



VALIDATION REPORT

REGARDING CHANGES FROM THE
PROJECT ACTIVITY AS DESCRIBED IN THE
REGISTERED PDD

RATNAMANI METALS AND TUBES LTD
(RTML)

**13.25 MW WIND POWER GENERATION BY RMTL, IN
KUTCH, GUJARAT**

Report No: 8107679667– 11/012 V01

Date: 2011-06-20

TÜV NORD CERT GmbH
JI/CDM Certification Program
Langemarckstraße, 20
45141 Essen, Germany
Phone: +49-201-825-3335
Fax: +49-201-825-3290
www.tuev-nord.de
www.global-warming.de



Validation Report on requested changes	Report No. 8107679667– 11/012	Rev. No. 0	Date of 1st issue: 2011-06-20	Date of this rev. 2011-06-20
Project:	Title: 13.25 MW Wind Power Generation by RMTL, in Kutch, Gujarat		Registration date: 2009-03-25	UNFCCC-No.: 2247
Project Participant(s):	Host party: India		Other involved parties:	
Applied methodology/ies:	Title: Grid connected renewable electricity generation		No.: AMS-I.D. ver. 13	Scope: 01/T
Requested Changes:	Kind of requested changes <input type="checkbox"/> From the start <input checked="" type="checkbox"/> After implementation		Effective as of: 2007-06-30	Last issuance: -
Revised PDD:	Title: 13.25 MW Wind Power Generation by RMTL, in Kutch, Gujarat		Draft version: -	Final version: 2011-06-14
Validation team / Technical Review and Final Approval	Validation Team: Mr. Pankaj Patel Mr. Indrapal Parmar Mr. Hemang Shah Mr. Saroj K Sahoo Mr. Sanjay Kandari		Technical review: Mr. Ingo Klein Mr. David Lubanga (T)	Final approval: Mr. Rainer Winter
Validation Opinion:	<p>The changes do not raise concerns with respect to aspects outlined in paragraph 10(c) of EB 48 Annex 66 i.e.</p> <ul style="list-style-type: none"> a. additionality of the project b. scale of the CDM project activity and c. applicability and application of the Approved Baseline Methodology under which the project activity has been registered. <p>Thus a notification of changes from the project activity as described in the registered PDD to the UNFCCC is deemed appropriate, in line with the requirements outlined in EB 48 Annex 66.</p>			
Document information:	Filename: 2011-06-20 S01-VA010-A4_FVR_Ratnamani-withoutcomment			No. of pages: 27

Abbreviations

CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO₂	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
CP	Certification Program
DNA	Designated National Authority
EB	CDM Executive Board
FAR	Forward Action Request
GHG	Greenhouse gas(es)
PDD	Project Design Document
PP	Project Proponent
QC/QA	Quality control/Quality assurance
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
WTG	Wind Turbine Generator

Table of Contents	Page
1 OBJECTIVE / SCOPE	5
2 DESCRIPTION OF THE PROJECT AND REQUESTED CHANGES	6
2.1 Project Characteristics	6
2.2 Involved Parties and Project Participants	7
2.3 Project Location	7
2.4 Technical Project Description	7
2.5 Type of Requested Changes	8
2.6 Description of requested changes	8
2.7 Impact of changes on the ability to deliver emission reductions	9
3 METHODOLOGY AND VALIDATION SEQUENCE	10
3.1 Validation Steps	11
3.2 Appointment of team members and technical reviewers	11
3.3 Review of Documents	12
3.4 Follow-up Interviews	13
3.5 Resolution of Clarification and Corrective Action Requests	13
3.5.1 Definition	13
3.5.2 Draft Validation	14
3.5.3 Final Validation	14
3.6 Technical review	14
3.7 Final approval	14
4 VALIDATION FINDINGS	16
5 VALIDATION ASSESSMENT SUMMARY	18
6 VALIDATION OPINION	21
7 REFERENCES	22
ANNEX 1: ASSESSMENT OF FINANCIAL PARAMETERS.....	26
ANNEX 2: ASSESSMENT OF BARRIER ANALYSIS	27

1 OBJECTIVE / SCOPE

Ratnamani Metals and Tubes Ltd (RMTL) has commissioned the TÜV NORD JI/CDM Certification Program (CP) to carry out the verification of monitoring period # 1 of the project

“13.25 MW Wind Power Generation by RMTL, in Kutch, Gujarat”

In this context of this verification the need was identified to carry out a *validation regarding changes from the project activity as described in the registered PDD*.

This specific report covers the validation regarding changes from the project activity as described in the registered PDD with regard to the relevant requirements for CDM project activities (esp. EB 48 Annex 66 / 67). The purpose of a validation regarding changes is to have an independent third party assess whether the project is still in compliance with the

- approved CDM Methodology under which it was registered; esp. w.r.t. the applicability criteria,
- category of the CDM project activity,
- CDM additionality requirements.

The validation scope is given as a thorough independent and objective assessment to ensure that the CDM project activity still meets all relevant and applicable CDM criteria after the implementation of changes of the project design, as described in the registered PDD.

2 DESCRIPTION OF THE PROJECT AND REQUESTED CHANGES

2.1 Project Characteristics

Essential data of the project is presented in the following Table 2-1.

Table 2-1: Project Characteristics

Item	Data
Project title	13.25 MW Wind Power Generation by RMTL, in Kutch, Gujarat
Project size	<input type="checkbox"/> Large Scale <input checked="" type="checkbox"/> Small Scale
Project Scope (according to UNFCCC sectoral scope numbers for CDM)	<input checked="" type="checkbox"/> 1 Energy Industries (renewable- /non-renewable sources)
	<input type="checkbox"/> 2 Energy distribution
	<input type="checkbox"/> 3 Energy demand
	<input type="checkbox"/> 4 Manufacturing industries
	<input type="checkbox"/> 5 Chemical industry
	<input type="checkbox"/> 6 Construction
	<input type="checkbox"/> 7 Transport
	<input type="checkbox"/> 8 Mining/Mineral production
	<input type="checkbox"/> 9 Metal production
	<input type="checkbox"/> 10 Fugitive emissions from fuels (solid, oil and gas)
	<input type="checkbox"/> 11 Fugitive emissions from production and consumption of halocarbons and hexafluoride
	<input type="checkbox"/> 12 Solvents use
	<input type="checkbox"/> 13 Waste handling and disposal
	<input type="checkbox"/> 14 Afforestation and Reforestation
	<input type="checkbox"/> 15 Agriculture
Applied Methodology	AMS-I.D. ver. 13 - Grid connected renewable electricity generation
Technical Area(s)	T: Renewables – Wind
CDM registration No.	2247
Crediting period	<input type="checkbox"/> Renewable Crediting Period (7 y) <input checked="" type="checkbox"/> Fixed Crediting Period (10 y)

2.2 Project Verification History

Essential events since the registration of the project are presented in the following Table 2-2.

Table 2-2: Project verification history

#	Item	Time	Status
1	Date of registration	2009-03-25	Registered
2	Start of crediting period ¹	2009-03-25	Started
3	1 st Monitoring period	2009-03-25 to 2010-10-31	Ongoing

¹ As per the registered PDD (version 1)

2.3 Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-3).

Table 2-3: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	India	Ratnamani Metals and Tubes Ltd

2.4 Project Location

The details of the project location are given in table 2-4:

Table 2-4: Project Location

No.	Project Location
Host Country	India
Region:	District: Kutch State: Gujarat
Project location address:	Village: Arikhana, Kamand, Suthri,
Latitude:	Refer table 2-4.1
Longitude:	Refer table 2-4.1

Table 2-4.1: Geographical Coordinates of Project activity

Sl. No	WTG ID	WTG No.	Latitude (North)	Longitude (East)
			Degree, Minutes, Seconds	Degree, Minutes, Seconds
1	V12	SEL/1250/05-06/0139	22° 51'	68° 32'
2	M81	SEL/1500/06-07/0361	23° 03'	68° 52'
3	M80	SEL/1500/06-07/0360	23° 03'	68° 52'
4	M64	SEL/1500/06-07/0383	23° 02'	68° 52'
5	M82	SEL/1500/06-07/0384	23° 02'	68° 52'
6	M123	SEL/1500/06-07/0359	23° 00'	68° 55'
7	M98	SEL/1500/06-07/0358	23° 03'	68° 52'
8	M143	SEL/1500/06-07/0382	23° 02'	68° 53'
9	M147	SEL/1500/06-07/0362	23° 02'	68° 54'

2.5 Technical Project Description

The Project activity is the installation and operation of 09 Wind Turbine Generators of capacity (08*1.5+01*1.25) MW aggregating a total capacity 13.25 MW in Kutch

region of state Gujarat in India. The 10.5 MW i.e. (7*1.5) MW power produced from the project activity is exported to Urja Vikash Nigam Ltd. (GUVNL) through the transmission company Gujarat Electricity Transmission Corporation Limited (GETCO) which comes under NEWNE grid of India and the rest of 2.75 MW i.e. (1*1.5+1*1.25) MW power is wheeled by the project proponent for its own captive consumption. Thus, the project activity displaces equivalent amount of energy generated through fossil fuel based power plants, contributing to sustainable development and conservation of natural resources through use of wind which is renewable source of energy.

The key parameters for the S-82 & S-64, Suzlon make (1500 kW & 1250 kW WTGs) are given in table 2-5:

Table 2-5: Technical data of the project activity

Parameter	1.25 MW WTG	1.5 MW WTG
Rotor		
Electrical output	1250 kW	1500 kW
Diameter	64 m	82.0 m
Rotor swept area	3217 m ²	5281 m ²
Regulation	Pitch	Pitch
Generator		
Type	Asynchronous generator, 4 Poles	Single speed induction generator with slip rings
Rotational speed	1006/1506 RPM	1511 RPM
Rated Voltage	690 V	690 V
Gear Box		
Type	3 stage gear box; 1 planetary and 2 helical	3 stage gear box; 1 planetary and 2 helical
Gear Ratio	74.917:1	1: 95.09
Yaw System		
Drive	4 active electrical yaw motors	Active Electrical yaw motor
Safety System		
Mechanical System	Spring powered disc brakes, hydraulically released, fail safe	Hydraulic disc brake

2.6 Requested changes

2.6.1 Type of Changes

The “Procedure for notifying and requesting approval of changes from the project activity as described in the registered PDD” distinguishes 2 situations as per table 2-6:

Table 2-6: Type of changes – implementation stage

Category	Implementation stage
A	Changes occur from the start of the project activity, i.e. the project has never been implemented in accordance with the description in the registered PDD
B	Permanent changes occur after the project activity has been implemented in accordance with the description in the PDD and issuance of CERs has taken place.

The changes within this project activity fall under category a).

2.6.2 Description of requested changes

The validation addresses the following changes from the registered PDD:

70% of the wheeling power from one among the WTG of capacity 1.5 MW (with WTG No-SEL/1500/06-07/0362) which was considered for the assessment of additionality is now being corrected to 100%.

2.6.3 Reasons for requested changes

It was stated in the registered PDD that 70% power produced from one among 8 WTGs of 1.5 MW capacity (with WTG No-SEL/1500/06-07/0362) was to be wheeled to the manufacturing unit of the project proponent while in actual 100% of power produced from the same WTG is being wheeled. This is the reason for which project proponent has sought for the correction in registered PDD.

2.6.4 Occurrence of changes

As per the wheeling agreement^{/WHLA/} dated 2007/12/04, signed by the project proponent with GETCO (Gujarat Energy Transmission Corporation Limited), 100% of power produced from the WTG could be wheeled to the manufacturing unit with a provision of treating the excess energy (after subtracting the set off against monthly consumption) as sell to grid. The WTG was commissioned^{/CC/} on 2007/06/30 and since then 100% of power from the WTG is being wheeled to the manufacturing unit. However, at the time of conceptualisation, based on the requirement of the manufacturing unit, the project proponent had envisaged to wheel 70% of power produced by the WTG and subsequently, the same was considered for the assessment of additionality of the project. The project got registered under CDM on 2009/03/25.

The issue was identified by the verification team during the course of 1st periodic verification and a clarification was sought by the verification team on the same in response of which the PP has requested for the correction in the registered PDD in accordance with EB 48 Annex 66 / 67.

2.6.5 Impact of changes on the ability to deliver emission reductions

The wheeling of power from the WTG does not have any impact on the ability to deliver the emission reduction from the project activity. The baseline of the project activity is still valid and in line with the applied methodology AMS I D, version 13. Thus, the validation team conclude that the above changes do not impact on the emission reduction of the project activity.

3 METHODOLOGY AND VALIDATION SEQUENCE

3.1 Validation Steps

The *validation of requested changes from the project from the Project Activity as described in the Registered PDD* consisted of the following steps:

- Appointment of team members and technical reviewers
- A desk review of the original and revised PDD^{/PDD/} submitted by the client and additional supporting documents
- On-Site assessment (if required)
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft validation reporting – in case of CARs or CLs
- Resolution of corrective actions (if any)
- Final validation reporting
- Technical review
- Final approval of the validation,

The sequence of the validation is given in the table 3.1 below:

Table 3.1: Validation sequence

Topic	Date
On-site visit	2011-02-08
Draft reporting finalised	2011-03-21
Final reporting finalised	2011-06-20
Technical review on final reporting finalised	2011-06-20

3.2 Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a validation team, consistent of one team leader and 3 additional team members and one observer were appointed. Furthermore also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-2 below.

Table 3-2: Involved Personnel

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Scheme competence	Technical competence ⁴⁾	Host country Competence	Team Leading competence
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Pankaj Patel	TUV-India	TL	LA	<input checked="" type="checkbox"/>	–	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Hemang Shah	TUV-India	TM	A	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Saroj Sahoo	TUV-India	TM	A	<input checked="" type="checkbox"/>	–	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Indrapal Parmar	TUV-India	TM	TE	<input type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Sanjay Kandari	TUV-India	OT	T	<input type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	David Lubanga	TÜV NORD Cert	OR ³⁾	T	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ingo Klein	TUV-Nord	TR ³⁾	LA	<input checked="" type="checkbox"/>	1.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Rainer Winter	TUV-Nord	FA ³⁾	SA	<input checked="" type="checkbox"/>	1.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>

¹⁾ TL: Team Leader, TM: Team Member, TR: Technical review, OT: Observer-Team, OR: Observer-TR, FA: Final approval

²⁾ GHG Auditor Status: A: Assessor, E: Expert, SA: Senior Assessor, T: Trainee, TE: Technical Expert

³⁾ No team member

⁴⁾ As per S01-MU03 or S01-VA070 A2 (such as A, B, C...)

3.1 Review of Documents

The registered as well as the revised PDD and supporting background documents related to the project design and the requested changes were reviewed.

Furthermore, the validation 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.

3.2 Follow-up Interviews

The validation 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 CDM.

During validation the validation 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 3-3.

Table 3-3: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
1. Projects & Operations Personnel ^{/IM01/} : Ratnamani Metals and Tubes Ltd (RTML)	<ul style="list-style-type: none"> - General aspects of the project - Technical equipment and operation - Changes since validation - Monitoring and measurement equipment - Remaining issues from validation
2. Operation and maintenance service provider ^{/IM01/} : Suzlon Infrastructure Services Limited.	<ul style="list-style-type: none"> - Calibration procedures - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management
3. Consultant ^{/IM02/} : Emergent Ventures India Private Limited	<ul style="list-style-type: none"> - Data uncertainty and residual risks - GHG emission reduction calculation - Procedural aspects of the verification - Maintenance - Environmental aspect

A comprehensive list of all interviewed persons is part of section 7 'References'.

3.3 Resolution of Clarification and Corrective Action Requests

3.3.1 Definition

A **Corrective Action Request (CAR)** will be 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 validation of the intended / implemented changes,
- there is a risk that the changes can not be approved by the UNFCCC or that emission reductions would not be able to be verified and certified after the implementation of the changes.

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 subsequent verification(s).

3.3.2 Draft Validation

After reviewing all relevant documents and taken all other relevant information into account, the validation team issues all findings in the course of a draft validation report and hands this report over to the project proponent in order to respond on the issues raised and to revise the project documentation accordingly.

3.3.3 Final Validation

The final validation starts after issuance of the proposed corrective action (CA) of the CARs CLs and FARs by the project proponent. The project proponent has to reply on those and the requests are “closed out” by the validation team in case the response is assessed as sufficient. In case of raised FARs the project proponent has to respond on this, identifying the necessary actions to ensure that the topics raised in this finding are likely to be resolved at the latest during the next verification. The validation team has to assess whether the proposed action is adequate or not.

In case the findings from CARs and CLs cannot be resolved by the project proponent or the proposed action related to the FARs raised cannot be assessed as adequate, no positive validation opinion can be issued by the validation team.

The CAR(s) / CL(s) / FAR(s) are documented in chapter 4.

3.4 Technical review

Before submission of the final validation report a technical review of the whole validation procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the validation opinion and the topic specific assessments as prepared by the validation team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.5 Final approval

After successful technical review of the final report an overall (esp. procedural) assessment of the complete validation on requested changes will be carried out by a senior assessor located in the accredited premises of TÜV NORD.



Only after this step the notification or the request for approval of the changes on the project activity can be forwarded to the UNFCCC (in case of a positive validation opinion).

4 VALIDATION FINDINGS

The findings (CARs, CLs and FARs) of validation process are summarized in the tables below.

Finding:	CL 1		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>The Project proponent has to provide the clarification on the following issues;</p> <ol style="list-style-type: none"> 1. The reasons for the requested change. 2. When was it occurred, if this was known to the PP before registration of the project? 3. Since in the registered PDD, 70% of wheeling of one among 1.5 MW WTG was considered where as in actual it is 100%, how it does not affect the additionality. 		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<ol style="list-style-type: none"> 1) The registered PDD reports that 70% of the power generated in one WTG would be wheeled to the manufacturing unit of PP, while in actual 100% of this power is being wheeled. 2) The wheeling agreements were signed for 1.25MW capacity on dated 19/06/06 and for 1.5MW capacity on 19/12/07. Both are prior the date of CDM registration of project. Though, the wheeling agreement specifies that the PP could wheel 100% power to its own unit however, any power in excess to wheeled power and transmission loss would be treated as sold to the grid. Initially, PP had envisaged that only 70% of power would be required to be wheeled to its own unit. However, it could use 100% in actual during the current monitoring period. 3) This change does not affect project additionality; this is shown in the financial sheet incorporating this scenario, submitted to the DOE. 		
DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<ol style="list-style-type: none"> 1. It was stated in the registered PDD that 70% power produced from one among 8 WTGs of 1.5 MW capacity (with WTG No-SEL/1500/06-07/0362) was to be wheeled to the manufacturing unit of the project proponent while in actual 100% of power produced from the same WTG is being wheeled. This is the reason for which project proponent has sought for the correction in registered PDD. 2. As per the wheeling agreement^{WHLA/} dated 2007/12/04 signed by the project proponent with GETCO (Gujarat Energy Transmission Corporation Limited), 100% of power produced from the WTG could be wheeled to the manufacturing unit with a provision of treating the excess energy (after subtracting the set off against monthly consumption) as sell to grid. The WTG was commissioned^{CC/} on 2007/06/30 and since then 100% of power from the WTG is being wheeled to the manufacturing unit. However, at the time of conceptualisation, based on the requirement of the manufacturing unit, the project proponent had envisaged to wheel 70% of power produced by the WTG 		

Finding:	CL 1																							
	<p>and subsequently, the same was considered for the assessment of additionality of the project. The project got registered under CDM on 2009/03/25.</p> <p>The issue was identified by the verification team during the course of 1st periodic verification and a clarification was sought by the verification team on the same. In response of which the PP has requested for the correction in the registered PDD in accordance with EB 48 Annex 66 / 67.</p> <p>3. The revised calculation sheet^{/XLS/} and the corrected PDD^{/PDD-REV/} are submitted by the project proponent to the validation team. The value of 100% of wheeling has now been considered in cell no. E21 of sheet, “total ER” instead of 70%. The effective tariff for the assessment of additionality was calculated based on weighted average basis considering 70% of wheeling from the WTG under consideration. Now the same has been revised in cell no. C36 of sheet, “Key Assumption”. The effective tariff is now revised from 3.62 Rs/Kwh to 3.67 Rs/Kwh.</p> <p>The project has been assessed to remain additional even after that; the revised project IRR thus comes after considering 100% wheeling of the WTG is 10.16% while the benchmark of the project is 13.4%. The sensitivity analysis has also been found to be valid even after considering the revised input value as a base case. The revised sensitivity analysis established after the correction is as follows.</p> <table><tr><th rowspan="2">Sensitivity factors considered</th><th colspan="3">Project IRR</th></tr><tr><th>-10%</th><th>Baseline</th><th>+10%</th></tr><tr><td>Project cost</td><td>11.57%</td><td>10.16%</td><td>8.98%</td></tr><tr><td>CUF</td><td>8.52%</td><td>10.16%</td><td>11.72%</td></tr><tr><td>O&M cost</td><td>10.46%</td><td>10.16%</td><td>9.87%</td></tr><tr><td>Benchmark</td><td>13.4%</td><td>13.4%</td><td>13.4%</td></tr></table> <p>Thus, it could be concluded that the additionality of the project is still intact even after considering 100% of wheeling of the WTG instead of 70%.</p> <p>CL is closed.</p>	Sensitivity factors considered	Project IRR			-10%	Baseline	+10%	Project cost	11.57%	10.16%	8.98%	CUF	8.52%	10.16%	11.72%	O&M cost	10.46%	10.16%	9.87%	Benchmark	13.4%	13.4%	13.4%
Sensitivity factors considered	Project IRR																							
	-10%	Baseline	+10%																					
Project cost	11.57%	10.16%	8.98%																					
CUF	8.52%	10.16%	11.72%																					
O&M cost	10.46%	10.16%	9.87%																					
Benchmark	13.4%	13.4%	13.4%																					
Conclusion <i>Tick the appropriate checkbox</i>	<div><input type="checkbox"/> To be checked during the first periodic verification</div> <div><input checked="" type="checkbox"/> Appropriate action was taken</div> <div><input type="checkbox"/> Project documentation was corrected correspondingly</div> <div><input type="checkbox"/> Additional action should be taken</div> <div><input checked="" type="checkbox"/> The project complies with the requirements</div>																							

5 VALIDATION ASSESSMENT SUMMARY

5.1 General

Ratnamani Metals and Tubes Ltd (RMTL) has commissioned the TÜV NORD JI/CDM Certification Program (CP) to conduct a *validation regarding changes from the Project Activity as Described in the Registered PDD* of the project:

“13.25 MW Wind Power Generation by RMTL, in Kutch, Gujarat”

with regard to the relevant requirements of the UNFCCC esp. the *Procedure for notifying and requesting approval of changes from the project activity as described in the registered project design document* (EB 48, Annex 66) ^{/PNRAC/} and the *Guidelines on assessment of different types of changes from the project activity as described in the registered PDD* ^{/GADTC/}.

In the course of the validation 1 Clarification Requests (CLs) was raised and closed successfully. No Corrective Action Request (CAR) or Forward Action Request (FAR) was raised by the validation team during the validation.

The review of the revised project design documentation and additional documents related to changes to the project design and monitoring plan; the subsequent background investigation and follow-up interviews have provided TÜV NORD JI/CDM CP with sufficient evidences for assessment.

5.2 Additionality

5.2.1 Methodology

In the original project documentation the additionality was justified in line with the requirements of AMS ID version 13.

5.2.2 Decisive Route of Additionality Justification

During the original validation of the project the additionality was justified on the basis of a financial analysis. A corresponding Excel file was presented and attached to the validation report. The project IRR of this project activity was determined to be 9.97%.

5.2.3 Re-Assessment of Additionality

The revised calculation sheet^{/XLS/} and the corrected PDD^{/PDD-REV/} are submitted by the project proponent to the validation team. The value of 100% of wheeling has now been considered in cell no. E21 of sheet, “total ER” instead of 70%. The effective tariff for the assessment of additionality was calculated based on weighted average basis considering 70% of wheeling from the WTG under consideration. Now the same has been revised in cell no. C36 of sheet, “Key Assumption”. The effective tariff is now revised from 3.62 Rs/Kwh to 3.67 Rs/Kwh. The project has been assessed to

remain additional even after that; the revised project IRR thus comes after considering 100% wheeling of the WTG is 10.16% while the benchmark of the project is 13.4%. The sensitivity analysis has also been found to be valid even after considering the revised input value as a base case. The revised sensitivity analysis established after the correction is as follows.

Sensitivity factors considered	Project IRR		
	-10%	Baseline	+10%
Project cost	11.57%	10.16%	8.98%
CUF	8.52%	10.16%	11.72%
O&M cost	10.46%	10.16%	9.87%
Benchmark	13.4%	13.4%	13.4%

Thus, it could be concluded that the additionality of the project is still intact even after considering 100% of wheeling of the WTG instead of 70%.

5.2.4 Result of Additionality Re-Assessment

The consideration of 100% of wheeling of power from the WTG instead of 70% increased the project IRR from 9.97% to 10.16%. However, the revised project IRR has been observed to be well below the benchmark IRR of 13.4%. The upper range i.e. 10% of the sensitivity factor also doesn't allow the project IRR to cross the benchmark. Thus, the validation team conclude that the project is still additional even after the requested correction in the PDD^{/PDD-REV/}.

5.3 Scale of the Project activity

The revision in the percentage share of wheeling of one among the WTGs of capacity 1.5 MW from 70 to 100 does not have any impact on the scale of the project activity as the number of installed WTGs and the installed capacity are still the same. The total capacity of the project was 13.25 MW which has remained same even after the requested correction.

5.4 Applicability and application of the Approved Baseline Methodology

The requested change does not affect baseline of the project activity and the baseline and the monitoring plan of the project activity is still in line with the applied methodology, AMS I D, version 13.

5.5 Other issues

Along with this validation regarding changes the PP has taken the initiative to correct inconsistencies in the registered XLS calculation sheet^{/REG-XLS/} which are not related to the technical changes done. The validation team confirms that the changes are

- (i) only of editorial nature and not related to the technical changes in question and
- (ii) the editorial changes are justified and correct.

In detail:

1. The financial indicator used for the assessment of additionality of the project activity is “project IRR” where as in cell no. B18, of the sheet, “IRR” it was written as “equity IRR”. In the registered PDD it has been written correctly as “project IRR”. The same has now been corrected in the revised calculation sheet submitted by the project proponent.
2. Since 100% of the wheeling is now considered for the WTG under consideration in place of 70%, the basis of the input parameter in cell no. D36 of the sheet, “Key Assumption” is revised accordingly in the revised calculation sheet.

6 VALIDATION OPINION

The changes do not raise concerns with respect to aspects outlined in paragraph 10 c) of EB 48 Annex 66 i.e.

- d. additionality of the project
- e. scale of the CDM project activity and
- f. applicability and application of the Approved Baseline Methodology under which the project activity has been registered.

Thus a notification of changes from the project activity as described in the registered PDD to the UNFCCC is deemed appropriate, in line with the requirements outlined in EB 48 Annex 66.

Vadodara, 2011-06-14

A handwritten signature in black ink, appearing to read "P. Patel".

Pankaj Patel
TÜV NORD JI/CDM CP
Verification Team Leader

Essen, 2011-06-20

A handwritten signature in black ink, appearing to read "R. Winter".

Rainer Winter
TÜV NORD JI/CDM CP
Final Approval

7 REFERENCES

Table 7-1: Documents provided by the project participant

Reference	Document
/CC/	Commissioning Certificate of the WTG, SEL/1500/06-07/0362 dated 2007/07/12.
/PDD-REV/	Revised project design document for the CDM project “13.25 MW Wind Power Generation by RMTL, in Kutch, Gujarat” version 2, dated 2011-06-14
/WHLA /	Wheeling agreement dated 2007/12/04, signed by the project proponent with GETCO (Gujarat Energy Transmission Corporation Limited) for the WTG, with serial no. SEL/1500/06-07/0362
/XLS/	Financial Calculation sheet with respect to the revised project design document, /PDD-REV/

Table 7-2: Background investigation and assessment documents

Reference	Document
/ AMS ID /	‘Grid connected renewable electricity generation’ Scope 1; Version 13, EB 36
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/GADTC/	Guidelines on assessment of different types of changes from the project activity as described in the registered PDD (EB 48, annex 67).
/KP/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)
/PDD/	Project Design Document for CDM project: “13.25 MW Wind Power Generation by RMTL, in Kutch, Gujarat” version 1.2, dated 2009-03-26.
/REG-XLS/	Registered XLS calculation sheet of the project titled, “13.25 MW Wind Power Generation by RMTL, in Kutch, Gujarat” available in the UNFCCC project web page.

Reference	Document
/PNRAC/	Procedure for notifying and requesting approval of changes from the project activity as described in the registered project design document (EB 48, Annex 66)
/VAL-R/	Validation Report for the CDM project “13.25 MW Wind Power Generation by RMTL, in Kutch, Gujarat”, dated 2009-03-26
/VVM/	UNFCCC Validation and Verification Manual (Version 01.2 as per EB 55)

Table 7-3: Websites used

Reference	Link	Organisation
/dna-HP/	http://www.cdmindia.nic.in/	DNA of India – Ministry of environment and Forests.
/KPTCL/	www.kptcl.com	Karnataka Power Transmission Corporation Limited
/unfccc/	http://cdm.unfccc.int	UNFCCC
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications

Table 7-4: List of interviewed persons

Reference	Mol ¹		Name	Organisation / Function
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Aniruddh Dave	Ratnamani Metals and Tubes Ltd
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Neeraj Bulchandani	Suzlon Infrastructure Services Limited/ Dy. Manager- CRM
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Bharat Patel	Suzlon Infrastructure Services Limited/ Assistant Manager
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Dharmesh Davada	Suzlon Infrastructure Services Limited/ Senior Eng.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Haresh Saujot	Suzlon Infrastructure Services Limited/ Senior Eng.
/IM02/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Snigdha Kala	Emergent Ventures India Private Limited / Consultant

¹⁾ Means of Interview: (Telephone, E-Mail, Visit)

ANNEX

- A1:** Assessment of Financial Parameters
- A2:** Assessment of Barrier analysis

ANNEX 1: ASSESSMENT OF FINANCIAL PARAMETERS

Table A-1: Assessment of Financial Parameters

<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
Share of wheeling from the WTG, EL/1500/06-07/0362	100	%	Wheeling agreement dated 2007/12/04, signed by the project proponent with GETCO (Gujarat Energy Transmission Corporation Limited) for the WTG, with serial no. SEL/1500/06-07/0362 Page no-01	/WHLA/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The value has been checked from the wheeling agreement for the WTG signed by the project proponent with GETCO (Gujarat Energy Transmission Corporation Limited) and found to be correct.

ANNEX 2: ASSESSMENT OF BARRIER ANALYSIS

Table A-2: Assessment of Barrier Analysis

<input checked="" type="checkbox"/>		No barrier parameters are used for additionality justification		
<input type="checkbox"/>		Assessment of barriers see below		
Kind of Barrier (invest, tech, other)	Description of Barrier	Evidence used	Assessment of validation team	
			Appropriateness of information source	Explanation of final result
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	