

LIEPYNES WIND POWER PARK JOINT IMPLEMENTATION PROJECT

MONITORING REPORT NO.1

FOR PERIOD 01.11.2009-31.12.2010

Prepared by:

Vejo gūsis, UAB
Nemuno g.139,
LT-93262 Klaipėda,
Lithuania

Tel. +370-616 01 005
Fax. +370-46 341 586
E-mail. es@nemo.lt

CEO Egidijus Simutis




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1. GENERAL INFORMATION

Project name	Liepynes wind power park joint implementation project
UNFCCC No.	0178
ITL project ID	LT2000019
Type of project	Small
Sectoral scope	Energy industries (renewable/non-renewable sources)
Project location	Kretingos district, near village Liepyne
	
Host parties	Vejo gusis, UAB (Lithuania)
Investor parties	Ecocom BG, LTD (the Netherlands)
Project description	<p>The project includes installation of 6 wind turbines with the total capacity of 9,13MW (2MW x 4 units, 0,8MW x 1 unit, 0,33MW x 1 unit). Wind turbines manufactured by German company Enercon GmbH.</p> <p>The wind power park is connected to 110 kV power line. An existing transformer substation with incoming voltage of 20 kV, outgoing voltage of 110 kV and 25 MVA capacities was used for this purpose.</p>

2. IMPLEMENTATION OF THE JI PROJECT

LoE issuance by host country DFP	31 Mar 09
PDD publication on UNFCCC website	23 Apr 09-22 May 09
LoA issuance by host country DFP	15 Jan 10
LoA issuance by investor country DFP	25 Feb 10
Determination report issuance by AIE	25 May 10
Final Determination on UNFCCC website	30 Jul 10

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

Monitoring period	01 Nov 09 – 31 Dec 10
Methodology description	JI Project use own methodology (not CDM approved). Methodology is based on procedures defined in Section D of the project PDD. The amount of net electricity supply to the grid from JI project is defined as key activity to monitor.

4. MONITORING EQUIPMENT AND ITS CALIBRATION

Monitoring equipment	<p>Due to reason that Liepynes Wind Power Park Joint Implementation Project (9,13MW) and Rudaiciai wind power park (30MW) are connected to the same substation with one commercial power metering device it is necessary to separate each park energy generation/consumption. According to monitoring plan description Liepynes wind power park joint implementation project operations are controlled by common commercial meter (excluding its duplicate) and 1 control meter. Rudaiciai wind park's operations are controlled by common commercial meter (excluding its duplicate) and 3 control meters. All meters are connected to SCADA system and monitored remotely.</p> <p>Second commercial meter is necessary in the case of main commercial meter's failure. Control meters indicate commercial meter's deviations and helps evaluate energy consumption for own purposes (difference between generated and supplied to the grid values).</p> <p>All metered data is double checked by receipts of electricity sales with SCADA system as backup.</p>
Calibration/maintenance of energy meters	Commercial power meter together with control meters were installed by AB Lietuvos Energija, national grid operator which buys electricity from the wind power parks. The meters belong to AB Lietuvos Energija. Power meters as well as current and voltage transformers are calibrated once every 8 years.
Deviations	During all monitoring period wind power park operated without major technical interruptions.

Liepynes wind power park joint implementation project monitoring equipment technical data

Energy meter	T-101	T-101/D	P4 (L-107)	P4 new (L-107)
Purpose	Commercial meter	Duplicate-commercial meter	Control meter	Control meter
Producer	UAB "Elgama-Elektronika"	UAB "Elgama-Elektronika"	UAB "Elgama-Elektronika"	UAB "Elgama-Elektronika"
Type	EPQS 113.09.04	EPQS 113.21.29	EPQS 113.21.29	EPQM 312.01.534
Measurement range	3x57,7/100V; 1(1,25)A	3x57,7/100V; 1(1,25)A	3x57,7/100V; 1(1,25)A	3x57,7/100V; 1(1,25)A
Accuracy class	0,5s	0,5s	0,2s	0,5s
Serial number	289135	289203	649218	75232
Metrological test date	29.09.2005	29.09.2005	11.12.2008	16.12.2009
Breakdowns (if any)	-	-	Meter breakdown on 27 03 2010. Replaced on 29 03 2010	-

Automatic energy meter breakdown occurred in P4 (L-107) position on 27 03 2010 22:00. Broken meter was replaced with a new one on the 29 03 2009 10:30. Energy supply was not stopped. According to the Act on accounting of consumed electricity Nr.10-24 issued on 29 03 2010 accounting of electricity stood from the 27 03 2010 22:00 to 29 03 2010 10:30 due to automatic energy meter breakdown and consumed electric energy in this period was calculated based on readings of other 3 control (P1, P2, P3) and commercial meters (T-101), i.e. based on its reading difference.

Rudaiciai wind power park project monitoring equipment technical data (excluding commercial meters)

Energy meter	Kiauleikiai	Kveciai	Rudaiciai
Purpose	Control meter	Control meter	Control meter
Producer	UAB "Elgama-Elektronika"	UAB "Elgama-Elektronika"	UAB "Elgama-Elektronika"
Type	EPQS 113.09.04	EPQS 113.09.04	EPQS 113.09.04
Measurement range	3x57,7/100V; 1(1,25)A	3x57,7/100V; 1(1,25)A	3x57,7/100V; 1(1,25)A
Accuracy class	0,5s	0,5s	0,5s
Serial number	508196	508202	508174
Metrological test date	29.10.2008	29.10.2008	29.10.2008
Breakdowns (if any)	-	-	-

Despite one meter breakdown all supplied/consumed power were accounted properly during monitoring period and therefore can be used as basis for proper achieved emission reduction calculations.

5. POWER PRODUCTION

Net project production during year 2009

Month	Power supplied to the grid, kWh*	Power consumed from the grid, kWh*	Net power production, kWh
Nov	0	0	0
Dec	265.621	134	265.487
Total:	265.621	134	265.487

* data of AB Lietuvos energija

Net project production during year 2010

Month	Power supplied to the grid, kWh*	Power consumed from the grid, kWh*	Net power production, kWh
Jan	1.741.105	1.612	1.739.493
Feb	1.315.915	451	1.315.464
Mar	2.208.543	683	2.207.860
Apr	1.317.744	1.088	1.316.656
May	1.291.266	810	1.290.456
Jun	1.213.944	267	1.213.677
Jul	828.129	1.142	826.987

Aug	1.295.016	605	1.294.411
Sep	2.328.550	71	2.328.479
Oct	2.671.015	368	2.670.647
Nov	2.159.167	289	2.158.878
Dec	2.204.041	3.929	2.200.112
Total:	20.574.435	11.315	20.563.120

* data of AB Lietuvos energija

6. CALCULATION OF EMISSION REDUCTIONS

In accordance to Monitoring plan described in the Project PDD the following formula is used to calculate Project emission reductions:

$$ER = E_{Liep(+/-)} \times EF_{LE} \quad [1]$$

Where:

ER – annual emission reductions, tCO₂

$E_{Liep(+/-)}$ – Net annual power production at Liepynes wind power park joint implementation project (the difference between produced and consumed power), MWh.

EF_{LE} – emission factor for power production at Lietuvos elektrine, i.e. 0,626 tCO₂/MWh

$$E_{Liep(+/-)} = E_{T101} - E_{Rud(+/-)} \quad [2]$$

Where:

E_{T101} – the data of commercial power meter No. T101, i.e. net power dispatched to the grid from Rudaiciai wind power park (30MW) and Liepynes Wind Power Park Joint Implementation Project (9,13MW), kWh

$E_{Rud(+/-)}$ – net power dispatched to the grid from Rudaiciai wind power park, kWh

According to the power sale-purchase agreement between project owner with AB Lietuvos energija net power dispatched to the grid from each park will be recorded by 4 control meters installed on substation parallel to commercial meter

$$P = P1_{(+/-)} + P2_{(+/-)} + P3_{(+/-)} + P4_{(+/-)} \quad [3]$$

Where:

P – the sum of net power dispatched to the grid measured by all control meters, kWh

$P1_{(+/-)} + P2_{(+/-)} + P3_{(+/-)} + P4_{(+/-)}$ - the data from four separate control meters on net power dispatched to the grid, kWh

Based on data of all meters AB Lietuvos energija will separate Liepynes Wind Power Park Joint Implementation Project's generation/consumption proportion from net power dispatched to the grid calculated by [4] formulae:

$$P4\% = P4_{(+/-)} / P \quad [4]$$

Where:

$P4\%$ – Liepynes Wind Power Park Joint Implementation Project's energy generation proportion from total net power amount, %

$P4_{(+/-)}$ - the data of Liepynes Wind Power Park Joint Implementation Project's control meter, kWh

The factual net power dispatched to the grid from Liepynes Wind Power Park Joint Implementation Project calculated by [5] formulae:

$$E_{\text{Liep}(+/-)} = P4\% \cdot E_{\text{T101}} \quad [5]$$

	2009	2010	Total
<u>Fixed data</u>			
Emission factor for power production at Lietuvos elektrine (EF _{LE}), tCO ₂ /MWh	0,626	0,626	
<u>Monitored data</u>			
Net power generation (E _{Liep(+/-)}), MWh	265,5	20.563,1	20.828,6
Calculated emission reductions (ER), tCO₂e	166	12.873	13.039


Liepynes wind power park joint implementation project generated 13.039 tCO₂e of emission reductions during the monitoring period 2009-2010.

ANNEXES

ANNEXE 1 – Monitoring form

ANNEX 1

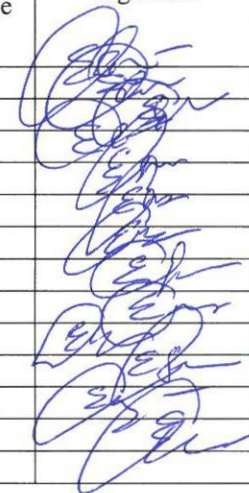
YEAR: 2009

Month	Power dispatch confirmation document No.	Date of issuance of power dispatch confirmation document	Power supplied to the grid (E _{sup}), MWh	Power consumed from the grid (E _{con}), MWh	Net annual power production E _{Liep(+/-)} , MWh	Amount of Emission Reduction (ER), tCO ₂ e	Name of the person in charge	Signature
November	None	None	0	0	0	0	E.Simutis	
December	VJ-1/09/12	2010.01.11	265,621	0,134	265,487	166	E.Simutis	
Total:			265,621	0,134	265,487	166		

$$ER = E_{Liep(+/-)} \times 0,626$$

$$E_{VP} = E_{sup} - E_{con}$$

YEAR: 2010

Month	Power dispatch confirmation document No.	Date of issuance of power dispatch confirmation document	Power supplied to the grid (E _{sup}), MWh	Power consumed from the grid (E _{con}), MWh	Net annual power production E _{Liep(+/-)} , MWh	Amount of Emission Reduction (ER), tCO ₂ e	Name of the person in charge	Signature
January	VJ-1/10/1	2010.02.02	1.741,105	1,612	1.739,493	1.089	E.Simutis	
February	VJ-1/10/2	2010.03.02	1.315,915	0,451	1.315,464	823	E.Simutis	
March	VJ-1/10/3	2010.04.02	2.208,543	0,683	2.207,860	1.382	E.Simutis	
April	VJ-1/10/4	2010.05.04	1.317,744	1,088	1.316,656	824	E.Simutis	
May	VJ-1/10/5	2010.06.03	1.291,266	0,810	1.290,456	808	E.Simutis	
June	VJ-1/10/6	2010.07.02	1.213,944	0,267	1.213,677	760	E.Simutis	
July	VJ-1/10/7	2010.08.03	828,129	1,142	826,987	518	E.Simutis	
August	VJ-1/10/8	2010.09.03	1.295,016	0,605	1.294,411	810	E.Simutis	
September	VJ-1/10/9	2010.10.04	2.328,550	0,071	2.328,479	1.458	E.Simutis	
October	VJ-1/10/10	2010.11.02	2.671,015	0,368	2.670,647	1.672	E.Simutis	
November	VJ-1/10/11	2010.12.01	2.159,167	0,289	2.158,878	1.351	E.Simutis	
December	VJ-1/10/12	20011.01.03	2.204,041	3,929	2.200,112	1.377	E.Simutis	
Total:			20.574,435	11,315	20.563,120	12.873		

$$ER = E_{Liep(+/-)} \times 0,626$$

$$E_{VP} = E_{sup} - E_{con}$$