

March 26, 2014

**Comments from NRDC (via WRI) on Approval by Mail: CTF Chile: Geothermal Risk Mitigation Program  
(IDB)**

Dear Patricia,

Please find attached comments on the Chile Geothermal Risk Mitigation Program. These comments come from NRDC, which we pass along here in our capacity as developed country civil society observer to the CTF Trust Fund Committee.

Thank you for the opportunity to comment.

Best,

Milap Patel



**Natural Resources Defense Council comments on  
Chile Geothermal Risk Mitigation Program Proposal  
March 19, 2014**

The proposed Chile Geothermal Risk Mitigation Program (MiRiG) would utilize CTF resources to support:

- a) Development and implementation of social and environmental best practices
- b) Independent geothermal advisory services, and
- c) Knowledge Management

***a) Development and implementation of social and environmental best practices***

As the Proposal notes, one of the main risks to the Program is related to public concern about potential environmental and social impacts of geothermal development. Given Chile's experience with El Tatio, it will be critical to inform local communities and secure public support for projects prior to the start of development activities.<sup>1</sup> The MiRiG program implementers should encourage project developers to reach out to local and neighboring communities, specifically including indigenous communities with claims to the land, in a meaningful manner and as early as possible. Technical assistance on environmental, social and operation management should seek to go beyond ensuring compliance with national regulations, since there are existing legal and regulatory gaps with regard to environmental impacts and indigenous communities. In particular, support for the development and implementation of social and environmental best practices should consider:

Earlier environmental impact studies: Current regulations in Chile stipulate that an environmental impact study is to be conducted only when a project enters the period of exploitation. This means that developers are legally obligated to consult with local communities only after exploration occurs. Impacts to the surrounding environment can occur in exploration just as they can occur in exploitation. Communities near projects may be uninformed about the potential negative impacts of geothermal exploration activities, and this can generate mistrust. Conducting a preliminary environmental impact study at the beginning of the exploratory phase would help address potential concerns and ensure that local communities have a true voice in the decisions that affect their surrounding environment. Among other things, exploration activities can result in impacts on: air quality (from exhaust, dust, and release of geothermal fluid vapors), cultural resources and artefacts (such as from construction of new access routes), ecological resources (through disturbance of habitat, increased erosion, alteration of water, or elevated noise pollution), and water resources (during exploration drilling). The impact on ground and surface water resources can range from low to high. In particular, exploratory drilling can lead to increased erosion and runoff. Drilling of exploratory wells can also impact reservoirs by creating pathways through which geothermal fluids can mix with groundwater. An early-stage impact study would also provide valuable information about the baseline environmental conditions at the site,

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<sup>1</sup> Geotermica del Norte's El Tatio project, located in a northern region of Chile considered sacred by indigenous people and with high touristic value, moved forward despite the concerns of the local indigenous community. In September 2009, a well failure at El Tatio created a 60 meter column of vapor and water that took a month to control, casting a shadow over geothermal development.

making it easier to identify, attribute, and remediate any potential environmental degradation that may arise during project development, or to identify sites where development would not be appropriate.

*Incorporating the spirit of the ILO Convention 169 into the geothermal law:* In 2008, the Government of Chile ratified the International Labor Organization (ILO) Convention No. 169 signaling it planned to carefully consider indigenous communities in the institutional and legal framework of the country. Yet the government has not considered this agreement in relation to the geothermal concession law or any other institutional framework related to geothermal projects. The lack of clarity about indigenous issues and rights in Chile's legal and institutional framework can lead to an increased level of uncertainty in all energy development projects, including those in the geothermal sector. The Program should encourage the government to develop a better understanding of the claims of indigenous communities in sensitive territories and consider these claims when granting concessions. For example, the Pueblos Atacameños in the northern region of the country, have claims to ground water supplies based on Law 19.253 ("indigenous law"). The current geothermal concession law grants concession holders access to water resources, but does not include provisions to ensure local indigenous communities retain their water supply. Given this perceived conflict, indigenous communities in dry regions may be particularly wary of geothermal development.<sup>2</sup> Conflicts over water in northern Chile have already occurred in relation to industrial operations such as large scale mining activity. For example, local communities charged that Barrick Gold's Pascua Lama gold mine was destroying glaciers, contaminating water, and have blamed the company for water scarcity. In response, government authorities suspended operations and levied fines on company.

#### ***b) Independent geothermal advisory services***

The MIRiG document cites geothermal potential estimates of 16 GW and 3.3 GW, while the consultant only cites the 16 GW estimate. The fact that the two most often cited resource potential estimates in Chile are so profoundly different is a problematic issue. It would be helpful if the geothermal advisory services provided under the Program helped encourage the government to invest in conducting a new, reliable resource potential inventory and provided the technical expertise to develop a clear resource estimate. Such information would help define both priority areas for exploitation and areas that are simply too risky for exploitation or exploration or should be off-limits to development for other reasons.

The component of the Program focused on transferring and sharing geothermal expertise to the Ministry of Energy should also consider including the participation of higher learning and research centers such as the Andean Geothermal Center of Excellence (*Centro de Excelencia en Geotermia de Los Andes –CEGA*), a Fondap/CONICYT project. This would help build local expertise and technical capacity and eventually help sustain the industry by preparing future geothermal professionals.

#### ***c) Knowledge Management***

Efforts to share lessons learned and best practices, should explicitly include outreach to and sharing experiences with local commercial banks in Chile to help inform them of the details and benefits of backing geothermal projects.

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<sup>2</sup> See "Visión y propuesta de los Pueblos Atacameños para el desarrollo de la geotermia," Antonio Cruz Plaza, Presidente del Consejo de Pueblos Atacameños at: <http://www.cega.ing.uchile.cl/cega/index.php/en/noticias-destacadas/202-todos-los-actores-de-la-geotermia-se-reunen-en-exitoso-seminario-en-el-cega>