed by engineering companies and ESCO based on EPCs. GEF funding of US$ 2,157,000 and parallel contribution was US$32,407,064 for a total of US$34,564,064.

- **Project Context**

In that moment, Chile's electricity sector was leading economic growth. Electricity demand, measured in terms of annual gross generation, grew from 33,226 GWh in 1998 to 56,697 GWh in 2009, an increase of almost 70% over 10 years. This was coupled with a 68% increase in generation capacity experienced over the same period. In addition to growth in capacity and demand, the sector underwent a number of reforms, beginning with privatization in the 1980s, which divided the sector into three distinct businesses: generation, transmission and distribution. Electricity supply was characterized by a matrix wherein the main source of primary energy in terms of share of national installed capacity was hydroelectric (38.2%) followed by natural gas (36.8%), coal (15.9%) and diesel (7.4%).

Owing to the composition of the energy matrix, the two interconnected electrical grids in Chile, the SING and SIC[1], were highly vulnerable because they were highly dependent on natural gas from Argentina and weather conditions. Thus, in 1998 the country faced an energy crisis, mainly due to the lack of water resources resulting from a severe drought. In 2008 the situation was similar, but with an exacerbated impact caused by the shortage of natural gas from Argentina.

To mitigate this vulnerability and increase energy security, the GoCh developed a series of initiatives to diversify the country's energy matrix, with the introduction of legislative changes to create incentives for and encourage investments in renewable energy (RE) and non-conventional energy sources (NCE), including mechanisms to accelerate the introduction of renewable and non-conventional energy technologies in power generation and energy efficiency (EE).

In 2004 two important studies were published which have had a significant influence on the prioritization of public policies to promote EE:

- The assessment by Chile's National Energy Commission (Comisión Nacional de Energía, or CNE) which showed the extent of savings that could be achieved through EE, and
- The OECD overview report, published in 2004, which recommended better integration of EE into the country's development efforts.

The GoCh has shown its commitment to make a quantum leap in the development of EE in Chile transitioning from the current demonstration model towards the creation of a legal framework turning EE into a long-term policy.

Since 2005, a series of measures have been implemented to achieve better EE performance:

- in 2005, the National Energy Efficiency Program (Programa País Eficiencia Energética, PPEE), the first public initiative to promote EE, was created as part of the Ministry of Economy;
- in 2005, the first National Action Plan for EE was adopted;
- in 2006, the CNE's Plan for Energy Security reinforced EE as one of the priority actions to undertake in the short term in Chile (CNE, 2009);
- in 2008, as part of the GoCh's decision to create a unique institution in charge of energy policy, the PPEE became part of the CNE, chaired by the Minister of Energy;
- between 2006 and 2010, the PPEE budget was increased by almost 60 times:
- in 2009, the CNE published new guidelines for energy policy in a document entitled Transforming the Energy Crisis into an Opportunity" (Tokman, 2009);
- in 2009, Chile participated in the Peer Review on EE conducted by Asia-Pacific Economic Cooperation (APEC) to evaluate existing EE initiatives and obtain recommendations for medium- to long-term policy development (APEC, 2009);
- in 2009, the International Energy Agency (IEA) reviewed Chile's energy policy; In its report, the agency emphasized the development of a GEF project in order to address energy efficiency project financing and establish the foundations for developing an energy efficiency market (IEA, 2009);

[1] Currently, both systems are interconnected and is called in their National Electric System (SEN).

- on February 2010, the Ministry of Energy (MINENERGIA) was created. The reform of the institutional framework for energy in Chile also considers EE an important part of the country's long-term energy strategy; and
- on April 21, 2010 the Chilean Agency for EE (ACHEE) was created as a non-profit organization in charge of designing and delivering EE programs for different sectors. The Agency constitutes the institutional consolidation of PPEE and will be responsible for carrying out the projects and programs which are currently being developed by PPEE;
- on 2018, the Agency transitioned to the Agency for Sustainable Energy (AgenciaSE).

On February 2012, the GoCh launched the National Energy Strategy (ENE) 2012-2030, whose first pillar was defined as "Growth with Energy Efficiency: A State Policy "To achieve this target, it stated that it was essential "to set a specific goal for Energy Efficiency to align all available measures to achieve them". Thus, the EE Action Plan aimed to achieve a 12% reduction in energy demand projected by 2020, based in 2010. It aimed to achieve an estimated 43,000 Tcal decline in 2020, which represents, only on electrical energy savings, a displaced power of over 1,100 MW, along with the associated economic benefits for the country. Achieving this goal would generate additional benefits such as higher levels of industry production and lower CO2 emissions, among others.

Another significant example of policies created by the GoCh to encourage EE, was the draft Law on Energy Efficiency, still pending approval in Congress. The project law provides for the identification of EE measures in three main areas: i) EE Industry and Mining; ii) EE for homes, small industries and businesses; and iii) EE in the public sector.

Studies indicate that there has been an untapped potential of EE in all sectors: industrial, commercial, residential, public, and transportation. A study conducted by the National Commission of Energy (CNE) in 2008, indicated that Chile could cover almost 15% of its energy demand growth with EE, particularly through measures for the industrial sector. According to the National Energy Balance 2008, the productive sector (industry and mining) consumes 27% of energy, while the commercial, public and residential together, and consumes 17.5%. In electricity, the same sectors consume 66% and 29% respectively. However, limited access to financing options for ESCOs represented one of the main barriers to the development of EE projects in Chile. As a result, the need to develop an instrument specifically oriented to the ESCO market as a key player in developing the national market, became critical.

The instrument identified to promote the EE market was a Partial Credit Guarantee Program (PCG). The project was conceived by GoCh and the Bank as one of the necessary measures to contribute to reducing the financial obstacles facing the EE market in Chile through the formulation and implementation of a Partial Credit Guarantee (PCG) aiming to promote the active participation of EC/ESCOs as intermediaries in achieving energy savings and implementation of energy efficiency projects, based on EPC. The PCG was to be administered by a third party, that would involve financial institutions willing to provide credit to EC/ESCOs to finance the implementation of energy saving projects. Technical validation of projects, as well as the strategic orientation of the instrument, would be supervised by the ACHEE. Thus, GEF would contribute to solve this need by creating a fund (FOGAEE) to secure EE projects and leverage larger resources from the banking sector.

The specific objectives of the project were: (i) formulation and structuring of a PCG to support the participation of EC/ESCOs in promoting energy conservation and energy efficiency projects based EPC; and (ii) execution of PCG in support of the activities of EC/ESCOs, which will create a

guarantee to cover the technical risk associated with energy efficiency projects promoted by these same companies or ESCOs based on EPC.

- **Development Issues**

The main problem in the field of EE has been the development of a strong ESCO market that can facilitate the implementation of more and larger EE projects in all productive sectors; and one of the main causes identified to prevent the growth of an ESCO market is the limited access to financing of EC/ESCOs.

There was consensus among various clean energy market players (ACHEE, Fundación Chile, Ministry of Energy and ANESCO Chile, among others), that there are market failures in Chile preventing profitable clean energy projects to be executed. The problem of limited financing, among others, has been associated to the following elements[2]:

- Asymmetries of information between engineering firms and companies benefiting from measures and investments in EE and/or Non-Conventional Renewable Energy, associated to the quality of proposals and to the measurement and verification of energy savings.
- Transaction costs between these two types of actors derived from the fact that ESCOs are expected to first make the investments and demonstrate the savings, before energy savings flows are paid for.
- ESCOs lack of capital preventing them from financing large investments.
- 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. In particular, the banking sector does not have technical personnel trained to evaluate the technical feasibility of EE projects; more so, most banks aren't familiar with the ESCO business model and operation of EPC.

Market analysis studies performed during project design identified a number of specific barriers that prevent ESCOs to access critical credit lines for the identification, analysis, pre-feasibility, design, engineering, implementation, operation and maintenance of EE projects. These barriers generate stagnation in the development of the sector and its evolution as an alternative for diversification of the energy matrix.

The main barriers identified during the project design were[3]:

- ESCOs work primarily based on a fee-for-service. These gains are based on the savings achieved with the implementation of EE projects; however often 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).

[2] "Formulación y Estructuración de un Instrumento Financiero para el Mercado de Servicios Energéticos en Chile", Final Report, (2012), Gerens S.A., pg. 19.

[3] Encouraging the Establishment and Consolidation of an Energy Services Market in Chile, CH-X1009, Plan of Operations, Pg. 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.
- A key element in this business model is the need to measure and verify (M&V) energy savings. This requires a relationship of trust between the ESCO and the end user at the onset.
- There is a lack of skilled human resources in the EE sector in general and in particular among the ESCOs.

II. Project Strategy

- **Project Design**

In order to contribute to the creation and development of the energy services market in Chile, given the local market conditions, the international experience and the financial barriers mentioned above, GoCh through the ACHEE (now, AgenciaSE), proposed to re-design the existing financial mechanisms, including lines of credit, guarantees, equity funds, etc., to adapt the nature and conditions of such financial instruments to the particular conditions of the EE projects in Chile. This GEF project was part of a basket of financial instruments that have been promoted by the GoCh to mitigate financial barriers and specific conditions affecting the EE projects in the market.

International experience shows that there are different tools that could be used to encourage the implementation of EE projects through strengthening the development of ESCOs. Of particular importance are the lines of credit and specialized investment funds, contract and cash flow guarantees, consolidation of the ESCO market, actions in the public sector to catalyze the market demand, and the use of energy performance contracting (EPC), among others.

Specifically, this project aimed to help overcome barriers to the financing faced by EE projects, through the design, structuring and implementation of a financial instrument that could support the financing of EE projects based on EPC. Therefore, it was estimated that a guarantee fund, administered by an independent agent with experience in issuing counter-guarantee certificates, and with the capacity to involve commercial banks interested in financing ESCOs, was the appropriate instrument to create leverage in the financial sector and to encourage the development of projects under the ESCO model. Thus, the development hypothesis of the project suggested that the EE market required a partial credit guarantee (PCG) covering the technical risks of EE projects[4].

The goal of FOGAEE, was therefore "to partially guarantee the savings associated to servicing the financial debt provided to engineering companies or ESCOs to implement EE projects (partial credit guarantee related to Energy Performance Contracts of "shared savings" or "Chauffage"), or to guarantee the savings (technical credit guarantee related to Energy Performance Contracts of guaranteed savings) of EE projects through the underwriting of certificates of deposit issued by a Reciprocal Guarantee Company (RGC)[5].

[4] Ibid, pg. i.
[5] Guide that establishes the procedures, requirements and mecanisms to obtain tecnical validation by FOGAEE, ACHEE.

There were a number of ongoing initiatives, supported by local entities and bilateral and multilateral institutions, in which the IADB, the German Development Cooperation Agency (GIZ) and the German Development Bank (KfW) were the major funding sponsors. In addition, the Chilean Government through joint work between PPEE and the Chilean Development Corporation (Corporación de Fomento de la Producción, or CORFO[6]) had thus far developed three EE promotion instruments oriented toward private companies:

- The CORFO instrument known as Pre-investment in Energy Efficiency (Pre-Inversión en Eficiencia Energética, or PIEE), a direct subsidy to finance EE consulting services including i) assessment to quantify potential energy savings, ii) implementation plan and/or iii) financial analysis of energy efficiency measures. This financial mechanism allowed companies with annual net sales up to US$33 million to hire EE consulting services to quantify their energy savings potential and develop an improvement plan. CORFO covered up to 70% of the total cost of the consultancy, to a maximum of US$10,000.
- The EE credit line to finance investments of up to US$1 million for optimizing energy use in businesses. This credit line allowed companies to finance investments in energy optimization projects. Companies, production cooperatives and associations with annual sales up to US$ 33 million, excluding VAT, could apply for this credit line. This financial instrument was available to different sectors such as industry, agriculture, mining, fisheries, tourism and health. This credit was facilitated through banks with a preferential interest rate, grace periods of up to 18 months and payment terms from 2 to 12 years.
- The CORFO Guarantee for EE projects; approved by the General Accounting Office in December 2009, expected to begin operating during 2010.

This project was also preceded by a technical cooperation grant from the GEF (CH -X1002), USD2.6 million, whose main objectives were: i) to provide technical assistance for the development of institutional capacities of the ACHEE in EE and in Measurement and Verification (M&V)techniques of EE projects, ii)to develop awareness among a critical mass of actors, on the design and implementation of EE projects, as well as on the financing, and measurement techniques, in the public and industrial, as well as in the commercial sectors; and iii)to finance EE pilot projects in different industries.

Therefore, initial resources for this project belonged to an expanded GEF Full Size Project (FSP) for US$5.5 million. In this regard, a GEF FSP document was prepared including the joint components and activities for an amount of US$5.5M of GEF financing. This GEF Document incorporated as cofinancing resources from the Government of Chile through the ACHEE (US$4.049 million) and CORFO (US$35.500 million). It also had a counterpart provided by the IDB (US$1M), and estimated contributions from other beneficiaries based on the leverage of financial resources which could result from project implementation (US$12.052 million).

[6] CORFO is a state corporation that supports Chilean companies, helping them to compete in today's markets. Its activities are aimed at individual companies and business organizations as well as production chains, including clusters or geographic concentrations of companies and institutions focused on a specific productive activity.

Table 1. Original GEF Project Budget

Investment categories	GEF Financing ($)	Co-Financing and Parallel Financing ($)	Total ($)
1. Design of a financial mechanism geared towards EF and ESCOs.-	134,000	165,073	299,073
2. Implementation of the financial mechanism to support the activity of the EF/ESCOs.-	2,157,000	32,407,064	34,564,064
3. Project management	73,000	214,000	287,000
Total project costs	**2,364,000**	**32,786,137**	**35,150,137**
Percentage	7%	93%	100%

Source: GEF Project Document (GEFSEC PROJECT ID: 4176).

FOGAEE was created with an initial capital of 48.552.2885 Financing Units (FU) equivalent to US$2.2 million. It was established with a grant from the Inter-American Development Bank (IDB) through GEF (CH-X1009), and a contribution of 9% (about US$171,000) from the fund administrator, Congarantía. In addition, GEF funds were coupled with a credit line of US$3.6 million, pledged by CORFO with grant resources from KFW provided for the development of NCRE and EE projects.

Although CORFO's credit line considered investments in both, NCRE and EE projects, credit line for EE projects was canceled during project implementation, on July 27, 2010, due to the lack of projects in this sector. As a result, CORFO oriented the full amount to NCRE projects.

III. Operative Model

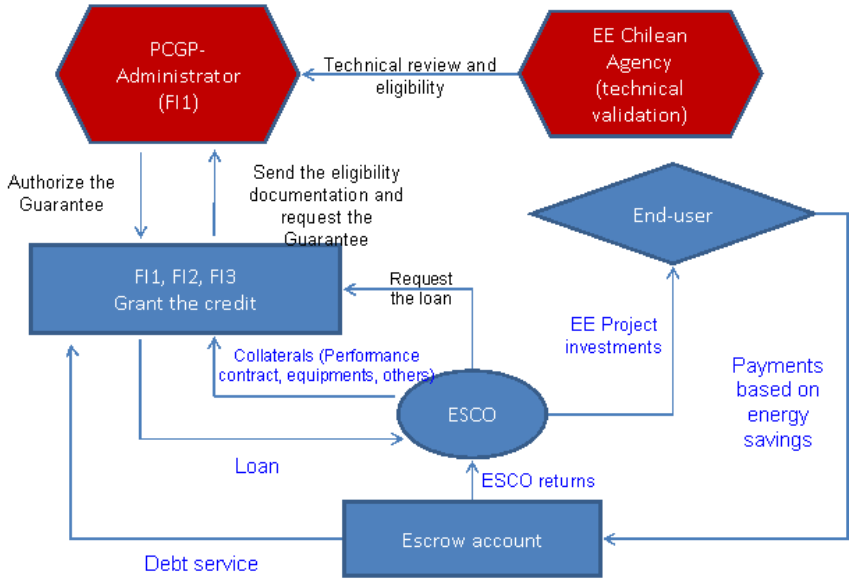
- **Operation of the Guarantee**

The objective of the PCG was to facilitate guarantees for loans granted by Financial Institutions (FIs) to EE projects whose returns were based on EPCs. The FIs financing EE projects would use the EPC as collateral for the loan provided, controlling the funding flow derived from the contract, normally through an escrow account established for this purpose, so that the payments made by the end client to fulfill the contract will be used first to pay the debt service and then be applied to the EF/ESCO fees for the return on investments made.

Thus, if the savings generated by EE project implementation were less than those initially estimated, this reduction in revenue would affect the profits of the EF/ESCO first before it affected payment

of the loan provided by the FI. Graph1. "PCG Model" shows how this EPC-based mechanism functioned.

Graph 1. PCG Model

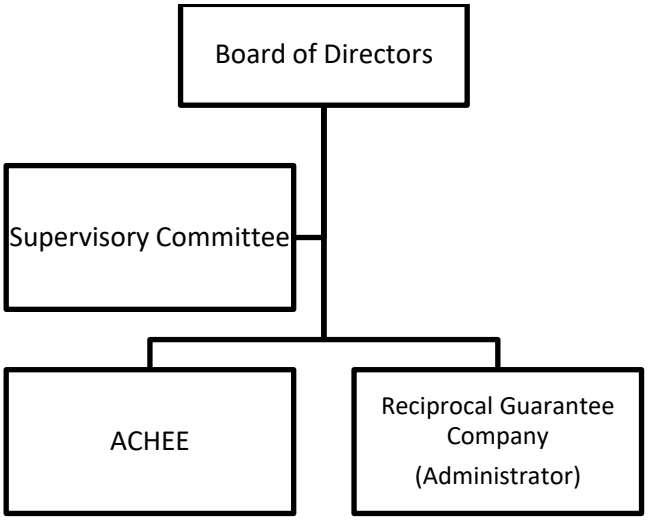


Source: IADB, Project Information, Oct.2010.

The GGP was meant to be sufficiently flexible to adapt to the evolution of demand and any changes which the Chilean market may experienced. The model hoped that, as the market for energy services in Chile matured, the PCG would evolve toward guaranteeing portfolios of EE projects based on EPCs, rather than specific projects. With this, the amount of leveraging generated by the PCG would increase significantly.

- **FOGAEE Governance model**

Figure 2. Actors Governance Model



Source: Self developed.

- **Project Governance (Roles and Responsibilities)**

The following were the roles and responsibilities of some key players in the governance model of FOGAEE, according its "Operations Manual" and "Internal Code", quoted as follows:

- **Board of Directors:**

The fund contributors meet in Ordinary and Extraordinary Assemblies. The first ones are to be held once a year, within four months following the closing date of each fiscal year, to decide on their own subjects without the need to mention them in the respective summons. The latter may be held at any time, if required by the needs of the Fund, to rule on any matter which the law or these Rules provide to the Extraordinary Assemblies, provided that such matters are indicated in the summons.

The following are subjects of the Ordinary Assembly:

a) Approve the annual reports of the fund, to be presented by the RGC, about the management and administration of the fund, and the associated financial statements.
b) Elect annually to members of the Supervisory Committee, as provided in Article 26 of this Code.
c) Approve the annual budget and general remuneration of the independent member of the Supervisory Committee, who will be the only paid member of the Committee, charged to the Fund.
d) Appoint annually independent external auditors according to the proposal submitted by the Administrator and approved by the Supervisory Committee.
e) Appoint annually the Risk Rating Provider that will rate the fund, according to the proposal submitted by the Administrator and approved by the Supervisory Committee.

f) In general, any matter of common interest to the Shareholders, outside of the interest of the Extraordinary Assembly.

The following are subjects of the Extraordinary Assembly:

a) Approve amendments to this Regulation.
b) Agree extensions to the term of the Fund.
c) Agreeing replacement of the Administrator.
d) Discuss any situation that may affect the interests of the Shareholders.
e) Agree on termination and early liquidation of the Fund.
f) Appoint the liquidator of the Fund, fixing their powers, duties and remuneration, and approve the final bill at the end of the liquidation.
g) Agree on the characteristics and conditions of a new issue of shares of the Fund, setting the amount to be issued, the number of shares to be issued (for each series), the timing and placement price of these.
h) Other matters, according to the Law or to these Rules.
i) Other matters that are of interest of the Fund.

- **Supervisory Committee**

The Fund has a Supervisory Committee whose main function is to ensure that the Administrator complies with the obligations under this Regulation and the Law, which shall consist of three members.

Two of the members shall be appointed by the ACHEE, one of which must be registered in the register of independent directors of the Superintendent of Pensions, and the third member shall be elected by the Administrator. The members of the Supervisory Committee will last one year in office, after which he or she may be reappointed. Members of this Committee may be Contributors to the Fund or Representatives. In any case, they can't be persons who fulfill administrative or management functions in the Administrator and shall abide by the rules of this Internal Code. Only the elected member, registered in the Registry of Independent Directors of the Superintendence of Pensions, shall be remunerated.

The Supervisory Committee shall meet at least every three months and must generate a minute attesting compliance with the Internal Code. If a vacancy at the Supervisory Committee arises, it shall be the same Committee that appoints a replacement, keeping the designation form set out in the preceding article, and remaining in office until the next Shareholders Assembly, when the new members are appointed.

The matters of the Supervisory Committee will be:

a) Verify that the Administrator, complies with the provisions of the Internal Code,
b) Verify that the information submmitted to the Contributors is accurate, sufficient and timely,
c) Note that investments, expenses, changes in capital and operations of the Fund are made under the Law and the Internal Code.

If the majority of the members of the Supervisory Committee determines that there has been violations to the Law or to the Internal Code, the Supervisory Committee shall request the Administrator to summon an Extraordinary Assembly of Contributors within a period not exceeding 30 days, opportunity in which the Administrator shall state and explain the situation and

the measures to solve it, it shall propose to the Assembly of Contributors the external auditors, from those enrolled in the registry carried out by the Superintendence of Securities and Insurance ("SVS"), and request the Administrator to summon an Extraordinary Assembly of Contributors when it considers issues to be of the Fund's interests.

Likewise, the Supervisory Committee shall assume provisionally the administration of the Fund, in the event of resignation or dissolution of the Administrator or for any other reason it leave the administration of the Fund, and shall summon a Special Assembly of Contributors to decide about the transfer of the administration of the Fund to another RGC, or to appoint a liquidator of the Fund.

- **ACHEE (now Agencia de Sostenibilidad Energética (AgenciaSE))**

According to the Operations Manual of the project, the Chilean Agency of Energy Efficiency (ACHEE), has the following functions:

a) Supervise general operations of the fund.
b) Perform statistical record of operations for benchmarking and evaluation of midterm and final evaluation of the instrument.
c) Certify technical feasibility of EE projects submmitted by ESCOs or end users to obtain certificates of guarantee of FOGAEE.
d) Monitor work of the body certifying project technical failures
e) Regarding the admissibility of the applications for certification of technical validity, the ACHEE reviews the background, that is, that the documents are filed properly and that all requirements requested in the Manual are met.
f) The evaluation is conducted by a commission formed by a specialist relevant to the technical area of the project (eg, Industry and Mining, Transport and Commercial and Residential), a professional from the M&V department, and a professional appointed by the Subdirection of the ACHEE.
g) The ACHEE may request information from other public or private bodies in order to verify the accuracy of the information contained in the applications.

- **Fund Administrator (Reciprocal guarantee Company -RGC-)RGC):**

The fund is administered by the RGC "Congarantía", constituted by legal act on January 21, 2008.

The Administrator will respond, even for slight negligence, for damages caused to the Fund from breaching any of its obligations. The Administrator has signed a notarized promissory note equivalent to the funds provided by the ACHEE, which remains in the possession and custody of the Agency. Redimission of the note will only proceed when a serious breach of the duties and obligations consigned in the Internal Code are present, and when such breach causes critical damage to the Fund valued at an equivalent or superior amount to the funds provided to the ACHEE, all in accordance to the determinations of the Supervisory Committee.

Its functions according to the Internal Code are:

a) The development of criteria, objectives and investment strategies and guarantees, including its evaluation;
b) The verification of compliance with the requirements of this Regulation for the implementation and the adequacy of the Fund's investment policies;

c) The verification of compliance with the requirements of this Regulation for the implementation and the adequacy of guarantee and financial policies of the Fund.
d) The signing of contracts required for the development of investments and guarantees made by the Fund;
e) The purchase, sale, investment, alienation, encumbrance and any other form of disposition of the Fund's assets;
f) The arrangement and custody of the securities and financial instruments representing the Fund 's investments;
g) Provide the necessary infrastructure and equipment for its operation and the delivery of information to contributors;
h) Liquidate the Fund, if agreed the Assembly of Contributors;
i) Demand the Contributors the payment of unpaid subscribed shares;
j) Perform judicial and extrajudicial collection of unpaid debts of the guaranteed beneficiaries, whose partial payment to the creditor was made with resources from the fund.
k) According to the Operations Manual, the fund shall invest in the following instruments: (1) Securities issued by the General Treasury of the Republic, the Central Bank of Chile, or having state guarantee of 100% of its value until total extinction; (2) Time deposits and other securities representing deposits of financial institutions or guaranteed by them; (3) Letters of credit issued by banks and financial institutions; and (4) bonds, short-term debt and debt securitization whose issue has been registered with the Register of Securities of the respective Superintendency.
l) Collect commissions of the guarantee certificates issued to ESCOs or to the end users, according the "shared" or the "guaranteed" EPC savings respectively.
m) Pay guarantee commissions to FOGAEE, and pay claims to the commercial and technical risks to end users.

Other key players, whose functions are described in the Operations Manual are: a) Financial Institution, b) ESCO, c) End User, and d) Technical Risk Certification Expert.

IV. Findings of the Final Evaluation

- **Results Achieved**

Based on the interviews made to project stakeholders involved in the project design and project implementation, and a desk-review of all the documents provided, the evaluator concludes that FOGAEE didn't achieve its ultimate development goal: "to contribute to reducing the financial obstacles facing the EE market in Chile through the formulation and implementation of a Partial Credit Guarantee (PCG) aiming to promote the active participation of EC/ESCOs as intermediaries in achieving energy savings and implementation of EE projects, based on EPC". Nonetheless, the FOGAEE experience yielded some positive effects and critical findings that may help the Government of Chile and the EE industry achieve a more mature stage for an ESCO market to flourish in the future. The causes that hindered a healthy performance of FOGAEE, along with the lessons learned for the development of similar instruments will be explained in the following section. This section will account for some of the results achieved during the implementation of the project.

In terms of impact, this project has to be observed under the scope of a larger lens that includes other GEF and IDB programs supporting the GoCh in its transition to a decoupled economy, where EE has to play an important role. GEF programs in Chile have been instrumental in advancing the technical and the institutional capacities of the AgenciaSE and the GoCh, positioning this Agency as the institutional reference of EE public policy in Latin America. From launching the first public initiative in 2005, called "the National Energy Efficiency Program", to the development of new and more focused public policies on energy and EE in 2008, to the creation of the Chilean Energy Efficiency Agency (AChEE) in 2010 and to its later transition to the Sustainable Energy Agency (AgenciaSE for its name Spanish) in 2018, the GoCh has been able to advance and put EE in the government agenda, achieving international standard recognition and high leveled commitments. Under this umbrella, the technical teams carried out successfully the institutional and structural pieces to design and implement a conducive framework to facilitate the development of an EE industry, critical as a first stepping stone for any financial instrument to be conceived.

Along with these efforts, the program was also successful in increasing the awareness and capabilities of different stakeholders on the existing opportunities of the energy services market, and of the functioning of the Energy Savings Performance Contracts and FOGAEE, which included EF/ESCO companies, banks, and final energy consumers. In addition, the project provided the opportunity to transfer-in international best practices on Energy Performance Contract Models adapted to the Chilean context, and on the processes to verify the technical viability of the projects to be covered by the PCG. Such knowledge and related capacities were inexistent before IDB/GEF's financial and technical assistance, and today they represent an installed technical capacity.

In terms of outputs, the project provided the means to structure a PCG for the EE sector in Chile for the first time, and all required activities to carry it out were completed. These outputs included the legal, financial, technical and operational processes and documents, and related capacities for the actors to execute FOGAEE's business model. The following tables provide a view of the Results Matrix and the target achievements.

- **Progress in the Results Matrix:**
  - **Performance of General Objective:**

Project Strategy	Indicator	Baseline Level	Midterm Target	End of Project Target	End of Project Assessment	Achievement Rating	Comments
Objective: **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.**	**Indicator 1:** Institutional Framework for the promotion and implementation of energy efficiency projects and programs through EF/ESCOs operational and permanently functional	No institutional framework created to support the EE projects promoted by EF/ESCOs exits	Institutional Framework operational and permanently functional	**Institutional Framework operational and permanently functional**	Achieved	MU	
	Indicador 2: A financial mechanism to support EE projects based on EPCs available	No financial instrument to specifically support EE project based on EPCs	A PCGP structured and functioning	**A PCGP structured and functioning**	Achieved		
	Indicador 3: Improved capacities of participating stakeholders and increased awareness of the existing opportunities of the energy service market	Low capacity and awareness of the energy service market	Improved capacities of participating stakeholders and increased awareness of the existing opportunities of the energy service market Target: 200	**Improved capacities of participating stakeholders and increased awareness of the existing opportunities of the energy service market Target: 200**	Achieved		
	Indicador 4: The PCGP expands the energy service market and EE operations based on EPC	No investment for EE operations		**Investments of more than US$30 M mobilized for EE operations based on EPC**	Not achieved		
	Indicator 5: Increase of energy savings reached by EE project (Cumulative MWh over a 10 years period)	0	57,997 MWh	**857,997 MWh**	Not achieved		4,676 MWh was achieved.
	Indicator 6: Direct CO2e emission reductions due to EE projects based on EPC (Cumulative tCO2e over a 10 years period)	0	40,000 MWh	**302,269 tCO2e**	Not achieved		4,086.47 tCO2 was achieved.
	Indicator 7: Indirect CO2e emission reductions due to PCGP (Cumulative tCO2e over a 10 years period)	0	80,000 MWh	**678,182 tCO2e**	Not achieved		0 tC02 reported on the ISDP as of S2-2019.

(*) RS: Rating Scale: Highly Satisfactory (HS), Satisfactory (S), Medium Satisfactory (MS), Medium Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU).

- **Performance of Outcome and Output Indicators:**

Component 1 : Design of a financial mechanism geared towards EF and Energy Service Companies (ESCOs)

Outcome 1 had a satisfactory performance on the implementation of products of the results matrix (RM). After reviewing the RM, only one indicator calls for attention: "# of Memorandums of Understanding to determine the collaboration framework among ACHEE and power distribution companies signed (cumulative)", which wasn't achieved. The AgenciaSE explained that this target didn't make sense because many of the power distribution companies were interested in becoming ESCOs and users of the PCG.

Component 1 - Outcome 1.

Outcome: Institutional Framework for the promotion and implementation of energy efficiency projects and programs through EF/ESCOs operational and permanently functional	**Output Indicator 1:** # of Memorandums of Understanding to determine the collaboration framework among ACHEE and ESCOs associations signed (cumulative)	N/A	1	**1**	Achieved	S	
	Output Indicator 2: # of Memorandums of Understanding to determine the collaboration framework among ACHEE and Financial Institutions signed (cumulative)	N/A	3	**3**	Achieved		
	Output Indicator 3: # of Memorandums of Understanding to determine the collaboration framework among ACHEE and power distribution companies signed (cumulative)	N/A	3	**3**	Not achieved		
	Output Indicator 4: # of Memorandums of Understanding to determine the collaboration framework among ACHEE and professional associations signed (cumulative)	N/A	1	**1**	Achieved		

(*) RS: Rating Scale: Highly Satisfactory (HS), Satisfactory (S), Medium Satisfactory (MS), Medium Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU).

Component 1 - Outcome 2.

Outcome 2 had a highly satisfactory implementation performance.

Outcome: **A structured financial mechanism to support EE projects based on EPCs available**	**Output Indicator 1:** Legal documentation to support PCGP structuring carried out	N/A	1	**1**	Achieved	HS	
	Output Indicator 2: Financial documentation to support PCGP structuring carried out	N/A	1	**1**	Achieved		
	Output Indicator 3: PCGP Operational Manual designed and implemented	N/A	1	**1**	Achieved		
	Output Indicator 4: Process to verify the technical viability of the projects to be covered by the PCGP defined	N/A	1	**1**	Achieved		
	Output Indicator 5: # of EPC models adapted to the Chilean context	N/A	3	**3**	Achieved		

(*) RS: Rating Scale: Highly Satisfactory (HS), Satisfactory (S), Medium Satisfactory (MS), Medium Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU).

Component 1 - Outcome 3.

Outcome 3 had a Medium Satisfactory performance due to missing targets in the dissemination efforts among banking professionals and power distribution companies. During the interviews, AgenciaSE personnel expressed that banks were not very interested in financing EE projects.

Outcome: Improved capacities of participating stakeholders and increased awareness of the existing opportunities of the energy efficiency market	**Output Indicator 1:** # of EF/ESCOs that attend to the PCGP-ESCOs business model information sessions (cumulative)	N/A	12	**12**	Achieved	MS	
	Output Indicator 2: # of banks professionals that attend to the PCGP-ESCOs business model information sessions (cumulative)	N/A	18	**18**	Partially Achieved		15 bank professionals received the information sessions, according to ISDP S2-2019.
	Output Indicator 3: # energy power distribution companies that participate to the PCGP-ESCOs business model information sessions (cumulative)	N/A	5	**5**	Not achieved		1 power distribution company received the information session, according to ISDP S2-2019.
	Output Indicator 4: # End users that participate to the PCGP-ESCOs business model information sessions (cumulative)	N/A	650	**650**	Achieved		667 end users participated in the sessions, according to the ISDP S2-2019.

(*) RS: Rating Scale: Highly Satisfactory (HS), Satisfactory (S), Medium Satisfactory (MS), Medium Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU).

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

Component 2 presented the greatest challenges during implementation. Although, much of the preparatory work for the structuring and function of the PCG was completed, it was very hard to place it in the market. In total, only 2 guarantees were placed with respect to 120 that were planned. Almost none of the targets of Outcomes 1 and 2 of this component were achieved, due to challenges presented in the banking sector, and availability of EE projects with MVPs in the industry.

Component 2 - Outcomes 1 and 2.

Outcome: PCGP contributes to facilitate the access to financing for EF/ESCOs	**Output Indicator 1:** # of EF/ESCOs dealing in the market (cumulative)	N/A	12	**12**	Achieved		There is a total of 38 EF/ESCO companies participating in the market today.
	Output Indicator 2: # of guarantees issued (cumulative)	N/A	120	**120**	Not achieved	HU	Only 2 PCGs were issued by FOGAEE.
	Output Indicator 3: # of Banks involved in financing the energy service market (cumulative)	N/A	6	**6**	Not achieved		Only 1 Bank participated in the financing of the model.
Outcome: Increase of Energy savings reached by EE project (MWh over the project duration) / Reduction of direct CO2e emission due to EE projects based on EPC (tCO2e over the project duration)	**Output Indicator 1:** # of EE projects establishing a baseline energy consumption level	N/A	120	**120**	Not achieved	HU	Only 7 EE projects established a baseline.
	Output Indicator 2: # of EE projects with savings Measurement and Verification Plans (MVPs)	N/A	120	**120**	Not achieved		Only 3 EE projects had a MVP.

(*) RS: Rating Scale: Highly Satisfactory (HS), Satisfactory (S), Medium Satisfactory (MS), Medium Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU).

- **<u>Projects Guaranteed by FOGAEE and Energy Savings Achieved:</u>**

During all its life, FOGAEE issued two PCGs for the following two projects:

Project 1: Implementation of a biomass thermal system for heating water: the new system replaced an old one of water heaters using diesel as fuel. The system was installed in the company Mantos Copper of Mantos Blancos, where the project developer was Pellet S.A. In this case, the contract modality used is the sale of energy for water heating.

Project 2: Design and implementation of a system of efficient illumination for the shop "Ellus" in Florida Center Mall: the new system replaced the existing lighting system with one that uses more efficient lighting. The new project was installed by the company Bluenow in the form of a shared savings contract.

Project 1: Biomass Thermal System

The project was implemented in Mantos Copper Mining Group by the company Pellet S.A.. In the mining operations (Faenas) of the Group, distributed along Chile, the company produces copper concentrate and cathodes. Minera Mantos Blancos is located on Route 5 North, 45 km north of Antofagasta - Region II. The following illustration shows the geographic location of the plant:

Illustration 1: Location of "Faena Mantos Blancos".

Source: Final Report, POCH 2015

In addition, the site has a copper concentration plant and a minerals lixiviation plant of copper oxides. This plant has a capacity to produce 60,000 tons/year of copper cathodes. According to the information reported by the project implementation the following results are expected in one year

Table 1: Expected results at one year, according to information reported by the implementer of the project.

Item	Reference period	Reporting period of savings
Fuel Consumption	3.000.000 lt diesel/year	4.666.667 kg of biomass/year
Heating Power	9,88 kWh/(lt of diesel)	5,23 kWh/(kg of biomass)
Equivalent Energy Consumption	29.651MWhe/year	24.419 MWhe/ year
Heating Efficiency	70%	85%
Useful Energy (hot water)	20.756 MWhe/ year	20.756 MWhe/ year

Figure 2:. Panoramic photograph of the connection hot water system Mantos Copper Taken October 15, 2015 by POCH.

Source: Final Report, POCH 2015

So, the estimated savings calculated by the project implementer correspond to 5,232 MWhe/year, 18% of previous consumption. These savings calculated by Pellet S.A. consider a historical consumption of diesel of 3,000,000 liters per year, a yield of 70% heat over a diesel heating value of 9.88 kWh/l. Moreover, the heat generated by the Thermal Biomass System (TBS) would be 20,756 MWh per year, with a calorific value of 5.23 kWh/kg biomass and a yield of 85%. In addition, the TBS will supply 100% of the hot water from diesel heaters.

This operation, however, started running into problems in 2016, because the company Mantos Copper Mining Group cancelled the contract with Pellet S.A. As a result, a guarantee approved to Pellet S.A. for US$510 million was requested by Tanner, the institution that provided the financing to the project.

The project the potential to be successful, however, the price of the fossil fuel required to achieve economic benefit was US$40. As the price of oil dropped below that level, the mining company cancelled the project. As a consequence, the ESCO company, Pellet S.A. could not fulfill its financial commitments.

Given the above situation, it should be made clear that:

- The operation had the equipment financed by the project as counter-guarantees (pledges), which, at the time of the payment of the deposit to the financial institution, could be required by way of judicial collection, however, its commercial value is very depreciated with respect to the value of the loan endorsed by FOGAEE, since the facilities are of very specific use and are in the mining work, being estimated at no more than 20% of the value that must be paid.
- The administrator informed the AgencySE that, as for the bond that covers the operation indicated above in the event of a possible formal charge, it will be rejected because it does not meet the requirements required by Law 20,179.

Project 2: Implementation of efficient lighting project

The project was implemented by the company Bluenow where the complete system modification Ellus lighting store at the Mall Florida Center was performed. Then a picture of the general store and the electrical panel board and strength shown:

Illustration 3 : Image Ellus shop in the Florida Mall Center.

Source: Final Report, POCH 2015

This project involves not only the replacement of the existing lighting equipment by more efficient equipment, but also includes the modification of the amount of points of light, incorporating emergency lights and the overall improvement in levels of illumination in different areas of the store. The implementer has declared **annual expected savings of26,989 kWh/year**, corresponding to the difference between the energy consumption of the project in the current situation, with the implemented Energy Efficiency Measure (EEM) and the prior situation without the EEM.

This project finalized successfully.

- **Budget Execution**

Table 1. Authorized Budget vs. Executed Budget

	AUTHORIZED BUDGET					EXECUTED BUDGET		
Component	*Estimated person weeks*	*GEF amount($)*	*Co-financing ($)*	*Project total ($)*		*GEF amount($)*	*Co-financing ($)*	*Project total ($)*
COMPONENT I (Design)								
Local consultants*			165.073	250.698		84.497		
International consultants*				18.200		31.642		
Travel expenses*				5.175				
Sub-Total		**103.168**	**165.073**	**274.073**		**116.139**	**324.784**	**440.923**
COMPONENT III (Project Mgt)								
Local consultants*	380	70.832	214.000	284.832		100.864	21.992	122.855
Sub-Total	**380**	**70.832**	**214.000**	**284.832**		**100.864**	**21.992**	**122.855**
TOTAL	**380**	**174.000**	**379.073**	**558.905**		**217.003**	**346.775**	**563.779**

Source: Project Documents and Financial Support Documents (AgenciaSE)

The authorized budget for the Design and Implementation FOGAEE was US$558,905 of combined financing from GEF and AgenciaSE, of which US$817,678 were executed and reported. Main differences, observed in this table, are related to the hiring of local consultants for the management of the project, for which a co-financing of US$214,000 was authorized, however, US$275,891 have been reported by AgenciaSE. Project Financial Audits show no comments or observations made by the Auditors.

Table 2. Audited Financial Statements, Summary of Auditors' Opinions.

Fiscal Year	Status	Auditor´s Opinion	Comments
2012	Postponed	Blank	IDB and ACHEE agreed to postpone the Project Financial Audit for 2013.
2013	Completed	None	Approved on June 17th, with communication's N° CSC/CCH 437/2013.
2013	Completed	None	The Financial Audit was performed. No observations made by the Auditors.
2013	Completed	None	The Financial Audit was performed for FY13. No observations made by the Auditors.
2014	Completed	Blank	Coordination efforts started for project financial auditory for FY14.
2015	Completed	Blank	The Financial Audit was performed for FY15. No observations made by the Auditors.
2016	Completed	Blank	The Financial Audit was performed for FY16. No observations made by the Auditors.

Source: ISDP Report, 2015 and Audited Financial Statements, 2015 and 2016.

- **Evaluation of the Instrument (FOGAEE) and of its Implementation**

According to the business plan proposed by the fund Administrator (Congarantia), the fund intended to guarantee 100 projects with an average amount per guarantee certificate of 508 FUs. the fund's projected profitability was 4% and the operations would be profitable from the first year. However to date, FOGAEE secured only 2 projects, equivalent to a total amount of 13,837 FU, corresponding to 27% of the initial projections.

FOGAEE was initially conceived as a necessary measure to contribute to reducing the financial obstacles facing ESCO companies in implementing EE projects in Chile. It was thought that a technical guarantee could derisk and support the financing of projects based on energy efficiency savings, thus promoting the participation of ESCOs as intermediaries in securing EE projects and leveraging resources from the banking sector. FOGAEE as a financial instrument to mitigate EE project risks and catalyze resources from the banking sector couldn't be fully tested in Chile. Several critical pieces of the model never achieved maturity for it to be properly implemented, and therefore we can't evaluate its effectiveness as a tool to support the development of the energy efficiency market. We can only analyze the factors that impeded its successful operation and identify potential areas of work to support in other critical ways the development of the energy efficiency industry in Chile.

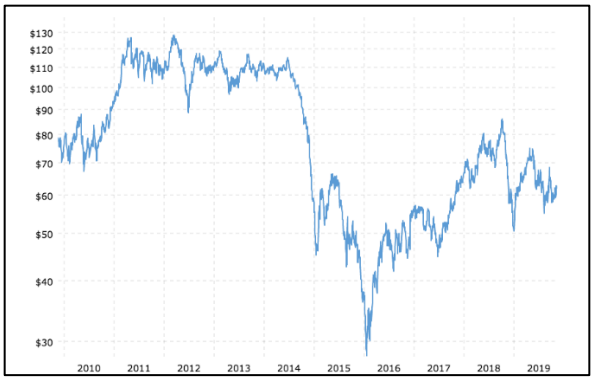
According to our conclusions, a number of assumptions made in the years 2010-2012 when the instrument was designed changed or didn't hold a few years later, reducing its chances of success.

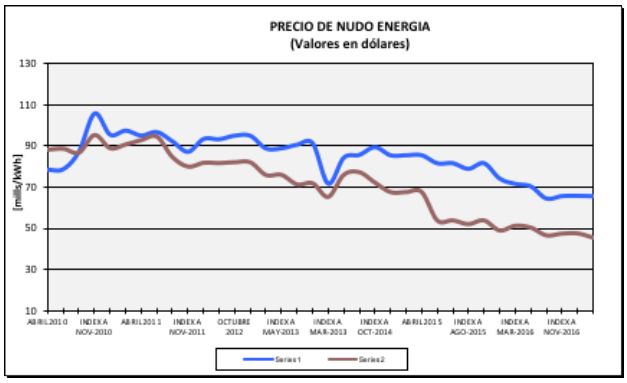
- Assumptions made during project design:

First, it was thought that the untapped EE potential, in particular from the productive sector (industry and mining) accounting for almost 27% of the energy consumption in Chile, was going to turn into a latent demand of energy efficiency projects. Such assumption probably found support under the existing context: first a new National Energy Strategy seeking to set EE targets per sector and potentially introducing an Energy Efficiency Law, and second increasingly higher oil prices in an era of energy vulnerability.

The context under which such assumption was made changed. First, government measures to encourage demand of EE and approval of the Energy Efficiency Law has been more challenging than expected, and second oil and energy prices dropped. This scenario created very little incentives for companies in the productive sector to seek energy saving alternatives. Evidence of that is the failure of one of the only two projects guaranteed by FOGAEE. Mantos Copper Mining Group decided to cancel the EE project when oil prices dropped below US$40.

Chart 1. Brent Crude Oil Prices & Energy Prices (2010-2019)





Sources: Macro-trends and CNE, 2019.

Second, it was assumed that by reducing the technical risks of the EE projects with a PCG, banks were going to be incentivized to provide more lending to ESCOs to finance EE projects. This didn't happen. Very little banks perceived a reduced risk and there was a general lack of interest for financing projects based on energy savings performance contracts. Despite efforts made to promote FOGAEE in the banking sector, very little banks were willing to support the guarantee. Moreover, the few banking institutions willing to use the guarantee, not only it didn't reduce traditional requirements, such as the usage of real guarantees, but instead increased the administrative costs and paperwork burdens. This factor was aggravated by the fact that the FOGAEE added additional commission fees making the instrument very costly for the ESCO. The guarantee was offered at 18% interest vs. 12-20% interest rate for traditional lending.

Third, it was assumed that the most appropriate actor to host and manage the PCG was a reciprocal guarantee company. However, the AgenciaSE got only one (1) proponent to the procurement process (Congarantía S.A.) for the management of the PCG, made this assumption not so strong any more. In effect, both RCGs, Congarantía S.A. and Red Confianza S.A. who absorbed the former in 2016, experienced financial insolvency. In 2017, Red Confianza S.A. filed for bankruptcy protection. On the other hand, bylaws of Congarantía limited the universe of financial institutions with which the PCG could be offered to only their commercial partners. This represented a huge limitation for the placement of the PCG.

Fourth, it was assumed that the Government of Chile's release of this instruments was accompanied by other robust financial instruments to promote the development of the EE market. By the time FOGAEE was designed, there were a number of ongoing activities supported by local entities and bilateral and multilateral institutions, in which the IDB, the German Development Cooperation Agency (GIZ) and the German Development Bank (KfW) were major funding sponsors. The Government of Chile and CORFO had developed three EE promotion instruments oriented toward private companies: 1) a pre-investment facility to subsidize EE consulting services in EE, 2) an EE credit line to finance investments of up to US$ 1 million for optimizing energy use in businesses, and 3) other CORFO Guarantee for RE/EE projects to begin in 2010. However, due to the lack of project candidates these financing instruments haven't been fully rolled out. As a result, the few

interested ESCO companies interested in the project had very little alternative sources of financing outside of the traditional banking sector tracks.

All the aforementioned circumstances made the land inhospitable for an instrument like FOGAEE to make roots in Chile. On the other hand, resources for trying to mitigate these adversities were limited since they were mainly oriented to the design and implementation of the PCG, and AgenciaSE and Congarantia didn't mobilize enough resources to overcome the identified limitations in the implementation process, as it was expected at the designed stage. As a consequence, results obtained in terms of promoting the instrument among the industry companies and among the banking sector institutions were very limited in scope and impact.

- Other challenges in the model:

An ESCO market didn't exist by the time this guarantee was offered. At project start, AgenciaSE's ISDP shows an initial baseline of 12 Engineering Companies operating in the EE market, while a 2015 technical study from ATS shows that around 14 companies had some knowledge about the ESCO model, with around 19 projects operating with CDEs, 17 of which were small projects carried out by small engineering companies. Engineering companies didn't understand the ESCO model and didn't have the technical capabilities to set up and carry out CDEs successfully. Evidence of this is the fact that AgenciaSE only received 5 expression of interests for FOGAEE, when it was offered in 2014, none of which could be accepted by the fund due to their low technical qualities. Project candidates demonstrated very low knowledge on CMVP and the IPMVP Protocol. Progress report documents showed this market weakness since the early days of the project and the need for large resources to strengthen the capabilities of engineering firms for FOGAEE to work.

The initial process to get funding and apply for the FOGAEE PCG was lengthy, burdensome and costly. A volunteer pilot case from the company Bluenow decided to try the instrument to test its benefits. In an interview with the beneficiary, the owner expressed frustration with the process established to get the PCG, the amount of requirements, and its final cost. The main costs were associated to the Measurement and Verification (M&V) of EE projects that had to be paid by the ESCOs. According to the Operational Manual, however, the M&V process was a technical responsibility that relied on the AgenciaSE, to be "conducted by a commission formed by a specialist relevant to the technical area of the project (e.g. Industry and Mining, Transport and Commercial and Residential), a professional from the M&V department, and a professional appointed by the Subdirection of the AgenciaSE". Instead, this function was outsourced to the company "POCH". The cost of this outsourcing turned very high and given its binding character for all projects regardless of size, they generated a disincentive for the ESCOs. In 2014, the parties, IDB, GEF, AgenciaSE and MINENERGIA agreed that the instrument required structural changes. However, these changes didn't seem to modify the perception of potential clients as there was very little demand for the PCG after all.

Marketing, promotion and dissemination of the guarantee among financial institutions and other market players was never executed properly. According to the Operations Manual, the Fund Administrator was responsible for carrying the required commercial activities to promote the instrument. However, this responsibility was not fulfilled effectively by Congarantia.

The implementation and management of FOGAEE was also challenging and experienced a number of mistmachings. The following is a time table presenting the chronological order of events, since the inception of the fund through its final liquidation.

Table 3. Timetable of Events

Date	Milestone	Info Source
12 Dec 2011	Financing agreement signed between IDB and ACHEE	IDB-ACHEE contract
04 Nov 2012	AChEE publishes notice of contract for hiring an Administrator of the Energy Efficiency Guarantee Fund (FOGAEE).	AgenciaSE-Guarantee Agreement
10 Dec 2012	The tender is awarded to Congarantía	AgenciaSE-Guarantee Agreement
08 Mar 2013	Contract signed between ASE and Congarantía.	Rules of Procedure
Apr 17, 2013	The Internal Regulations of the Fund are notarized in Santiago, for a duration of 8 years (2013-2021). After 4 years, a midterm evaluation must be carried out.	Rules of Procedure
March 31, 2014	The Bidding Rules for submitting projects to FOGAEE are published.	Bidding Rules by AgenciaSE
S2 - 2014	The closure of the consolidation and co-financing of the Bluenow company project is achieved. However, this experience shows weaknesses in the FOGAEE guarantee.	ISDP S2-2014
S2 - 2014	IDB, GEF, MINENERGIA agree on the need to adjust the conditions of FOGAEE guarantees. Funds are committed for adjustment.	ISDP S2-2014
S1 - 2015	Critical changes are introduced to the guarantee model based on reformulation studies. These changes require the restructuring of a new Operating Regulation for FOGAEE and a new contract with the Fund administrator, which were completed in Sept. 2015	AgenciaSE Final Report
Feb 28, 2015	The ASE detects solvency problems of Congarantía, the SGR that manages FOGAEE (as of February 28, 2015, the SGRs are still in negotiations for CORFO to reduce the requirements of the new fund to be delivered to support the guarantees).	ISDP S2- 2014
S1 - 2015	Congarantía lays off several employees, including the executive designated for FOGAEE.	ISDP S2-2014
8 Feb 2016	Change of ownership of Congarantía, which is acquired on a 75% by Red Confianza. IDB and ASE are not informed until the assembly of 08/09/2016.	IDB audit
March 29, 2016	The Medium-Term Evaluation conducted by the IDB is delivered to GEF and the ASE.	Mid-Term Evaluation, IDB-GEF
S1 - 2016	The Pellet SA / Mantos Blancos project fails and notification of a possible call to the guarantee is received.	AgenciaASE
S2 - 2016	FOGAEE is reformulated based on the results of the Mid-Term Evaluation and FOGAEE 2.0 dissemination campaigns are initiated. FOGAEE's relaunch achieves a new candidate project that seems to show interest in more favorable financial conditions. This consolidation never comes to fruition due to operational problems.	AgenciaSE Final Report
June 17, 2017	ASE develops its own Mid-Term Evaluation Report.	Mid-Term Evaluation, AgenciaSE
Sep 29, 2017	A quality audit is carried out at FOGAEE contracted by the IDB in which irregularities are detected in the administration of the	IDB audit

	Congarantía fund, due to deficiencies on the part of Congarantía and the Surveillance Committee.	
Sep 29, 2018	Red Confianza enters into cessation of payments and dismisses all its staff.	IDB audit
Nov 16, 2018	The FOGAEE Fund is Liquidated.	Final Liquidation Report, Barriga and CIA. Lawyers

Critical challenges and mismatchingsthat occurred during the life of the fund, can be detected from the table of events, and are summarized as follows:

- Challenges related to the activities performed by the fund administrator, Congarantía S.A.

From different reports and interviews one can conclude that the administrator didn't perform an optimal role in the management and promotion of the PCG. One of AgenciaSE's strongest arguments is that Congarantía didn't conduct proper commercial activities among banking institutions and failed to establish banking agreements to encourage the placement of the guarantee. Even after the parties had agreed to hire a commercial representative, the activities of this person were very limited and brought no results.

Additionally, one of the conditions agreed in hiring Congarantía was to make a contribution to the initial capital fund of 9%. This requirement, coupled with a model of remuneration based on a commission per project, has caused conflicting interests between Congarantía and the ACHEE, as the former seeks primarily to place large projects, while the second seeks to promote the market of small ESCOs.

The flow of information between the parties was difficult according AgenciaSE, so much so that the relation between AgenciaSE and Congarantía S.A. deteriorated as time went by during project execution. For instance, the AgenciaSE didn't find out that Red Confianza S.A. had acquired 75% of the ownership of Congarantía until 6 months later of the event. An internal auditory of the funds processes was conducted by IDB in 2017. The audit report concluded that Congarantía failed to comply with a number of internal regulations of FOGAEE, including the following aspects:

- The Contributing Assemblies corresponding to the years 2014 and 2015 were not held.
- The Minutes of the meeting of contributors of 2017 were not provided.
- No Surveillance Committee Assemblies were held in 2015 and part of 2016.
- Cash flows maintained in current account and not invested according to the policy defined in the Regulation.
- Folder of Pellet Heating and Bioenergía S.A. without endorsement of the Technical Evaluation carried out by AChEE and without conclusion of the commercial evaluation carried out.
- Lack of protection of the relevant business information when the Industrial Processes client folder is lost.
- Transfer of resources to Congarantia S.A.G.R. without the related supporting documents.
- No delivery of information to AChEE required according to Article 69 of the Internal Regulations.

- Challenges related to the activities performed by the Supervisory Committee

The Supervisory Committee didn't play an active role preserving the integrity and interests of FOGAEE. Two of the three members of the committee were inactive for a long time, and its presidency was vacant for most of 2015. Pursuant to Article 26 of the Rules of Procedure, it is a matter of the Ordinary Assembly of Contributors to elect annually the members of the Supervisory Committee. According to Article 27, if the vacancy of a member of the Supervisory Committee arises, the same Committee shall appoint a replacement, maintaining the form of designation set out in the preceding article, which will remain in office until the next Assembly of Contributors in which new members are appointed. In addition, the Supervisory Committee should hold a meeting at least every three months and must generate a certificate attesting the analysis of compliance with the Code. However, none of these procedures were followed leaving the Committee inactive and putting FOGAEE's integrity at risk.

It is very difficult to reconstruct the history of events and understand what happened from the written record of the Committee Minutes. Minutes are not in PDF, they lack the signatures of the Secretary and the President of the Committee, some are empty, or are inexistent, in the dates when the Committee should have carried out Ordinary Assemblies. The following is a table of the Minutes presented:

Table 4. Supervisory Committee Minutes

	2013	2014	2015	2016	2017
1	-	#1 11/04/2014	Not Issued	Not Issued	#8 19/01/2017
2	#1 15/05/2013	#2 26/05/2014	Not Issued	Not Issued	#9 28/02/2017
3	#2 03/07/2013	#3 25/07/2014	Not Issued	#6 09/08/2016	18/05/2017 Extra Ordinary
4	#3 13/11/2013	#4 25/09/2014	Not Issued	Minute is lost	-
5	-	#5 20/11/2014	Not Issued	28/22/2016 Extra Ordinary	-

Most importantly, the Supervisory Committee's main function was to ensure that the Administrator complies with its obligations under FOGAEE's Rule of Procedure. There were several instances when the Supervisory Committee played a passive role to protect the interest of FOGAEE and demand a higher performance standard from Congarantía.

- Challenges faced by Agencia de Sostenibilidad Energética (AgenciaSE)

The AgenciaSE is a relatively young institution, created in 2010 as a nonprofit organization, from the National Energy Efficiency Program of the Ministry of Economy " EE Country Program, PPEE", which in turn was born in 2005 as the first public initiative for the promotion of EE in Chile. Since then, the AgenciaSE has been building institutional capacities in diverse areas such as construction, industry and mining, transportation, education, and measurement and verification, among others.

Over the last years, AgenciaSE has experienced significant turnover. In particular, the project manager of the project has rotated more than four times since its inception, and today, since the departure of the last officer in charge of the project from the Agency, a dedicated manager wasn't completely assigned. The AgenciaSE considers that it lacks critical profiles to fill some important functions in the operation of the fund. For example, a full-time professional in charge of collecting

prospects of possible projects of EE from other techniques areas of the AgenciaSE, and to serve as an articulator between the ESCOs, the final beneficiaries, and banking sector.

According to interviews held with the AgenciaSE, argues not to have had the sufficient resources for the adequate administration of FOGAEE, as counterpart funds were executed and several critical functions for sustaining the operation of the fund, such as legal advice, monitoring projects and promotion of the guarantee, lacked the adequate budget.

- Project reformulation efforts made and its results

In the wake of the results obtained in the Mid-Term Report and the challenges experienced during project execution, the AgenciaSE introduced changes to the conditions of the PCG, in attempts to adjust the instrument to the market needs, conditions and challenges. In April of 2015, the consultancy firm ATS Energia, hired to assess the instrument and to propose changes to the PCG, provided a list of adjustments in the commercial, operational and financial fronts. A first reformulation of the PCG, which included changes to Operating Manual, a new contract with the fund administrator, new commercial agreements with RCGs, and a methodology to evaluate risks in EE projects, was made early in 2015. Nonetheless these changes, although necessary, weren't enough to increase the demand of the PCG. In a new effort to achieve this, FOGAEE was again reformulated and relaunched in the second part of 2016. Also a new commercial strategy to promote the PCG among the banking institutions and new clients was implemented. These changes resulted in a new project candidate for the PCG, however due to external reasons, the PCG was never acquired by the client. The low success of the adjustments to the PCG led the parties (AgenciaSE and IDB) to prepare a modification proposal to the project. This modification proposal was discussed with IDB and GEF at the beginning of 2019, and has been used as based to the formulation of Exit Strategy of the Project carried out by AgenciaSE, in coordination with MINENERGIA.

Overall, we conclude that there were diligent efforts made by the parties (AgenciaSE and IDB) to make appropriate adjustments and adaptations to FOGAEE in order to meet the market demands and overcome several of the barriers impeding the placement of the guarantee. We conclude that the adjustments proposed and made were appropriate and timely, however, the additional difficulties associated to the fund administrator (Congarantia) made the scenario very difficult to prove them successful. Also, these changes would need more time to be tested in the market, and would require additional parallel resources in capacity building to promote the EE market and spark a higher demand of the guarantee.

- **<u>Conclusions</u>**

The main problem of FOGAEE was the limited development achieved by the ESCO market prior to introduction of the PCG, exacerbated by a context of falling electricity prices and the distrust of the banking sector in the EPC model, which prevented scaling EE projects. Other factors for its failure included:

- Lack of capacities of the Engineering Companies to carry out the ESCO model, coupled with the low technical capacities of the banking sector to properly analyze and evaluate EE projects.

- The guarantee reduces very marginally the risk profile of EE projects for Financial Institutions (FIs). They consider the guarantee only one element in the assessment but usually fail to reduce high rates and requirements such as financial solvency and real counter-guarantees.
- Engineering Companies lack the necessary strategies for proper marketing of their services failing to captivate the interest of end users and financial institutions, let alone to sell projects based on energy saving contracts.
- The guarantee only covers the technical risk, therefore this requires a comprehensive monitoring and verification measurement, which substantially increases transaction costs.
- Costs (commission) of the guarantee, added to the financial expenses charged by FIs, made the instrument expensive for the potential clients, and the processes of commercial and technical verification are long and burdensome.

Despite efforts made to introduce changes to FOGAEE to meet the market demands and overcome several of the barriers impeding the placement of the guarantee, the PCG didn't achieve the expected scale due to additional difficulties associated to the fund administrator (Congarantia). Changes to the instrument FOGAEE would need more time to be tested in the market, and would require additional parallel resources in capacity building to promote the EE market and spark a higher demand of the guarantee.

- **Termination of FOGAEE:**

Since the first half of 2018 the AgenciaSE has been working together with MINENERGIA in the elaboration of a proposal to reformulate the project CH-X1009 (ATN/FM-12650-CH) to present it to the IDB and, if appropriate, submit it for the consideration of the GEF and the IDB, in order to use the remaining resources of the project after termination of FOGAEE. In June 2018, a draft of the proposal for reformulation of the CH-X1009 project was presented to the IDB, with the purpose of using the remaining resources of the project after the liquidation of FOGAEE.

During February 2019, AgenciaSE worked together with the IDB and MINENERGIA to conceptualize a new minor modification proposal that was presented to the GEF during the first half of 2019. To this end, progress was made in the preparation of a modification proposal in which the appropriate adjustments were proposed to meet the initial objective of the project, but through minor modifications.

On March 22, 2019, the liquidation of the FOGAEE was completed. In this context it is important to note that: a) The Pellet Project Guarantee was not executed and b) The fund was released from the payment of taxes by the Internal Revenue Service. In addition, all resources (CLP640.733.776) are currently invested in risk-free financial instruments. IDB and AgenciaSE agree to work jointly in the development of an Exit Strategy according to the Fund Agreement signed on December 2011(Unique Annex, Section 2.05) whose final purpose is aligned to the original project purpose, which is to encourage the development of an EE market. The following table presents the Exit Strategy presented by AgenciaSE and the GoCh.

Exist Strategy

- **Justification**

On February 16, 2011, IDB approved a non-reimbursable technical cooperation for the "Promotion of the Establishment and Consolidation of an Energy Services Market in Chile (CR-X1009)", financed by the Global Environment Facility (GEF).

In accordance with the commitments assumed by the IDB in the project, in its capacity as administrator of the GEF, at the end of 2015 the Bank developed, with the support of an independent evaluator, a Mid-Term Evaluation, presenting finding and recommendations regarding the project's performance up to such date. The Report concluded that the implementation of FOGAEE presents a significant delay in the fulfillment of the planned goals since it secured only 2 projects compared to the 120 planned, identifying barriers to the achievement of the project objectives. The report indicates that the fundamental problem of FOGAEE has been the limited development achieved by the ESCO market in Chile, which, exacerbated by the context of downward prices in the electricity market, and the lack of interest and knowledge of the banking sector in operation of the CDEs, has prevented the catalyzing of private sector resources.

In addition, during 2017, the Agency developed, with the support of an independent expert, a Mid-Term Evaluation Report according to the requirements of the Administration Contract, which concludes that the market is still immature and recommends thinking about the restructuring of the CH-X1009 project, under a new structure capable of generating a multiplier effect in the pursuit of the development of an EE market in Chile, covering the needs of the different stages and market actors in the development of an EE project.

In accordance with the provisions of Section 2.05 of the Unique Annex to the Fund Agreement that regulates the project, the IDB and the Agency have determined the following exit strategy in accordance with the results and performance achieved.

- **Proposal**

The proposal consists in the generation of a new EE market in Chile in the productive and services sectors, based on the massification of the International Standard ISO50001, Energy Management Systems (EMS).

The main objective is to expand, promote and strengthen an advanced culture of EE in the industrial, mining and commercial sectors of Chile through the implementation of EMS; 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.

Specific Objectives: the Exit Strategy specifically seeks to:

- Train energy managers in the industrial-mining and commercial sectors, promoting knowledge in the technologies available for EE, including requirements for the implementation of EMS and EE projects, and generating capacities for the measurement and verification of energy savings.

- Provide the necessary tools to multiply the implementation of EMS in end users, providing financial and technical support, in its implementation and subsequent certification. The greater the number of companies that have an EMS, the greater the number of projects to be implemented, with the support of top management of the organizations.

- Creation of practical tools for the early detection of potential opportunities of EE in the industrial-mining and commercial sectors; instruments that will allow companies and organizations to self-assess their efficiency levels so that they do not require basic consulting services, but can take the first steps on their own, later demanding advanced services with high added value (i.e. self-assessment platform for EE measures, platforms for analyzing gaps for the implementation of an EMS, etc.).

- Foster a market of EE consultants by increasing their capacities in providing personalized services with high quality and innovative components when supporting the development of projects. This is due to the fact that a lot of work has been done today in terms of awareness, but not so much in the improvement of their technical, commercial and management qualities. This requires extra resources for their training, improvement of capacities and the generation of technical-commercial solutions allowing them to structure EE opportunities in less than 3 months, and not between 6 months and a year as it is commonly the case today.

Component I: Capacity Building

Subcomponent I.1: Training of new energy managers. This subcomponent will finance the development of training courses in order to incorporate new energy managers in the industrial-mining and commercial sector. For the development of this component local resources will be used in the design of the training program and in the execution of the first courses, the resources from the IDB will be used to continue replicating the course.

Subcomponent I.2: Workshops and Seminars on Energy Efficiency. This subcomponent is aimed at financing workshops and seminars on design and evaluation of EE programs, benchmarking, case studies and / or success in EE and lessons learned, risk perception for EE projects, among others to the different members of the ecosystem of EE (Ministry of Energy, Energy Efficiency Agency, ESCO, IFs and end users). Additionally, the formation of a cluster in Energy and Energy Efficiency will be co-financed, developing round tables, gathering industrial and commercial representatives to raise awareness in terms of reducing energy costs through the implementation of EE projects. This subcomponent is aimed at market mobilization, both from the supply side, as well as from the demand side, connecting them to show that EE is not only saving and responsible energy consumption, but also considerations related to higher productivity, sustainability and operational security; complementing in this way the training of professional energy managers and the implementation of greater numbers and better SGE.

Component II: Energy Management Systems.

Currently in Chile there are only 28 companies that have a certified ISO50001 system, and as a result of the continuity in the energy management they offer, more than 70 US projects have been developed. Through this component, progress will be made in the implementation of SGE that

guarantees a continuous improvement of the energy performance of organizations over time. For this, a competitive fund will be available, which will co-finance the implementation and certification of SGE ISO50001 in companies, which will have the support of expert consultants throughout the process. This competitive fund will co-finance 70% of the costs associated with each implementation and certification, with a cap of US$15,000, and the applicant company must present its project in conjunction with a consulting company expert in implementation of SGE, in addition to accrediting a consumption minimum energy to justify the implementation of an EMS. The award of the fund will be in open window mode under criteria of selection of compliance with requirements and in order of arrival, until the funds are exhausted. The GHS certification must be managed by the expert consultant through a certifying house.

Component III: Tools for the development of EE projects.

In this line of work different tools will be developed that will allow companies to make early decisions in the realization of EE projects, will establish links between supply and demand, which is mainly validated through the Agency's consultant registry. Additionally, the different platforms and materials currently available to the Agency to deliver information to the market, oriented both to the supply and demand of US projects, will be strengthened. This initiative seeks to generate instruments that allow companies and organizations to self-assess their efficiency levels in such a way that they do not require basic consulting services, but can take the first steps on their own, later demanding advanced services with high added value.

Component IV: Market promotion of US companies and consultants.

With this component, the market of companies providing energy services will be strengthened through different measures; such as, capacity building, dissemination of projects, strengthening the registry of companies and consultants, generation and dissemination of project portfolio, among others. The current situation of the EE market in Chile requires, in addition to a greater offer of services, also to improve its quality so as to be able to have a registry of consultants (www.registroenergetico.cl) that meets international conditions and standards; ensuring that the projects that are implemented achieve the goals of savings and performance expected in their design over time, generating confidence in the market and, above all, showing that the EE is the main solution to increase sustainability and productivity in National companies.

- **Costs and financing**

The total cost of the project is estimated at US$ 2.1 million, to be financed according to the breakdown shown in Table 1 below:

Table 5. Project Costs

Project Components	Financing (US $)			
	IDB / GEF	MINENERGIA	CORFO	Total
I. Capacity building	**320,000**	**150,000**	**0**	**470,000**
Subcomponent I.1: Training of new energy managers	200,000	150,000	0	350,000
Subcomponent I.2: Workshops and Seminars on Energy Efficiency	120,000	0	0	120,000
II. Energy Management Systems	**750,000**	**450,000**	**0**	**1,200,000**
III. Tools for the development of EE projects	**130,000**	**0**	**0**	**130,000**
IV. Promotion to the market of companies and consultants of EE	**100,000**	**0**	**200,000**	**300,000**
TOTAL	**1,300,000**	**600,000**	**200,000**	**2,100,000**

Key Results Indicators. The program has a Results Matrix that presents products, results and impacts associated with the objectives and components. The expected impact corresponds to the reduction of annual energy consumption and reduction of annual CO2 emissions. See Annex II for more detail.

Execution period and disbursement schedule. Both the execution and disbursements will be carried out in a period of 48 months, through tenders, contracting of services and creation of development instruments that allow the fulfillment of the objectives of this project.

Table 6. Exit Strategy

N °	Activity	Description	Amount (thousand USD)[1]	Expected result	Execution time
1	Training of new energy managers	Currently, the training program for energy managers is designed and in execution, with 2 graduates made with 53 trained energy managers and 2 more graduates in execution with 47 future energy managers in training, who have benefited from the financing received from the Ministry of energy. In addition, the Agency is developing a manager training course for the medium-sized company that seeks to complement what has been done in the diploma course, but with a focus on the medium industry. The work will consist in replicating the diploma and the energy manager courses developed by the Agency with the purpose of incorporating new energy managers in the industrial-mining and commercial sector.	200	Implement 6 diplomas for large industry and 7 courses for medium industry, totaling 250 new energy managers. 5000GWh saved by participating companies. 30 MM USD turnover generated from the implementation of energy efficiency measures in participating companies.	48 months
two	Workshops and Seminars on Energy Efficiency	Conduct workshops and seminars on design and evaluation of EE programs, benchmarking, case studies and / or success in EE and lessons learned, risk perception for EE projects, among others to the different members of the EE ecosystem (Ministry of Energy , Energy Sustainability Agency, ESCO, IFs and end users).	95	10 seminars and / or similar activities of dissemination of the SGE carried out	48 months
3	Cluster training in EE and SGE	Form a cluster in Energy and Energy Efficiency, developing round tables, gathering industrial and commercial representatives to raise awareness in terms of reducing energy costs through the implementation of EE projects.	5	Design guidelines and program cluster EE and SGE and Action Plan thematic dissemination of EE, full s in its first release	12 months
4	Operation of the cluster in EE and SGE	Operate the cluster in Energy and Energy Efficiency, developing round tables, gathering industrial and commercial representatives to raise awareness in terms	twenty	EE thematic dissemination plan executed 15 Stakeholders participating in the EE and SGE cluster	48 months

N °	Activity	Description	Amount (thousand USD)[1]	Expected result	Execution time
		of reducing energy costs through the implementation of EE projects.			
5	Energy Management Systems	Encourage the implementation of SGE that guarantee a continuous improvement of the energy performance of organizations over time. Here it is hoped to extend what has been done with the "Contest of implementation and certification of energy management systems under ISO 50.001" which is published and open to the target audience.	750	20 companies that certify SGE ISO 50001. 1000 companies supported through the tools or web platforms generated.	48 months
6	Tools for the development of EE projects	Strengthen existing instruments and generate new instruments that allow companies and organizations to self-assess their efficiency levels, make early decisions in the realization of EE projects and establish links between supply and demand.	130	5 tools or self-diagnostic web platforms or support for the implementation of SGE or, of EE measures, generated	48 months
7	Promotion to the market of companies and consultants of EE	Strengthen the market of companies providing energy services through: capacity building, dissemination of projects, strengthening the registration of companies and consultants, generation and dissemination of project portfolio, among others.	100	50 consultants incorporated into the registry of consultants www.registroenergetico.cl . 100 consultants and bank agents trained.	48 months

V. Lesson Learned and Recommendations

ESCOs are seen as an important vehicle for promoting energy efficiency around the world and recent studies have shown that the growth potential for the ESCO industry in many different countries is remarkable. For example, the ESCO industry revenue in the United States was about USD $5.3 billion in 2011 with EE projects accounting for about 85% of that revenue. Based on historical trends, the industry could more than double in size from approximately $6 billion in 2013 to $11–$15 billion by 2020[7]. In Chile, the main problem in the field of EE has been the development of a strong ESCO market that can facilitate the implementation of more and larger EE projects in all productive sectors; however, one of the main causes to prevent the growth of an ESCO market has been the limited access to financing of ESCOs.

As a result, the parities (IDB and the GoCH) identified the need to develop a financial instrument specifically oriented to the ESCO market as one of the necessary measures to contribute to reducing the financial obstacles facing the EE market in Chile, through the formulation and implementation of a Partial Credit Guarantee (PCG) aiming to promote the active participation of ESCOs as intermediaries in achieving energy savings and implementation of EE projects, based on EPC. The PCG was to be administered by a third party, that would involve financial institutions willing to provide credit to ESCOs to finance the implementation of energy saving projects. Technical validation of projects, as well as the strategic orientation of the instrument, was to be supervised by the AgenciaSE. The following are some limitations in the ESCO market observed in Chile before implementation of the PCG:

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.

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).

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.

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.

A key element in this business model is the need to measure and verify (M&V) energy savings. This requires a relationship of trust between the ESCO and the end user at the onset.

Overall, there has been a positive institutional impact derived from GEF's Extended Program in Chile:

GEF programs in Chile have been instrumental in advancing the technical and the institutional capacities of the AgenciaSE and the GoCh, positioning the Agency as the institutional reference of EE public policy in Latin America. From launching the first public initiative in 2005, called "the National Energy Efficiency Program", to the development of new and more focused public policies on energy and EE in 2008, to the creation of the Chilean Energy Efficiency Agency (AChEE) in 2010 and to its later transition to the Sustainable Energy Agency (AgenciaSE for its name Spanish) in 2018, the GoCh has been able to advance and put EE in the government agenda, achieving international standard recognition and high level commitments.

Careful analysis of project risks with regards to energy price trends and forecasts, including price of fuels for auto-generation is of utmost importance:

FOGAEE was able to place two guarantees, one for the implementation of efficient lighting in a store and another for the implementation of a biomass thermal system for heating water. The project had the potential to be successful, however, the price of the fossil fuel required to achieve economic benefit was US$40. As the price of oil dropped below that level, the mining company cancelled the project. As a consequence, the ESCO company, Pellet S.A. could not fulfill its financial commitments.

Although it is difficult to conclude that a drop in oil prices was one the reasons why the FOGAEE model didn't work, due to the lack of a large enough sample of projects, we do have an indication of the necessity to perform a more thorough analysis of energy prices, in particular of oil derivatives used for auto-generation during the design of an EE financial instrument. In Chile, for example, auto-generation projects in industries such as mining, represent the largest potential for EE projects, and the failure experienced on one of the only projects of FOGAEE leaves us the lesson that a fall on oil prices may represent a very high risk to the viability of EE projects. In future PCG-fund models, it is recommended to incorporate this analysis not only on the project design itself, along with mitigation strategies, but also on the measurement of baselines used to calculate energy savings on EPC-based models.

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.

It was thought that a technical guarantee could reduce-risk and support the financing of projects based on energy efficiency savings, thus promoting the participation of ESCOs as intermediaries in securing EE projects and leveraging resources from the banking sector. However, FOGAEE as a financial instrument to mitigate EE project risks and catalyze resources from the banking sector

didn't seem to work for now in Chile. Very little banks perceived a reduced risk and there was a general lack of interest for financing projects based on energy savings performance contracts. Despite efforts made to promote FOGAEE in the banking sector, very little banks were willing to support the guarantee.

Project financing is so fundamental to the ESCO business model that an ESCO cannot consider doing business in a country where it cannot obtain a long-term reliable source for financing its EE projects (IFC 2013). The project financing barrier was difficult to overcome for ESCOs due in large part to the fact that the Chilean banking industry is unfamiliar and uncomfortable with providing project-based lending to energy savings projects on a medium- to long-term basis. Virtually no financial institutions were willing to recognize and accept energy savings from EE projects as collateral, as they continued to require real guarantees.

In addition, financial institutions in Chile obtain high profitability by providing resources for traditional projects and sectors through financial instruments that they know very well. Given this context in the financial market in Chile, it is extremely difficult to awaken the interest of banks in venturing into new sectors of activity that they do not know well (such as energy efficiency) and use innovative financial instruments that move away from those they usually use.

Based on other country experiences, promotion of the ESCO model has been achieved with alternative actions, such as: a) encouraging the development of several demonstrative projects with successful implementation, which is usually achieved first by implementing several EE project contracts with the government, b) placing enough long-term project-based financing alternatives available for EE projects, and c) support ESCOs with equity-based models, so that they can have sufficient equity to be able to self-finance a certain number of EE projects and start generating more robust corporate cash flows. We believe a PCG is beneficial, but as one of many other instruments happening in tandem, not alone, in the absence of other well established and successful instruments.

Stage of maturity of the ESCO Market should be more advanced before introduction of an instrument such as a PCG.

An ESCO market didn't exist by the time this guarantee was offered. At project start, AgenciaSE's ISDP shows an initial baseline of 12 Engineering Companies operating in the EE market, while a 2015 technical study from ATS shows that around 14 companies had some knowledge about the ESCO model, with around 19 projects operating with CDEs, 17 of which were small projects carried out by small engineering companies. Project candidates demonstrated very low knowledge on CMVP and the IPMVP Protocol. Progress report documents showed this market weakness since the early days of the project and the need for large resources to strengthen the capabilities of engineering firms for FOGAEE to work.

It is critical to provide incentives to develop an ESCO Market first. There are a number of ways to support the development of an ESCO market. For instance, starting in 2004, the Spanish government implemented various programs, most notably the E4 program (National Energy Efficiency Strategy) and Plan 2000 ESCO, in efforts to promote demand-side measures in the

following sectors: buildings, industry, transport, agriculture, public services and appliances. This program supported the implementation of energy audits by subsidizing 75% of the cost. Depending on the solutions proposed as a result of these audits, a subsidy was given in order to help finance the execution of the suggested actions (BC3 2013).

It is critical to support the development of ESCOs skills to structure EE projects. In nascent ESCO markets, having credibility and relationships with energy end-users is a key element for the trust needed for the end-users and ESCOs to be willing to enter into a new type of long-term contract that may have legal precedence. The critical factor in determining the creditworthiness of energy end-users is the ESCO's ability to convince a financial institution for financing purposes. ESCO needs to develop its own credibility and quickly expand its relationships with potential energy end-users. ESCOs need to develop skills are particularly specialized to the ESCO's performance-based business model and require individuals who are highly talented in the technical, financial and legal aspects of selling, structuring, financing and implementing energy savings projects. Commercial skills are also paramount to develop quickly a network of contacts both in the public sector (national and local levels) and the private sector (through business associations, chambers of commerce, etc.) in order to enhance understanding and belief in the ESCO model, which may or may not be well-known and, in parallel, to negotiate EPC agreements with identified prospects (IFC 2011).

Other measures include: enhancing awareness on the part of potential consumers (clients) about the ESCO and the EPC concepts. Without a good understanding of the EPC concept, ESCOs are often just disseminating information about the concept and trying to sell it to potential energy end-users instead of trying to develop real business. Also, ensuring an initial market available to ESCOs, either through public sector openness to the concept or launching bids (such as in Canada and the United States) or through a supported initiative by third parties.

Absence of baseline data can inhibit the development of the EE market:

Lack of reliable data in the different industries in Chile has been one of the main obstacles for successful implementation of energy efficiency projects and government policies. The implementation of a professional and accountable energy audit scheme is recommendable in order to gather reliable information regarding the energy consumption profile of companies.

Overall efforts to promote the EE and ESCO markets should also be placed in the understanding and construction of baseline data. In some countries for instance, energy consumption is monitored through real-time software platforms. The objective is to gather accurate data in order to calculate energy consumption baselines, thereby correcting the asymmetric information problem between ESCOs and energy end-users.

Promote or enforce use of the IPMVP. To ensure promised energy savings have been achieved over the contract duration, there exists an internationally accepted procedure called the International Performance Measurement and Verification Protocol (IPMVP). Policy reforms should be made to make this protocol mandatory in Chile in order to build understanding and awareness around the potential and real monetary value of energy savings.

The final cost of the guarantee has a big impact on the viability of the instrument:

As a fundamental principle of the ESCO model, ESCOs must have the ability to identify in a low cost and reliable way a cost-effective EE program within the energy end-user's premises or installations. ESCOs must perform energy audits aiming to calculate baseline consumption and estimate the percentage of energy savings likely to be reached through a series of cost-effective investments. In FOGAEE, the main cost of the PCG was associated to the Measurement and Verification (M&V) of EE projects that had to be paid by the ESCOs. According to the Operational Manual, the M&V process was a technical responsibility that relied on the AgenciaSE, however, this function was outsourced to the company "POCH". The cost of this outsource increased the cost of the PCG significantly and given its binding character for all projects regardless of size, they generated a disincentive for the ESCOs.

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.

The Supervisory Committee didn't play an active role preserving the integrity and interests of FOGAEE. Two of the three members of the committee were inactive for a long time, and its presidency was vacant for most of 2015. The project manager of the project rotated more than four times since project inception, and the position was practically vacant for some time. The AgenciaSE considers that it lacked the critical profiles to fill some important functions in the operation of the fund. For example, a full-time professional in charge of collecting prospects of possible projects of EE from other techniques areas of the AgenciaSE, and to serve as an articulator between the ESCOs, the final beneficiaries, and banking sector. They also lacked other critical roles such as a legal advisor or some to monitor the performance of projects and of the fund.

These were all critical elements to the survival of the fund, yet committed resources from AgenciaSE to perform them weren't there. We consider that there should be more stringent mechanisms to ensure financial commitment on the side of the Executing Agency are followed through.

Annex 1. Final Evaluation Mission Itinerary and Persons Interviewed

Dates: From 10/09/2019 – 10/11/2019

	Wednesday 9	Thursday 10	Friday 11
9 o'clock		9:00 a.m. Sebastian Jure, Anita Becerra Agency	9:30 a.m. Meeting with Fernando Araya, BlueNow. At the agency, deck fernando@bluenow.cl, +56 9 8839 7059
10:00		10:00 a.m. Carolina Castillo, Clement Demons Agency	
11:00		11: 00hrs. Ignacio Santelices Agency	11hrs Meeting Marcos Lima, CIS Consultores Presidente Riesco 5711 Of 801 Las Condes. Contact Magaly Morales M., Executive Assistant, mmorales@cisconsultores.cl (+56 2) 2209 1912
13:00			12: 40hrs Carlos BernerBensan carlos.berner@corfo.cl Manuel Martínez Bejar mmartinez@corfo.cl Currency 921, Santiago 4th floor, room 438.
15:00	15hrs Camila Rosales Pérez crosales@minenergia.cl Marcel Silva msilva@minenergia.cl Ministry of Energy		3:00 p.m. Alvaro Soto Agency
	Robles Alzamora, Paola A. PAOLAR@iadb.org, "La Rosa, Analia" CLAROSA@iadb.org , "Echevarria Barbero, Carlos Jose" CARLOSE@iadb.org	Miguel Stutzin MStutzin@mma.gob.cl .	

Annex 2. List of Documents Reviewed

1. Project Information (GEFSEC PROJECT ID: 4176)
2. Non-Reimbulsable Agreement (No. GRT/FM-12650-CH)
3. EPC Contract Models
4. Measure and Verification Report on the projects guaranteed by FOGAEE, POCH 2015
5. Audited Financial Statements of FOGAEE 2012-2015
6. Third Progress Report from Attorneys Barriga y Cia.
7. Internal Code of FOGAEE
8. Proposal of a New Internal Code of FOGAEE
9. Tender Documents for the Selection of FOGAEE's Administrator "Congarantia"
10. Signed Contract with Congarantía for the Administration of FOGAEE
11. Proposal for a New Contract with a New Fund Administrator
12. Table of Personnel Costs, with staff allocations by name and time, charged to FOGAEE.
13. Description and results obtained by the two projects guaranteed by FOGAEE.
14. Proposal by the ACHEE for the Continuation and Restructuring of FOGAEE.
15. ACHEE's Financial Proposal for the Continuation of FOGAEE
16. Minutes of the Supervisory Committee's
17. Letter of Consultancy send to the Superintendecy of Internal Taxes
18. Biannual Progress Reports (ISDP for their initials in Spanish), by AgenciaSE from 2017 through 2019
19. Mid-Term Evaluation Report, by AgenciaSE, June 2017
20. Proposal for the Modification of the Project "Promotion Of The Establishment And Consolidation Of An Energy Services Market In Chile", June 2018
21. Final Project Report, by AgenciaSE
22. Fund Liquidations Documents
23. Exit Strategy Proposal, by AgenciaASE

Annex 3. Co-Financing Table

Sources of Financing	Name of Co-financer	Type of Co-financing	Amount Confirmed at CEO endorsement (US$)	Actual Amount Contributed	Actual % of Expected Amount
ACHEE	ACHEE	In Kind	354,073.00	600,674.10	169.6%
KFW	CORFO	Grant	3,614,600	469,730.5[8]	7.7% (*)
	IADB	Grant	25,000	25,000	100%
		TOTAL	**4,861,060**		
EF/ESCOs	EF/ESCOs	Parallel Financing	4,861,060	1,310,437	26.9%
Financial Institutions	Financial Institutions	Parallel Financing	23,931,404	-	-
		TOTAL	**28,792,464**		

(*) As explained in the document, CORFO's credit line was cancelled. Due to the absence of EE projects, all KFW-CORFO resources were assigned to NCRE projects.

[8] CLP371.632.000, tasa de cambio al 26/11/2019 CLP791,16/USD

Annex 4. Signed Code of Conduct

Evaluators/Consultants:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.

2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.

3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source.

Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.

4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.

5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.

6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study limitations, findings and recommendations.

7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

MTR Consultant Agreement Form

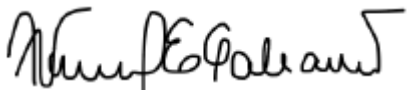
Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Consultant: _____Victoria Galeano _____

Name of Consultancy Organization (where relevant): _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at __Washington D.C. _____ (Place) on _November 18, 2019 (Date)

Signature: _  _____