

October 6, 2011

## Reply of IDB on the Approval by Mail: Mexico Renewable Energy Program, Proposal III

Dear Zhihong

We sincerely appreciate the careful revision of the proposal by the German CTF team and hereby provide the responses to their questions.

Mit freundlichen grüßen,

Claudio

### Mexico Renewable Energy Program - Proposal III Proposal for Submission to the CTF Trust-Fund Committee

#### Responses to questions by Germany

<b>1</b>	<b>ENERGY POLICY</b>
<b>Q</b>	<i>The envisaged projects can be expected to support the current situation, where – due to the lack of a corresponding grid – the renewable energy capacity will probably be used not to feed into the grid but to provide electricity to larger enterprises. Although it seems reasonable that financing under these conditions (matching interests between the Wind-Energy investor and the large customer) is more challenging, many argue that fundamental reforms of the Mexican electricity sector are needed. We think, it is important to <b>elaborate more on the question to what extent the proposed project will facilitate the fundamental reforms or the structural change of the Mexican electricity sector.</b></i>
<b>A</b>	<p>The development of renewable energy-based grid-connected electricity generation in Mexico is following several tracks in parallel:</p> <ol style="list-style-type: none"><li><b>CFE-operated projects</b> (<i>Obra Pública Financiada</i>). A number of geothermal and hydropower projects owned and operated by CFE, the public utility, are being built or planned across the country. A pilot 5MW solar power plant is planned as well.</li><li><b>Independent power producers</b> (tender-based system). Five wind power projects, with approximately 100MW each, are underway (La Venta III, and Oaxaca I, II, III and IV), and other wind project projects are included in the <u>official planning document</u> (Sureste I, II, III and IV, with 304 MW each; Rumorosa I, II, and III, with 100 MW each). Furthermore, a hybrid concentrated-solar power / combined cycle natural gas power plant will be built in the Sonora desert.</li></ol>

	<p>3. <b>Small producers</b> (under 30 MW, without tender). The <u>LAERFTE Law</u> enacted in 2008 sets favorable conditions for the development of small producer projects driven by renewable energy (RE) sources. In particular, it provides for payments that recognize the capacity contribution and the positive externalities of RE projects. The government is actively working in the development of the required complementary regulatory and programmatic mechanisms (including a study on the externalities of electricity generation).</p> <p>4. <b>Self-supply</b> projects feed both large and medium-sized enterprises by wheeling power through the grid. A number of projects under this modality are in the construction or planning stages. They are similar to projects in countries where generators are allowed to sell electricity directly to large consumers. The particularity of Mexico lies in the absence of a market and the need for consumer and generators to reach cross-sharing agreements.</p> <p>CFE-operated projects and private projects that sell all their electricity to CFE (IPPs and small producers) will benefit from a <u>recent change</u> to Article 36-bis of the <u>electricity law</u>, which establishes that environmental externalities need to be considered when applying the least-cost principle for power sector planning and dispatch. This relevant modification still needs to be translated into secondary regulations.</p> <p>In the current context, the majority of the new RE capacity is occurring under the self-supply modality, but it is foreseen that, as the new regulations are enacted, a larger share will occur in the IPP and small producer modalities.</p> <p>The financing mechanisms and the institutional capacity to be developed under the Renewable Energy Financing Facility (REFF) are expected to be applicable not only to self-supply projects, but also to IPPs and small producers. Even though there are some project risks that are specific to self-supply projects, most of the characteristics of RE projects are shared among the different modalities.</p> <p>It is expected, therefore, that by supporting up the REFF, the CTF will ultimately contribute to facilitate the overarching structural transformation of the Mexican power sector.</p>
<b>2</b>	<b>SOCIAL BENEFITS</b>
<b>Q</b>	<i>The proposal would benefit from additional thoughts about whether long-term structural advantages for the population are expected, what these are and how they will materialize.</i>
<b>A</b>	<p>Regardless of their modality, all RE projects benefit the general public, as they contribute to industrial development and job creation, especially in the areas surrounding the projects, and as they provide other benefits, such as a reduction in local pollution around fossil-fuel-fired power plants.</p> <p>Secondly, they provide an important benefit to the economy as a whole, as they reduce the macroeconomic impacts of fuel imports.</p>

	Finally, they contribute to mitigate the volatility of electricity tariffs. This benefit will be higher as the country transitions towards a more enabling policy and regulatory framework for IPP and small producer projects, as explained above.
<b>3</b>	<b>COMMUNITY DEVELOPMENT MEASURES</b>
<b>Q</b>	<i>Are project developers actually obliged to undertake additional community development measures (as mentioned in Appendix 2) or is that merely optional?</i>
<b>A</b>	While it is certainly encouraged that additional community development measures be undertaken, in line with best practices, the measures will be optional.
<b>4</b>	<b>CONNECTION BETWEEN THE SOCIAL IMPACTS STUDY AND THE LOANS</b>
<b>Q</b>	<i>How the grant components are really integrated/connected to the provision of the individual loans. <b>Will the results of the studies be included into the individual final loan agreements as conditions</b> for the loan to be paid out? How the results of the study will relate to the overall project design, including indicators for M&amp;E.</i>
<b>A</b>	This will not be a condition for the loans. The REFF safeguards ensure that fair agreements are reached between developers and local communities, following the current best practices. The studies seek to build on the experience of the projects that will be financed and develop improved practices for the future. The studies will also enable the monitoring of relevant, additional social indicators.
<b>5</b>	<b>WIND POWER COSTS</b>
<b>Q</b>	<i>The estimated investment cost range of <b>2 to 2.5 Million USD per MW seems on the high side</b>. Costs above 2 Millions would require explanation from our point of view.</i>
<b>A</b>	According to our assessment, the total investment costs of most wind power projects in developing countries go beyond the USD2M/MW threshold. In the specific case of Mexico, the need to contribute to the financing of the La Ventosa-Juile transmission line further increases costs. It is estimated that this concept alone amounts to USD140k/MW.
<b>6</b>	<b>JUSTIFICATION OF CONCESSIONALITY</b>
<b>Q</b>	<i>It would be desirable to <b>be more explicit in justifying these highly concessional terms</b>: The proposal simply refers to the standard-conditions. But very concessional terms are to be justified in terms of the added value that the CTF contribution is expected to generate, which would not occur in the absence of the CTF contribution.</i>
<b>A</b>	The fundamental reason for the need of subsidized financing of RE investment in Mexico lies strictly in the central objective of the program itself, namely, to scale-up investment in RE. The argument is that without this incentive the rhythm of

investment would remain well below its potential. The grant element embedded in the financing package of the REFF (the concessionality of CTF resources) helps win the resistance of private sector investors through different channels, that will be classified according to the nature of the impacts: short-term or longer-term (structural) impacts.

## 1. Short Term

- a) The subsidy lowers the cost of long-term financial resources needed by these investments. Even pooled with NAFIN, IDB and other resources lent at market rates, the financing terms of the blend will be better than the financing available in the absence of the subsidy. Some back-of-the-envelope mathematic calculations might explain the finances: we are estimating that the USD 210M of the REFF should raise up to USD 1,540 M of third party finance in order to cover investment in 1,000 MW of RE sources. If that were the case, CTF resources would amount to 4% of total financing. In USD, compared to a loan of 20 year maturity with 5 year of grace at 5-7%, CTF financing implies savings of around USD 40 to 50 million at current prices in the total financing cost over the life of the whole program portfolio.
- b) Hence, the subsidy increases the economic merit of the consumer-producer ventures. The subsidy/profit can be captured in different ways. It might directly accrue to the developers or buy them additional finance from third-party investors/banks. For example, given an official kWh price established by the CFE, cheaper financing options will either increase the profits of the development or allow the partners to revise the negotiated price down, delivering a profit through either mechanism. Banks may capture part of the subsidy in exchange of providing more resources or better terms.
- c) Summing up, there are multiple ways in which the subsidy might help scale-up investment. Whatever the end use of the subsidy might be, it is a powerful enough incentive to compensate for the risk spreads associated to the regulatory uncertainty and to the relative novelty of the RE projects in Mexico.

## 2. Longer Term

The program is comprehensive in the sense that it seeks to jump-start/scale-up an investment process that should become self-sustaining in the longer term.

Through the involvement of NAFIN and financing from third parties in the projects, as well as through the creation of the contingent financing credit line, the viability of RE power generation will be proven, and its financing and the risks involved therein better understood.

Of course, without future regulatory incentives to this industry it is difficult to predict where the limits to profitable ventures might be (in terms of total national MW installed). That depends as well on the evolution of the technology, the quality and quantity of the RE resources available, future conditions in the financial

markets, and future prices of electricity/energy.

Arguably the Program delivers its structural impact because of the fact that it makes the resources available and seeks to maximize the amounts leveraged. The underlying subsidy is seen as an incentive to accelerate and multiply the investment process.