Cover Page for CTF Project/Program Approval Request			
1. **Country/Region**	Chile	2. **CIF Project ID#**	(CIF AU will assign ID.)
3. **Project/Program Title**	Chile Geothermal Risk Mitigation Program		
4. **Terms and Amount Requested in million USD equivalent**	**Private sector** *IP:* Loan/guarantee: 27.7 Grant: 1.048 Fee (for implementation of TC / KM activities): 0.052 Fee (for implementation of investment operations): 1.2 Total IP: 30 *DPSP:* Loan/guarantee: 20 Total DPSP: 20 **Total IP and DPSP: 50**		
5. **Implementing MDB(s)**	Inter-American Development Bank		
6. **National Implementing Agency**	Not applicable		
7. **MDB Focal Point**	calatorre@iadb.org		

8. Brief Description of Project/Program (including objectives and expected outcomes)

1. For the last decades Chile has been one of the leading countries in Latin America in terms of economic development and growth, achieving the third highest rate of GDP growth per capita in the region in 2012. This high growth has been coupled with higher energy demand, with a 90% increase in the last decade. Projected energy demand growth until 2020 is 5.5%-6.5% per year, with an additional 7-8 GW of installed capacity required by then. Hydropower expansion could meet an important percentage of the expected demand, but some important projects have been put on hold because of environmental concerns. Development of coal plants can also face opposition when the plants are located in the vicinity of population centers, given the local pollution impact. Natural gas currently accounts for approximately 25% of the national installed generation capacity and its sizable contribution is expected to continue or increase in the coming years, but all natural gas is imported and is more expensive in terms of production costs than both coal and large hydro.
2. Given that Chile is a net importer of energy resources and dependent on fossil fuels, whose costs have been continuously rising in recent years, the GoC has been promoting the development of non-conventional renewable energy (NCRE) to diversify its energy sources in a sustainable way, contributing to a diversified, clean and safe energy matrix. The GoC recently approved legislation to increase the percentage of NCRE to 20% of all new contracts by 2025. Chile also encourages clean energy through total exemption of transmission charges to renewable projects up to 9MW, and partial exemption for projects between 9MW and 20MW.
3. Geothermal energy could be an alternative source of renewable, base-load energy to produce a relatively stable supply of electricity. Located in the Pacific Ring of Fire, Chile is one of the countries with the highest potential for geothermal energy development in Latin America.

Although geothermal developers have been increasingly arriving to Chile since 2008, the market remains untapped. While the Ministry of Energy has granted 79 exploration concessions and 7 exploitation concessions, none of these projects have installed generation capacity yet.

4. The high risk (resource, market/price, among other) and cost of developing geothermal power capacity in Chile pose barriers to raise risk capital and effectively advance exploration and complete project development. Besides the well-known risk/reward imbalance and barrier posed by geothermal resource risk during the exploratory stages, other cost and risk barriers are also important in Chile: a) higher capital costs: among other reasons, the lack of local availability of adequate rigs requires sourcing rental equipment from abroad, thereby doubling or tripling drilling costs; b) market/price risk: merchant project risk given the difficulty in securing PPAs in early stages of development and/or for an adequate duration; c) time to commissioning: project development lead times of geothermal (9-13 years) are longer than other renewable projects such as solar and wind, making it more difficult to obtain a PPA with unregulated clients such as mining companies; d) sites in remote locations: most of geothermal resources are far away from the grid and other essential services, making it challenging to connect to the grid and increasing the investment costs for developers; in addition, prevailing extreme weather conditions in some geothermal sites only allow for 3-4 months of work per year, increasing development time and cost.
5. These risks create a shortage of funding or inadequate funding conditions for geothermal development in Chile. CTF concessional finance has the potential to tackle some of these cost and risk barriers to enable and catalyze the development of the first few projects, providing a strong demonstration effect of the viability of this industry in Chile. The proposed MiRiG program aims to combine CTF resources under the Chile Revised Investment Plan (IP) and the Dedicated Private Sector Programs (DPSPs) envelopes to support investment needs of projects that have already completed some exploratory drilling but require -before they can access commercial debt financing- concessional risk mitigation support to advance with additional drilling and plant construction.
6. The MiRiG program intends to support up to three geothermal projects in Chile that have the potential to become the first in the country (and at this point in South America), demonstrating the viability of this technology in Chile and leveraging DFI and commercial financing. The program expects to directly enable a minimum of 100-150MW of installed capacity. CTF resources will be used in structuring financial solutions that will mitigate the effects of resource and other project development and operation risks, and incentivize project developers to make the significant additional investments still necessary to allow production drilling campaigns and plant construction to go forward. The proposed structuring solutions include senior and subordinated long term project loans, short term bridge loans (convertible to grant), and guarantees.
7. IDB is also submitting the "Geothermal Financing and Risk Transfer Facility" proposal for Mexico, and is planning to submit a geothermal proposal for Colombia. The simultaneous execution of these geothermal risk mitigation programs will offer opportunities for the exchange of experiences between the different stakeholders.

Justification of combined request for IP and DPSP resources

8. Resources are being requested from both sources for a couple of reasons, and with careful

consideration of additionality as well as minimum size to allow for demonstration. Firstly, given the high costs and risks associated to geothermal development in Chile (as detailed in point 4 above) the USD 30M available through the IP (per its revision, as approved on October 9, 2013) represents a very limited amount to confidently expect -given the high costs and financing needs of the prospective projects - sufficient demonstration. It would likely be just enough to support one project; if that project failed (a possibility that cannot be discarded given the high resource risk associated to the exploration stage of geothermal development), the whole program would not achieve its objective. A larger envelope that can support at least two projects would allow greater risk diversification and significantly enhance chances of having at least one successful project providing the intended demonstration. Secondly, the geothermal DPSP program approved by the CTF TFC was defined to exclusively support resource risk mitigation. As explained in the body of the proposal hereby presented, there are other risk and cost barriers hindering geothermal development in Chile, addressing which may be as crucial as mitigating resource risk, particularly for projects relatively more advanced in their development. The IP resources -not restricted in their use to resource risk mitigation- complementary allow such additional flexibility to customize CTF support to the individual risks and needs of each project. For these reasons -size of the envelope to enhance chances of program achieving intended demonstration and the need for flexibility in terms of risk and cost barriers that need to be addressed-, a combined envelope of USD 50M (USD 30M from IP; USD 20M from DPSP) is hereby requested.

9. Consistency with CTF Investment Criteria

See V. Fit with CTF Investment Criteria pp. 14-18

(1) Potential GHG Emissions Savings: see p. 14
(2) Cost-effectiveness: see p. 14
(3) Demonstration Potential at Scale: see p. 15
(4) Development Impact: see p. 16
(5) Implementation Potential: see p. 16
(6) Additional Costs and Risk Premium: see p. 17
(7) Financial Sustainability: see p. 17
(8) Effective Utilization of Concessional Finance: see p. 18
(9) Mitigation of Market Distortions: see p. 18
(10) Risks: see p. 18

10. Stakeholder Engagement

In addition to the engagement through the Ministry of Energy, the IDB team has been working for the last eighteen months in the identification of a pipeline of projects and discussion of possible structures to cater to the needs of developers. In the framework of the preparation of the Program, a firm was hired by IDB to support the preparation of the project and conducted interviews with developers as part of a demand assessment and modeling of potential financing solutions.

During the preparation of the Revised Investment Plan in July 2013, meetings with relevant stakeholders from civil society and private developers were held.

11. Gender Considerations

The IDB will include gender considerations in its social and environmental safeguards due diligence process. Gender aspects will be taken into account in the framework of consultations to be undertaken, as well as in the development of best practice manuals for the industry and for the Ministry of Energy, and in the materials generated in the knowledge management component of the Program.

12. Co-financing Indicators and Targets (consistent with results framework)

Core Indicators	**Targets**
New capacity installed by the project	At least 100MW
GHG tons abated by the Project	At least 8.7 $MtCO_2e$ [a]
Financial leverage	At least 1:10 [b]
Development Indicator(s):	
Annual reductions in fossil fuel imports	At least USD 16 Million [a]

[a] Assuming drilling is successful for at least 1 or 2 projects, enabling at least 100MW of installed capacity
[b] For projects with successful drilling which thus proceed to plant construction

13. Co-financing

	Please specify as appropriate	Amount (in million USD)
• CTF		50
• MDB		Up to 140-205[c]
• Private Sector	Sponsor (equity)	220-330
• Others	Other financing (other DFIs, commercial banks, ECAs)	140-240
Total		550-825

[c] This range represents the maximum that IDB can finance, 25% of total project costs for projects in Chile. IDB financing may however be more limited, closer to the $50M CTF investment amount, depending on the stage of development of the project/s supported and how CTF funding is structured. Given the critical role that CTF concessional funding will play on this, this cannot be determined until CTF funding is endorsed and in depth assessment of projects is completed.

14. Expected Date of MDB Approval (first project)

Q2 2015