**Implementation Costs and Technical Assistance activities**

1. **Background**
   1. CTF grant resources from ME-G1005 will provide support to the CTF – Geothermal Financing and Risk Transfer Facility. The objective of the program is to increase power production from geothermal sources so as to contribute to the diversification of the energy matrix, and thus reduce both dependency on fossil fuels and GHG emissions in Mexico. To this end, the program intends to scale up investments in geothermal power generation projects by making available a range of financial mechanisms tailored to meet the specific needs for each project’s stage of development. This will include risk mitigation mechanisms as well as various forms of financing for exploration, drilling, field development and construction phases of private geothermal projects.
   2. The expected impacts of the program are: (i) electricity production from geothermal sources; (ii) tons of GHG emissions avoided and (iii) geothermal capacity installed. The proposed program is expected to finance some 300 MW of additional geothermal capacity in the long term, which could lead to emissions savings of around 1.10 MtCO2 per year.
   3. The proposed program seeks a transformational intervention by building a track record of geothermal projects and providing the possibility to replicate successful outcomes in other countries in the region and the world. The program also has a multiplier effect, as it is designed to optimize the use of funding available in terms of leverage and sustainability. Continuing these efforts should allow for the development of a sustainable framework in the long term, after demonstration of the benefits of investing in geothermal has permeated the economy. Moreover, since it is expected that the Program is successful, the insurance industry would evolve into building risk management instruments that make sense for geothermal technologies, the proposed program could contribute to improve data on historical loss patterns and technical information that could help facilitate the development of solutions for geothermal energy projects in the long term.

**2. Components of the Technical Cooperation Activities**

* 1. The CFT Geothermal Financing and Risk Transfer Facility includes technical cooperation activities that can be divide into four components:
  2. **Component 1:** **Capacity Building:** The barriers that geothermal development encounters are from varied nature, and include financial barriers, regulatory barriers, technical barriers and risk perception barriers. The proposed program targets financial and risk perception barriers though the design of risk mitigation and flexible financing instruments targeted for the different phases in geothermal development, building a track record and triggering investment in the sector. In order to maintain the sustainability of the Program and guarantee the permanence and transfer of the knowledge generated by it, technical workshops for NAFIN, SENER[[1]](#footnote-1) and other Financial Institutions are envisioned. This component would seek synergies with the Geothermal Center for Excellence under creation in Mexico, as well as with the Center for Regional Geothermal Training in El Salvador[[2]](#footnote-2) to deliver short-duration workshops and seminars in relevant aspects of geothermal development (regulatory aspects, environmental and social safeguards, financial incentives, risk management, among others) as well as to promote policy dialogue and exchange with other countries with geothermal expertise, such as Chile, Nicaragua, Costa Rica, among others.
  3. **Component 2: Support to the Federal Electricity Commission (CFE).** This component aims at preparing the CFE to develop alternative business models that allow the participation of CFE together with private developers in geothermal projects, taking advantage of the body of expertise in geothermal development generated by CFE in over 40 years. Advisory services would be provided to support CFE in evaluating itsassets (i.e. previous studies, permits, land rights, etc.), providing alternatives to optimize the return on those assets in the face of private sector interest and considering the public sector legal constraints and the context of the energy reform. The consultancy would also deliver suggested business structure, standard contracts, procedures and best international practice to have CFE become an active player in the geothermal market through its engagement with the private sector through PPPs or other means.
  4. **Component 3: Support to the GoM in the development of policies and regulations:** The IDB has been supporting SENER in the drafting of specific regulation for geothermal development, which results in the estimated approval in April 2014 of the first Geothermal Development Law in the country. This component envisions the extension of this support in order to further develop the geothermal legislation and includes the following: (i) providing technical inputs to SENER for the development of geothermal legislation, as well as to other agencies (such as CONAGUA) as needed; (ii) providing SENER with a suggested structure and human resources policy for the administrative units that will become necessary for the application of the new regulations and (iii) integration of environmental and social considerations into geothermal projects: this will support the development of environmental and social regulation specifically targeted at complying with the challenges associated with geothermal projects. The development of a protocol for best practice in integrating environmental and social considerations into geothermal products is envisioned, among others specific needs of the Government on a case by case basis.
  5. **Component 4: Technical Evaluation of the proposals, Due diligence of the Projects and Knowledge Transfer activities:** The implementation of the program will include the contracting of third party expertise to support NAFIN in (i) defining the technical documentation required to conduct due diligence ; (ii) performing technical due diligence of evaluating the quality geothermal projects geothermal-consistency model and the technical feasibility of the proposed project ; (iii) analyzing the financial viability of the proposals (iv) analyzing the drilling program indicating whether (1) the procedures for drilling and safety systems are implemented to achieve the correct safety requirements and environmental protection, (2) the specific objectives, the minimum expectations and expected outcomes are consistent with the proposed preliminary geothermal model. However, the expertise needs to be not only contracted to a third party but transferred and shared in order to maintain the sustainability of the program in the long term and ensure the demonstration effect of the Program
  6. For that purpose, the company would also be tasked with the design of a national mechanism to evaluate the financial and technical feasibility of the projects that can be implemented by NAFIN and the corresponding Government institution (SENER*[[3]](#footnote-3)*) after the company is no longer involved in the program in order to maintain its sustainability. The mechanisms would be targeted to the different needs and audiences accordingly. The products would include specific training to technical staff at NAFIN and to the Mexican Government. SENER has committed own resources to establishing a coordination unit within SENER in order to continue the promotion and development of geothermal projects even after the Programs has used the resources.

# 3. Structure and resources of the Technical Cooperation Activities:

* 1. The technical cooperation activities will be implemented using resources the CTF Investment Plan.

## Indicative Budget and timeframe:

|  |  |  |
| --- | --- | --- |
| Technical cooperation components | IP Grant Resources | Execution by |
| Component 1: Capacity Building for NAFIN, SENER  and other Financial Institutions | 100,000 | December 2015 |
| Component 2: Support to the  Federal Electricity Commission (CFE). | 300,000 | December 2015 |
| Component 3 : Support to GoM in the development  of policies and regulations | 100,000 | December 2015 |
| Component 4: Technical Evaluation of the proposals  and Due diligence of the Projects | 2.300,000 | December 2020 |
| TOTAL (USD) | **2.800,000** |  |

1. Or any other Government Agency as determined by SENER [↑](#footnote-ref-1)
2. In the framework of the Geothermal Development Facility in LA coordinated by KfW [↑](#footnote-ref-2)
3. Or any other Government Agency as determined by SENER [↑](#footnote-ref-3)