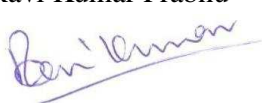
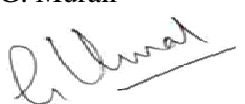
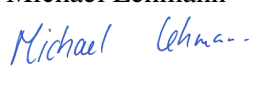




Validation opinion

Notification of changes from the project activity as described in the registered project design document

Title of project activity:			
Enercon Wind Farms in Karnataka Bundled Project – 30.4 MW			
CDM reference number:		DNV project No.:	
1291		PRJC-267341-2010-CCS-IND	
Type of request:	<input checked="" type="checkbox"/> Notification of changes from project activity as described in the registered PDD (i.e. changes do <u>not</u> raise any concerns with regard to i) additionality, ii) the scale of CDM project activity and/or iii) the applicability and application of baseline methodology <input type="checkbox"/> Request for approval of changes from project activity as described in the registered PDD		
Date	Work carried out by:	Work verified by:	Approved By
3 May 2011	Ravi Kumar Prabhu 	G. Murali 	Michael Lehmann 

1 Description of the changes as compared to the description in the registered PDD

The project activity involves installation of a bundled wind project of 30.4 MW capacity at Chitradurga and Gadag districts of Karnataka state, India. As per the registered PDD of version 05 dated 23 February 2009, the sub-project no. 1 is stated to be located in Bhramapura village, Hiriyur taluk of Chitradurga district. The sub-Projects 2 to 14 are stated to be located in villages Ittegehalli, Myakenahalli, Katheholle, Goolihosahalli, Lakkihalli, Lingadevarahalli and Mulashiranahalli, all located in Jogimatti wind Zone of Chitradurga district and sub-projects 15 to 18 are located in Kapatagudda wind zone of Gadag district.

The geo-coordinates of the project activity as stated in the registered PDD are:

For sub-project 1, the project area extends between latitude 14° 02' & 14° 04' North and longitude 76° 27' & 76° 28' East. This sub-project is connected to the Aiamangla 66/11 kV KPTCL sub-station.

For sub-projects 2 to 10, the project area extends between latitude 13° 57' & 14° 01' North and longitude 76° 24' & 76° 29' East. These sub-projects are connected to the Hiriyur 220/66/11 kV KPTCL sub-station.

For sub-projects 11 to 14, the project area extends between latitude 13° 58' & 14° 02' North and longitude 76° 17' & 76° 20' East. These sub-projects are connected to the Ramagiri 66/11 kV KPTCL sub-station.

For sub-projects 15 to 18, the project area extends between latitude 14° 11' & 14° 14' North and longitude 76° 43' & 76° 45' East. These sub-projects are connected to the Dambal 110/33/11 kV KPTCL sub-station.

This notification of change is with respect to,

- a) To indicate the village in which each of the Wind Energy Generator (WEG) is located, in accordance with the commissioning certificates.
- b) To indicate the actual geo-coordinate of the individual WEGs as per the actual site measurements done by Enercon.
- c) Transfer of ownership with respect to one of the WEGs of 0.8 MW capacity.

2 Assessment of the changes

The first verification site visit for this project activity covering the monitoring period from 18 March 2010 to 31 August 2010 was conducted by DNV on 18 and 19 November 2010.

Assessment of when the changes occurred.

The range of geo coordinates and the name of villages indicated in the registered PDD was based on the information available at the time of preparation of the PDD. However, when the actual location of the WEGs were finalised based on the site conditions in 2006, the geo coordinates of some of the WEGs were found to be slightly outside the range indicated in the PDD. Further, the geo co-ordinate of the individual WEG was not stated in the registered PDD.

At the time of commissioning in 2006, it was noticed that names of a few villages were not covered in the list provided in the PDD. Further, the name of the village in which the individual WEG is situated was not stated in the PDD.

In 2008, one of the investors R.K Marbles with one WEG, sold the WEG to a new entity Power Link Systems Private Limited. The transfer of ownership of the WEG from R.K. Marbles to Power Link Systems Private Limited was approved by the Government of Karnataka in February 2008 and supplementary power purchase agreement was signed with Mangalore Electricity Supply Company Limited in September 2008. Power Link Systems Private Limited also signed an agreement with Enercon (India) Limited for managing the CERs generated by the said WEG.

The name of the village in which the WEGs are located are indicated in Table 1 and the actual geo coordinates of the WEGs are indicated in Table 2.

Table 1

Project Name	Capacity	Location as per Registered PDD	As per Commissioning Certificate
Enercon Wind Farms (Chitradurga) Ltd	8.80 MW	Bhrampura	Bharampura, Chitradurga
Steelfab Offshore	0.80 MW	Ittegehalli,	Lakkihalli, Chitradurga
Dewanchand Ramsaran:	0.80 MW	Myakenahalli,	Lakkihalli, Chitradurga
Elpro International:	0.80 MW	Katheholle,	Gulihosahalli, Chitradurga
Gautam Ladkat:	0.80 MW	Goolihosahalli,	Lakkihalli, Chitradurga
		Lakkihalli,	
		Lingadevarahalli,	
		Mulashiranahalli,	
Sameer Ladkat:	0.80 MW		Gulihosahalli,

		all located in	Chitradurga
Panama Business Centre:	1.60 MW	Jogimatti wind	Lingadevarahalli,
Balasahab Ladkat:	1.60 MW	Zone	Chitradurga
			Lingadevarahalli,
Panama Infrastructure:	1.60 MW		Chitradurga
MK Agrotech Private Ltd:	1.60 MW		Gulihosahalli &
Srinivas Sirigeri:	0.80 MW		Mulashiranahalli,
Power Link Systems Private			Chitradurga
Limited (earlier R.K.Marbles):	0.80 MW		Gulihosahalli,
Dempo Industries:	0.80 MW		Chitradurga
Desai Brothers:	0.80 MW		Janakal, Chitradurga
Abhilash Garments & Estates			Janakal, Chitradurga
(P) Ltd:	0.80 MW		Janakal, Chitradurga
			Janakal, Chitradurga
Prasad Global Solutions:	1.6 MW		Gundikere, Chitradurga
Siddaganga Oil Extractions			
Ltd.:	1.6 MW		Machenehalli, Gadag
			1. Majjur village
Gangadhar Narsingdas			Shirahatti, 2.Ranathur,
Agarwal:	4.0 MW	Kapatagudda	Shirahatti, Gadag
		Wind Zone of	Gulihosahalli,
		Gadag district.	Chitradurga
			1. Majjur village
			Shirahatti,
			2. Machenahalli &
			Ranathur, Gadag

Table 2

Sub Project	Project Owner	Unique Identification Number	Latitude			Longitude		
			Deg.	Min.	Sec.	Deg.	Min.	Sec.
1	Enercon Wind Farms (Chitradurga) Ltd	EWCLA-01	14	2	45.2	76	28	8.3
		EWCLA-02	14	2	49.0	76	28	6.3
		EWCLA-03	14	2	52.6	76	28	5.0
		EWCLA-04	14	2	56.7	76	28	4.4
		EWCLA-05	14	3	0.6	76	28	3.8
		EWCLA-06	14	3	4.4	76	28	3.0
		EWCLA-07	14	3	8.8	76	28	2.4
		EWCLA-08	14	3	14.6	76	28	1.2
		EWCLA-09	14	3	18.4	76	28	0.3
		EWCLA-10	14	3	22.1	76	27	59.2
		EWCLA-11	14	3	26.0	76	27	58.6
2	Steelfab Offshore	SFOGH2-01	13	57	3.6	76	25	4.9

3	Dewanchand Ramsaran	DRGH2-01	13	57	0	76	25	6.7
4	Elpro International	EILGH2-01	13	58	50.7	76	25	24.9
5	Gautam Ladkat	GLGH2-01	13	57	10.8	76	25	0.9
6	Sameer Ladkat	SLGH2-01	13	59	22.4	76	23	52.6
7	Panama Business Centre	PBCGH2-01	13	57	23.5	76	24	55
		PBCGH2-02	13	57	20	76	24	54.6
8	Balasahab Ladkat	BMLGH2-01	13	57	16.3	76	24	55.9
		BMLGH2-02	13	57	12.9	76	24	57.5
9	Panama Infrastructure:	PIPPGH2-01	13	59	28.2	76	23	46.2
		PIPPGH2-02	13	59	28.5	76	23	50.8
10	MK Agrotech Private Ltd	MKAGH2-01	13	58	44.3	76	25	26.3
		MKAGH2-02	13	58	40.9	76	25	28
11	Srinivas Sirigeri	SSHD-01	13	57	0.10	76	19	29.80
12	Power Link System Private Limited (earlier R.K.Marbles)	PLSHD-01	13	57	8.10	76	19	27.30
13	Dempo Industries	DIPLHD-01	13	57	4.30	76	19	28.20
14	Desai Brothers	DBLHD-01	13	59	27.70	76	18	45.70
15	Abhilash Garments & Estates (P) Ltd	AGEGA-01	15	80	57.30	75	38	38.20
16	Prasad Global Solutions:	PGSGA-01	15	10	7.90	75	38	34.50
		PGSGA-02	15	8	19.40	75	38	1.80
17	Siddaganga Oil Extractions Ltd	SOEGA-01	15	8	40.30	75	38	44.30
		SOEGA-02	15	8	36.50	75	38	46.80
18	Gangadhar Narsingdas Agarwal	GNAGA-01	15	9	34.30	75	38	27.10
		GNAGA-02	15	9	26.40	75	38	31.50
		GNAGA-03	15	9	20.50	75	38	32.00
		GNAGA-04	15	8	48.70	75	38	39.40
		GNAGA-05	15	8	44.70	75	38	41.00

Assessment of the reasons for these changes taking place

The geo coordinates and name of the villages are broadly stated in the registered PDD, without specifying the details of the individual WEGs, as per the information available at the time of preparation of the PDD. However, when the actual locations were finalised based on the infrastructural requirements and soil condition, of the geo co-ordinates of some of the WEGs were found to be slightly outside the range indicated in the PDD. It was also noticed that names of some of the villages were not stated in the list indicated in the registered PDD.

DNV has assessed the geo coordinates of the individual WEGs from the undertaking given by Enercon (India) Limited and the name of the village in which the WEGs are installed from the commissioning certificates of WEGs.

The 0.8 MW capacity WEG at Chitradurga wind farm owned by R.K Marbles was transferred to Power Link Systems Private Limited in 2008. DNV assessed the approval of the transfer by the Government of Karnataka, from the order no. EN 70 NCE 2008, Bangalore, dated 15 February 2008. DNV had also assessed the supplementary power purchase agreement (PPA) signed by Power Link Systems Private Limited with Mangalore Electricity Supply Company Limited, dated 12 August 2008. DNV verified from the supplementary PPA that the terms and conditions of the original PPA will remain unchanged. The financial analysis of the sub project (R.K Marbles) presented under Appendix 3 of the registered PDD shows that the project is unviable with equity IRR of 9.13% for R.K.Marbles against the selected benchmark of 17.75%. The following three changes took place in the investment input parameters because of transfer of asset to Power Link Systems Private Limited.

- i) Investment cost is marginally reduced from INR 37.8 Million to INR 37.5 Million.
- ii) Operation and maintenance cost got changed to INR 0.55 Million with 5% escalation from fourth year onwards.
- iii) Power Link Systems Private Limited availed a debt of INR 28.1 Million against the use of 100% equity by RK Marbles.

DNV verified the above from the Purchase Order dated 28 December 2007 and the loan document dated 29 September 2007. There is no change in PLF and tariff for the sub project after transfer of asset to Power Link Systems Private Limited. In accordance with para 8 of EB 48 Annex 67, to re-assess the additionality, PP has inserted the parameters applicable to the new investor in the original spreadsheet calculations. The equity IRR for the new investor (Power Link Systems Private Limited) works out to 10.17% which is less than the benchmark (17.7%) and the sub project continues to be unviable without CDM. DNV also verified that the sensitivity analysis for the sub-project at 28% PLF (as per registered PDD), shows that the Equity IRR improves to 11.73%, still less than the benchmark.

Assessment of whether the changes would have been known to the project participants prior to registration of the project activity

The project participant was aware of the changes prior to the registration of the project activity, but the same was not included in the PDD, since the project participant was unaware of its importance in CDM documentation.

Assessment of how the changes may impact the overall operation/ability of the project activity to deliver emission reductions as stated in the PDD

The project activity is a wind based power generation unit. The minor change in the geo co-ordinates with respect to some of the WEGs and indicating name of the village have no impact on the additionality of the project as the all critical parameters to assess the additionality remain unchanged.

Plant Load Factor: The potential impact on PLF due to change in the geo-coordinates was assessed. The tariff order of Karnataka Electricity Regulatory Commission (KERC) dated 18 January 2005 has considered a PLF of 26% for calculation of tariff for wind projects ([http://www.kerc.org/ website/ / / / /order2005.html](http://www.kerc.org/website/ / / / /order2005.html)). The PLF applied for demonstration of additionality was 26.5%, higher than the value considered by KERC. All the WEGs are located in the state of Karnataka and will not have any impact on the PLF for the project activity as a result of the minor change in geo-coordinates of some of the WEGs, or indicating name of the villages. As per the registered PDD, the sensitivity analysis with a PLF of 28%

(the highest value of the range of 23 to 28% considered by KERC) does not cross the benchmark.

Tariff: The tariff for the project activity was sourced from the tariff order of Karnataka Electricity Regulatory Commission (KERC) dated 18 January 2005 ([http://www.kerc.org/ website/ / / / /order2005.html](http://www.kerc.org/website/ / / / /order2005.html)). This order is applicable for all the wind projects located in the state of Karnataka. Since the observed location of villages and geo-coordinates fall within the state of Karnataka, the change does not have any impact on tariff for the project activity.

Hence in DNVs opinion, both the changes do not in any way impact the operation/ability of the project activity to deliver emission reductions as stated in the PDD.

3 Assessment of the impact of the changes

Do the changes raise concerns with regard to any of the following aspects?

- ☐ Additionality
- ☐ Scale of CDM project activity
- ☐ Applicability and application of baseline methodology
- ☒ Not applicable (the changes do not raise any concerns)

Assessment of impacts of the changes on additionality

The additionality of the project was established on the basis of investment analysis. The project activity is implemented in the state of Karnataka and is connected to Southern grid. As the location and geo-coordinates of all the WEGs commissioned under the project activity are located in the state of Karnataka it does not impact the additionality and the financial viability of the project continues to be unattractive.

Assessment of impacts of the changes on the scale of the CDM project activity

This is a wind based power generation project and the installed capacity of the project activity has not been changed and hence there will not be any impact of the scale of the CDM project activity.

Assessment of impacts of the changes on the applicability and application of baseline methodology

Applicability: The project activity is registered under ACM0002 Version 6.0, “Consolidated baseline methodology for grid-connected energy generation from renewable sources”. Since wind based power project still continues to be grid connected and the installed capacity is above 15 MW, the applicability of the methodology does not change.

Monitoring plan: As the project is based on ACM0002 Version 6.0 and the monitoring plan envisages monitoring of the net electricity exported from the project activity. Thus the changes will not have any impact on the applicability and the application of the monitoring methodology. However, the project participant is making an application for change in monitoring plan to reflect the actual practice being followed by the Karnataka state utility for Joint Meter Reading (JMR), calculation of transmission losses, and the billing calculations.

4 Validation opinion

DNV's evaluation of the project activity during the verification site visit, revealed the changes from the registered PDD. DNV wish to seek permission on behalf of the project participants for the inclusion of the actual geo co-ordinates, the name of the village in which the WEGs are located and the change in name of the investor with respect to one of the WEGs. Considering the assessment presented above, DNV is able to confirm that the changes in the project would a) not impact the additionality of project activity negatively b) would not change the scale of CDM project activity c) does not change the applicability of ACM0002 version 06, and d) does not result in change of emission reduction calculations.

The inclusion of the actual geo co-ordinates, the name of the village in which the WEGs are located and the change in name of the investor with respect to one of the WEGs will not affect the monitoring parameters and monitoring plan in the registered PDD, thus, no revision in the PDD is needed.

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