



Upscaling Renewable Energy Sector

Country / Region: **Mongolia** | Project Id: **XSREMN055A** | Fund Name: **SREP** |

MDB : **Asian Development Bank**

Comment Type	Commenter Name	Commenter Profile	Comment	Date
Comment 1	Daniel Menebhi	Switzerland	<p>Questions (Q) and comments (C):</p> <ol style="list-style-type: none"> (C/Q) It is mentioned in the project document that the RE system must compete with coal which has a levelized cost of \$0.07 per kWh and that therefore SREP (grant) co-financing will help achieve grid parity and reduce the cost to \$0.05 per kWh in the targeted regions. <ol style="list-style-type: none"> (C) If coal is the main source of supply and its levelized cost is \$0.07 per kWh, then grid parity is reached at \$0.07 per kWh not at \$0.05 per kWh. (Q) Why should we then still have to reduce the levelized costs of RE to \$0.05 per kWh, i.e. well below grid parity? (Q) What is the value of the SREP grant that would help drive the levelized cost of RE to \$0.07 per kWh i.e. to grid parity? Please detail the calculation. Economic and financial viability: According to the project document the project is economically and financially viable with EIRR = 15.46% and FIRR = 7.99% <ol style="list-style-type: none"> (C) Please provide the detailed assumptions and calculations leading to these figures. (Q) Do these figures take into account the USD 7.5 million annual savings the project allows thanks to substituting electricity imports (mentioned under economic benefits)? Indicators and targets: <ol style="list-style-type: none"> (Q) Why do you distinguish the overall project target with the project target excluding the JFJCM contribution? Is there any doubt that this contribution will materialize? (C/Q) The expected ADB board approval is in August 2018. Why is this scheduled so much later than the proposed approval of the SREP contribution? Mobilization of private sector investments: At the moment of the IP endorsement, the Government of Mongolia has committed to improve the enabling environment for (private sector) investments into RE and to direct part of the SREP funded program towards the mobilization of private sector investments. The project document also mentions that "the successful completion of the project will see the establishment of an institutional 	Dec 11, 2017



platform that encourages private sector investments in distributed renewable energy" and that the project would lead to "further upscaling in remote and less-developed regions by crowding in future private investments".

1. (Q) What are the specific improvements in framework conditions that have been achieved in Mongolia since the endorsement of the SREP IP (December 2015)?
2. (Q) How does that reflect in the progress of Mongolia with regards to the RISE indicators?
3. (Q) To what extent is Mongolia ready to also open the investments into grid-connected RE projects (and not only to "distributed RE") and utilities to the private sector?
4. (Q) By what means does this project specifically lead to the improvement of enabling environment for (private sector) investments into RE and for crowding in private sector investments?
5. (C) The ADB or the Government of Mongolia shall confirm that the involved utilities WRES and AuES will not get additional (government) subsidies (i.e. in addition to the SREP and JFJCM grants) linked to the sale of electricity generated from RE sources.

5. Contextual questions:

1. (Q) What is the status of implementation of the WB project "Mongolia: Upscaling Rural Renewable Energy- Solar PV" which was approved by the SREP Subcommittee in February 2017?
2. (C/Q) The project document mentions that the RE potential of Mongolia is large enough to cover 25% of the combined electricity demand of Japan, Korea and the PRC in addition to the domestic demand. In the context of the Chinese Belt and Road initiative, Mongolia is key on one of the six major corridors and its RE potential is likely to lead to substantial Chinese investments. Do you have knowledge about plans of substantial Chinese investment into RE in Mongolia? How relevant is this small SREP investment in light of a potentially massive Chinese engagement?

7 December 2017

Response 1 Sugar Gonzales ADB

1.1 The cost of supply is \$0.07/kWh, which comprises domestic generation plus imports. Feb 20, 2018

1.2 Reducing cost of energy supply below the grid parity is essential to:
(i) accelerate energy transformation and move towards low carbon development. Transformation away from coal will not occur unless renewable energy is below grid parity; and

(ii) make electricity affordable among end users in remote and less developed regions with high incidence of poverty (36% in 2016).

1.3 SREP/JFJCM grants plus ADB loan brings the cost of energy down from \$0.088 per kWh to \$0.05 cents. Out of this overall cost of energy reduction, SREP alone contribute to 37% of LCOE reduction (or \$0.014/kWh), SREP and JFJCM grant to 42% of reduction (or \$0.016/kWh), and ADB loan alone to 58% (or \$0.022/kWh).

2.1 Please refer to the project's financial and economic analyses in the attachments (supporting project documents).

2.2 Yes, imported electricity savings are incorporated into the economic benefits of the project. However, this USD 7.5 million economic benefit cannot be monetized



readily to serve as upfront project cofinancing; therefore SREP funds are requested as a de facto monetization and cofinancing mechanism.

3.1 JFJCM also accounts GHG emissions based on their contribution. To avoid any double counting on GHG reductions, JFJCM contribution was differentiated from the overall project target.

3.2 Below shows the project's target processing schedule:

- Due diligence by April 2018
- Management review meeting by May-June 2018
- Loan negotiation by June-July 2018
- Board approval by July-August 2018

The target ADB approval is also consistent with SREP guidance on pipeline management policy that requires MDB board approval must be obtained within 9 months after Sub-Committee approval.

4.1 The Law on Energy was amended in 2017 to allow off-shore arbitration for the foreign entities. It is also expected to mitigate perceived legal risks for international developer-led renewable energy investment. Since January 2017, the government has introduced zero-night time electricity tariff policy (21:00-6:00) during winter time for the residents in Ger districts in Ulaanbaatar to stimulate fuel switch from coal to electricity for space heating, which is also expected to create the additional room to evacuate wind power. In 2017, the government also issued National Energy Efficiency Action Program (2018-2022) to enhance demand and supply side energy efficiency for GHG emission reduction.

Mongolia is currently under the IMF rescue package (2017-2020) for macroeconomic recovery. Despite such difficult time, renewable energy capacity in the central energy system grid is being build up to reach the government target (20% of renewable energy share in the total generation capacity by 2023): a total of 132 MW is either in operation or under construction. Together with 91 MW of the existing renewable energy capacity (started operation before December 2015), the share of renewable energy in total capacity will be around 18% in 2018 from 7.6% in 2015.

4.2 The issuance of new plan and amendments on policies are expected to improve Mongolia's score on the RISE indicators with latest overall score of 43 (Energy access: 39; Energy efficiency: 27; and Renewable energy: 62) (i). For example, the amendment of Law on Energy for off-shore arbitration supports Renewable Energy pillar and contributes to the indicator on "legal framework for renewable energy development". On the other hand, the newly issued National Energy Efficiency Action Program supports the energy efficiency pillar and contributes directly to National Energy Efficiency Planning with sub-indicators: (i) existence of legislation action plan; (ii) energy efficiency goal or target at the national level; (iii) sector targets (milestones and targets for residential, commercial, industrial, power sectors).

4.3 The country has successfully attracted private investments in renewable energy for the central energy grid system (CES) covering major load demand center in Mongolia. Apart from 132 MW of new capacity addition for last two years, the government has also granted licenses to private developers for around 400 MW of renewable energy projects for the CES in total. As noted in the project documents, the private sector has not indicated any interest in renewable energy projects outside CES.

4.4 The Project's institutional strengthen and capacity enhancement subcomponent aims to help the government in planning renewable investment (for outside of the CES) which ensures grid stability and minimizes curtailment, and in setting appropriate incentives for private investors while considering affordability of end-users (such as stepped FIT and/or competitive bidding).

4.5 The WRES and AuES are not eligible for the FIT, as noted in the project proposal. The SREP and JFJCM grants are expected to be sufficient to initiate transformation.

5.1 The project is currently at procurement stage to commence construction in Q2 2018.

5.2 As noted in the SREP IP, draft project documents, and SREP cover sheet, the SREP grant is needed to help catalyze future investments in renewable energy in remote and less developed regions, which are heavily dependent on high carbon electricity and currently unattractive to private sector developers.

While the Government of Peoples' Republic of China (PRC) is committed to finance a 450 MW of Egin-gol hydropower and a central energy system transmission line capacity addition in 2016, there is no plan to support renewable energy development in Mongolia as part of One-Belt One-Road Initiative so far.

ADB is currently supporting for the government of Mongolia to develop a plan for



cross boarder power interconnection with neighboring countries (PRC, Korea, and Japan) to export clean power in the future.

Footnote:

(i) <http://rise.esmap.org/country/mongolia>

Response 2 Daniel Menebhi Switzerland

Mar 12, 2018

Thank you for the answers to our questions and responses to our comments. We do not agree with your statement that a reduction of the cost of renewable energy sub-stantially (i.e. over 29%) below grid parity is needed to engage the transformative process towards low carbon development. We rather join the position of the UK that transformation is likely to occur also by bringing the cost of renewable energy slightly below grid parity (e.g. to \$0.069 i.e. half-way between the cost without the SREP induced financing and the \$0.05 you set it at).

In the absence of a more precise calculation, which we requested in our original set of questions but on which we received no answer, we assume that a half-way reduction of the cost of renewable energy will be possible with half of the proposed SREP grant contribution, i.e. USD 7.3 million (instead of USD 14.6 million). In view of the scarcity of SREP funding presently available and the needs expressed by many other SREP pilot countries as witnessed in the unfunded SREP reserve pipeline, we limit our approval to the amount of USD 7'300'000.-- grant for this project entitled Upscaling Rural Renewable Energy to the benefit of Mongolia and we recommend that an updated decision is circulated to the SREP Subcommittee.

Response 3 Sugar Gonzales ADB

Mar 15, 2018

The project recognized that bringing LCOE below grid parity (current cost of energy supply comprised of electricity import and domestic coal power generation) will help in market and energy transformation, but the degree of impact would vary depending on the level of cost reduction and actual situation in the targeted areas/regions. Because of high incidence of poverty (36% as in 2016) in the targeted regions, current level of electricity has been set at \$0.05 per kWh with the government subsidy to ensure end-users' affordability. Reducing the cost of energy supply to \$0.05 per kWh will bring it on par with baseline end-user costs, maintain end-users' affordability in the with-project scenario, and therefore ensure social acceptance of the project.

The cost of electricity of this proposed project is consistent with World Bank's Mongolia project under the same SREP investment plan, which the SREP Subcommittee approved in February 2017 (i.e., without SREP support \$0.086/kWh; with SREP support \$0.054/kWh) and MDB approved in July 2017.

The proposed reduction of SREP cofinancing would not be possible in the present project; i.e., the scope of work would have to be downsized, which would in turn affect the target outputs and outcomes compared to what is envisaged in the original project design.

Furthermore, Mongolia is now under IMF rescue package until 2020 because of its high debt distress and unsustainable budget deficit. Additional borrowing and/or additional state budget allocation is therefore not feasible to offset the proposed reduced SREP cofinancing or conversion of half of SREP cofinancing into non-grant. SREP policy explicitly allows the provision of full grant funding for countries with high debt distress rating such as Mongolia. In fact, the SREP IP for Mongolia, including the present project with grants, was approved at a time when Mongolia was not under IMF rescue package – so the current situation provides an even stronger justification for grants.

With a total cost of \$66.1 million, the project incorporates \$14.6 million of SREP financing, as envisaged and endorsed in the Mongolia SREP Investment Plan, and justified by strict adherence to the SREP eligibility criteria as follows:

1. Increased RE capacity and increased access to energy via RE: The project installs additional 41 MW aggregated RE capacity (98.77 GWh/year) and provides clean, affordable and reliable energy supply to about 50% of the local population in the targeted regions (258,314 individuals).

Institutional strengthening and capacity enhancement will lead to further indirect benefits in the form increased RE capacity and increase access to energy via renewables.

SREP cost efficiency: \$356/kW; \$0.15/kWh; and \$57/individual beneficiary

2. Low-emissions development: Help decarbonize the energy sector by reducing petroleum consumption in electricity generation (795,080 liters per year); reducing electricity imports from the Siberian Grid by 94.3 GWh/year, and avoiding 1,114 tons per year of coal use for space heating. Total GHG emission savings estimated at 87,969 tCO₂e per year (2.2 million tCO₂e during the project lifetime).

SREP cost efficiency: \$166/ton per year or \$6.6/ton lifetime

3. Affordability and competitiveness of RE: Drive down the cost of renewables-based electricity in the targeted regions from \$0.088/kWh (without intervention) to



\$0.05/kWh which is the current level of average end-user tariff, making RE competitive against coal and high carbon imported electricity, and avoiding negative impacts on end-user affordability in the targeted region with high poverty incidence (36% in 2016).

With this cost of electricity, poor households living in these remote regions will benefit the most. They will be able to access reliable and affordable electricity thereby improving their livelihoods, providing them more opportunities, and improving their quality of living.

4. Productive use of energy: The proposed investment will supply electricity directly to the grid which will reduce electricity imports, and minimize transmission and distribution losses (up to 30% of the total import).

5. Economic, social, and environmental development impact: Foreign exchange savings from avoided electricity imports and reduced government subsidy can be redirected to other economic and social development activities especially necessary in these poor regions. The project will promote development and expansion of entrepreneurial activities, including home-based. It will avoid air pollution associated with coal and diesel use for power generation and space heating.

6. Economic and financial viability: The project as proposed is technically and financially viable based on the analysis made with FIRR of 7.99% higher than the estimated WACC of 3.83%; and EIRR 15.46% which is above 9% economic opportunity cost of capital.

Without SREP intervention, subprojects which should be supported by the funding (10 MW Wind in Umunogovi, 10 MW Solar PV in Altai, and Shallow Ground Geothermal Heating) becomes financially unviable.

7. Leveraging of other financing: The direct leverage ratio of the project is 1: 3.53.

8. Co-benefits: The project will help improve energy security in remote and less developed regions by reducing dependence on imported, expensive, and unstable electricity. It will create direct and indirect jobs. Improve adaptive capacity of the people in terms of addressing risks associated with climate change by providing much needed infrastructure (i.e., reliable electricity).

9. Gender: Providing quality and affordable supply of electricity will improve quality of life for vulnerable groups – elderly, the disabled, children, especially women. It will reduce the use of unpaid women’s and child labor.

Response 4 Daniel Menebhi Switzerland

Thank you for responding to our comments and for taking the time for a teleconference to-day.

Mar 26, 2018

We acknowledge that the project addresses remote and underdeveloped regions of Mongolia, where the electricity tariffs have been set to USD 0.05, i.e. well below to grid parity, to address poverty issues.

We also acknowledge that the project generally responds to SREP criteria.

In conclusion to this and to our talks of today, we are ready to support the approval of an SREP grant to the project, provided that:

1. The ADB shall recalculate and detail the net benefits (savings) to the Government of Mongolia from the project, taking into account the substitution of imports, tariff subsidies granted to the concerned region’s customers, as well as expected costs incurred through the project, including O&M of the RE generating installations and the servicing of the ADB loan.

2. As a deduction (i.e. taking into account possible reflows from savings generated by the project) from the above, the ADB shall demonstrate the need of the full amount of SREP grant or calculate the amount of SREP grant that is necessary at the minimum for the project to be viable. This analysis should in particular take into account the phasing of the investments, as described in table 2 of the project document (SREP cover page).

3. The Government of Mongolia shall commit itself to reinvest a substantial part (at least 50%) of these net savings into RE generating projects in the concerned regions (Western Region and Altai-Uliastai Region). This commitment shall be made in the form of a signed document between the GoM and the ADB, to be shared (for information) with the SREP Subcommittee, ahead of the project approval.

Looking forward to your responses.

Thank you and best regards.

Response 5 Sugar Gonzales ADB

1. \$0.07 per kWh is the current average cost of energy supply in the Western and Altai-Uliastai regions comprised of electricity import from Russia at \$0.08 per kWh (70% of current electricity supply) and the rest from domestic generation sources at \$0.05 per kWh (30% of current electricity supply). The project would annually generate 98.77 GWh of renewable electricity, thus the annual gross benefit from substitution of imports and coal-fired domestic generation will be \$6.9 million (\$0.07 per kWh * 98.77 GWh). The estimated costs of generation from the project would be \$0.05 per kWh (details provided under response to Q2). Net savings to the Government is \$0.02 per kWh (\$0.07 of current cost of energy supply minus \$0.05

Apr 06, 2018



per kWh of the project's cost of energy supply). Thus, annual net benefit of the project to the government will be \$1.97 million (\$0.02 per kWh * 98.77GWh). This net benefit is the government annual subsidy reduction impact due to a reduction in cost of energy supply to \$0.05 per kWh from \$0.07 per kWh of current energy supply.

Please note that \$7.5million (up to \$7.9 million depending on the extent of import substitution) is the estimated savings in foreign exchange outflow due to electricity import substitution (\$7.5 million as described in the SREP cover page) using \$0.08 per kWh. The estimated electricity import substitution benefit is not the direct cash savings to the government (as the cost of electricity is \$0.05 per kWh) but an economic benefit (foreign exchange savings) for the country.

2. Please find the comparison between the no intervention case (project financed with ADB loan plus Government funding from bond issuance), and the proposed financing plan (ADB loan, SREP/JFJCM grants, and government funding), in the table below. The project aims to reduce cost of energy supply equal to \$0.05 per kWh of current end-user tariff to ensure affordability. \$0.05 per kWh of the project's cost of energy supply is comprised of \$0.022 per kWh of capital repayment, \$0.010 per kWh of debt services, and \$0.018 per kWh of operation and maintenance. Grant funding from SREP and JFJCM reduces costs for capital repayment and debt servicing from \$0.033 per kWh and \$0.038 per kWh, respectively. Reduction to \$0.05 per kWh of the project's cost of energy cannot be achieved without grant funding from SREP and JFJCM. The higher cost for capital repayment and debt servicing in the "no intervention" case are due to the high share of financing by the government (40% versus 8% with SREP/JFJCM intervention; ADB financing is a constant 60% in both cases) and the high cost of government financing.

\$cent / kWh	No intervention	With SREP and JFJCM
Capital repayment	3.3	2.2
Debt servicing	3.8	1.0
O&M	1.8	1.8
Total	8.8	5.0

The chart below illustrates three scenarios. The first scenario is "with no grants" (i.e., ADB loan and government financing only) which gives a cost of \$0.88 per kWh. The second scenario is "with JFJCM grant" included, the cost reduces by \$0.0129. The third scenario is "with SREP grant" of \$14.6 million included which reduces the cost further, down to \$0.05 per kWh. (Please see attached ADB responses document for the chart)

The project is designed using a two-stage approach to minimize implementation complexities of the subprojects which are geographically scattered, and to enhance the capacity of the project implementing agencies through learning-by-doing practices.

3. Please see attached signed letter from the Ministry of Energy of Mongolia (including translated version).

Response 6	Daniel Menebhi	Switzerland	Thank you for your answers and the copy of the letter from the Mongolian Ministry of Energy. With this we are able to support the approval of the funding decision, although the use of savings from the first phase (2018-21) to co-finance the second phase (2021-23) has not been addressed. We trust that the ADB will put a mechanism in place to monitor the investment of savings by the Government of Mongolia into renewable energy projects in the concerned regions and inform the SREP Subcommittee accordingly Thank you and best regards	Apr 11, 2018
Comment 2	Simon Ratcliffe	United Kingdom	The UK would like to thank the ADB and the Government of Mongolian for submitting this project proposal. We have two related questions related to the proposal. 1. Has any study been undertaken into the ability of consumers, or potential consumers, in the rural areas, to afford the envisaged electricity tariffs? 2. Are there any sections of the population that are likely to be unable to afford the envisaged rates?	Dec 18, 2017
Response 1	Sugar Gonzales	ADB	1. Yes, affordability assessment was conducted to assess the possible impacts on household income/expenditure groups in the targeted regions. 2. None. Since the cost of electricity supply of the project reduces cost of energy to \$0.05 per kWh due to SREP/JFJCM grants and ADB loan, the annual electricity expenditure in the bottom quintile household group accounts for 2.2% of annual household expenditure.	Feb 20, 2018
Response 2	Simon Ratcliffe	United	Thank you for the responses to our questions. We have a number of additional	Mar 07,



		Kingdom	<p>questions. These are:</p> <p>Question 1: Could the private sector be involved within this project? Currently there is no leverage even though in less rural areas private sector has installed so far 110MW of capacity with 400MW intended. The rationale is to prove utility scale solar and wind but this is almost a staple technology now so why is this level of concessionality needed and is something the private sector couldn't invest in, instead?"</p> <p>Question 2: Could we have some further information on the storage? How this will work/why it is needed in the Mongolia context and how much energy may be lost through efficiency issues? As well as the capacity of the storage associated with these Solar panels?</p> <p>Question 3: Given this intervention expects to bring the LCOE below grid parity at \$0.05/KWh (below \$0.7/KWh), what is the rationale that this is the level which will bring about change within the market? Why is it not the case we could intervene to bring the LCOE to a small margin below \$0.07/KWh and not have the same effect?</p>	2018
Response 3	Sugar Gonzales	ADB	<p>1. Involvement of the private sector will result in higher cost of energy (higher than \$0.07 / kWh of grid parity: current cost of energy supply comprised of electricity import and domestic coal power generation) as the current law on renewable energy in Mongolia guarantees the private investor \$0.15-\$0.18 / kWh for solar PV and \$0.08-0.09 / kWh for wind of feed-in-tariff payment.</p> <p>Because of small demand in scattered load centers and high transportation cost in remote independent grid system in western and Altai-Uliastai regions, private sector investment in renewable energy is being attracted only into the central energy system (CES) grid (which covers major load demand centers including Ulaanbaatar accounting for around 80% of the load demand in the country). During the preparation of SREP Investment Plan, public consultations were held. The private sector was well represented but did not express interest in renewable energy investment in the project's targeted areas.</p> <p>The project's institutional strengthening and capacity enhancement component aims to address the issue of low private sector investments outside CES. Measures include assisting the government in planning renewable investments in remote and rural areas, and setting appropriate incentives for private investors while considering affordability to end-users (such as stepped FIT and/or competitive bidding).</p> <p>2. The project plans to install battery storage in two subprojects to charge renewable energy electricity during low load demand time (late evening time and mid-day time) and discharge it for stable power supply and peak shifting:</p> <ul style="list-style-type: none"> - 200 kW of battery storage in Altai-Soum hybrid renewable (wind-PV) energy system subproject (an isolated independent system currently relying solely on diesel generators) which is to be fully funded by ADB and the Government; and - 1.2 MW of battery storage in Uliastai solar PV renewable energy subproject which is to be fully funded by ADB, JFJCM, and the government. <p>The battery storage is assumed to operate with a 90% conversion efficiency. Despite 10% energy loss, it is financially and economically justifiable. This is the first utility scale battery storage application in Mongolia and successful completion and operation of these two subprojects is expected to provide valuable lessons learned for future battery storage deployment beyond 2023.</p> <p>3. The project recognized that bringing LCOE below grid parity will help in market and energy transformation, but the degree of impact would vary depending on the level of cost reduction and actual situation in the targeted areas/regions. Because of high incidence of poverty (36% as in 2016) in the targeted regions, current level of electricity has been set at \$0.05 per kWh with the government subsidy to ensure end-users' affordability. Reducing the cost of energy supply from this project to \$0.05 per kWh will bring it on par with baseline end-user costs, maintain end-users' affordability, and therefore ensure social acceptance of the project.</p>	Mar 15, 2018
Response 4	Simon Ratcliffe	United Kingdom	<p>Thank you for your responses to our queries. They provide clarity as to why there is no private sector involvement in this project. It also is clear now as to why there is the need to lower LCOE to \$0.05/kWh to bring it in line with baseline end-user cost. However, there are still two questions we would like clarified.</p> <p>1. We are not clear as to how the lower LCOE then relates to grid parity. Could the team please clarify?</p> <p>2. Related to this too, what is the level the LCOE should be subsidised to for the project to be viable?</p>	Mar 19, 2018
Response 5	Sugar Gonzales	ADB	<p>1. Grid parity is considered when LCOE of renewable energy is comparable with grid electricity prices or cost of current energy supply which for Mongolia is \$0.07 / kWh (electricity import plus domestic coal fired generation). The project's lower LCOE was compared to grid parity to demonstrate competitiveness, affordability and sustainability of the proposed interventions i.e., without the project LCOE is \$0.088 / kWh which is above grid parity; with the project LCOE is \$0.05 / kWh which is below</p>	Mar 22, 2018



grid parity and at par with baseline end-user costs thereby effectively eliminating subsidy cost from the government. The lower LCOE ensures the sustainability of the renewable energy projects based on the tariffs (end-user costs). The lower LCOE also provides sufficient support to the government to overcome barriers currently impeding a switch from coal and petroleum to renewable energy-based electricity generation.

2. Without intervention (the case with the government finance only), LCOE of the project becomes \$0.088 and the government has to subsidize the difference between such level of LCOE and \$0.05 per kWh of end-user tariff. In case of the proposed financing plan (ADB, SREP, and JFJCM), there will be no need for the government price support and the project is financially stable and sustainable with the end-user costs.

Response 6 Simon Ratcliffe United Kingdom

Once again, we would like to thank the ADB for their responses to our questions. Apr 06, 2018
There are still a number of issues that we are unclear about. These are:

1. It is our assumption that the confusion surrounding the LCOE (\$0.05/kWh) that this project proposes to position the cost of electricity at is based off of a cost of \$0.07/kWh at grid parity level and reduced an extra \$0.02/kWh by a government subsidy. Is this something that the government currently pay for and why are the end-users costs this low?

2. If so, this intervention will effectively eliminate the need for this subsidy. Will the government continue to pay this for other forms of electricity generation? If this is the case then is this an over-subsidy on SREPs part, if not can you justify why SREP should not just fund a portion of the money to lower the LCOE to below \$0.07/kWh? What would the financing package have to look like to achieve this?

3. If SREP grants this money which alleviates the need for a subsidy, what does the Government of Mongolia plan to do with the savings from this?

Response 7 Sugar Gonzales ADB

Apr 10, 2018

1. Yes, \$0.02 per kWh of difference between \$0.07 per kWh of current cost of energy supply and \$0.05 per kWh of current level of end-user's tariff is the subsidy from the government. Because of high incidence of poverty in the targeted western and Altai-Uliastai regions, level of end-user's tariff is set low to ensure affordability.

2. Yes, the SREP intervention will effectively eliminate the need for subsidy. As was in the recent response to the similar clarification from Swiss and to UK, the project targets parity with baseline end-user costs to ensure that the project is sustainable without government subsidy and financially stable with end-user costs (tariffs). Further, the domestic sources of supply are very old (over 40 years) and cost of generation from these plants is only \$0.05/kWh. Therefore, the project's electricity is also priced equal to the least cost of generation in the system.

The chart below illustrates three scenarios. The first scenario is "with no grants" (i.e., ADB loan and government financing only) which gives a cost of \$0.88 per kWh. The second scenario is "with JFJCM grant" included, the cost reduces by \$0.0129. The third scenario is "with SREP grant" of \$14.6 million included which reduces the cost further, down to \$0.05 per kWh. (Please see attached ADB responses document for the chart)

3. The Government of Mongolia has committed to continue renewable energy investment in the targeted regions with such savings. Please find attached signed letter from the Ministry of Energy (with translated version) which also serves as a response to the request from the Switzerland.