

MONITORING REPORT NO. 4

FOR PERIOD 01.01.2012-30.09.2012

SUDENAI AND LENDIMAI WIND POWER

JOINT IMPLEMENTATION PROJECT

UNFCCC No. LT2000007

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Table of contents

1. GENERAL INFORMATION.....	3
2. IMPLEMENTATION OF THE JI PROJECT.....	4
3. MONITORING METHODOLOGY	5
4. ACHIEVED EMISSION REDUCTIONS.....	6
5. ANNEXES.....	7
Annex 3. Annual production report of Sudenai wind farm, 2012.....	8
Annex 4. Annual production report of Lendimai wind farm, 2012	8
Annex 5. Monitoring Protocol 2008-2012	9
Annex 6. Internal staff trainings during the monitoring period	10
Annex 7. Wind speed data.....	11
Annex 8. Comments to 2010 Verification Report FARs	12

1. GENERAL INFORMATION

Project name:	Sudenai and Lendimai Wind Power Joint Implementation Project
Project location:	<p>Sudenu and Lendimu villages in Kretingos county in Lithuania</p> 
Project owner:	<p>UAB Lariteksas (Sudenai) and UAB Vejo Elektra (Lendimai)</p> <p>UAB Lariteksas Reg. adr. Didžioji str. 25, LT-01128 Vilnius, Lithuania Address for correspondence: Šv. Ignoto str. 1, LT-01120 Vilnius, Lithuania</p> <p>UAB Vejo Elektra Reg. adr. Didžioji str. 25, LT-01128 Vilnius, Lithuania Address for correspondence: Šv. Ignoto str. 1, LT-01120 Vilnius, Lithuania</p>
Carbon credit purchaser:	Nordic Environment Finance Corporation, NEFCO in its capacity as Fund Manager to the Baltic Sea Region Testing Ground Facility Emission Reduction Purchase Agreement (ERPA) as of 2007-12-11
Project description:	The project involves an 8 MW wind farm at Sudenai (consisting of 4 Enercon E82 2000 kW wind turbines) and a 6 MW wind farm at Lendimai (consisting of 3 Enercon E82 2000 kW wind turbines).

	GHG emission reduction is achieved via displacement of carbon intensive electricity produced from fossil fuel sources in the Lithuanian power network. Crediting period for emission reductions: 01 September 2008 – 31 December 2012
Operation during monitoring period:	During the whole monitoring period both Sudenai and Lendimai wind farms operated without major technical interruptions except for two turbines fault due to the lightning caused surge arresters defects in Sudenai farm in August, 2011. The fault was resolved in 2 weeks.

2. IMPLEMENTATION OF THE JI PROJECT

LoE issuance by host country DFP	21 February, 2007
PDD publication on UNFCCC website	23 Mar 07 - 22 Apr 07
LoA issuance by investor country DFP	15 January, 2008
LoA issuance by host country DFP	30 January, 2008
Determination report issuance by AIE	19 June, 2009

Notes: DFP – designated focal point, LoE – Letter of Endorsement, LoA – Letter of Approval, AIE – accredited independent entity, PDD – Project design document, UNFCCC – United Nations Framework Convention on Climate Change.

3. MONITORING METHODOLOGY

Description:	<p>Monitoring is based on the procedures defined in the document “Monitoring Plan of Sudenai and Lendimai Wind Power Joint Implementation Project. Version 1.0 July 15, 2010”.</p> <p>The amount of net electricity supply to the grid from the JI project is defined as the key activity to monitor.</p>
Grid connection and measuring meters:	<p>The Sudenai and Lendimai wind farm connection to the Main Grid (110kV) is established via one coupling point to the national electricity transmission system operator (TSO) Litgrid AB.</p> <p>The Main Grid meter is connected to the TSO SCADA and monitored remotely by TSO. The meter is backed up with a back up meter. Totally there are 7 wind turbines. There are 3 20kV lines on the 20kV side of the 110/20kV transformer - 2 lines have 2 turbines each connected and 3rd line has 3 turbines connected. These lines are equipped with separate power meters that are owned by TSO and read as needed, to verify if any deviation from data of the main meter exists. If it was then data from the backup meter would be read.</p> <p>Net power production is calculated as a difference between actual power production and active power consumption.</p> <p>Active power consumption is measured with the same measuring equipment (as mentioned above) as used for measuring of actual power production. The equipment has 2 separate electronic registers (1 (one) for actual power production and 1 (one) for active power consumption). The overall delivered and consumed power amount is divided up between Lariteksas UAB and Vejo Elektra UAB using ratio 4:3.</p> <p>The two commercial power meters belong to TSO. Calibration of measuring meters is processed according to Lithuanian legislation and standards, and the TSO, owner of the meters is responsible for the calibration and maintenance. According to the national legislation the calibration of the meters is required every 8 years.</p> <p>Two commercial electric power meters installed:</p> <ul style="list-style-type: none"> - VJ-3.T-101 (commercial accounting): serial number 289132, calibrated on Sep 29, 2005; - VJ-3.T-101/D (duplicated commercial accounting): serial number 379391, calibrated on Aug 16, 2006. <p>The contractual party of purchase of power generated by Sudenai and Lendimai wind farms is Lietuvos Energija AB and Litgrid AB (purchaser of the public obligation services (POS) part).</p> <p>Additionally each turbine has separate meters which send data to Enercon SCADA database. The database data are used monthly to verify the production. It can be read any moment and real time as well.</p>

	No meters have been changed and all meters functioned properly during the period January 1, 2011 – September 30, 2012 and can therefore be properly used as basis for the calculation of achieved emission reductions.
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4. ACHIEVED EMISSION REDUCTIONS

In accordance with the Monitoring Plan the formula for calculation of achieved emission reductions is the following:

$$ERy (tCO_2e) = EGy (MWh) \times EFy (tCO_2/MWh)$$

Emission reductions have been calculated in accordance with the Monitoring Plan as follows:

	<u>2012*</u>
<u>Project constants</u>	
Emission factor EFy, tCO ₂ /MWh	0,629
<u>Actual data</u>	
Net power production EGy, kWh, Sudenai	12076028
Net power production EGy, kWh, Lendimai	9057992
Annual Emission reduction, tCO ₂ , Sudenai	7595,822
Annual Emission reduction, tCO ₂ , Lendimai	5697,476
Total emission reduction, tCO₂e, Sudenai & Lendimai	13293

* Data from 01.01.2012 – 30.09.2012

Sudenai and Lendimai Wind Power JI Project generated **13 293 tCO₂e of emission reductions** during the monitoring period 01 01 2012 – 30 09 2012.

5. ANNEXES

1	Annual production report of Sudenai wind farm 2012
2	Annual production report of Lendimai wind farm 2012
3	Monitoring protocol 2008-2012
4	Internal staff training records
5	Wind speed data
6	Replies to 2010 Verification Report FARs

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UAB Lariteksas and UAB Vejo elektra

Annex 3. Annual production report of Sudenai wind farm, 2012

	Actual power production (kWh)*	Active power consumption (kWh)*	Net power production (kWh)
January	1 632 730	353	1 632 377
February	1 676 874	938	1 675 936
March	1 672 932	277	1 672 655
April	1 454 199	951	1 453 248
May	975 853	89	975 764
June	1 073 430	867	1 072 563
July	1 033 321	498	1 032 823
August	1 020 604	517	1 020 087
September	1 540 718	143	1 540 575
October			
November			
December			
Total 2010	12 080 661	4 633	12 076 028

* Data according to TSO Litgrid AB power meter.

Annex 4. Annual production report of Lendimai wind farm, 2012

	Actual power production (kWh)*	Active power consumption (kWh)*	Net power production (kWh)
January	1 224 691	265	1 224 426
February	1 257 802	704	1 257 098
March	1 254 846	208	1 254 638
April	1 090 779	716	1 090 063
May	731 974	66	731 908
June	805 164	648	804 516
July	775 083	376	774 707
August	765 543	389	765 154
September	1 155 673	191	1 155 482
October			
November			
December			
Total 2010	9 061 555	3 563	9 057 992

* Data according to TSO Litgrid AB power meter.

Annex 5. Monitoring Protocol 2008-2012

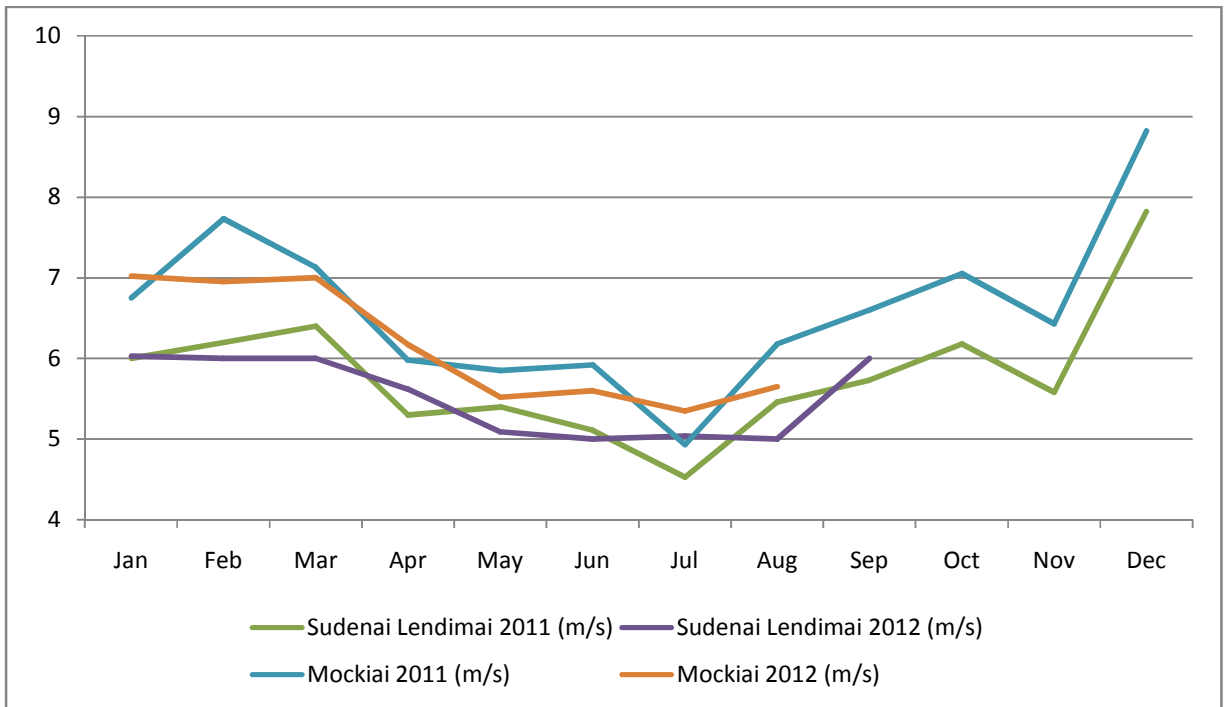
	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012*</u>
<u>Project constants</u>					
Emission factor EFy, tCO ₂ /MWh	0,629	0,629	0,629	0.629	0,629
<u>Actual data</u>					
Net power generation EGy, kWh, Sudenai	1106070	15820969	15242869	18503699	12076028
Net power generation EGy, kWh, Lendimai	715134	11867113	11433485	13879392	9057992
Annual Emission reduction, tCO ₂ , Sudenai	695,718	9951,390	9587,765	11638,827	7595,822
Annual Emission reduction, tCO ₂ , Lendimai	449,819	7464,414	7191,662	8730,138	5697,476
Total emission reduction, tCO₂e, Sudenai and Lendimai	1146	17416	16779	20369	13293
Total emission reduction, tCO₂e, Sudenai and Lendimai	1146	18562	35341	55710	69003

*Data from 01.01.2012 – 30.09.2012

Annex 6. Internal staff trainings during the monitoring period

Date	Training by	Participants	Topic
July 2010	Hannu Lamp, 4energia JI consultant	Tadas Navickas, 4energia UAB Managing Director Julius Mikalauskas, 4energia UAB Project Manager	Preparation of improved Monitoring Plan on basis of monitoring procedure as defined in project PDD and on basis of FARs as stated in verification report of BV.
January 2011	Julius Mikalauskas, Project Manager	Ieva Vaisvilas, 4energia UAB Project Assistant	Introduction to requirements related to monitoring and verification for JI project. Produced electric power accounting and control.
February 2011	Hannu Lamp, 4energia JI Consultant	Ieva Vaisvilas, 4energia UAB Project Assistant	Preparation of Monitoring Report for 2010.
December 2011	Hannu Lamp, 4energia JI consultant	Vaida Timinskaite, 4energia UAB Project Assistant	Introduction to requirements related to monitoring and verification for JI project. Basis of monitoring procedure as defined in project PDD. Preparation of Monitoring Report for 2011.
September 2012	Vaida Timinskaite, Project Assistant	Indre Budiene 4energia UAB Administrator	Introduction to requirements related to monitoring and verification for JI project. Preparation of Monitoring Report for 2012.

Annex 7. Wind speed data



* Data from WIND TURBINE SCADA.

Annex 8. Comments to 2010 Verification Report FARs

FAR 1: Please provide simplified single-line electric diagram with exact position of each electric meter in monitoring scheme

