

CLEAN TECHNOLOGY FUND
NOOR II AND III Concentrated Solar Power Projects
(P131256)
Comments Matrix
06/11/2014

REVIEW COMMENTS		
	Questions/Comments	RESPONSE
C A N A D A		
1	<p>Policy Pricing Framework. Global experience suggest that feed-in-tarrifs (FIT) provide the necessary financial policy environment for renewables, particularly solar, to flourish. The Noor proposal will use a FIT payment system, which is entirely positive. The other side of the equation, however, is putting a price on carbon to account for externalities and thus make fossil fuels less attractive i.e. FIT to make renewables attractive, carbon pricing (carbon taxes and/ or cap and trade, with appropriately designed compensation measures for the poor) to make status quo fossil fuels less attractive. On the latter, Morocco appears to be doing the opposite - it is currently subsidizing fossil fuels. We note that there is a complementary Technical Assistance component to the investment package; it could be beneficial to explore if such TA could include a policy dialogue component on complementary (to FIT) carbon pricing mechanisms, worldwide experiences etc.</p>	<p>Morocco has been aggressively addressing the fiscal impact of its energy sector as part of a multi-year program agreed with the IMF in 2012 to reduce state subsidies to the sector. In fact, the Government announced in May 2014 a revision to its fossil fuel policy that phases out subsidies to fuel oil that is currently the only subsidized fuel used in the power sector. Furthermore, the government announced increases to ONEE’s retail tariff as part of a performance contract (<i>contrat-programme</i>) that is designed to improve ONEE’s financial and operational performance.</p> <p>The Technical Assistance grant that has also been submitted to the CTF under the MENA CSP program is indeed to cover regulatory aspects of supporting the development of CSP. It could very well in more detail consider the feasibility and applicability of feed-in tariffs in the MENA region, including Morocco.</p>
2	<p>Overall Policy Environment. Morocco's overall policy environment towards solar is highly positive, which bodes well for the country's commitment to ensure Noor's success, and future replication.</p>	<p>We agree.</p>
3	<p>Cost/ C ton reductions. The cost/ ton carbon avoided for the Noor project is high (as a comparison, carbon pricing often has/ imputes a cost of \$40-\$60/ ton, whereas Noor</p>	<p>We agree.</p>

	overall has a \$155/ ton avoidance cost). However, the demonstrative effect of Noor needs to be considered, as well as the fact that solar costs have declined 70-80% in recent years i.e. costs will undoubtedly further decrease, and a successful demonstration is likely to lead to more carbon avoidance cost-effective replication elsewhere in Morocco and globally.	
4	Storage. We are pleased to note that the design specifications for storage will help reduce the problem of "no sun, no power" and provide capacity when it is most needed.	Thank you for your comment with which we agree.
5	The proposed public-private partnership will create limited recourse SPVs between MASEN and private sponsors. In this light, it is not clear to us whether CTF public sector loans terms are applicable, particularly in the absence of a sovereign guarantee. We request a justification for the use of public sector loan terms. In addition, in the event that the public sector terms are consistent with CTF financing guidelines, we would require further justification for the use of soft loan	<p>The CTF loan will be backed by a sovereign guarantee. The CTF funds will be lent to MASEN, as Borrower, which will then on-lend these funds in the limited recourse transaction to the SPVs. MASEN's status as the CTF Borrower is separate and distinct from its role as limited recourse lender to the SPVs. MASEN would have limited recourse to the SPVs' shareholders in the event of an SPV default on its obligations to MASEN as lender. However, CTF would benefit from a separate guarantee agreement to be signed between the Bank, acting on behalf of CTF, and the Government of Morocco that will guarantee repayment of CTF funds in the event that MASEN defaults on its repayment obligations in the CTF financing agreement. In other words, the CTF funds will be lent to MASEN with full recourse to the Government in the event of a repayment default by MASEN.</p> <p>The CTF financing guidelines for public sector operations (CTF Financing Products, Terms, and Review Procedures for Public Sector Operations, November 7, 2013) state in page 6 that Softer concessional loans can be offered for projects with: (i) Negative rates of return, or (ii) Rates of return below normal market threshold.</p> <p>The proposed project falls in the second case scenario.</p>
6	The economic and financial analysis on page 18 indicates a negative "opportunity cost" of -\$517M to the Government of Morocco. We request a sensitivity analysis comparing the economic and financial rates of return for this project with and without CTF financing, reflecting the appropriate, concessional discount rate (i.e., cost of funding, not average cost of debt) and tenor.	For the economic analysis of the project the economic opportunity cost of capital has been used, while the financial analysis uses the actual applicable financing terms. This follows, because in the economic analysis one wants to determine the impact of the project on the wider economy in its own right. The financial analysis then allows us to factor

		<p>in the concessionality of the CTF, which has been done in the manner described in the comments. The economic analysis then shows the economic incremental costs, while the financial analysis the remaining excess financing needs of the project net of the concessional financing. Thus the financial analysis shows that the available concessional financing buys down about US\$300 million of the overall economic incremental costs.</p>
7	<p>The project document indicates that MASEN will be charging a fixed interest rate in its loan agreement(s) with the special purpose vehicles (SPVs) that includes a margin to cover MASEN's exposure to fluctuations in variable interest rate loans provided by other donors. We request further details from the MDBs regarding the steps they will take to ensure that MASEN will pass on the concessional financing directly to the SPVs, and to inform of us any fees that MASEN would charge for doing so.</p>	<p>Because most of the MDB financing provided to MASEN charge variable interest rates and because the Bank's procurement rules require that awarded bid prices not change following award, MASEN had to indicate to bidders a fixed financing cost for the MDB funds MASEN will on-lend to the SPVs so that bidders can propose a fixed bid price. In order to cover its exposure to fluctuations in the variable interest rates to be paid on the MDB loans, MASEN included a margin in the fixed interest rate it will charge the SPVs on the on-lent MDB funds.</p> <p>Nonetheless, it is anticipated that, as was the case in Noor I, MASEN and the Government of Morocco will sign a Specific Convention that provides for the government's support to the project. In this convention, MASEN will be obligated to use any excess cash generated from the projects to cover MASEN's incremental revenue gap first before seeking the government's financial support. As such, any excess cash generated by the margin, until the variable interest rates charged by MDBs rise to the level that absorbs this margin, would be used to reduce the fiscal burden to the government from its subsidy obligation.</p>
8	<p>CTF concessional financing is expected to amount to around 10-15% of the total concessional debt for this project. We request further information on the balance of the concessional debt and the terms on which it is being provided.</p>	<p>The terms of the concessional financing from other MDBs are being finalized as they complete their internal approval processes. These MDBs are expected to provide the following financing amounts:</p> <p><u>Grants:</u></p>

		<p>European Commission: US\$123 million</p> <p><u>Concessional Loans:</u> KfW: US\$892 million EIB: US\$477 million AfDB (Private Window): US\$123 million AFD: US\$68 million IBRD: US\$400 million</p>
9	We would appreciate if the MDBs could clarify the leverage ratios for this project, as the ratios displayed in Annex 1 are different from those listed on page 40.	Based on the full financial package from all currently anticipated resources (i.e., concessional financing of US\$1.988 billion, US\$497 million of commercial equity, and US\$300 million for the cost mitigation mechanism), CTF leverages additional capital at a ratio of 1:11.7. The leverage ratio of 1:5.77 that is mentioned elsewhere has been made in error and will be deleted.
UNITED KINGDOM		
10	There seems to be a disconnect between the amount of CTF financing and co-financing available as indicated on the cover-page at approx. US\$ 3 billion and the EPC cost breakdown on page 31 of the PAD which indicates total EPC costs are estimated at approx. US\$ 2 billion. It is unclear what the additional \$1 billion will finance besides the US\$300 M earmarked from IBRD for the cost-mitigation mechanism?	The expected EPC costs stand at US\$2 billion based on the Bank's estimate of the projects' capital costs. There is currently financing available from all donors, including CTF, of approximately US\$2.785 billion, including US\$300 million from IBRD for the cost-mitigation mechanism. The balance of US\$485 million is reserved for contingencies in the event that actual capital and non-capital costs competitively awarded exceed the Bank's estimates. In the event that they do not, it is expected that MASEN would then look to reducing the amount of funds from donors to Noor II and III on the basis of cost. Since CTF funds have the lowest cost of capital, it is thus envisaged that no changes would be made to the amount of CTF funds used for the projects, regardless of the actual prices bid.
11	Pg. 40 states "The CTF is leveraging an additional US\$ 1374 million from KfW, IBRD, EIB, AfDB, NIF and AFD. The financial leverage ratio is 1 to 5.77." Whereas based on information reported elsewhere the leverage ratio is 1:11.7. Could you clarify what is the actual CTF leverage?	Please see answer to question 9.
12	The cost effectiveness is 18.4 US\$/tCO2 for CTF funding and 155 US\$/tCO2 considering total funding under the EPC contract. However considering total project	The calculation of cost effectiveness does not include funding used for the cost mitigation mechanism because such

	<p>costs (including funding towards the cost mitigation mechanism) the total project cost per tonne of CO2 avoided is 231US\$/t. This is higher than what we have recorded for Noor I at 216US\$/t, because the previous project calculated lifetime savings based on 30 years, whereas this in this project it is only 25. Why?</p>	<p>mechanism is not necessary for construction and operation of the plants. The mechanism is an elective element of the financing package that is intended to provide the Government of Morocco the means to reduce its cost of capital for covering the incremental cost of power from the plants.</p> <p>Further, the cost effectiveness calculations were made on the basis of a 25-year period to reflect a project life-span consistent with the term of the power purchasing arrangements between MASEN and the SPVs, which is in line with the length of the power purchase agreement (PPA) for CSP power between the SPV and MASEN. This is the period for which operation of Noor II & III is guaranteed. Noor I's calculations were based on the expected lifetime of the Noor I power plant (which is about the same for Noor II & III), but calculations are somewhat more conservative with the shorter time horizon.</p>
UNITED STATES		
<p>13</p>	<p>Do any of the selection criteria in the bidding process also look at the robustness of the environmental assessment?</p>	<p>The bidder's environmental assessment is expected to comply with the terms of reference included in the RfP. The Bank has reviewed these ToRs and found them in compliance with relevant Bank safeguards guidelines. During the evaluation process, the assessments submitted by bidders will be reviewed by the Bank to determine whether they are in compliance with these ToRs. It is expected to be a pass/fail review, subject to the terms of the RfP on non-material deviations or omissions.</p>
<p>14</p>	<p>Page 14 of the "Joint AfDB/WB Submission" states in the "Accelerating the process of completing the plant-specific environmental and social impact assessment" that the ESIA would only be completed at a later stage during the bidding process. How does this accelerate the Noor 2 / 3 start-up time when it appears to be similar to how Noor 1 was handled? If the project site and technology are known, what is the hurdle with completing the ESIA prior to the proposal coming to the World Bank Board?</p>	<p>On Noor I, the environmental and social impact assessment was started after award of the project, thus delaying construction while work on the assessment and the public consultation process are completed, the assessment is reviewed by the Bank, and the requisite disclosure period of the Bank-approved document closes.</p> <p>On Noor II and III, work on the assessment would be completed during the bidding process, except for public</p>

		<p>consultations. The Bank will review the assessment submitted by the Preferred Bidder in the process of evaluating MASEN's procurement award recommendation. What would then remain after award would be completing the consultation process and the Bank's review of only this aspect of the assessment, before the Bank-approved document is disclosed for the requisite period prior to construction start.</p> <p>Only the project site is known prior to award, but the specific technology used and the plant design will not be known until after award. From the technical bid stage, bidders have proposed a variety of designs using steam turbines with different capacities and from different manufactures; different sizes of thermal storage capacity and design; different solar fields sizes, water usage requirements, and tower heights; etc. As such, the plant-specific environmental and social impact assessment cannot be credibly completed until these different choices are firmed up after award of the projects.</p>
<p>15</p>	<p>Page 20 of the same document states that a hypothetical scenario of selling CSP capacity to Europe combined with the social cost of carbon can lead to a 7% real rate of return over the long-run. How is this projection affected by Europe's inability to absorb renewable exports as stated on Page 8? How does the inability to export power to Europe affect the cost-effectiveness estimates for the project?</p>	<p>While green energy exports remain a credible market for the Noor Complex, it is envisaged that such a market would develop over the medium- to long-term as the relevant policy, technical, and economic framework develops. Because of the uncertainties related to the timing and conditions of this market at this stage, energy exports to Europe were not considered in the Bank's economic and financial analysis of the Noor II and III projects.</p>
<p>16</p>	<p>Are there any studies that examine the impact of the industrial integration measures in Noor I to determine whether the local content requirement could raise costs of implementation?</p>	<p>A priori the case of Noor I would suggest that the local content clause had no impact on the pricing of the plant, since the bid LCOE was 30 percent lower than the cost estimate.</p> <p>Following the proposal by MASEN to include an industrial content clause also as part of the Noor II & III project, the Bank undertook an in-house review of the literature and data available from projects world-wide. It reviewed, among others, a Fraunhofer report, which concludes that using 2013</p>

		<p>as a baseline, about 37.5 percent would be expected to be produced locally as follows:</p> <ul style="list-style-type: none"> 1-Civil works and assembly is done locally 100% 2- Local suppliers with license from international company covering 80% of the CAPEX of mounting structures 3- Local supplier should be partly chosen for cables (50% of the CAPEX) 4- Electrical Works and parts of grid connection (only services) are done locally, while components supply is found not possible. This would mean a 40% of the CAPEX of the electrical components and installations segment 5- Storage system work is done 20% locally, considering that civil works for tanks and construction, storage medium and pumps, etc., are not available 6- Advanced support during construction of power block, turbines and specialized equipment is not available. Therefore, power block segment work is carried out 20% locally 7-Depending on project structure, part of finance and part of basic engineering and management is done locally (assumption for 2013 is 20%) 8-No local suppliers are available for mirrors and receivers 9- CSP specific components and materials are not produced in Morocco (trackers, HTF, swivel joints) <p>This value is somewhat higher than the percentage recommendation for local content used in the RfP for Noor II & III.</p>
17	Did the MDBs review the TOR for consultants that the bidders hire to undertake the environmental assessment? Can a copy of those TORs be provided?	<p>MDBs had the opportunity to review and approve the ToRs, which is an annex to the RfP, as part of reviewing the RfP before its release to bidders.</p> <p>Because the RfP is covered by a confidentiality commitment,</p>

		MASEN's consent is required to release the ToRs, but don't expect any objection to this request.. We expect to be able to send these TORs by Monday, 16 th of June.
18	Can staff provide a copy of the Fraunhofer Institute (2014) paper on the potential of local manufacturing in the MENA region is referenced several times in the proposal? We have seen the 2011 paper on the MENA region but are looking for what appears to be the more recent paper.	This is an update of the 2011 report with focus on Morocco. Subject to MASEN agreeing to the sharing of this short report, we would be happy to share it.
19	Are there any estimates on what percentage of Industrial Integration investments will be used for goods and materials versus what percentage will be used for labor?	There are no specific estimates for possible local expenditures on good, materials, or labor. The RfP gives bidders the freedom to determine the level of industrial integration to propose and the content of any proposals. Bidders can elect to propose direct investments in the form of expenditures on the plants' construction or indirect investment in the form of expenditures on manufacturing facilities, R&D facilities, training centers, etc. However, based on the local content under Noor I only very little will be used for goods and materials. Under Noor I local content is estimated at 41 percent with 15 percent for civil works, 5 percent for steel structures, 4 percent for earth works, and 4 percent for collector assembly. The remainder is spread around the remaining components at a level of 1 percent suggesting that these refer to supplementary services of component delivery rather than manufacturing of parts themselves..