

Nicaragua SREP Investment Plan Technical Review

1. **Title of Investment Plan:** Nicaragua’s SREP Investment Plan (PINIC).
2. **Program under the SCF:** Scaling Up Renewable Energy Program in Low Income Countries (SREP)
3. **Name of the reviewer:** Oscar Coto
4. **Date of submission:** April 27th, 2015.
5. **Part I: General Criteria**

The Nicaragua SREP Investment Plan (PINIC) is written based on a thorough presentation, which is descriptive of the current context situation both of the country and the energy sector, as well as the state of renewable energy development in the country. The country context presented addresses the perspectives emerging from the national plans and economic perspectives that are inclusive of the national plans for the energy sector. There is adequate description of the general challenges as well as sustainability issues involved in the planning for energy sector development in the mid to longer term. At the country level, the proposed investment plan is consistent with the National Human Development Plan (Spanish acronym PNDH) as well as expressed needs from economic planning institutions within the Government of Nicaragua. At the energy sector level, the PINIC establishes the necessary contextual links with the relevant programs in the country such as PNER, PLANER, ENLCV and the Geothermal Master Plan; which are all relevant to the different components of the PINIC.

The plan includes a discussion of perceived barriers that are restricting the current efforts related to the scaling up and mainstreaming of RE within grid and off-grid energy service provision. The proposed PINIC includes two main components related to:

1. Development of Nicaragua’s Geothermal Energy, and
2. Integrated Development of Rural Areas.

The two components of this SREP program are directed at transforming Nicaragua’s energy matrix to include more renewables, increasing the national grid coverage and ensuring universal access to modern energy services.

Assessment of PINIC from the General Criteria Perspective:

General Criteria	Comments by Reviewer
Complies with principles, objectives and criteria of SREP	The PINIC complies with the principles, objectives and criteria of the SREP program as specified in the DESIGN DOCUMENT FOR THE PROGRAM ON SCALING-UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES (SREP), A TARGETED PROGRAM UNDER THE STRATEGIC CLIMATE FUND. There is a link established in the PINIC on the complementarities of SREP funds to already on-going efforts in the country.
Takes into account in-country capacity to implement the plan	<p>The PINIC components are linked to on-going programs or initiatives in Nicaragua.</p> <p>The Geothermal Development Component of PINIC is linked to the capacity to implement the Nicaragua Geothermal Master Plan as well as the Geothermal Law, both within the context of the evolving electricity market behavior in the country. This component specifically recognizes the need to further strengthen in-country capacities through the Program for the Development of Human Resources in the Geothermal Sector with the support of the IDB, NDF, IRENA and the Government of El Salvador through LaGeo -El Salvador’s geothermal power generating company-, as well as with the GGDP. Taking into account the complex nature of geothermal development which requires the need to have independent peer review of road map activities as well</p>

General Criteria	Comments by Reviewer
	<p>as the need for early inclusion of (likely) international developers with sound equity capabilities, it is suggested that the GoN could consider establishing a small external advisory board; whose members could bring specialist knowledge and can also contribute experience across the spectrum of issues within geothermal project development.</p> <p>With respect to the Integrated Development of Rural Areas Component, an important issue to take into account is that the PNESEER program is scheduled to finish by 2017; and although the PINIC indicates that such structure could to a larger extent be used for implementing the SREP Program, there is no indication on the real permanence and commitment within the governmental structure to maintain those implementation capacities (especially since the PINIC only includes description of the thematic components of PNESEER and no specific responsibilities and roles are presented on how they will be retain or enhanced for SREP implementation). This Component is also to be supported on the development of an Action Plan known as “Sustainable Energy for All 2030”, which includes drafting a National Strategy for Universal Access, but for which there is no timeline described within PINIC.</p>
<p>Has been developed on sound technical basis</p>	<p>The PINIC seems to have been developed based on sound background context information as well as on a technical basis.</p> <p>Technical information related to resource assessments and level of current utilization are presented, as well as the development of LCOE modeling for potential target technology selection which are based on adequate benchmarking in the Central American Region and elsewhere.</p> <p>The proposed investment plan lacks some contextual information related to the grid off take capacity for RE technologies in the specific areas of the country where activity is suggested to take place, as well as on wholesale market electricity cost formation that could be relevant to assess private sector engagement.</p>
<p>Demonstrates how it will initiate transformative impact</p>	<p>The PINIC presents analysis and justification of barriers that need to be overcome, including: knowledge barriers (geothermal potential); market (lack of commercial interest in remote areas) and financial restrictions (equity and debt placing); legal framework barriers (granting and supervision of concessions, technical diudilligence, recognition of eventual grid disparity, etc) ; (v) technical limitations (training and capacity building); and social barriers (related to perceived non sustainability of isolated renewable energy systems models of intervention).</p> <p>Links relating barrier analysis to specific component design, and into results oriented outputs are not very clear for some of the barriers in particular for the market and financial ones related to the integrated development of rural areas component of the Plan.</p>
<p>Provides for prioritization of investments, capture and dissemination of lessons learned, M&E and links to results framework</p>	<p>Initial screening processes for on/ off-grid renewable energy technologies, is based on assessing resource potential and determination of LCOE, which are well substantiated in the document. Further prioritization of technologies for SREP investment included a consideration of criteria including: scalability, potential beneficiaries, elimination of market barriers, promotion of low emission development, strategic relevance and social inclusion, contribution to leveraging new investment, synergies with existing programs minimizing duplication and financial sustainability. These criteria are also said to be complemented with assessment of other dimensions of co-benefits such as social / environmental /gender, and state of readiness for implementation, which are not quantified in the document,</p>

General Criteria	Comments by Reviewer
	<p>therefore leaving open the important dimension of quantification, and perhaps monitoring of co-benefits of the program.</p> <p>Both components of the Plan include provisions for the capture of lessons learned on international trends for geothermal resource development, and on past experiences related to the implementation of rural energy service provision at the local level. It may be appropriate for the Plan to more explicitly address for example how lessons learned are to be acquired in areas such as rural organizational model for energy service provision (like micro grids or results oriented financing programs).</p> <p>The M&E component of the Plan presents a general framework for its implementation, having the plus of expecting to rely on the capacities in place within the GoN to follow-up and evaluate of the energy sector. It is recognized that such complex intervention, would require further strengthening of the M&E and associated indicators.</p>
<p>Has been proposed with sufficient stakeholder consultation and provides for appropriate stakeholder engagement</p>	<p>The GoN with the WB, the IFC and the IDB carried out a consultation process to identify PINIC investment priorities. Several sessions were held with the focal point of the SREP Program in Nicaragua, institutional actors of the energy sector, NGOs and the private sector; through meetings as well as with public consultation through electronic media, before submissions of final PINIC occurred. The GoN validated top priority activities and the selection criteria to identify renewable technologies that can best meet its goals while satisfying the Program’s general philosophy –of being transformational, scalable and sustainable- in order to benefit from their financing and their business models.</p> <p>It will be appropriate for PINIC to address the extent of consultations conducted with respect to the municipal layer of relevant stakeholders, especially since in the component related to integrated rural development, those stakeholders are likely to play a very important role emanating from the key directives of the drafting of a National Strategy for Universal Access in the country.</p>
<p>Adequately addresses social and environmental issues, including gender</p>	<p>The PINIC adequately addresses social and environmental issues by stating the country’s overarching principles, followed by assessing the targeted technological interventions, through the inclusion of both potential beneficiaries as well as relevance/social inclusion parameters.</p> <p>Gender considerations are included in different sections of the Plan, especially at the level of the specific components of the Plan and more heavily relevant to the integrated development of rural areas segment. With respect to gender issues, the document mentions that “Nicaragua has no data available to provide a baseline for gender diagnosis or investigation in the field of renewable energy” and proposes several strategies to make full incorporation of the gender considerations; issue that merits further detail development in subsequent stages of implementation and to be directly linked to the results framework as well as to the monitoring and evaluation framework.</p>
<p>Supports new investments or funding additional to on-going/planned MDB investments</p>	<p>There is no specific explicit description within PINIC on the on-going/planned investments by MDB’s. It may be appropriate for the PINIC to explicitly address this issue.</p> <p>It is well noted that the PINIC mentions that a group of bilateral and multilateral organizations led by the IDB have decided to support authorities in the implementation of the PNESEER program, which has received a total of US\$419 M and is supported by the IDB, CABEL, EIB, NDF, EU/Latin American Initiative, among others up to an</p>

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	<p>scheduled ending by 2017, indicating that “SREP’s support would make it possible to continue with additional tasks of this successful and transforming program”.</p> <p>The PINIC also mentions that the World Bank is currently supporting the Government of Nicaragua with a Geothermal Technical Assistance Program, but there is no direct description on additional funding availability.</p>
<p>Takes into account institutional arrangements and coordination</p>	<p>The PINIC describes the institutional structure used for its preparation using the figure of an SREP Nicaragua Technical Committee that was formed, under the leadership of the Ministry of Finance (MHCP) and MEM, and composed of technical experts from MEM, ENATREL and ENEL. The Focal Point for SREP Nicaragua is the Minister of Energy and Mines and currently ENATREL’s Executive President.</p> <p>The document also indicates that the PNESER structure could be used to a great extent in implementing future projects under the SREP support. The document could benefit from a more detailed presentation on the proposed structure for implementation, especially since Annex 4 only presents the components of PNESER (programmatically) but with no description of its organizational structure and associated roles and capabilities towards SREP Program implementation.</p>
<p>Promotes poverty reduction</p>	<p>The PINIC addresses poverty alleviation aspects for both components of the plan. Lower expected tariffs due to the development of the geothermal resource may have an impact on percentage of income required by lower income segments of the population to pay for electricity services; and in the rural development component there is consideration linking to enhanced access as well as development of productive use applications of renewable energy.</p>
<p>Considers cost effectiveness of investments</p>	<p>Cost effectiveness of investments is addressed from the comparison of LCOE of targeted renewable energy technologies in both on and off-grid applications considered.</p>

6. Part II: Compliance with the investment criteria or business model of the relevant program

Assessment of PINIC from the SREP Specific Criteria Perspective:

SREP Specific Criteria	Comments by Reviewer
<p>Catalyze increased investments in renewable energy in total investment</p>	<p>The plan outlines in some detail, how it is anticipated that SREP investments and program support will help attract public and private funding in areas where energy sector investment in Nicaragua is not necessarily happening (geothermal development and rural energy service provision).</p> <p>In the case of the geothermal development component, the leadership of existing government agencies is seen as critical in implementing strategies to remove targeted resource assessments barriers, providing for the development of public-private funded examples to help aggregate markets so that private investors can have larger-scale opportunities to develop the resource base, which is a pragmatic approach to catalyze increase investment in the energy sector in Nicaragua.</p> <p>In the case of the integrated development of rural areas component, the proposed program aims at catalyzing increased investments from the GoN, MDB’s as well as International Cooperation Agencies, beyond the expected course of action of current programs in Nicaragua; although the description presented does not allow for proper assessment of the catalytic role with</p>

	<p>respect to total investment. The plan is not explicit on how the program will increase or not private sector participation within this component of PINIC.</p> <p>Component #2 of PINIC incorporates several activities related to the implementation of different kinds of financial facilities for financing of solar PV, adoption and transfer of improved cook stoves, and RE technology development and promotion in SME's; but the plan lacks the presentation on the current situation for financing in the country and the proposed vehicles of implementation to be used in addressing this catalytic investment.</p>
Enabling environment	<p>The plan acknowledges that there is a sound regulatory environment for renewable energy market development in Nicaragua.</p> <p>The plan states that further enabling environment development should concentrate in the development of public-private schemes for the implementation of a shared-cost risk-mitigation scheme for geothermal development; and more precise regulations establishing the conditions to grant and to supervise distribution concessions over a given territory or area to be served for rural energy service provision.</p> <p>The Plan does not include description of activities related to addressing the area of improve regulations that are described as relevant to remove barriers related to rural energy service provision.</p>
Increase energy access	<p>The plan addresses energy access issues as related to the national framework and consistency with policies and aspirations of Nicaragua. The geothermal component of the plan expects that energy access contributions will emerge due to the expected lower tariffs due to the geothermal technology lower LCOE and therefore improved energy access related to levels of affordable consumptions in different segments of society. At the rural energy service component, the plan addresses improve energy access due to introduction of energy services as well as productive uses of energy projects aiming at specific targeted segments of rural population currently with unmet demands.</p> <p>The plan includes a set of indicators to be used to assess the transformative impact of the initiative, including access to the grid/reliable electricity service; and number of women and men, businesses and community services benefiting from improved access to electricity and fuels as a result of SREP interventions. It is suggested that the PINIC could benefit by linking with the on-going efforts for developing energy access indicators in the Central American region, currently under development by the Alianza Centroamericana para la Sostenibilidad Energética (ACCESE) with support from international NGO's.</p>
Implementation capacities	<p>The existence of an SREP Nicaragua Technical Committee (established for PINIC development) contributes to foster an enabling environment for stakeholder participation, although it is suggested that consideration needs to be given to the implementation of a Program Steering Committee that could oversee implementation and coordination during execution.</p> <p>PINIC recognizes that added capacity will be required as new programs are introduced, but the plan only addresses how these may be met with respect to technical training of engineers and technicians, with little presentation on what kind of institutional strengthening is likely to be required. Attention to careful definition of this issue will be very important in the next stages of SREP Program development since the impact of this issue on the creation of the required enabling environments for both components is critical for the expected transformative impact.</p> <p>Clearly, there are numerous donor/partner relationships that need to be implemented fully for the PINIC to be successful; no doubt, their effective management will be an ongoing challenge and hard to evaluate at this stage,</p>

	especially since the PINIC does not include the organizational responsibilities and specific roles for SREP program implementation.
Improve the long term economic viability of the renewable energy sector	The PINIC contributes through the two components aimed at building market conditions for scaling up RE in the country. Taking into account the relative complexities of the power sector in the country, it would be hoped that growth going forward will still be largely market driven, although for the integral development of rural areas; government and MDB/ international cooperation financial allocations seem to be critical in the short term.
Transformative impact	<p>The targeted nature of the proposed SREP investments in the geothermal energy development is seen as a pragmatic approach to achieve a transformative impact.</p> <p>The multidimensional approaches included in the component related to integral development of rural areas represents a more complex mix of service provision and disbursing from financing facilities to be established (mainly from public sources); increasing the scale of activities and drawing all the elements of the project together, while addressing the issues that may have been bottlenecks in the past, will require strong strategic planning and ongoing review to ensure the expected transformative impact of this component.</p>