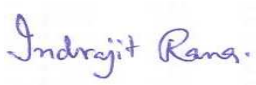
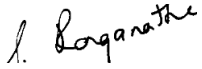
Validation opinion for post registration changes

Title of project activity:			
9.8 MW Biomass Based Power Plant at Lahari Power & Steels Limited in Champa-Janjgir District, Chattisgarh			
CDM reference number:		DNV project No.:	
1199		PRJC-393167-2012-CCS-IND	
Date	Work carried out by:	Work verified by:	Approved by:
2 August 2012	Indrajit Rana 	S.Ranganathan 	Michael Lehmann 

1 Overview of post registration changes

Type of post registration change		**Is prior approval by CDM EB required?** (refer to Appendix 1 of CDM Project Standard)
Temporary deviations from the registered monitoring plan and/or monitoring methodology (refer to section 2)		☐ Yes ☐ No ☒ Not applicable
Corrections (refer to section 3)		☐ Yes ☒ No ☐ Not applicable
Changes to the start date of the crediting period (refer to section 4) *Prior approval by the CDM EB is not required in case of (a) bringing forward the start date up to one year earlier or (b) postponing the start date by up to one year (by up to two years for project activities in LDCs).*		☐ Yes ☐ No ☒ Not applicable
Permanent changes from the registered monitoring plan or applied methodology (refer to section 5)	☐ Proposed revision only includes the request by the CDM EB ☐ Proposed revision includes not only the request by the CDM EB but also additional revisions proposed by the PP/DOE ☒ Proposed revision includes revisions proposed by the PP/DOE	☒ Yes ☐ No ☐ Not applicable
Changes to the project design of a registered project activity (refer to section 6)	☐ Notification of changes from project activity as described in the registered PDD (i.e. changes do <u>not</u> raise any concerns with regard to i) additionality, ii) the scale of CDM project activity and/or iii) the applicability and application of baseline methodology ☐ Request for approval of changes from	☐ Yes ☐ No ☒ Not applicable

	project activity as described in the registered PDD	

2 Temporary deviations from the registered monitoring plan and/or monitoring methodology

Not applicable

3 Corrections

3.1 Description of corrections

Contact information on participants in the project activity has been corrected.

As per registered PDD

Organization:	M/s Lahari Power & Steels Limited
Street/P.O. Box, Building:	Plot No: 1115, Road No: 54, Jubilee Hills, Hyderabad- 500 033, Andhra Pradesh, India
City:	Hyderabad
State/Region:	Andhra Pradesh
Postfix/ZIP:	500 033
Country:	India
Telephone:	+91- 40- 2355 0597, 2355 0598
FAX:	+91- 40- 2354 1339
E-Mail:	lahari_power@yahoo.co.in
URL:	
Represented by:	
Title:	Managing Director
Salutation:	Mr.
Last Name:	
Middle Name:	
First Name:	Sri. T. Sri Rama Krishnayya
Mobile	
Direct Fax	+91- 40- 2354 1339
Direct Telephone	+91- 40- 2355 0597, 2355 0598
Personal E.mail	

As per revised PDD version 4 dated 7 June 2012

Organization:	M/s Lahari Power & Steels Limited
Street/P.O. Box, Building:	Suryachakra House, Plot No: 304-L-III, Road No: 78, Jubilee Hills,
City:	Hyderabad
State/Region:	Andhra Pradesh
Postfix/ZIP:	500 096
Country:	India
Telephone:	+91- 40- 2355 0597, 2355 0598
FAX:	+91- 40- 2354 1339
E-Mail:	cdm@suryachakra.com,
URL:	
Represented by:	
Title:	Director
Salutation:	Mr.

Last Name:	k
Middle Name:	
First Name:	Vijay Kumar
Mobile	
Direct Fax	+91- 40- 2354 1339
Direct Telephone	+91- 40- 2355 0597, 2355 0598
Personal E.mail	

Name of person/entity determining the monitoring methodology has been corrected

As per registered PDD: The entity is not a project participant.

Organization:	Zenith Energy Services Pvt. Ltd
Street/P.O. Box, Building:	10-5-6/B, My Home Plaza, Masabtank,
City:	Hyderabad
State/Region:	Andhra Pradesh
Postfix/ZIP:	500 028
Country:	India
Telephone:	+91- 40- 2337 6630, 2337 6631
FAX:	+91- 40- 2332 2517
E-Mail:	zenith@zenithenergy.com
URL:	www.zenithenergy.com
Represented by:	
Title:	Director
Salutation:	Mr
Last Name:	Reddy
Middle Name:	Mohan
First Name:	Attipalli

As per revised PDD version 4 dated 7 June 2012

Organization:	M/s. Lahari Power & Steels Limited
Street/P.O. Box, Building:	Suryachakra House, Plot No: 304-L-III, Road No: 78, Jubilee Hills
City:	Hyderabad
State/Region:	Andhra Pradesh
Postfix/ZIP:	500 096
Country:	India
Telephone:	+91- 40- 2355 0597, 2355 0598
FAX:	+91- 40- 2354 1339
E-Mail:	cdm@suryachakra.com,
URL:	
Represented by:	
Title:	Director
Salutation:	Mr
Last Name:	K
Middle Name:	
First Name:	Vijay Kumar

3.2 Assessment of corrections

The PP has provided the revised latest MOC (**ANNEX-1**) which has been intimated to UNFCCC and revised PDD version 4 dated 7 June 2012 which shows the above mentioned change of information.

The corrections do not affect the design of the project activity and do thus not require prior approval by the Board. Nonetheless, as the PDD was also revised due to permanent changes from the registered monitoring plan and this revision required prior approval by the Board, the Board is request to also consider and approve, if applicable, the corrections.

4 Changes to the start date of the crediting period

Not Applicable

5 Permanent changes from the registered monitoring plan or applied methodology

5.1 Description of the revision of the monitoring plan

The following revisions have been done in monitoring plan of the registered PDD:

1. Recording frequency of gross generation and auxiliary consumption has been revised from continuous to daily. The parameters remains to be monitored continuously but is recorded daily only. Calibrating and inspection agency for gross generation and auxiliary meter has been revised from (Chhattisgarh State Electricity Board) CSEB to third party.
2. Accuracy class and calibration frequency of all the energy meters have been mentioned which was not there in the registered PDD.
3. .Recording frequency of power import and power export has been revised continuous to monthly. Thus the parameters are monitored continuously and recorded monthly.
4. Metering arrangement in the power plant boundary, QA & QC procedure and roles and responsibility have been detailed which was missing in the monitoring plan of the registered PDD
5. The CSEB substation contains only one meter instead of two meters (main and check) as per the registered PDD. The substation meter records both import and export electricity. The billing for the electricity export to the grid is done on the basis of this meter. Thus the accounting procedure of electricity export when the substation meter is failed has been described.

5.2 Assessment of the revision of the monitoring plan

The proposed revision of the monitoring plan ensures that the level of accuracy or completeness in the monitoring and verification process is not reduced as a result of the revisions

1. Monitoring frequency of gross generation and auxiliary is continuous, only recording frequency has been revised to daily. All the meters are showing cumulative figures. Thus continuous monitoring and daily recording is deemed appropriate. Moreover as the recording is done manually continuous recording is not a feasible option. As this meter is under the custody of the project proponent calibration of the same by CSEB is not feasible and thus the calibration has been done by authorised third party. The gross

generation and auxiliary consumption is used to cross check net electricity export to the grid and not directly used in the emission reduction calculation.

2. Accuracy class of gross generation meter, power export meter and power import is 0.2S and same of auxiliary meter is 1S. These accuracy class energy meters represent good monitoring practice. Calibration frequency of all the energy meters is considered once in a year which also represents good monitoring practice.
3. Monitoring frequency of export and import is continuous. Joint meter reading by the CSEB, Government agency and the project proponent is done on monthly basis. All the meters are showing cumulative figures. Thus continuous monitoring and monthly recording is deemed appropriate.
4. In the power plant boundary there are four meters. Two meters, namely gross generation meter and auxiliary consumption meter are in the control room. In the switch yard there are main and check meter which measures both import to the project and export to the grid. The import billing is done on the basis of the main meter reading at the plant. In case of any failure of the main meter, the check meter reading would be considered for import billing. The arrangement mentioned in the revised PDD is similar with the arrangement as per the monitoring plan of the registered PDD. Only detail description has been detailed further to that stated in the registered PDD. Moreover in the revised PDD, QA & QC procedure and roles and responsibility has been described adequately based on the actual practice followed. Defined roles and responsibility and QA & QC procedure represents good practice.
5. The project proponent does not have any control in the CSEB substation. As per PPA (power purchase agreement) in the substation two meters will be installed, main meter and check meter for measurement of export electricity to the grid. In actual case only one meter has been installed in the substation. As per clause 12.16 of Chhattisgarh State Electricity Supply Code-2011 "*interface meters (main meter) shall be installed and maintained by the State Transmission Utility or transmission licensee or distribution licensee for and at the cost of generator seeking connectivity at STU or transmission licensee or distribution licensee system as the case may be*[*]" the PP has no control in substation meter implementation and calibration.

   The meter installed at the interface (i.e. in the substation) can monitor export and import simultaneously. The billing for the energy export is done on the basis of this meter. As there is no check meter when the substation meter fails as per clause 12.22 of Chhattisgarh State Electricity Supply Code-2011, *"In case of outage of both the main and check meters, if any energy is interchanged in the intervening period the assessment has to be done on the basis of reading recorded in generator's sending end meter if found working properly by considering average of previous 3 months percentage line loss when both interface meter and generators meter were found working properly*[*]" following procedure will be adopted during joint meter reading.

   The export reading will be measured from the in plant switch yard main meter reading and average of previous 3 months percentage line loss from switch yard to substation will be deducted from that reading to arrive export from the project at substation level. The difference between substation meter export and in plant switch yard main meter export is due to the line loss from switch yard to substation. Thus the procedure adopted by CSEB during failure of substation meter is deemed appropriate. None of the above changes are under control of the project participant.

[*] http://cserc.gov.in/pdf/39-Chhattisgarh%20State%20Electricity%20Supply%20Code-2011.pdf

Thus it is DNV's opinion that proposed revision of the monitoring plan ensures that the level of accuracy or completeness in the monitoring and verification process is not reduced as a result of the revisions

The proposed revision of the monitoring plan is in accordance with the approved monitoring methodology applicable to the project activity whilst ensuring the conservativeness of the emission reductions calculation

In line with the applied small scale methodology AMS-I.D version 10 "*monitoring shall consist of metering the electricity generated by the renewable technology. Where co-firing is done, the amount of biomass and fossil fuel input shall be monitored."* All proposed revisions of the monitoring plan mentioned in the revised PDD version 4 dated 7 June 2012 are in accordance with the applicable approved small scale monitoring methodology AMS-I.D version 10. Moreover in latest version 17 of AMS-I.D it states continuous monitoring, hourly measurement and at least monthly recording for quantity of net electricity supplied to the grid in year y. Hence revision 1 and revision 3 are deemed appropriate. Methodology does not mandate any accuracy class and calibration frequency of the energy meters. The mentioned accuracy and calibration frequency represents good monitoring practice. In revision 4 only detailing is provided in the revised PDD. Thus this revision is also in accordance of the applicable approved monitoring methodology AMS-I.D version 17.

Use of main meter and check meter is not mandated by the methodology. As discussed in the earlier section PP has no control in the substation meter implementation as well as calibration. When the substation meter fails the procedure of computing of joint meter reading for electricity export at the substation level (already discussed in previous section) shows a conservative approach. This is also in line with the cross checking procedure mentioned in the latest version 17 of the AMS-I.D. Thus revision 4 is also in accordance of the applicable approved monitoring methodology AMS-I.D version 10.

As there is no change in emission reduction calculation the conservativeness of emission reduction is unchanged.

The findings of previous verification reports, if any, have been taken into account

The revision of monitoring plan has been adopted prior to issuance of any verification. Thus findings of previous verification reports are not applicable here.

6 Changes to the project design of a registered project activity

Not applicable

7 Validation opinion

DNV recommends the approval of the revised monitoring plan submitted by the project participants.

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