VOLUNTARY CARBON STANDARD 2007.1

VERIFICATION REPORT

22.5 MW WIND POWER PROJECT BY RUCHI SOYA INDUSTRIES LIMITED AT PALSODI, DISTRICT-RATLAM, MADHYA PRADESH

Monitoring Period: 2008-02-29 to 2009-12-31

(incl. both days)

Report No: 8105848970 - 09/140

Date: 2011-02-02

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Name of Verification company	Date of the issue:
TÜV NORD CERT GmbH	2011-02-02
Report Title:	**Approved by:**
22.5 MW Wind Power Project by Ruchi Soya Industries Limited at Palsodi, District-Ratlam, Madhya Pradesh	Mr. Rainer Winter
Client:	**Project Title:**
Ruchi Soya Industries Limited	22.5 MW Wind Power Project by Ruchi Soya Industries Limited at Palsodi, District-Ratlam, Madhya Pradesh

Summary:

M/s Ruchi Soya Industries Limited has commissioned the TÜV NORD JI /CDM Certification Program to carry out the verification of the Project "22.5 MW Wind Power Project by Ruchi Soya Industries Limited at Palsodi, District-Ratlam, Madhya Pradesh" in Palsodi village of Ratlam district, Madhya Pradesh, India with regard to the requirements of VCS 2007.1 Standard.

The project activity involves installation of 15 Wind Energy Convertors of 1.5 MW each and selling power to MPPKVVCL, a company of Madhya Pradesh State Electricity Board (MPSEB), connected with the NEWNE grid at 132 kVA substation at Sailana (Ratlam). The purpose of the project activity is to utilize wind energy which is a renewable source of energy for generation of electricity. The project activity displaces the electricity of NEWNE grid of India that would have been generated mainly from fossil fuel based power generation.

In the course of the verification 8 Corrective Action Requests (CARs), 0 Clarification Requests (CLs) were successfully closed and 0 Forward Action Request (FAR) will be verified during the subsequent periodic verification.

As per the registered VCS PD the Net Electricity exported to the grid (when monitoring period is not matching with the billing period) is not in line with the approach mentioned in the registered VCS PD. To calculate the Net electricity exported to the grid for the period when monitoring period is not in line with the billing period an apportioning procedure is adopted by the project participant.

The verification team has checked the apportioning procedure calculation and found the same to be correct and appropriate Thus the deviation from the VCS PD is acceptable to the assessment team as the apportioning approach is in line with the practice followed onsite and will be same for the present and subsequent

verification. The deviation is also in line with the stipulation of VCS 2007.1 section 5.3.as the deviation don't impact negatively on the conservativeness of the VCS program approved methodology`s criteria and procedures to quantify data leading to GHG emission reductions.

The verification is based on the draft monitoring report/MR1/, revised monitoring report/MR2/, the monitoring plan as set out in the validated PD/VCSPD/, the validation report/FvalR/, emission reduction calculation spreadsheet/XLS2/ and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

As the result of the 1st periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions from 2008-02-29 to 2009-12-31(inclusive both the days) as follows:

Emission reductions 78,919 t CO_{2e} equivalents

Work carried out by:	Number of pages:
Mr. Manoj Kumar Borekar Mr. Prasad Jakkaraju Mr. Sukanta Das Mr. Jimmy Sah Mr. Rohit Badaya The technical review of the project was carried out by: Ms. Katja Beyer Mr. Ingo Klein	37

Abbreviations

BAU	Business as usual
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CO_2	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
CP	Certification Program
CL	Clarification Request
DNA	Designated National Authority
EB	CDM Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MPPKVVCL	Madhya Pradesh Pashchim Kshetra Vidyut Vitaran Company Ltd
MPSEB	Madhya Pradesh State Electricity Board
MR	Monitoring Report
NABL	National Accreditation Board for Testing and Calibration Laboratories
QC/QA	Quality control/Quality assurance
RSIL	Ruchi Soya Industries Limited
SISL	Suzlon Infrastructure Services Limited
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard
VCS - PD	VCS - Project Description
VCU	Voluntary Carbon Unit
VVM	Validation and Verification Manual

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1 INTRODUCTION

The Ruchi Soya Industries Limited has commissioned the TÜV NORD JI/CDM Certification Program to carry out the verification of the project:

"22.5 MW Wind Power Project by Ruchi Soya Industries Limited at Palsodi, District-Ratlam, Madhya Pradesh"

with regard to the relevant requirements of the Voluntary Carbon Standard 2007.1[/VCS/]. The verifiers have reviewed the implementation of the monitoring plan (MP) in the registered VCS project for the monitoring period 2008-02-29 to 2009-12-31,

The applied monitoring methodology is ACM0002 version 10 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

1.1 Objective

The purpose of this verification, by independent checking of objective evidence, is as follows:

- to verify that the project is implemented as described in the project design document;
- to assess the implementation of the monitoring plan (MP) content in the VCS-PD;
- to assess the project's compliance with other relevant rules, including the host country (India) legislation;
- to confirm that the monitoring system is implemented and fully functional to generate voluntary emission reductions (VERs / VCUs) without any double counting; and
- to establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

1.2 Scope and Criteria

The verification of this project is based on the validated project design document [/VCS-PD/], the monitoring report[/MR2/], emission reduction calculation spread sheet[/XLS2/], supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. Furthermore publicly available information was considered as far as available and required.

The TÜV NORD JI/CDM CP has employed a risk-based approach in the verification, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

1.3 VCS Project Description

1.3.1 Project Characteristics

Essential data of the project is presented in the following Table 1-1.

Table 1-1: Project Characteristics

Item	Data			
Project title	22.5 MW Wind Power Project by Ruchi Soya Industries Limited at Palsodi, District-Ratlam, Madhya Pradesh.			
Project owner	Ruchi Soya Industries Limited			
Any specific project categories	☐ Mega project (> 10^6 t CO_{2eq} / a) ☒ Project (5,000-1,000,000 tCO_{2e} per year) ☐ Micro project (< 5000 t CO_{2eq} / a) ☐ AFOLU project ☐ Grouped project ☐ No specific project category			
VCS PD dated	Draft:		Final:	2010-02-11
Applied Methodology	ACM0002, version 10			
Project starting date	2008-02-29			
Crediting period	☐ Renewable Crediting Period (7 y) ☒ Fixed Crediting Period (10 y)			
Start of crediting period	2008-02-29			

1.3.2 Project Location

The details of the project location are given in table 1-2:

Table 1-2: Project Location

No.	Project Location
Host Country	India
Region:	Madhya Pradesh
Project location address:	Palsodi village, Ratlam district
Latitude:	23°20' & 23°22' N
Longitude:	74°54' & 74°56' E

1.3.3 Technical Project Description

The project activity involves installation of 15 WEGs of Suzlon make (S-82), each of which has a rated output of 1.5 MW, providing a total capacity of 22.5 MW. The project activity harnesses renewable wind energy source in the region thereby

displacing the non-renewable natural resources of energy and ultimately leading to sustainable economic and environmental development. Suzlon is the equipment supplier and also the operations and maintenance contractor for the project activity. The electricity exported and imported from the grid is measured by two way tri-vector energy meter. The electricity generated from the project activity is sold to MPPKVVCL, a company of Madhya Pradesh State Electricity Board.

The project site is located in the hills of Sambharkho range falls in Palsodi village of Ratlam district in the state of Madhya Pradesh. The following table gives the detail description of the commissioning date of WECs and their respective latitude and longitudes. Latitude and longitude of the each WEG has been verified during the site with GPS (equipment used for GPS) and crosschecked with the registered VCS-PD. Commissioning date has been verified from the commissioning certificate/CR/ issued by the M.P.PK.V.V Co. Ltd. Ratlam Circle, a company of Madhya Pradesh State Electricity Board (MPSEB).

Machine No.	Latitude	Longitude	Commissioning Date
P 101	23° 20’ 22.4” N	74° 54’ 55.7” E	30/05/2008
P 104	23° 20’ 33.9” N	74° 54’ 40.2” E	30/05/2008
P 107	23° 20’ 36.2” N	74° 55’ 18.4” E	30/05/2008
P 109	23° 20’ 45.1” N	74° 54’ 57.1” E	29/03/2008
P 112	23° 20’ 53.8” N	74° 55’ 23.2” E	29/03/2008
P 113	23° 20’ 54.4” N	74° 55’ 41.3” E	29/03/2008
P 114	23° 21’ 00.6” N	74° 55’ 05.6” E	29/03/2008
P 131	23° 21’ 15.5” N	74° 55’ 17.1” E	29/03/2008
P 137	23° 21’ 37.9” N	74° 56’ 02.7” E	29/03/2008
P 140	23° 21’ 49.4” N	74° 55’ 51.1” E	29/03/2008
P 143	23° 22’ 07.2” N	74° 55’ 47.0” E	29/02/2008
P 145	23° 22’ 15.7” N	74° 55’ 25.5” E	29/02/2008
P 148	23° 22’ 09.6” N	74° 56’ 06.1” E	29/02/2008
P 150	23° 22’ 22.8” N	74° 55’ 51.1” E	29/02/2008
P 154	23° 22’ 37.7” N	74° 55’ 58.3” E	29/02/2008

The total WEGs of the project activity is connected to 33 kV feeder (feeder number 1 and 3).

The key parameters of the project are given in table 1-3:

Table 1-3a: Technical data of the project

Parameter	Unit	Value
Number of WEGs installed	-	15
Cut-in wind speed	m/s	4
Rated wind speed	m/s	14
Cut-out wind speed	m/s	20
Generator Type: Asynchronous 4 poles with slip ring		
RPM at Rated Power	-	1511
Rated Voltage	V	690, 3 phase
Frequency	Hz	50
Rated output	kW	1500
Rotor diameter	m	82
Rotor blades (nos.)	-	3
Swept area	m^2	5281
Hub height	m	78.5

Table 1-3b: Parameters confirmed during verification

Parameter	Name	Unit	Value
EG_{export}	Electricity Exported to the grid by the project activity.	MWh	85795.73
EG_{import}	Electricity imported from the grid by the project activity.	MWh	243.63
EG_y	Net electricity supplied to the grid by the project.	MWh	85552.1

1.3.4 Appointment of team members and technical reviewer

On the basis of a competence analysis and individual availabilities a verification team was appointed. Furthermore also the personnel for the technical review and the final approval was determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 1-4 below.

Table 1-4: Involved Personnel

	Name	Company	Function [1]	Qualification Status [2]	Sectoral competence	Technical competence	Host country Competence	Controlling competence
☒ Mr. ☐ Ms.	Manoj kumar Borekar	TUV India Pvt. Ltd, Mumbai	TL	SA	☒	T	☒	☒
☒ Mr. ☐ Ms.	Prasad Jakkaraju	TUV India Pvt. Ltd, Mumbai	TM	E	☒	T	☒	☐
☒ Mr. ☐ Ms.	Sukanta Das	TUV India Pvt. Ltd, Mumbai	TM	E	☒	-	☒	☐
☒ Mr. ☐ Ms.	Jimmy Sah	TUV India Pvt. Ltd, Mumbai	TM	E	☒	-	☒	☐
☒ Mr. ☐ Ms.	Rohit Badaya	TUV India Pvt. Ltd, Mumbai	-	AT	-	-	☒	☐
☐ Mr. ☒ Ms	Katja Beyer	TN CERT, Essen	TR	A	☒	-	☐	☒
☒ Mr. ☐ Ms.	Ingo Klein	TN CERT, Essen	TR	A	☒	T	☐	☒
☒ Mr. ☐ Ms.	Rainer Winter	TN CERT, Essen	FA	SA	☒	T	☐	☒

[1] TL : Team Leader; TM : Team Member, TR: Technical review; FA: Final approval;

[2] GHG Auditor Status: A : Assessor; E : Expert; SA: Senior Assessor; T : Trainee; TE Technical Expert

1.4 Level of Assurance

The verification has been planned and organized to achieve a

☒ reasonable level of assurance

☐ limited level of assurance.

The verification report is based on VCS-PD[/VCS-PD/], Monitoring report[/MR1/,/MR2/] and Final Validation Report[/FVR/], supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. The verification opinion is assured provided the credibility of all above.

2 METHODOLOGY

The verification of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the monitoring report
- Desk review of the Monitoring Report[/MR1/] submitted by the client and additional supporting documents.
- Verification planning,
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft verification reporting
- Resolution of corrective actions (if any)
- Final verification reporting
- Technical review
- Final approval of the verification.

The sequence of the verification is given in the table 2.1 below:

Table 2.1: Verification sequence

Topic	Time
Assignment of verification	2009-04-14
On-site visit	2010-10-21
Draft reporting finalised	2010-10-21
Technical review on draft reporting finalised	2010-10-21
Final reporting finalised	2010-11-11
Technical review on final reporting finalised	2011-02-02
Final corrections	2011-02-02

The main verification steps are described below.

2.1 Review of Project Documentation

The VCS PD /PD/ and supporting background documents related to the project design and baseline were reviewed.

Furthermore, the verification team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

The references used in the course of this verification are summarized in section 5.

2.2 On-Site Assessment

2.2.1 Review of Performance Records

The present verification is 1st periodic verification under VCS 2007.1. During the site visit It was found that the implementation of the project activity is as per the registered VCS PD. The verification team has also checked the verification report of the project activity and found that there are no remaining issues from the validation of project. The overall performance of the project activity is assessed to be correct.

2.2.2 Follow-up Interviews

The verification team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for the VCS. The verification site visit was carried out on 2010-10-21 by Mr. Prasad Jakkaraju and Mr. Sukanta Das with the project proponent.

During verification the verification team has performed interviews to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in Table 2-2.

Table 2-2: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives Mr. Vinay Sah Mr. Sankalp Ved Mr. Amit Shukla	- General aspects of the project - Technical equipment and operation - Changes since validation - Monitoring and measurement equipment - Remaining issues from validation / previous verifications - Calibration procedures

Interviewed Persons / Entities	Interview topics
	- Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - GHG calculation - Procedural aspects of the verification - Maintenance - Environmental aspects - Editorial issues of the Monitoring Report

A comprehensive list of all interviewed persons is part of section 5 ‘References’.

2.2.3 Collection of Measurements

M/S Ruchi Soya Industries Limited has undertaken operation and maintenance agreement with Suzlon Infrastructure Services Limited (SISL). The performance of the WEGs, safety in operation and scheduled /breakdown maintenance/BR/ thereof are organized and monitored by SISL. Panel electricity generation of each WEG in the project activity is being measured from the online metering system. SISL maintains records in both electronic and as well as in printed form of generation data of individual WEGs from the controllers of each WEG.

The monthly meter readings (main) at the metering point are jointly undertaken by O&M contractor (SISL) on behalf of the project proponent and representatives of MPPKVVCL officials and form Joint Meter Reading (JMR) document which is signed by the witnessing officials of both parties. Based on the JMR, MPPKVVCL issues the monthly generation report showing the electricity generated by the WEGs to the project participant and this statement forms the basis for calculations of emission reductions.

2.2.4 Observation of established practices and testing of the accuracy of monitoring equipment

The power generated by 15 WEGs is at 690 V, which is stepped up to 33 kV by a step up transformer located at the base of the WEG, and fed into the two 33 kV feeder lines. The metering is at the metering yard located at site having two main meters which are connected with WEGs of the project activity. The feeder lines culminate at the 132 kVA substation at Sailana (Ratlam). The main meter installed is two way tri-vector energy meter having 0.5% accuracy class and metering is done on monthly basis.

The general conditions set out for metering, recording, meter readings, meter inspections, test & checking and communication are as per the PPA (power purchase agreement)/PPA/ with MPSEB. The quality and the accuracy of meter readings is assured through calibration of electricity meters. Billing Main meter is tested, checked for accuracy once in a year and also is calibrated and adjusted once in a year in the presence of the concerned persons. The CTPT (Current Transformer and Potential Transformer) unit installed to provide required signals to the main meter is of 0.5% S accuracy class which is same as the meter accuracy class. The same is checked by the assessment team during the verification site visit and found correct.

The installed meters measure the electricity export and electricity import for each WEC of the project which are designated by unique machine number by the state electricity board which was verified on site.

2.3 Determination of the reductions in GHG emissions

The project activity involves generation of electricity from renewable wind source that would have been generated from fossil fuel based power plants connected to the grid. The project activity displaces the grid power and thus leads to the reduction of GHGs emissions.

The emission reductions ER_y due to the project activity during the year is calculated as the difference between baseline emissions (BE_y), project emissions (PE_y) and emissions due to leakage (L_y) as per the formula given below:

$ER_y = BE_y - PE_y - L_y$

Baseline emissions have been calculated as the product of net electricity exported to the grid by renewable generating unit and NEWNE grid emission factor. The net electricity exported to the grid is calculated from the difference of electricity exported to grid and electricity imported from the grid.

Moreover, there are instances when the claim of emission reduction starts or ends in middle of a monitoring period and apportioning will have to be done to arrive at Net electricity exported for that certain period. The following apportioning procedure is and will be followed, if the crediting period start or end dates falls in between the main meter reading cycles: The apportioning will be done as per the net electricity generated at controllers of the WEGs of the project activity. The daily generation data on controllers will be used for deriving a ratio for apportioning.

Procedure for apportioning to calculate the Net electricity exported to the grid when the monitoring period is not in line with the billing period:

Let us assume,

X = Sum of the net electricity generation at controller of each WEG of the project activity during the partial period of the corresponding period of main meter reading (kWh)

Y = Sum of the net electricity generation at controller of each WEG of the project activity during the corresponding full period of main meter reading (kWh)

Therefore, ratio of the net electricity generation during the partial period (Z) = X/Y

If G = Net electricity exported by the WEGs of the project activity to the grid during the corresponding full period of main meter reading as per credit notes (kWh)

Then net electricity exported by the WEGs of the project activity to the grid during the partial period (for calculating emission reduction for partial period) = G*Z. The apportioning procedure is checked by the assessment team and found to be correct. The same though is not in line with the registered VCS PD but the approach to calculate the emission reduction is found conservative and thus the deviation from registered VCS PD is acceptable to the assessment team as the approach is in line with the practice followed onsite and will be same for the present and subsequent verification.

The project emissions related to the project activity is zero. The project activity does not involve any equipments transfer of any type, hence leakage emissions are considered as zero as per the applied methodology ACM0002 version 10.

2.4 Review of additional data from other sources if appropriate

Not Applicable

2.5 Review of monitoring results and verification of the correct application of monitoring methodologies

The verification team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for the VCS.

2.6 Resolution of any material discrepancy

Material discrepancies identified in the course of the verification are addressed either as CARs, CLs or FARs.

A **Corrective Action Request (CAR)** is established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence the project results,
- the requirements deemed relevant for verification of the project with certain characteristics have not been met or
- there is a risk that the project would not be registered or that emission reductions would not be able to be verified and certified.

A **Clarification Request (CL)** will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A **Forward Action Request (FAR)** will be issued when certain issues related to project implementation should be reviewed during the first verification.

A detailed list of the CARs CLs and FAR raised and discussed in the course of this verification is included in the next section 3 of this report.

3 VERIFICATION FINDINGS

In this section the assessments and findings from the desk review of the VCS PD, site visit, interviews and supporting documents as well as the final assessments are summarised. Table 3-1 includes an overview of all raised CARs, CLs and FARs.

Table 3-1: Overview of CARs, CLs and FARs issued

No.	Topic / Chapter	CAR	CL	FAR
3.1	Remaining issues, including any material discrepancy	-	-	-
3.2	Project implementation	1	-	-
3.3	Completeness of monitoring	3	-	-
3.4	Accuracy of emission reduction calculations	4	-	-
3.5	Quality of evidence to determine emission reductions	-	-	-
3.6	Management and operational system	-	-	-
-	**SUM**	**8**	**-**	**-**

3.1 Remaining issues, including any material discrepancy, from previous validation

Description

All the issues raised during the validation process of the project activity had been closed during the validation process. There are no remaining issues from the validation stage.

Related Findings

☒ No CARs, CLs or FARs have been identified in this context

☐ The following finding(s) have been addressed:

Final Assessment

The assessment team has checked that there are no remaining issues including any material discrepancy from the previous validation process.

3.2 Project implementation

Description

The project activity involves installation of 15 WECs of Suzlon make (S-82) of 1.5 MW each, aggregating to the capacity of 22.5 MW. The first 5 WECs were installed on 29/02/2008; next 7 WECs on 29/03/2008 and remaining 3 WECs were on 30/05/2008. The project activity involves electricity generation from renewable source of wind energy. The project activity leads to displacement of grid power and thus reduction in GHGs emissions. The generated electricity is sold to MPPKVVCL, a company of MPSEB, connected with the NEWNE grid at 132 kVA substation at Sailana (Ratlam).

The project activity has supplied net electricity of 85795.73MWh to the grid during the current monitoring period. The total emission reductions computed for this monitoring period is 78,919 tCO_{2e}.

Main meter: Meter connected to Feeder No.1 is MPE15233 and Meter connected to Feeder No.3 is MPE 33415.

If the main meter fails to record energy due to any reason whatsoever, the net supplied electricity to the grid during the period of outrage will be calculated by apportioning the net supply of the electricity recorded at the energy meter, owned by MPPKVVCL and located at the sub-station, as follows:

*Net supply of the electricity by i^{th} WEG = (Total net supply of the electricity by entire wind farm as recorded at energy meter installed at the sub-station) * (Net generation of the electricity by i^{th} WEG as recorded on its controller / Sum of net generation by all WEGs of the wind farm as recorded on their controllers).*

It was verified during the onsite visit and subsequent document review in the course of verification that the actual project activity was implemented in accordance with the registered VCS-PD.

Nevertheless following CAR was raised during the course of verification and closed successfully.

Related Findings

☐ No CARs, CLs or FARs have been identified in this context

☒ The following finding(s) have been addressed:

Project implementation	**3.2-1**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	PP needs to detail out all the major breakdown and maintenance records for the entire monitoring period (2008-2009) in Section B of the Monitoring Report. Corrections are sought in this regard.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The major breakdown and maintenance records have been provided in section B.5.		
DOE Assessment #1 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The Major breakdown and maintenance records are included in the revised monitoring report. The same is checked by the assessment team from the breakdown log records/BR/ onsite and found correct. Thus the CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements		

Final Assessment

All the WEGs are commissioned and are under operation. The commissioning certificates/CR/ of the WEG is cross checked by the assessment team to confirm the commissioning of the WEGs. It was also checked during the site visit none of the meters have been changed and the project is implemented as described in the registered VCS PD.

3.3 Completeness of monitoring

Description

The reporting/MR2//XLS2/ is in line with the requirements of validated monitoring plan and as well as with the applied methodology ACM002 version 10. The emission reductions for the reported monitoring period is based on net electricity of 85795.73MWh sold to Madhya Pradesh State Electricity Board which is connected to NEWNE grid of India. During the site visit the verification team cross checked through interviews/IM01/ and confirmed that the monthly JMR (Joint Meter Reading) provides the export, import and net electricity supplied to the grid (Net electricity supplied = Electricity export - Electricity import). This data forms the basis of emission reduction calculations.

The net electricity exported to the grid is calculated from the electricity exported and imported from the grid. These values are measured by the two way tri-vector energy meter of 0.5% accuracy class located at the common metering point. The monthly meter readings (main meter) at the metering point are jointly undertaken by O&M contractor on behalf of the project proponent and representatives of MPPKVVCL officials and form Joint Meter Reading (JMR) document and are signed by the witnessing officials of both parties. Based on the JMR, MPPKVVCL issues the monthly generation report showing the electricity generated by the WEGs to the project participant. The electricity meters are calibrated annually by electricity board officials and the calibration is traced to NABL standards. The CTPT (Current Transformer and Potential Transformer) unit installed to provide the required signals to main meter at the common metering point is of 0.5 % accuracy class.

None of the meters are changed /replaced during the monitoring period.

The calibration details of the meters are described below:

Meter type	Feeder Number	Meter Sr. No.	Substation	Accuracy class	Latest calibration done	Due calibration on
Main Meter	1	MPE15233	Sailana (Ratlam) substation	0.5%	23.03.2009	23.03.2010
Main Meter	3	MPE 33415	Sailana (Ratlam) substation	0.5%	23.03.2009	23.03.2010

Related Findings

☐ No CARs, CLs or FARs have been identified in this context

☒ The following finding(s) have been addressed:

Monitoring Plan	**3.3-1**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	PP is requested to mention the calibration details e.g. calibration date, calibration due date, calibration frequency, calibration agency, serial number and the results of the calibration of Billing meters (MPSEB meter) located at common metering point used for measuring electricity export and import for the project activity. Corrections are sought in Section D.2 of monitoring report of the project activity.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Calibration details are provided in section D.2 of monitoring report.		
DOE Assessment #1 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The Calibration details for the year 2008 are not included in the revised Monitoring report. CAR is open in this context.		
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Two dedicated new main meters (Sr. No. MPE 15233 for 8 WEGs and MPE 33415 for 7 WEGs) were installed by MPPKVVCL at the time of commissioning in the year 2008 after testing. Both main meters were calibrated in the year 2009 as detailed below: Calibration due date: 23/03/2010 Date of calibration: 23/03/2009 Calibrating agency: MPPKVV Co. Ltd., Ratlam Result of calibration: No defect These details have also been provided in section D.2 as per CAR.		
DOE Assessment #2 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The calibration details are now included in the revised Monitoring report. The calibration details are checked by the assessment team and found the same to be correct. Thus the CAR is closed.		
Conclusion	☐ To be checked during the first periodic verification		

Tick the appropriate checkbox	☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements

Monitoring Plan	**3.3-2**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	As per the registered VCS PD, total electricity generation by the wind mills during the year y ($EG_{total,y}$) has to be monitored. However the monitoring report does not describe the same. Corrections are sought in this regard in section D.2 of the monitoring report.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	$EG_{total,y}$ is monitored at the controllers of the WEGs. It is used only for apportioning purpose as mentioned in revised monitoring plan.		
DOE Assessment #1 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	PP needs to incorporate the parameter in the monitoring plan as it is a part of registered VCS PD. Moreover, the values for $EG_{total,y}$ used for this monitoring period in the calculation of emission reduction should be the part of the monitoring plan. CAR is open in this context.		
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	$EG_{TOTAL,y}$ for the periods used in apportioning has been included in section D.2.		
DOE Assessment #2 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The Gross generation value is now included in the revised Monitoring report as per the registered VCS-PD. Thus the CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements		

Monitoring Plan	**3.3-3**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	During the document verification it was found that the main meter connected to Feeder no III was defective since October 2009 and thus the same is replaced during the annual calibration dated 19/03/2010. The error factor as per EB 52 annex 60 needs to be applied for the period from October 2009-Dec 2009. Correction is sought regarding the same.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	As per calibration report correction factors in export @ 5.88% and in import @ 6.29% have been applied for the period October-December 2009 for the 7 WTGs connected to the defected main meter installed at feeder -III. The VCU calculations and Monitoring report have been revised accordingly. Corrected Monitoring report and VCU calculations are being submitted.		
DOE Assessment #1 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The error factor for the month of October 2009-Dec 2009 for both the export and import reading is adjusted in the billing. The assessment team checked the emission reduction calculation and found the calculation to be conservative and in compliance with EB 52 Annex 60. Hence, CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements		

Final Assessment

Project is connected to state electricity board which is part of NEWNE grid through dedicated metering point (main meter) at HT side of the transformer. The serial number of the main meters are 15233 and 33415. The meters are calibrated annually as per the registered VCS PD which is in line with the requirement of Annex 60 EB52. JMR procedure was discussed with the Plant monitoring personnel and cross-checked with PPA /PPA/. During the site visit and subsequent interview with PP, it was found that none of the meter has been changed during the reported monitoring period. However, the main meter connected to Feeder no III was replaced on 19/03/2010 as it was found defective. The calibration report reveals that meter was malfunctioned from October 2009 to the date it was replaced i.e. 19/03/2010. The error factor for the month of October 2009-Dec 2009 for both the export and import reading is adjusted in the billing. The assessment team checked the emission reduction calculation and found the calculation to be conservative and in compliance with EB 52 Annex 60...

3.4 Accuracy of emission reduction calculations

Description

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The emission reductions ER_y due to project activity during a given year y is estimated as the difference between baseline emissions (BE_y), and project emissions (PE_y) & emissions due to leakage (L_y), as per the formula given below:

$ER_y = BE_y - PE_y - L_y$

The baseline emissions in the year y (in tCO_2), BE_y, due to electricity supplied to the grid are the product of the Baseline emissions factor, $EF_{grid,y}$ (in tCO_2 / MWh) and the electricity supplied to the grid in the year y, EG_y, (in MWh), over the crediting period as given below:

$BE_y = EG_y * EF_{grid,y}$

The Net electricity supplied by the project activity is calculated as the difference of electricity exported to the grid and electricity imported from the grid. The project emissions related to the project activity is zero. As per the applied methodology ACM0002 version 10, the project leakage emissions have been considered as zero for the project activity.

The net electricity supplied to the grid for each month has been cross checked with the JMR[/JMR/] sheets which are an authentic document. Also the values were cross checked with the invoices[/INV/] raised by the project participant to the MPPKVVCL. The Net electricity supplied to the grid during the monitoring period is 85795.73MWh. The baseline emission factor has been fixed ex-ante as 0.922 tCO_2/MWh based on the CEA data for NEWNE grid.

Based on the electricity supplied and the grid emission factor, baseline emissions for the present monitoring period are computed to 78,919tCO_{2e} All the figures as per the monitoring plan were cross checked by the assessment team against basic monitored data[/XLS2/] and the calculations were found to correct.

Nevertheless following CAR was raised and closed successfully based on revised MR and ER calculation sheet.

Related Findings

☐ No CARs, CLs or FARs have been identified in this context

☒ The following finding(s) have been addressed:

Emission Reduction Calculations	**3.4-1**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	PP is requested to compare the actual PLF obtained in the project activity and the PLF used in the ex-ante calculation of emission reductions (refer VCS PD) in section E.6 of the Monitoring Report. The implication therefore on additionality of the project activity must be justified. Correction is sought in this regard.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The comparison of actual PLF and ex-ante PLF has been carried out in section E.6 of the monitoring report. The required corrections have also been done in section E.4 and E.5.		
DOE Assessment #1 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The actual PLF obtained for the project activity is within the range of sensitivity (25.68±10% i.e. 23.11% to 28.25%) for which the project activity remains additional. The calculation is checked by the assessment team and found the same to be appropriate. Hence, CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements		

Emission Reduction Calculations	**3.4-2**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The emission reduction calculation for the month of December 2008 and December 2009 is not in line with the registered VCS PD i.e. apportioning method is not described in VCS-PD. Correction is sought in this regard.		

Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	An apportioning method has been proposed in section C of the monitoring report. The calculations of emission reduction for the month of December 2008 and December 2009 have been modified accordingly in sections E.4 and E.5. of the monitoring report. PP seeks deviation for this approach in the present and subsequent verification.
DOE Assessment #1 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The apportioning procedure is checked by the assessment team and found to be correct. The same though is not in line with the registered VCS PD but the approach to calculate the emission reduction is found conservative and thus the deviation from registered VCS PD is acceptable to the assessment team as the approach is in line with the practice followed onsite and will be same for the present and subsequent verification. Thus the CAR is closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements

Emission Reduction Calculations	**3.4-3**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The export and import values for the month of March 2008 are contradicting for the 8WEG and 7WEG installed onsite. Moreover, the export and import value for the month of April08, May08, August 08, September 08, December 08 and Jan09, March 09, April09 and August 09 is contradicting with JMR sheets. Correction is sought in this regard.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The corrections have been carried out as per JMR sheets. The JMR sheet for main meter A / B is categorised as per multification factor considered in it. JMR sheet for main meter A / B has the same multification factor throughout the monitoring periods.		
DOE Assessment #1 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The JMR sheets are checked by the assessment team and the correction are found appropriate for the respective months. Hence, CAR is closed.		

Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements

Emission Reduction Calculations	**CAR 3.4-4**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Sections E.5 of the MR version 01 compares the actual emission reductions with estimates in the VCS PD for a monitoring period which is not same in both the cases. PP is requested to justify the difference in actual and estimated value. Corrections are sought in this regard.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The table mentioned in section E.5 has been modified for actual and estimated emission reductions considering same period for both emission reductions.		
DOE Assessment #1 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The Justification is still missing in the relevant section of the MR. Hence, CAR is open.		
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The Justification has been provided in section E.5.		
DOE Assessment #2 *The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The Justification is acceptable to the assessment team and thus the CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements		

Final Assessment

The formula to calculate the Net electricity supplied from the project activity is already mentioned in the above text. The Online panel generation from all the WEG are recorded in the online SCADA system which is checked during the verification site visit and found OK.

The JMR sheet are checked by the verification team for the export and import of electricity and found ok. The approach to calculate the Net electricity supplied is checked with the PPA /PPA/ and found correct. The apportioning procedure to calculate the Net electricity exported to the grid for the period in which monitoring period is not in line with the billing period is found correct by the assessment team. The apportioning approach though is not mentioned in the registered VCS PD but the approach to calculate the emission reduction is found conservative and thus the deviation from registered VCS PD is acceptable to the assessment team as the approach is in line with the practice followed onsite and will be same for the present and subsequent verification.

The Emission reduction is product of net electricity supplied by the project and the grid emission factor (NEWNE regional grid). The net electricity supplied is cross-checked for every month while the grid emission factor remains fixed, thus the total emission reductions by the project is deemed accurate

Based on the net electricity supplied and the emission factor the baseline emissions for the present monitoring period are computed to be 78,919 tCO_{2e}. All the figures as per the monitoring plan were cross-checked by the verification team against basic monitored data /XLS2/ and the calculations were found to be correct"

3.5 Quality of evidence to determine emission reductions

Description

Proper data management inclusive of data acquisition and aggregation, data

management system is being followed for the project activity. All records needed for monitoring are archived in line with the requirements of the registered monitoring plan/VCS-PD/. No significant lack of evidence and missing data were detected during on-site verification.

It is evident from the monitoring data that the monitoring system ensures for continuous (except some routine breakdowns or outage) operation. All internal data are subjected to QA/QC measures. Suzlon is ISO 9001:2008/ISO/ certified and has proper procedures for data handling which is checked by the verification team to ensure that the QA/QC procedure is followed as per the ISO standard.

The monitoring personnel at site are well trained and capable enough to perform the routine tasks. The training records/TRA/ of the plant personals have been cross checked and found OK. Thus, they are competent to carry out the relevant tasks with sufficient accuracy. All necessary monitored and measured raw data were checked during on-site verification. The electricity exported to the grid and imported from the grid are the basic monitoring parameters. The net electricity is the difference between the export and import values which is cross checked by the verification team with JMR sheets and the commercial invoices and found correct.

☒ No CARs, CLs or FARs have been identified in this context

☐ The following finding(s) have been addressed:

Final Assessment

All internal data are subjected to QA/QC measures. Suzlon is ISO 9001:2008/ISO/ certified and has proper procedures for data handling which is checked by the verification team to ensure that the QA/QC procedure is followed as per the ISO standard.

Daily report for each WEG is generated in the online monitoring system (SCADA system) which has the data stored since the commissioning of the WEG and has been verified to confirm the gross-generation and breakdown values. The data for VCS is complied and maintained by the O&M contractor, the data w.r.t to VCS requirements are stored for whole crediting period and additional 2 years. Calibration of the meters used for the project activity is being scheduled annually as mentioned in the registered PD.

All necessary monitored and measured raw data were checked during on-site verification (Ref Annex-2 of this report). The electricity exported to the grid and

imported from the grid are the basic monitoring parameters.

3.6 Management and operational system

Description

All the responsibilities which has been allocated as per the validated VCS PD has been followed during the monitoring period. All the data has been archived and the calculations are in line with the VCS PD.

The project participant has undertaken maintenance and service agreement with Suzlon Infrastructure Services Limited, the contractor. The performance of the WEGs, safety in operation and scheduled / breakdon maintenance are organised and monitored by the contractor. Representative of the contractor are also involved in the jointly certifying the billing meter reading. Thus the authority and responsibility of the project management lies with the contractor. Daily meters readings and compilation of daily reports, providing readings to the project participant are the joint responsibility of site operator and shift in charge.

The responsibility of monitoring the project activity and record keeping, collecting credit reports and raising invoices are undertaken by the project participant (RSIL personnel's). All monitored data are archived in Physical and Electronic form. The data will be kept for the whole crediting period and additional 2 years as given in the PD.

Related Findings

☒ No CARs, CLs or FARs have been identified in this context

☐ The following finding(s) have been addressed:

Final Assessment

All the management operational procedures are in place as per the registered VCS

PD. Suzlon is an ISO certified organization and thus all the QA/QC procedures are as per the standard. The archiving of the data is both in electronic and paper format and is in line with the VCS PD.

4 VERIFICATION STATEMENT

M/s Ruchi Soya Industries Limited has commissioned the TÜV NORD JI /CDM Certification Program to carry out the verification of the Project "22.5 MW Wind Power Project by Ruchi Soya Industries Limited at Palsodi, District-Ratlam, Madhya Pradesh" in Palsodi village of Ratlam district, Madhya Pradesh, India with regard to the requirements of VCS 2007.1 Standard.

The project activity involves installation of 15 Wind Energy Convertors of 1.5 MW each and selling power to MPPKVVCL, a company of Madhya Pradesh State Electricity Board (MPSEB), connected with the NEWNE grid at 132 kVA substation at Sailana (Ratlam). The purpose of the project activity is to utilize wind energy which is a renewable source of energy for generation of electricity. The project activity displaces the electricity of NEWNE grid of India that would have been generated mainly from fossil fuel based power generation.

In the course of the verification 8Corrective Action Requests (CARs), 0 Clarification Requests (CLs) were successfully closed and 0 Forward Action Request (FAR) will be verified during the subsequent periodic verification.

As per the registered VCS PD the Net Electricity exported to the grid (when monitoring period is not matching with the billing period) is not in line with the approach mentioned in the registered VCS PD. To calculate the Net electricity exported to the grid for the period when monitoring period is not in line with the billing period an apportioning procedure is adopted by the project participant.

The verification team has checked the apportioning procedure calculation and found the same to be correct and appropriate Thus the deviation from the VCS PD is acceptable to the assessment team as the apportioning approach is in line with the practice followed onsite and will be same for the present and subsequent verification. The deviation is also in line with the stipulation of VCS 2007.1 section 5.3.as the deviation don't impact negatively on the conservativeness of the VCS program approved methodology`s criteria and procedures to quantify data leading to GHG emission reductions.

As the result of the 1st periodic verification, the verifier confirms that :

- All operations of the project are implemented and installed as planned and described in the project design.
- The monitoring system is in place and in line with the approved methodology AMS.I.D version 15.

- The installed equipment essential for recording generation accounting the emission reductions runs reliably and is calibrated appropriately.

- GHG emission reductions are calculated without any material misstatements in a conservative and appropriate manner.

- All the documents checked during on-site visit and verification process will be kept confidential and will not be disclosed at any time other than the project proponent consent or as required by VCSA.

TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned monitoring period as follows:

Monitoring period	Project Participant	Monitoring Period		Emission Reductions Achieved (tCO2)
		From	To	
First	Ruchi Soya Industries Limited	29/02/2008	31/12/2008	31,591
Second	Ruchi Soya Industries Limited	01/01/2009	31/12/2009	47,328

Emission reductions 78,919 t CO_{2e} equivalents

TÜV NORD JI/CDM Certification Program

Verification Team Leader

Mumbai, 2011-02-02

TÜV NORD JI/CDM Certification Program

Final Approval

Essen, 2011-02-02

5 REFERENCES

Table 5-1: Documents provided by the project participant

Reference	Document
/BR/	Breakdown/Annual maintenance records during the monitoring period (29/02/2008 to 31/12/2009).
/CAL/	Calibration certificates for main meters (MPE15233 and MPE 33415) installed onsite : Calibration due date: 23/03/2010 Date of calibration: 23/03/2009Calibrating agency: MPPKVV Co. Ltd., Ratlam Result of calibration: No defect
/CR/	Commissioning certificates of all the WECs located at site. 1. First 5 machines dated 29/02/2008 2. Second 07 machines dated 29/03/2008 3. Third 3 machines dated 30/05/2008
/GEN/	Generation at the Online meter for each WECs during the complete monitoring period.
/INV/	Invoices raised to the Electricity Board by Ruchi Soya Industries Limited for the project activity during the complete monitoring period (29/02/2008 to 31/12/2009).
/ISO/	Copy of ISO certificate confirming the ISO 9001:2008 Standard.
/JMR/	Copy of JMR sheets covering the entire monitoring period.
/LA/	Layout of the project site, describing the metering positions.
/MR1/	Draft Monitoring Report dated 25/09/2010 version 01 based on which Verification activity was carried out
/MR2/	Final Monitoring report dated 01/02/2011version 03 based on which Verification opinion is provided in the report.
/O&M/	Operation and Maintenance contract dated 11/07/2009 signed with Suzlon Infrastructure Services Limited.
/PPA/	Power Purchase Agreement between Ruchi Soya Industries Limited

Reference	Document
	and MPSEB dated 11/08/2008.
/RD/	Declaration by the project proponent stating no intention of creatingand trading of another form of environmental credits out of VERs wouldbe created from this given project (Cp para 1.13 of VCS PD template)
/SLD/	Single line diagram covering all the WECs and metering system.
/TS/	Technical specifications of the Wind Turbines installed onsite.
/TR/	Training requirements of the personnel working onsite.
/XLS/	1. Draft ER calculation spreadsheet. 2. Final Emission reduction calculation sheet.

Table 5-2: Background investigation and assessment documents

Reference	Document
/ACM0002/	Approved consolidated baseline and monitoring methodology ACM0002 version 10 - "Consolidated baseline methodology for grid connected electricity generation from renewable sources".
/VCS-PD/	Final Project Document validated under VCS 2007.1.
/FValR/	Final validation report dated 23/02/2010
/VCS/	Voluntary Carbon Standard 2007.1
/TA/	Tool to calculate the emissions factor for an electricity system Version 01.1
/VVM/	Verification and Validation Manual (Version 1.2 as per EB 55)

Table 5-3: Websites used

Reference	Link	Organisation
/cea/	www.cea.nic.in	Central Electricity Authority

Reference	Link	Organisation
/vcs/	www.v-c-s.org	VCSA
/unfccc/	http://cdm.unfccc.int	UNFCCC

Table 5-4: List of interviewed persons

Reference	MoI[1]		Name	Organisation / Function
/IM01/	V	☒ Mr. ☐ Ms	Vinay Sah	Vice President, Ruchi Soya Industries Limited
/IM01/	V	☒ Mr. ☐ Ms.	Mr. Sankalp Ved	Senior Manager, Ruchi Soya Industries Limited
/IM01/	V	☒ Mr. ☐ Ms	Mr. Amit Shukla	Manager, Ruchi Soya Industries Limited

1) Means of Interview: (**T**elephone, **E**-Mail, **V**isit)