

VCS PROJECT REVIEW REPORT

Project ID	PL1709
Project Name	140 MW Solar Photovoltaic Project in Rajasthan
Project Proponent	Rising Bhadla 1 Private Ltd Rising Bhadla 2 Private Ltd
Methodology	ACM0002, Grid-connected electricity generation from renewable sources, v17.0
Sectoral Scope(s)	1. Energy (renewable/non-renewable)
Validation/Verification Body (VVB)	LGAI Technological Center, S.A. (Applus+)
Registry	APX

Assessment Criteria	VCS Standard, v3.7, ACM0002, Grid-connected electricity generation from renewable sources, v17.0
Date of First Issue	15 DEC 2017
Date of Final Issue	7 FEB 2018

Summary:

An accuracy review of the 140 MW Solar Photovoltaic Project in Rajasthan registration request has been conducted by VCS in accordance with Section 4.3 of the *Registration and Issuance Process*.

The accuracy review has raised 13 assessment findings and 1 minor finding, detailed below. The VVB, in coordination with the project proponent, is hereby required to provide a response to the assessment findings presented in Section 1. The 13 assessment findings must be addressed to the satisfaction of VCS. The VVB need not address the minor findings during this review. Please note, however, that where VCS finds consistent minor findings by the VVB in future reviews, minor findings shall be escalated to assessment findings.

This findings report may be made publically available. Confidential information may be provided as separate attachments.

1 ASSESSMENT FINDINGS

Finding 1

Section 1.7 of the VCS *Project Description Template, v3.3* requires that the project proponent indicate the estimated annual GHG emission reductions or removals for the project crediting period.

Section 1.6 of the project description states that the project crediting period begins on 18 July 2017.

Section 1.7 of the project description states that the first year of the project crediting period is estimated to generate 242,688 tCO₂e (251,412 MWh). The IRR calculation spreadsheet indicates that the first year of the project crediting period will generate 210,084 MWh.

The VVB is required to address this discrepancy and update the project documentation as required.

VVB Response:

The ER estimation is done based on capacity, PLF and 8760 (365*24) annual hours and degradation factor of 0.5% per year (cross checked from the policy of Rajasthan Electricity Regulatory Commission, RERC=3rd party <http://rerc.rajasthan.gov.in/cnpl/PDFs/Solar.pdf>) is considered from second year onwards as a conservative approach. The ER estimation is done on yearly basis and not considering any specific date of start date of crediting period. Since this is estimation of annual electricity generation and annual estimated emission reductions, the assumption like capacity (As per the Manufacturer specification), PLF (DPR= 3rd party report) and annual hours of operation is thus acceptable to the assessment team.

Based on expected date of commissioning as 31/05/2017, the number of days for the financial year of 2016-17 are 305 days, hence for IRR sheet total electricity generation is 210084 MWh for 2x70 MW capacity project activity. The IRR calculation requires expected date of commissioning and based on date of commissioning, the number of days of that particular financial year varies. This leads to the different net generation for each financial year. Also due to leap year (of having 366 days in a year), the annual estimation of electricity varies slightly. In IRR spreadsheet, annual generation is mentioned as 125706 MWh (Please refer "Assumption" worksheet for same). However in worksheet "P&L Stat." the electricity generation is calculated based on actual number of days for particular year. If any year is a leap year (having 366 days), the electricity generation in IRR sheet is calculated based on 366 days instead of 365 days, hence there is slight variation in IRR sheet and ER estimation sheet. Hence logically it is not appropriate to compare the net electricity generation from ER sheet and IRR sheet.

The assessment team confirmed that the assumptions considered for IRR and ER calculations are appropriate and hence accepted.

VCS Response:

Considering the above, this finding is closed and no further action is required.

Finding 2

Section 1.11 of the VCS *Project Description Template, v3.3* requires that the project proponent identify and demonstrate compliance of the project with all and any relevant local, regional and

national laws, statutes and regulatory frameworks.

Section 1.11 of the project description states that "the project has received necessary approvals for development and commissioning for the proposed 2 x 70 MW Solar PV project from the state Nodal agencies and is in compliance to the local laws and regulations" but does not identify what laws, statutes and other regulatory frameworks this description is referencing.

The VVB is required to ensure that the project proponent demonstrates the project's compliance with all and any relevant local, regional and national laws, statutes and regulatory frameworks in Section 1.11 of the project description, with specific references to the relevant laws, statutes and other regulatory frameworks. The project proponent must update the project documentation as required.

VVB Response:

Assessment team would like to submit that as per Central Pollution Control Board (Ministry of Environment & Forests, Govt. of India), final document on revised classification of Industrial Sectors under Red, Orange, Green and White Categories (February 29, 2016)

The newly introduced White category of industries pertains to those industrial sectors which are practically non-polluting such as Biscuit trays etc. from rolled PVC sheet (using automatic vacuum forming machines), Cotton and woolen hosiers making (Dry process only without any dyeing/washing operation), Electric lamp (bulb) and CFL manufacturing by assembling only, Scientific and mathematical instrument manufacturing, Solar power generation through photovoltaic cell, wind power and mini hydel power (less than 25 MW).

There shall be no necessity of obtaining the Consent to Operate" for White category of industries. An intimation to concerned State pollution control board shall suffice.

Since project activity falls under white category and the non-polluting nature of project fulfils the compliance to the local laws and regulations under Consent to operate.

The assessment team checked the inclusion of white category as per Central Pollution Control Board norms and thus confirm that project is in accordance with relevant local law and regulation of the host country.

Moreover, the relevant national laws and regulations pertaining to generation of energy in India are:

- Electricity Act 2003
- National Electricity Policy 2005
- Tariff Policy 2006

The Project activity conforms to all the applicable laws and regulations in India (because):

- Power generation using wind energy is not a legal requirement or a mandatory option.
- There are state and sectoral policies, framed primarily to encourage wind power projects. These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments.

- The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation.
- There is no legal requirement on the choice of a particular technology for power generation.

Thus assessment team confirms that the project activity follows the National and local law and regulation of the host country.

FVR and the VCS PD is updated accordingly and thus found to be appropriate.

VCS Response:

Section 1.11 of the project description has been updated to identify and demonstrate compliance of the project with all and any relevant local, regional and national laws, statutes and regulatory frameworks.

Considering the above, this finding is closed and no further action is required.

Finding 3

Section 1.10 of the *VCS Project Description Template, v3.3* requires that the project proponent describe the conditions existing prior to project initiation. Where the baseline scenario is the same as the conditions prior to the project initiation, the project proponent must state that such is the case and refer the reader to Section 2.4.

Section 1.10 of the project description states that the project is a greenfield solar power project but does not identify the baseline scenario per the requirements of the project description template.

The VVB is required to ensure that the project proponent describes the conditions existing prior to project initiation per the requirements in the template. The project proponent must update the project documentation as required.

VVB Response:

Section 1.10 of Joint VCS PD & MR has been revised with mention of baseline scenario in line with methodology requirement.

Being the green field project activity (nothing was there at site prior to initiation of project activity), the baseline scenario mentioned in VCS PD is found to be appropriate as per methodology requirement. The baseline as identified in section 2.4 of VCS PD is same prior to project initiation.

The revision is acceptable as per the requirement of VCS PD template to the assessment team. FVR is also modified accordingly.

VCS Response:

Section 1.10 of the project description has been updated to reflect the conditions prior to project initiation. It shall be noted however that the above response by the VVB incorrectly refers to the

project description as a “Joint VCS PD & MR”. The project description is not a joint document and does not include a monitoring report.

Considering the above, this finding is closed and no further information is required.

Finding 4

Step 1 of the CDM *Tool for the demonstration and assessment of additionality* instructs the project proponent to identify realistic and credible alternatives available to the project proponents or similar project developers that provide outputs or services comparable with the proposed CDM project activity.

Section 3.2.5 of the VCS *Validation Report Template, v3.4* requires that the VVB describe in detail the steps taken to validate that the procedure for additionality has been followed correctly and precisely.

The project proponent describes two project alternatives in Section 2.5 of the project description.

Section 3.2.5 of the validation report does not include an assessment by the VVB of the alternatives identified by the project proponent, including whether the list of alternatives has been assessed to include all realistic and credible alternatives.

The VVB is required to assess the alternatives identified by the project proponent, including whether the list of alternatives is complete, realistic and credible.

VVB Response:

The section 2.5 of VCS PD has mentioned the alternatives as per step 1 a) and these alternatives are project activity without VCS benefits and another alternative is to continue the current practise. As per methodology, being the green field project activity, the second alternative i.e. continue the current practise is the baseline scenario for the proposed project activity.

Section 3.2.5 of the FVR is revised accordingly.

VCS Response:

Section 3.2.5 of the validation report has been updated to include an assessment of the alternatives identified by the project proponent and whether the list of alternatives is complete, realistic and credible.

Considering the above, this finding is closed and no further action is required.

Finding 5

Sub-step 1b of the CDM *Tool for the demonstration and assessment of additionality* instructs the project proponent to assess whether the alternatives identified in Sub-step 1a are consistent with

mandatory laws and regulations.

Section 2.5 of the *VCS Project Description Template, v3.3* requires that the project proponent describe how each step of the additionality tool is applied and clearly document the outcome of each step.

Section 3.2.5 of the *VCS Validation Report Template, v3.4* requires that the VVB describe in detail the steps taken to validate that the procedure for additionality has been followed correctly and precisely.

Section 2.5 of the project description lists what the project proponent has determined to be the relevant national laws and regulations pertaining to generation of energy in India, but does not assess whether the identified alternatives comply with those laws. The project proponent does not clearly document the outcome of Sub-step 1b.

In Section 3.2.5 of the validation report, the VVB does not appear to have assessed the project proponents' adherence to Sub-step 2b of the CDM "Tool for the demonstration and assessment of additionality".

The VVB is required to ensure that the project proponent provides an assessment of whether the identified alternatives comply with the laws cited and otherwise document the outcome of Sub-step 1b in a clear fashion. The VVB is required to assess the project proponent's adherence to Sub-step 1b. The project documentation must be updated as required.

VVB Response:

The two alternatives mentioned in VCS PD are as per step of additionality tool, the first alternative is not possible as project activity is not viable without carbon credit benefits (as per Investment analysis) and second alternative is the baseline scenario for the project activity as per methodology as mentioned in section 2.4 of VCS PD.

It is to be noted that being the green field project activity, "the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

Section 3.2.5 of the FVR is now modified indicating the project adherence to relevant national laws.

VCS Response:

Section 2.5 of the project description has been updated to assess whether the identified alternatives are in compliance with the relevant laws, and documents the outcome of Sub-step 1b of the CDM *Tool for the demonstration and assessment of additionality*.

Section 3.2.5 of the validation report has been updated to assess the project proponents' adherence to Sub-step 2b of the CDM "Tool for the demonstration and assessment of additionality".

Considering the above, this finding is closed and no further action is required.

Finding 6

Sub-step 2a of the CDM *Tool for the demonstration and assessment of additionality* instructs the project proponent to determine whether to apply simple cost analysis, investment comparison analysis or benchmark analysis.

Section 2.5 of the VCS *Project Description Template, v3.3* requires that the project proponent describe how each step of the additionality tool is applied and clearly document the outcome of each step.

Section 2.5 of the project description does not clearly document how this step of the additionality tool was applied, but rather proceeds to apply the benchmark analysis without explanation.

The VVB is required to ensure that the project proponent describes how this step of the additionality tool is applied. The project proponent must update the project documentation as required.

VVB Response:

In revised VCS PD, Sub-step 2a of the CDM Tool for the demonstration and assessment of additionality has been elaborated. The appropriate analysis method for investment analysis has been mentioned now. The selected benchmark approach by PP is in line with additionality tool and found to be appropriate. It is justified that why simple cost analysis and investment comparison analysis mention is not suitable for Investment analysis method.

The assessment team found that step 2 a) of additionality tool has been followed by PP in revised VCS PD appropriately and hence it is accepted.

Section 3.2.5 of the FVR is also modified accordingly.

VCS Response:

Section 2.5 of the project description has been updated to describe the project proponent's decision to apply the benchmark analysis.

Considering the above, this finding is closed and no further action is required.

Finding 7

Sub-step 2b of the CDM *Tool for the demonstration and assessment of additionality* instructs the project proponent to identify the financial indicator most suitable for the project type and decision-making context.

Section 2.5 of the VCS *Project Description Template, v3.3* requires that the project proponent describe how each step of the additionality tool is applied and clearly document the outcome of each step.

Section 3.2.5 of the VCS *Validation Report Template, v2.4* requires the VVB to assess the suitability

of the benchmark used for the investment analysis.

Section 2.5 of the project description discusses how the expected return on equity was determined, but does not clearly document how it was determined that the financial indicator chosen is the most suitable for the project type and decision-making context.

Section 3.2.5 of the validation report states that the "benchmark analysis is used for the project activity as per project type and decision-making context. Therefore, the Expected return on equity is considered appropriate benchmark. Accordingly, the post-tax Equity IRR has been considered as the relevant financial indicator for the project activity which is acceptable to the assessment team." The VVB therefore states that the project proponent's choice of a post-tax equity IRR is an acceptable financial indicator for the assessment team, but does not explain why the expected return on equity is considered an appropriate benchmark, nor does the VVB explain why the post-tax equity IRR is acceptable to the assessment team.

The VVB is required to ensure that the project proponent documents how it has determined that the financial indicator chosen is the most suitable. The VVB is also required to assess the suitability of the benchmark used for the investment analysis. The project documentation must be updated as required.

VVB Response:

As per Investment Analysis tool, Required/expected returns on equity are appropriate benchmarks for an equity IRR. The Equity IRR is considered as the financial indicator and the benchmarks used is cost of equity. Thus Assessment team observed that the benchmarks (cost of equity) used are applicable to the project activity and the type of IRR calculation (equity IRR) presented.

Also as per step 2a) of additionality tool, the appropriate analysis method is justified by PP and found to be appropriate.

It is also noted that it's PP choice to select the financial indicator and there is no any guideline in terms of selection of financial indicator. Since project activity loan and equity component, the PP has selected equity IRR (meaning equity component to determine the IRR) as financial indicator for the determination of additionality and benchmark of cost of equity is justified for the selected financial indicator. Thus investment analysis followed by PP is in line with methodological tool "Investment Analysis" and is accepted.

Section 3.25 of the FVR is now modified with the above explanation.

VCS Response:

Section 2.5 of the project description has been updated to document how it was determined that the financial indicator chosen is the most suitable for the project type and decision-making context.

Section 3.2.5 of the validation report has been updated to include an assessment of the suitability of the benchmark used for the investment analysis.

Considering the above, this finding is closed and no further action is action is required.

Finding 8

Section 2.5 of the project description states that the 10-year inflation forecast for India is 3.7% per the source provided in footnote 15 (<https://rbi.org.in/Scripts/PublicationsView.aspx?id=16696>).

Section 3.2.5 of the validation report repeats this figure and its source and provides no assessment of its accuracy.

The source cited by the project proponent and the VVB does not contain a relevant value equalling 3.7%. The VVB is required to clarify whether this value is accurate and describe how the appropriateness of the inflation parameter is assessed. Where the value is not accurate, the project documentation must be updated as required.

VVB Response:

The IRR sheet is revised with correct inflation rate as 3.6% as per Table A.9: Annual Average Percentage Change Annual average percentage change over the next ten years of Results of the Survey of Professional Forecasters on Macroeconomic Indicators– Round 36 Date : Sep 29, 2015 published by Reserve Bank of India (India's Central Bank)

<https://rbi.org.in/Scripts/PublicationsView.aspx?id=16696>

The revised IRR sheet, revised VCS PD are submitted along with response.

The assessment team has checked the revised document and found that inflation rate considered by PP is appropriate and is in line with methodological tool of "Investment Analysis". Section 3.2.5 of the FVR is also modified.

VCS Response:

Section 2.5 of the project description and Section 3.2.5 of the validation report have been updated to reflect an inflation rate of 3.6%.

Considering the above, this finding is closed and no further action is required.

Finding 9

Paragraph 8 of the CDM *Common Practice* tool states that the applicable geographic area for the common practice analysis should be the entire host country. If the project participants opt to limit the applicable geographical area to a specific geographical area (such as province, region, etc.) within the host country, then they shall provide justification on the essential distinction between the identified specific geographical area and rest of the host country.

Section 2.5 of the project description states that the applicable geographic area is the Rajasthan state of India because each state has different policies regarding renewable energy. This reference to "different policies regarding renewable energy" is not a sufficient explanation of the essential distinctions between the Rajasthan state and the rest of India, as the project proponent must justify

the essential distinctions between the state of Rajasthan and the rest of the host country.

The VVB is required to ensure that the project proponent justifies the essential distinctions between the state of Rajasthan and the rest of the host country. The project documentation must be updated as required.

VVB Response:

The revised VCS PD has been checked and found that selection of Rajasthan state as geographical region for project activity is justified.

The distinguish to choose state rather than the host country has been justified in revised VCS PD is as below

The project activity involves generation of electricity from solar energy. The project activity is located in the state of Rajasthan in India and the policy applicable for the solar projects is regulated by Rajasthan state policy. The policies/tariff for each state is regulated by State Electricity Regulatory Commissions of respective states and they differ for respective states. The project implemented in different states are claimed as different since the policies and regulations differ in each state. Each state have different policies regarding renewable energy, hence Rajasthan state is considered as geographical region for common practise analysis.

Based on local and expert sectoral scope knowledge, assessment team confirms that each state have different tariff order as each states policies, tariff rate, rules and regulation are different. Thus the justification provided by PP is found to be appropriate.

The detail explanation of choice of the state rather than the entire host country was already presented in the FVR. No change in FVR is thus envisaged. VCS PD is updated accordingly.

VCS Response:

Section 2.5 of the project description has been updated to state that the tariffs and regulations are different in Rajasthan compared to other states in the country.

Section 3.2.5 of the validation report has been updated to state that the assessment team has deemed this distinction acceptable.

Considering the above, this finding is closed and no further information is required.

Finding 10

Section 3.2.5 of the VCS *Validation Report Template, v3.4* requires the VVB to describe in detail the steps taken to validate that the procedure for additionality has been followed correctly and precisely.

Section 3.2.5 of the validation report makes no independent assessment of the common practice analysis in the project description. Rather, Section 3.2.5 of the validation report is a word for word

copy of the project proponent's common practice demonstration in Section 2.5 of the project description.

The VVB is required to perform and document a step-by-step assessment of the project proponent's common practice demonstration and update the project documentation accordingly.

VVB Response:

The validation report is revised for the assessment of common practise analysis. As per methodological tool "Common Practise", the project activity has been followed all steps of tool. The steps followed by PP has been validated in report and found to be appropriate. The sources used for identification of similar projects are taken from Govt. web links and found to be authentic.

The section 3.2.5 of validation report is revised accordingly.

VCS Response:

Section 3.2.5 of the validation report has been updated to include a step-by-step assessment of the common practice analysis.

Considering the above, this finding is closed and no further action is required.

Finding 11

Section 3.17.3 of the *VCS Standard, v3.7* requires that the project proponent establish mechanisms for ongoing communication with local stakeholders to allow stakeholders to raise concerns about potential negative impacts during project implementation.

Section 5.3 of the *VCS Project Description Template, v3.3* requires that the project proponent include details on the mechanism for on-going communication with local stakeholders.

Section 5.3 of the project description does not provide any details on the mechanism for on-going communication with local stakeholders.

The VVB is required to ensure that the project proponent provides details on the mechanism for on-going communication with local stakeholders. The project documentation must be updated as required.

VVB Response:

The section 5.3 of project description has been revised with mention of grievance mechanism. If any feedback is received from any stakeholder, the same will be addressed. The Complaint register helps to take feedback as a part of ongoing communication with stakeholders. The same has been checked by assessment team during site visit and is accepted.

This is in line with template and found to be appropriate. Section 5.3 of the VCS PD and Section 4.3 of the FVR is modified accordingly mentioning the details regarding ongoing communication with local

stakeholders.

VCS Response:

Section 5.3 of the project description has been updated to describe details on the mechanism for on-going communication with local stakeholders.

Section 4.3 of the validation report has been updated to confirm that the VVB had assessed the mechanism of ongoing communications with local stakeholders during the site visit.

Considering the above, this finding is closed and no further information is required.

Finding 12

Section 3.17.4 of the *VCS Standard, v3.7* requires that the project proponent take due account of all and any input received during the local stakeholder consultation and through ongoing communications, which means it will need to either update the project design or justify why updates are not appropriate.

Section 5.4 of the *Project Description Template, v3.3* requires that the project proponent demonstrate how due account of all and any comments received during the public comment period has been taken and include details on any updates to the project design or demonstrate the insignificance or irrelevance of comments.

Section 4.4 of the *VCS Validation Report Template, v3.4* requires that the VVB include the project proponents' response to each public comment, and describe any resultant changes to the project design and provide an explanation of how the project proponent's responses are appropriate.

One comment was submitted to VCS during the project's public comment period and this comment has not been addressed by the project proponent in Section 5.4 of the project description. Section 4.4 of the validation report likewise does not contain any reference to the project proponents' response to the public comment received, and therefore does not contain an explanation of how the project proponents' response may be appropriate.

The VVB is required to ensure that the project proponent demonstrates how due account of the comments were taken, and include details on any updates to the project design or demonstrate the insignificance or irrelevance of comments. The VVB is further required to describe any resultant changes to the project design and provide an explanation of how the project proponent's responses are appropriate. The project documentation must be updated as required.

VVB Response:

Section 5.4 of VCS PD has been updated with mention of public comment period feedback received from Global stakeholders and the comments has been responded appropriately.

The assessment team found that the responses for comments received during public comment period are satisfactorily addressed by PP. The VCS PD has been updated accordingly. FVR already

contains the response of the DOE on the public comments received.

VCS Response:

Section 5.4 of the project description has been updated to demonstrate how due account of all and any comments received during the public comment period has been taken.

Section 4.4 of the validation report has been revised to include the project proponents' response to the public comment, describe the resultant changes to the project design and provide an explanation of how the project proponent's responses are appropriate.

Considering the above, this finding is closed and no further action is required.

Finding 13

Section 3.2.6 of the VCS *Validation Report Template, v3.4* requires that the VVB describe the steps taken to validate the quantification methods, including all data and parameters used in the equations, and any references to any other data sources used.

Section 3.2.6 of the validation report makes no assessment of the quantification methods, data and parameters or any of the references to other data sources used. Rather, the section is a word for word copy of the project proponent's language in sections 3.1 - 3.4 of the project description.

The VVB is required to describe the steps taken to validate the quantification methods, including all data and parameters used in the equations, and any references to any other data sources used. This must include information with respect to how documentation used as the basis for assumptions and sources of data (such as the DPR) were assessed. The project documentation must be updated as required.

VVB Response:

The section 3.2.6 has been updated with mention of quantification of emission reductions along with formulae.

The PLF, Degradation factor, grid emission factor are appropriately used for ER estimation and hence are accepted. The PLF and Degradation factor has been taken from DPR= 3rd party report and found to be appropriate.

The Grid emission factor is sourced from CEA database version 12, hence found to be authentic and emission factor calculations are in line with "Tool to calculate the emission factor for an electricity system" version 06. No further assessment is required for grid emission calculation as the ex-ante value is sourced directly from the Govt database.

VCS Response:

Section 3.2.6 of the validation report has been updated to describe the steps taken to validate the quantification methods, including all data and parameters used in the equations, and any references

to any other data sources used.

Considering the above, this finding is closed and no further information is required.

2 MINOR FINDINGS

Finding 1

Section 3.3 of the *VCS Validation Report Template, v3.4* requires that the VVB describe their assessment of the non-permanence risk analysis, where relevant. Note that this section is only relevant where emission reductions are at risk of reversal, as would be the case with projects under the AFOLU sectoral scope. The emission reductions generated by this activity have no risk of reversal and as such, this section is not relevant for this project.

In the future the VVB is required to indicate that this section of the validation report is “not applicable” per the guidance in the *VCS Validation Report Template, v3.4*.

Reply: The section in the FVR is now updated.

3 ASSESSMENT CONCLUSION

On 15 December 2017, VCS delivered to LGAI Technological Center, S.A. (Applus+) this project review report with 13 findings.

On 4 January 2018, LGAI Technological Center, S.A. (Applus+) provided VCS with responses to the findings and an updated project description and validation report.

On 7 February 2018, VCS closed all findings.