**JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM
FOR SMALL-SCALE PROJECTS
Version 01.1 - in effect as of: 27 October 2006**

CONTENTS

SECTION A. General description of the small-scale project

A.1. Title of the small-scale project:

Kaisiadorys wind power park
The sectoral scope - (1) Energy industries (renewable/non-renewable sources)
PDD version 01
12/10/2011

A.2. Description of the small-scale project:

Situation existing prior to the starting date of the Project

The renewable electricity produced by the wind power plants would displace carbon intensive electricity produced from fossil fuel sources in the Lithuanian power network. Lithuanian electric power network is being operated by national grid operator - Lietuvos Energija. Foremost, they purchase power quotas (on basis of the prior signed contracts) from electric power producers. The producers may also supply electric power, exceeding the quotas, at a few time lower prices. The difference in national demand for the electric power and total production thereof (quotas and over-quotas) is being covered by Lietuvos Elektrine. Thus, if the implementation of this JI Project fails, the estimated electric power would be produced by Lietuvos Elektrine using fossil fuels – natural gas, heavy fuel oil and orimulsion.

Currently wind energy parks with total capacity 166,13 MW and singly wind turbines with total capacity 21,5MW are under operation in Lithuania. The total installed capacity is 187,63 MW[1].

The proposed JI Project supports Lithuania's objective to increase the share of renewable electricity to 20% by end of year 2020.

Baseline scenario

It was calculated that by generating 1 MWh of electric power, contributes to the pollution of atmosphere with 0,626 tones of CO2 (See chapter B.1.).

Project scenario

Kaisiadorys wind power park would displace carbon intensive electricity produced from fossil fuel sources in the Lietuvos Elektrine. It is foreseen to install 3 wind power plants with the total capacity of 6,0MW (2MW x 3). Wind turbines Power Park will be manufactured, installed, adjusted and set into action by Enercon GmbH staff. After Wind Park's commissioning it is planed to sign additional agreement on turbines maintenance between companies.

Kaisiadorys wind power park in a conservative approach, will generate about 14,91 GWh of electric power per year. Such wind park's generation will lead 9331 tCO2/year emission reductions on Lietuvos Elektrine side.

History of the Project

Current Project stage – constructional works.

Company Vildara, UAB started the Project activities on October 2008 by wining of auction on connection to the national grid – organized by Lietuvos energija. Later it was visited few turbine manufacturers, analyzed project financing prospective and sources, solved other related questions. It was

[1] Data of LITGRID www.litgrid.eu 07/09/2011

agreed on project financing structure and signed contracts on turbine delivery with Enercon Gmbh. All project stages are indicated into Table 3.

A.3. Project participants:

Table 1. Project participants

Party involved	Legal entity project participant (as applicable)	Please indicate if the Party involved wishes to be considered as project participant (Yes/No)
Lithuania (Host party)	Vildara, UAB	No

The Host party company Vildara, UAB was founded in year 1993. Since this year the few different activities (food production, public catering etc.) were developed and closed. Currently company specializes on new kind activities - renewable energy sources project development.

A.4. Technical description of the small-scale project:

A.4.1. Location of the small-scale project:

A.4.1.1. Host Party(ies):

Republic of Lithuania

A.4.1.2. Region/State/Province etc.:

Kaisiadorys district

A.4.1.3. City/Town/Community etc.:

Naujosios Slabados village

A.4.1.4. Detail of physical location, including information allowing the unique identification of the small-scale project:

Kaisiadorys wind power park is located in southeast part of Lithuania near Kaisiadorys town (Figure 1.). Wind turbines coordinates according to the technical project are:
WEC No.1 X=6068879,95, Y=529541,89;
WEC No.2 X=6068507,34, Y=529268,85;
WEC No.3 X=6068217,70, Y=529973,97.

Figure 2. Location of Kaisiadorys wind power park

The park's territory is situated in the rolling territory on above 70m over see level. The territory is on open space from all sides without near obstacles. The nearest forest is over 2 km from the wind park location place. This place may be characterized as high wind speed and windy

The wind park territory (43,67 ha) is leased under the long term agreement for 98 years. The lease agreement is registered into state enterprise Centre of registers Wind power park's connection point will be existing 10/110 kV transformer substation (belongs for energy distribution company Lesto).

Characteristics of wind take a significant role in installation of wind power park, especially in selection of the location. Referring to long term meteorological data and measurements of wind speed and strength, chosen location is well suited for project implementation.

Detailed layout of wind turbines was made by German company Enercon GmbH (wind turbine producer). It is based on wind speed measurements data (average wind speed - 6,37 m/s on 98m height). Starting from December of 2010 on site wind parameters are under measurements. During wind power park place selection long term wind speed data from Kaunas meteorological station was used as well.

A.4.2. Small-scale project type(s) and category(ies):

Type I JI SSC project: Renewable energy project with a maximum output capacity of less than 15 MW(e).

Category: D. Electricity generation for a system

A.4.3. Technology(ies) to be employed, or measures, operations or actions to be implemented by the small-scale project:

It is planned to install 3 units of Enercon E-82 type wind turbines manufactured by German company Enercon GmbH. According to turbines manufacturer data the turbines operation regime is on 2,5-28 m/s wind speed. The other technical data of Enercon E-82 turbines is presented in Table 2.

Table 2. Technical parameters of the wind turbines

Type of wind turbine	E-82
Capacity, kW	2000
Rotor diameter, m	82
Rotor‘s rotation direction	Clockwise
Blade number	3
Total power plant height, m	149
Wight of power plant, t	1120
Tower diameter at ground, m	8,8
Hub height, m	98
Cut-in wind speed	2,5 m/s

According to Enercon calculations Kaisiadorys wind power park should generate about 14,91 GWh electric power per year. Wind power park’s connection point will be existing 10/110 kV transformer substation (belongs for energy distribution company Lesto). Wind turbines will be manufactured, installed, adjusted and set into action by Enercon GmbH staff. After Wind Park’s commissioning it is planed to sign additional agreement on turbines maintenance between companies.

A project implementation schedule is presented in Table 3.

Table 3. Project implementation schedule.

Project stage	Completion date/Deadline
Start of Project activities (decision of the board on preparation business plan for Project development including JI consideration)	2008-10
Business plan preparation	2008-12
Technical design	2009-05
Building of roads	2011-10
Constructional works	2011-11
Laying down the power cables	2011-12
Transportation of wind turbines	2012-04
Installation of wind turbines	2012-06
Reconstruction of substation	2012-06
Start-up works	2012-07

The obtained permits on wind power park erection are presented in table 4.

Table 4. The obtained permits on wind power park erection

No.	Permit/license	Date of issuance:	Valid before:
1.	Permit to enhance the energy generation capacity No. LP-0216	25 02 2009	25 02 2012 (may be extended for 6 month)
2.	Constructional permit on wind turbines erection No.LNS-26-110202-00011	02 02 2011	02 02 2021

Based on wind measurement results Project's power production forecast was performed by staff of company Enercon – 15857 MWh/year. Considering declared technical availability of 96% (the Enercon's Operation and Maintenance contract) the reasonable annual power production forecast was reduced by 4%. Similar practice is used in other Lithuanian wind power projects[2]. Additionally electrical loses impact (not evaluated in Enercon's assessment) were considered therefore annual production forecast was reduced by 2%[3]. The estimate has 94% probability of occurrence and can thus be considered as very conservative (Table 5).

Table 5. Kaisiadorys wind power park power production forecast

Project	Energy output, MWh/year
Kaisiadorys wind power park	14906

The approach on 14906 MWh/year power production will be used in further calculations.

A.4.4. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed small-scale project, including why the emission reductions would not occur in the absence of the proposed small-scale project, taking into account national and/or sectoral policies and circumstances:

The renewable electricity produced by the wind power plants would displace carbon intensive electricity produced from fossil fuel sources in the Lithuanian power network. Lithuanian electric power network is being operated by Lietuvos Energija. Foremost, they purchase power quotas (on basis of the prior signed contracts) from electric power producers. The producers may also supply electric power, exceeding the quotas, at a lower price. The difference in national demand for the electric power and total production thereof (quotas and over-quotas) is being covered by Lietuvos Elektrine. Thus, if the implementation of this JI Project fails, the estimated electric power would be produced by Lietuvos Elektrine using fossil fuels – natural gas, heavy fuel oil and orimulsion. It was calculated that Lietuvos Elektrine, by generating 1 MWh of electric power, contributes to the pollution of atmosphere with 0,626 tones of CO2.

[2] Benaiciai wind power project, April 2008, PDD version 06
http://ji.unfccc.int/UserManagement/FileStorage/ODX2FG966C3OSL4P1RCAODBJVX20TP

[3] Sudenai and Lendimai wind power joint implementation project. Final determination. File - Enclosure 2 "Energy yeld assesement 0046"
http://ji.unfccc.int/UserManagement/FileStorage/EDQXVA2WJZO01NUMYITL7S9FPCG5R8

The chapter B.1. describe baseline calculation details. The chapter B.2. includes estimation of the GHG emission reductions of the JI Project which have been calculated conservatively on basis of the above carbon emission factor of 0,626 tCO2e/MWh and the expected power production.

The proposed JI Project supports Lithuania's objective to increase the share of renewable electricity to 20% by year 2020[4]. To comply with this undertaking Lithuania would need to achieve 450 GWh electricity production from renewable energy sources and mainly from wind energy. This would amount to ca. 200 MW of installed wind power capacity.

The Law of the Republic of Lithuania on Energy points out promotion of consumption of renewable energy resources as one of the principal objectives of regulation of state energy sector activities[5]. The law provides that the state encourages the producers to generate electricity from renewable energy sources by imposing the "must carry" obligations. The Resolution on the promotion of electricity produced from renewable energy sources declares that grid operator obliges to purchase green electricity from the licensed grid-connected producers at the fixed feed-in-tariffs[6].

In order to provide incentives for wind power development the government has issued legislation regulating obligatory purchase of wind power at a price of 0,30 LTL per kWh (0,087 EUR)[7]. Such a feed-in tariff is expected to remain until year 2020. In order to obtain the mentioned feed-in tariff the wind power plant must be built in one of the six zones for which tenders for grid connection are organized by Lietuvos Energija - the electricity transmission system operator in Lithuania.

The above feed-in tariff for wind power is unfortunately not sufficient for commercial development of the wind power sector. Thus all recent wind power developments are being carried out under the JI scheme.

After the introduction of power spot market in Lithuania, the difference of power spot price and the feed-in tariff will be compensated for green power producers. The regulation envisages that the feed-in-tariff scheme will be replaced by green certificate scheme in 2021, hence the feed-in-tariffs are valid until 2021.

A.4.4.1. Estimated amount of emission reductions over the crediting period:

Table 6. Estimated emission reductions

Crediting period	**0 year 6 months**
Year	**Estimate of annual emission reductions in tones of CO2 equivalent**
2012	4666
Total estimated emission reductions over the crediting period (tones of CO2 equivalent)	**4666**
Annual average of estimated emission reductions over the crediting period (tones of CO2 equivalent)	4666

After year 2012 by following year estimated annual emission reduction – 9331 tones of CO2 equivalent.

[4] Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC http://www.managenergy.net/resources/48

[5] Law on Energy (16 May 2002 No.IX-884) http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=244185

[6] 2001-12-05 Resolution on the promotion of electricity produced from renewable energy sources No.1474 http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=342973

[7] 2008-02-28 Resolution of the national price and energy control commission No.03-27 http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=315044

A.4.5. Confirmation that the proposed small-scale project is not a debundled component of a larger project:

The Kaisiadorys wind power park with a combined capacity of 6,00 MW(e) is not a debundled component of a larger project due to the following reasons:
- The project boundaries of all existing wind power parks in Lithuania are different;
- All existing wind parks in Lithuania are covered under JI scheme already;
- The project owners of other wind power parks that are under operation in Lithuania are different.

A.5. Project approval by the Parties involved:

The project idea (project idea note) was approved by Lithuanian DFP (Ministry of Environment of the Republic of Lithuania) and the Letter of Endorsement (LoE) was issued on 17.08.2011 No.(10-2)-D8-7514.

According to national Joint Implementation Project development rules, the final Project approval or Letter of Approval might be issued only after draft Project determination report submission to Lithuanian DFP.

SECTION B. Baseline

B.1. Description and justification of the baseline chosen:

Baseline - the amount of GHG that would be emitted to the atmosphere during the crediting period of the project, i.e. in 2012, in case the Project was not implemented.

Project baseline was chosen in accordance with appendix B of the JI guidelines and the Guidance on criteria for baseline setting and monitoring., using the following stepwise approach:

Step 1. Indication and description of the approach chosen regarding baseline setting

Paragraphs 1.3 of appendix B of the JI guidelines define criteria for baseline setting A baseline shall be established:

i. On a project-specific basis and/or using a multi-project emissions factor;
ii. In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data sources and key factors;
iii. Taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector;
iv. In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure; and
v. Taking account of uncertainties and using conservative assumptions.

Taking into consideration the specifics of the Lithuanian power market, the methodology based on historical data is most suitable for country's baseline estimation. Furthermore, the usage of described methodology allows to have united country's baseline scenario and baseline emissions (tonne CO2 per

MWh of electricity). Based on this fact it was chosen to use JI specific approach by using a multi-project emissions factor adopted by Lithuanian Ministry of Environment of the Republic of Lithuania.

Step 2. Application of the approach chosen

The country's baseline scenario and baseline emissions factor have been described by Ministry of Environment of the Republic of Lithuania during National Allocation Plan (NAP) preparation for First commitment period (2008-2012). The European Commission during supervision of NAP didn't rejected country's baseline methodology. The NAP indicates that Lithuanian baseline emissions factor is 0,626 tCO2/MWhe[8].

The Baseline methodology that is indicated in the NAP is based on historic data of Lietuvos Elektrine and this method is best suited for Lithuanian power market. Approved CDM ACM0002 methodology is not used for the baseline calculation due to the following reasons:

- Lietuvos Elektrine, power plant with the second largest installed capacity in Lithuania (after Ignalina nuclear power plant –INPP) is operating on the power gird as a marginal plant. It covers all power demand which is remaining after all other power producers have supplied their quota power to the grid. Hence, by simply including all these power plants operating on the grid (excl. INPP) would bias the Operating Margin emissions factor.

- There is an overcapacity of installed power in Lithuania, so only very few new power plants are built. Because of that, it is impossible to calculate properly the Build Margin emissions factor.

Baseline emissions (BE) are calculated as following:

$$BE = E_{KP} \times EF_{GRID}$$

Where,
BE = Baseline emissions (tCO2/year)
E_{KP} = Net Electricity supply by Kaisiadorys wind power park (MWh/year)
EF_{GRID} = Emission factor for grid connected power generation (0,626 tCO2/MWh)

When net electricity supply (E_{SP}) is calculated:

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

Where:
E_{sup} = Electricity supplied to the grid by the project (MWhe/year)
E_{con} = Electricity consumed from the grid by the project (MWhe/year)

Key information and data used to establish the baseline scenario:

Data/Parameter	EF_{GRID}
Data unit	tCO_2/MWhe
Description	Emission factor from fossil fuel burning by Lithuanian condensing power plant
Time of determination/monitoring	Year 2002-2005
Source of data (to be) used	Lithuanian National allocation plan 2008-2012

[8] Lithuanian National allocation plan 2008-2012 (18.04.2007 version), section 6.3.
http://www.am.lt/VI/files/0.127744001228738706.pdf

	(18.04.2007 version)
Value of data applied (for ex ante calculations/determinations)	0,626 tCO2/MWhe
Justification of the choice of data or description of measurement methods and procedures (to be) applied	Emission factor is used in positively determined projects No.0178, 0034, 0025
QA/QC procedures (to be) applied	Public data sources
Any comment	

Data/Parameter	E_{sup}
Data unit	MWhe
Description	Electricity supply by Kaisiadorys wind power park
Time of determination/monitoring	Monthly
Source of data (to be) used	Deeds of transfer and acceptance from AB Lietuvos energija
Value of data applied (for ex ante calculations/determinations)	To be monitored
Justification of the choice of data or description of measurement methods and procedures (to be) applied	The data reading from commercial power metering devices will be executed remotely by SCADA
QA/QC procedures (to be) applied	Data will be double checked with receipt of sales, with the SCADA system as back-up.
Any comment	

Data/Parameter	E_{con}
Data unit	MWhe
Description	Electricity consumption by Kaisiadorys wind power park
Time of determination/monitoring	Monthly
Source of data (to be) used	Deeds of transfer and acceptance from AB Lietuvos energija
Value of data applied (for ex ante calculations/determinations)	To be monitored
Justification of the choice of data or description of measurement methods and procedures (to be) applied	The data reading from commercial power metering devices will be executed remotely by SCADA
QA/QC procedures (to be) applied	Data will be double checked with receipt of sales, with the SCADA system as back-up.
Any comment	

B.2. Description of how the anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the small-scale project:

JI project's additionally indicates the GHG reduction after implementation of JI project in comparison to the baseline. Usually financial efficiency of JI projects is low, thus income from ERU's sale help to promote their development and implementation. This economic promotion also reduces project's payback time.

Additionality of the Kaisiadorys wind power park was proven using the following stepwise approach:

Step 1. Indication and description of the approach applied

Paragraph 2 of Annex I of JI guidelines define criteria for baseline setting indicates that additionality can be demonstrated, inter alia, by using following approach:

(c) Application of the most recent version of the "Tool for the demonstration and assessment of additionality" approved by the CDM Executive Board (allowing for a grace period of two months when the PDD is submitted for publication on the UNFCCC JI website), or any other method for proving additionality approved by the CDM Executive Board.

Therefore the most recent - the version 05.2 of the Tool for the Demonstration and Assessment of Additionality was used for the Kaisiadorys wind power park.

Step 2. Application of the approach chosen

Kaisiadorys wind power park's additionality will be proven using a step-wise approach and following steps:

- Identification of alternatives to the project activity;
- Investment analysis to determine that the proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible;
- Barriers analysis; and
- Common practice analysis

Step 3. Provision of additionality proof

Step 1. Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a. Define alternatives to the project activity:

- Alternative A - the proposed project activity not undertaken as JI project activity;

- Alternative B - the electric power in the Lithuanian network will be produced by new modern cogeneration power plants.

Sub-step 1b. Consistency with mandatory laws and regulations:

The both alternatives are in compliance with mandatory legislation and regulations.

The alternative's A development might be considered due to promotion of renewable energy sources use according national legislation. The Lithuania has obligation against EU Directive 2009/28/EC to increase the share of renewable electricity to 20% by end of year 2020. To comply with this undertaking Lithuania planning to expand wind parks capacity up to 500MW[9]. In order to give incentives for business of wind energy parks, the government has issued legislation regulating the obligatory purchase of wind power electricity for fixed feed-in tariff 0,30 LTL per kWh i.e. 8,69 EUR cents per kWh (1 EUR = 3,4528 LTL). Unfortunately the set feed-in tariff is not sufficient to realize the proposed project on a commercial basis. Additional income from the sale of ERUs under the Kyoto Joint

[9] Lithuanian energy independency strategy. Lithuanian government decision No.1426 dated 06 10 2010. http://www.enmin.lt/lt/activity/veiklos_kryptys/strateginis_planavimas_ir_ES/NES_projektas_2010_2050.pdf

Implementation scheme is thus required to turn the project attractive for the investors. It means that Alternative's A development is fully eligible but project payback time without carbon credit revenues become longer (the IRR of the project without ERUs revenues is lower).

The alternative's B development might be considered based on the fact that wind energy projects still are low financial attractive and with long payback period. Usually the power from the wind energy is more expensive comparison with other renewable energy sources (biomass, geothermal, hydro), and it means that expansion of wind energy generation will take negative impact for end users power price (increase of tariff for inhabitants and industry consumers). Furthermore the wind energy power generation is not stable and other generation capacity reserve is necessary always. Such facts influence small support from state side. The state's obligation on 20% "green energy" generation before end of 2020 might be achieved by supporting usage of biomass and small and medium scale cogeneration (expansion of CHP). The current legislation supports biomass and cogeneration usage. Moreover EU structural funds are available for new cogeneration plants but not for wind power projects in Lithuania. The practice shows that biomass or cogeneration projects has higher IRR and are more financial attractive. It means that Alternative's B development is fully eligible as well.

Result: Pass

Step 2. Investment analysis

Sub-step 2a. Determine appropriate analysis method

Simple cost analysis (option I) is not applicable for the project as the income from sale of 'carbon credits' is not the only source of revenues for the project.

Investment comparison analysis (option II) is not applicable for the project as the alternative "A" is the project itself but without an JI incentive and on the other hand the alternative "B" is based on investment that is out of control of the Project developer, i.e. project could be developed by a different entity (as described in paragraph 15 in the Annex to the *Tool for the demonstration and assessment of additionality v.05.2*).

Benchmark analysis (option III) will be used for this project as it is the only applicable method.

Because there is no specific investment benchmarks for the Lithuanian power sector that currently exists the needed benchmark value for that analysis will be derived from the financial and economic indicators that is standard for the country and are public available. The benchmark analysis has been adopted wherein the Internal Rate of Return (IRR) of the project activity serves as a benchmark to assess the financial attractiveness of the project activity. Option III assesses if the project's returns are sufficient for investors to make the initial investment and further bear the associated costs of successfully operating the project activity over the crediting period of the project

Sub-step 2b. – Option III. Apply Benchmark analysis

In order to apply a benchmark comparable to the project IRR the project participant selected to use average value of the interest rate (AVIR) on loans for non-financial corporations published by the central Bank of Lithuania (LB). The AVIR is the benchmark interest rate at which Lithuanian commercial banks and other financial institutions (unions, funds and etc.) lend money to their customers.

Typically, projects in Lithuania would be borrowing debt at a rate equal to or higher than the AVIR. Hence, for any project to be financially attractive, the IRR of the project must be higher than the rate of borrowing on debt (i.e. higher than the AVIR). Accordingly, if any project's IRR does not exceed the AVIR, it could be considered a financially unattractive project.

The use of the AVIR is consistent with the *Tool for the demonstration and assessment of additionality v.05.2* which suggests that "*…benchmarks for IRR, NPV, etc. can be derived from.…Estimates of the cost of financing and required return on capital (e.g.* ***commercial lending rates*** *and guarantees required for the country and the type of project activity concerned), based on bankers views and private equity investors/funds' required return on comparable projects*".

The AVIR that was taken for consideration in the PDD (7,77%) is based on the official board's decision making time data (October 2008)[10] (Figure 2). For comparison the VILIBOR (Vilnius Interbank Offered Rate) value (for 1 year period) was added. VILIBOR is based on the quotes of not less than 5 local commercial banks, designated by the Bank of Lithuania, which are most active in Lithuanian money market. Banks by lending money for its clients takes VILIBOR value as basis. Moreover banks always add its fixed margin (%).

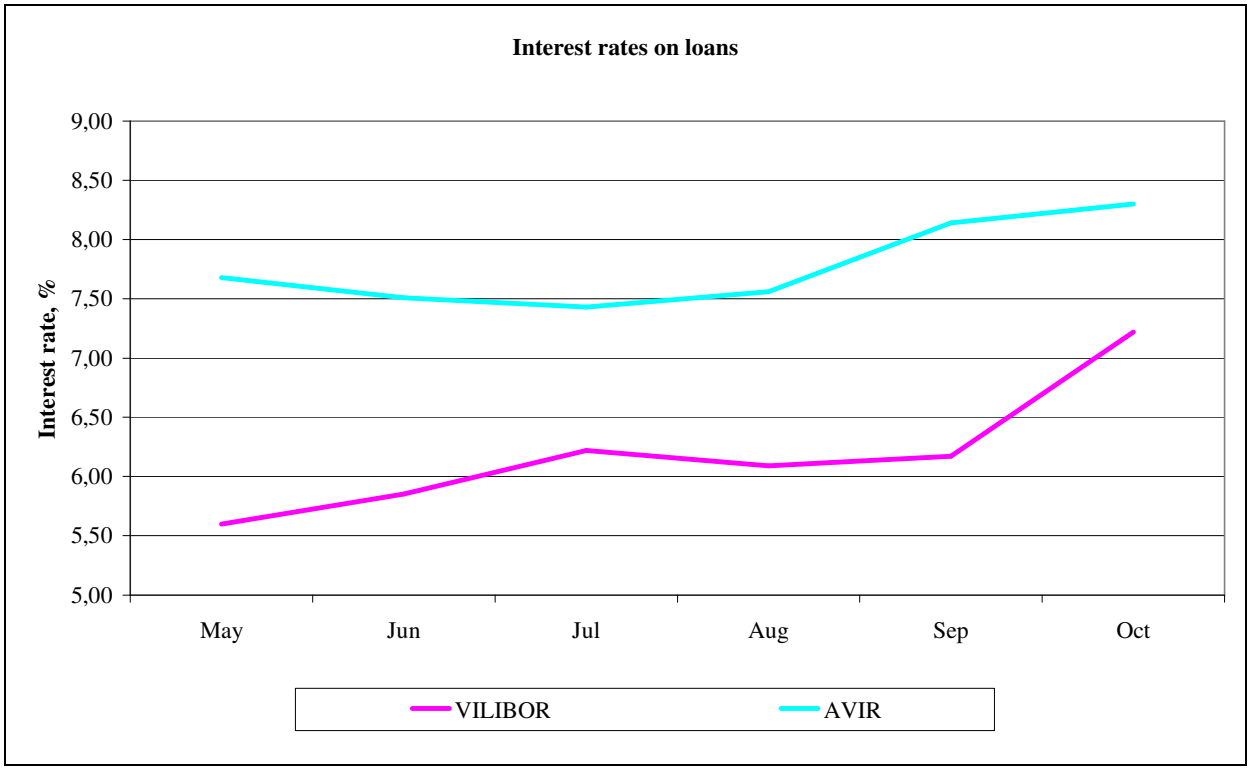

Figure 2. Loans interest rate in Lithuania

In order to keep this benchmark conservative no risk premium associated with the project type or the project developer was added to it. Further, AVIR's is in itself a conservative benchmark as it does not take into account the commercial lending rates of individual private sector banks which are typically higher than AVIR (because VILIBOR+bank margin).

Sub-step 2c. Calculation and comparison of financial indicators

1) Parameters needed for calculation of key financial indicators:

[10] Statistic of the Bank of Lithuania, http://www.lb.lt/eng/statistic/index.html

Table 7. Parameters for calculation of key financial indicators

Parameter	Value	Unit	Source
Total investment costs	33758,80	Ths.LTL	Contracts with third parties
Annual operation and maintenance costs first 5 years	815,32	Ths.LTL	Standard O&M contract with Enercon
Annual operation and maintenance costs after 5 years	1135,88	Ths.LTL	Standard O&M contract with Enercon
Annual electricity production	14906	MWh/year	Enercon data
Feed-in tariff till 2020	300,0	LTLMWh	Public sources
Wholesale electricity price after 2020	162,70	LTL/MWh	Baltpool information
Project life time	20	Year	Enercon data
ERU crediting period	1,0 (01.01.2012-31.12.2012)	Year	Kyoto agreement's period
ERU market price	8,00	Euro	Market overview

2) Comparison of IRR for the Project and the benchmark

In accordance with benchmark analysis (Option III), if the financial indicators of the proposed project, such as the project IRR, are lower than the benchmark, the proposed project is not considered to be financially attractive.

Table 8 shows the comparison of the project IRR with benchmark value. In both cases the project IRR is lower than the benchmark value. It means that project is financially unattractive on present market conditions. Additional revenues from ERUs sale increasing project IRR from 3,06% (Alternative A) to 3,10%. Therefore the JI revenues enable the Project to overcome the investment barrier and demonstrate the additionality of the Project.

Table 8. Project IRR in two scenarios

	Project IRR
Without ERUs	3,06%
With ERUs	3,10%
Benchmark value	7,77%

For comparison – the average IRR of new natural gas based cogeneration power plants is about 8-10%. However, EU structural funds are available for new cogeneration plants (up to 50% from all investments) but not for wind power projects in Lithuania. With the EU structural support IRR of new cogeneration plants jumps up to around 15%. This fact makes cogeneration option more attractive for the investors compared to the wind power. As concrete example may be used the new erected CHP plant example (Panevezys CHP) where the project IRR is 16,2%[11] (Alternative B).

[11] UNFCCC webpage, JI Project - Rudaiciai wind power park, PDDs supporting documentation Enclosure3 – IRR for cogeneration plant Panevezys

Sub-step 2d. Sensitivity analysis

The sensitivity analysis shall show whether the conclusion regarding the financial attractiveness is robust to reasonable variations in the critical assumptions.
According to *the Tool for the Demonstration and Assessment of Additionality, v.05.2*, minimal variation range should be in ±10% level.
For the Project, three parameters were selected as sensitive factors to assess the financial attractiveness:

1) Energy tariff variation after 2020
2) Annual Electricity Output
3) ERUs sale price

Table 9. Project sensitivity analysis

	-20%	**-10%**	**0%**	**+10%**	**+20%**
Energy tariff variation after 2020	1,75	2,48	3,14	3,72	4,23
Annual electricity output	0,04	1,66	3,14	4,47	5,75
ERUs sale price	3,09	3,10	3,14	3,10	3,11

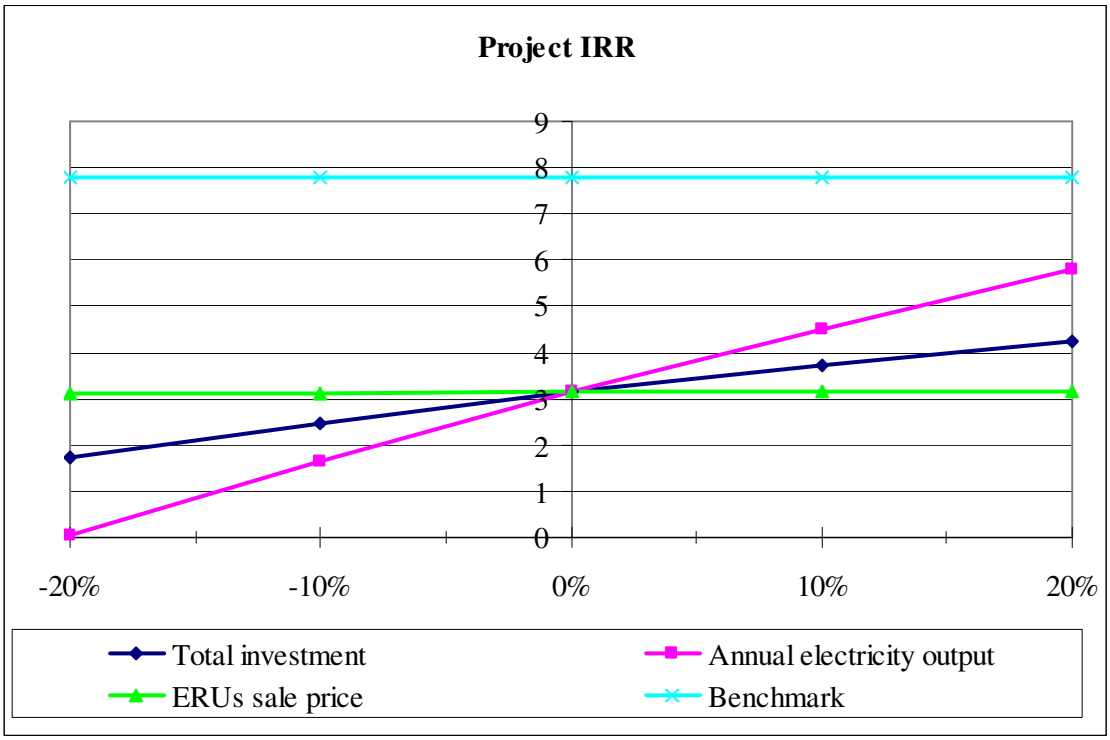

Figure 3. Project IRR sensitivity

The sensitivity analysis shows that the annual power production is crucial factor for project economic. From the figure 3 it might be seen that the Project IRR is not below benchmark IRR even the annual electricity output increase 20% or energy tariff after 2020 becomes 20% higher. The power production is variable and depends from on site wind conditions and wind turbines technical characteristics. The used power generation approach gives for project the capacity factor – 28,4%, that is

average result in practice, for ex. Rudaiciai[12] and Benaiciai[13] wind power projects real capacity factor during 2007-2010 period is 23,3% and 25,6% accordingly. The planned capacity factor for Rudaiciai project was 28,1% when for Benaiciai -28,9%. Presented data shows that project capacity factor estimation is conservative and probability of higher energy generation is minimal.

Energy tariff price after year 2020 depends from market situation and global energy recourses prices.

The additional revenue from ERUs sale gives more attractiveness and gives positive impact for Project additionallity. The ERUs sale price was estimated based on "carbon credits" market overview.

The sensitivity analysis confirms the fact that the project is not enough financially attractive and revenues from ERUs sale gives the chance to improve its financial figures.

Annual operation and maintenance costs weren't considered in sensitivity analysis due to fixed its values according to standard Enercon GmbH O&M contract (EPK).

Result: Pass

Step 3. Barrier analysis

According to Tool for the Demonstration and Assessment of Additionality methodology "If after the sensitivity analysis it is concluded that the proposed CDM project activity is unlikely to be the most financially attractive (as per step 2c para 8a) or is unlikely to be financially attractive (as per step 2c para 8b), then proceed to Step 4 (Common practice analysis)".

Step 4. Common practice analysis

Sub-step 4a. Analyze other activities similar to the proposed project activity:

Currently wind energy parks with total capacity 166,13 MW and singly wind turbines with total capacity 21,5MW are under operation in Lithuania. The total installed capacity is 187,63 MW. There are no information about other wind energy parks that is under operation without JI scheme in the country.

The Kaisiadorys wind power park is not related with existing wind parks and will be developed individually.

Sub-step 4b. Discuss any similar options that are occurring:

The practice shows that there are several main obstacles which have negative impact on widen project development in wind energy sector in Lithuania:

- Long wind energy projects pay back period. Due to big investments demand and constantly raising of prices of wind turbines (for ex. the Enercon turbines prices up approx. by 30% during last two years), raw materials (steel), civil works wages) the wind energy projects still are financially unattractive.
- Based on above mentioned reason the debt funding is complicated (the annual rate is increasing due to instable world economic situation).

[12] JI projects - Rudaiciai wind power park, PDD and verification reports
http://ji.unfccc.int/JI_Projects/JI_Projects/DeterAndVerif/Verif/FinVerif.html

[13] JI project - Benaiciai wind power park PDD and verification reports
http://ji.unfccc.int/JI_Projects/JI_Projects/DeterAndVerif/Verif/FinVerif.html

- No financial support for wind electricity generation is foreseen under the EU structural funds or any other multilateral or bilateral sources.
- Tender rules for grid connection in dedicated zones require a significant initial down-payment.
- Approval of dedicated zones means that only limited land areas might be used for wind energy projects. Such reason influenced the strong rising of prices and scarcity of land for availability of such projects development;
- There is insecurity regarding purchase of wind power when trading on hourly basis comes into effect after the establishment of the spot market. Lietuvos energija has the right to disconnect the wind power-plant park from the power network in case of the system overload.

Based on above mentioned reasons the JI revenue has been considered since the early stages of development of Kaisiadorys wind power park and is an integral part of financing the Project. As explained in Step 2, the fixed price offered for wind power is not high enough to make the Project activity financial viable. If the project developer will be able to sell the ERUs from the project activity, then the additional revenue from these sales would improve the financial viability and shall make the project more attractive.

Result: Pass

B.3. Description of how the definition of the project boundary is applied to the small-scale project:

The BASREC JI Project Guidelines describes project boundaries as theoretical boundaries, determining the scope of project's impact on GHG emissions. The sources of GHG involved in project boundaries represent the sources involved in baseline calculations.

The project boundary is drawn around the physical boundary of the wind power plants (i.e. the wind turbines and generators) and the power plants of AB Lietuvos Elektrine, the power generation of which the wind power plants would replace. Other producers as well as consumers of electric power are not included into project boundary due to the structure of Lithuanian power grid (see section B1).

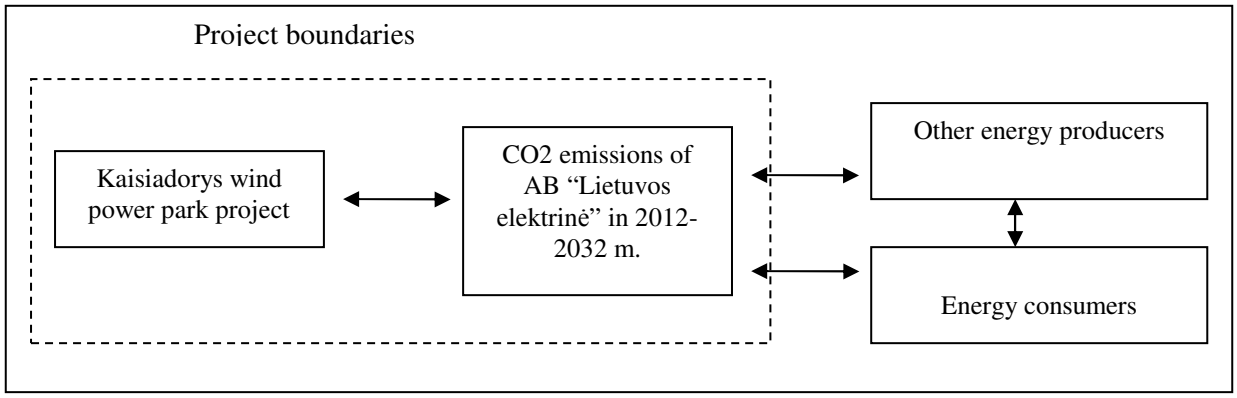

Figure 4. Project boundaries

B.4. Further baseline information, including the date of baseline setting and the name(s) of the person(s)/entity(ies) setting the baseline:

Date of Baseline setting: 10/10/2011
Prepared by: Vildara, UAB (Project participant), represented by CEO Aleksandras Spiridonov
Tel. +370-687-41976, Fax.+370-5-2137577 E-mail. Aleksandr.spiridonov@vildara.lt

SECTION C. Duration of the small-scale project / crediting period

C.1. Starting date of the small-scale project:

Start of the Kaisiadorys wind power park's activities – 01/05/2009 (technical project preparation).

Energy generation is planed from July 2012.

C.2. Expected operational lifetime of the small-scale project:

Planned operational lifetime of wind power park is 20 years (07/2012-06/2032).

C.3. Length of the crediting period:

The starting date of the crediting period is set to 1st July, 2012. First crediting period consist 0 years and 6 months (Jul-Dec 2012).

In case of additional international treaties between the parties of Kyoto protocol are signed, the crediting period may be extended for additional internationally agreed period.

SECTION D. Monitoring plan

D.1. Description of monitoring plan chosen:

The main requirements, being imposed on the monitoring plan, are pointed out in the Annex B of Chapter 6 of the Kyoto protocol (Decision 9/CMP.1, "Decisions adopted by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol"). The following points have to be considered in the monitoring plan:

- All the data necessary to the evaluation or the collection and storage of the data from all the sources of anthropogenic emissions and/or leakage. These data are being collected and stored during all the crediting period;
- The collection and storage of all the data necessary for the calculation of the baseline from all the anthropogenic sources and leakage during all the crediting period;
- The determination of all the potential sources, the collection of information about them and storage of it in case of increasing GHG emissions from the anthropogenic sources as well as leakage that have intense and significant impact on the project during its crediting period and that are outside the project boundaries. The project boundaries must involve all the sources and leakage of anthropogenic pollution under the maintenance of the participants of the project;
- The storage of the information about the state of environmental protection according to the requirements of the hosting country;
- The assurance of the quality of the monitoring and the procedures of control;
- The periodic calculation of the saved GHG, according to all the sources and leakage, if such are present.

The monitoring plan is attached as the Annex 3.

It was calculated that generating 1 MWh of electric power, contributes to the pollution of atmosphere with 0,626 tones of CO2 (see chapter B.1.). In accordance to the baseline scenario Kaisiadorys wind power park would displace carbon intensive electricity produced from fossil fuel sources. Baseline emissions will be monitored using the following formulae.

$ER = E_{KP} \times EF_{GRID}$

Where:
ER - emission reductions, tCO2
E_{KP} – net power dispatched to the grid from Kaisiadorys wind power park (difference between supplied into grid power and consumed from the grid power), kWh
EF_{GRID} – emission factor for power production in Lithuania, 0,626 tCO2/MWh

E_{KP} = Esup - Econ

Where:
Esup = Electricity supplied to the grid by the project (MWh/year)
Econ = Electricity consumed from the grid by the project (MWh/year)

See baseline study and methodology for detail on how EF_{GRID} is estimated (B.1.)

D.2. Data to be monitored:

Key information and data used for monitoring plan setup:

Data/Parameter	Esup
Data unit	MWhe
Description	The data of commercial power meter on electricity supplied to the grid from Kaisiadorys wind power park
Time of determination/monitoring	Per certain period (for ex. per month)
Source of data (to be) used	Deeds of transfer and acceptance from Lesto.
Value of data applied (for ex ante calculations/determinations)	-
Justification of the choice of data or description of measurement methods and procedures (to be) applied	Data will be aggregated monthly (yearly) and double checked with receipt of sales, with the SCADA system as back-up
QA/QC procedures (to be) applied	The data reading from commercial power metering devices will be executed remotely by SCADA. The installed current and voltage transformers will be certified and inspected by accredited companies (for ex. Lithuania and Germany Ltd. FESLA which has calibration and testing laboratory). Commercial power metering devices will be installed and under operation from Lesto side. Lesto will carry out periodical supervision, calibration and maintenance of metering devices.
Any comment	Historical data will be kept for min. 5 years period.

Data/Parameter	Econ
Data unit	MWhe
Description	The data of commercial power meter on electricity consumed from the grid by Kaisiadorys wind power

	park
Time of determination/monitoring	Per certain period (for ex. per month)
Source of data (to be) used	Deeds of transfer and acceptance from Lesto.
Value of data applied (for ex ante calculations/determinations)	-
Justification of the choice of data or description of measurement methods and procedures (to be) applied	Data will be aggregated monthly (yearly) and double checked with receipt of sales, with the SCADA system as back-up
QA/QC procedures (to be) applied	The data reading from commercial power metering devices will be executed remotely by SCADA. The installed current and voltage transformers will be certified and inspected by accredited companies (for ex. Lithuania and Germany Ltd. FESLA which has calibration and testing laboratory). Commercial power metering devices will be installed and under operation from Lesto side. Lesto will carry out periodical supervision, calibration and maintenance of metering devices.
Any comment	Historical data will be kept for min. 5 years period.

Key information and data used for monitoring plan setup:

Data/Parameter	ER
Data unit	tCO2
Description	Emission reduction
Time of determination/monitoring	Per certain period (for ex. per year)
Source of data (to be) used	Deeds of transfer and acceptance from Lietuvos energija
Value of data applied (for ex ante calculations/determinations)	0,626 tCO2/MWhe
Justification of the choice of data or description of measurement methods and procedures (to be) applied	Calculations based on baseline emissions (B.1.)
QA/QC procedures (to be) applied	Public data sources
Any comment	Historical data will be kept for min. 5 years period.

Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination regarding the PDD:
EF_{GRID} – emission factor for power production in Lithuania, 0,626tCO2/MWh

Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination regarding the PDD:
None

Data and parameters that are monitored throughout the crediting period:
Esup – power supplied to the grid from Kaisiadorys wind power park, kWh/year
Econ – power consumed from the grid from Kaisiadorys wind power park project, kWh/year

The monitoring plan is attached as the Annex 3

D.3. Quality control (QC) and quality assurance (QA) procedures undertaken for data monitored:

Table 9. Quality control (QC) and quality assurance (QA) procedures undertaken for data monitored

Data *(Indicate table and ID number)*	Uncertainty level of data (high/medium/low)	Explain QA/QC procedures planned for these data, or why such procedures are not necessary.
E_{KP}	*Low*	Data will be directly measured by commercial meter installed in the substation. This equipment will be sealed, calibrated and checked periodically for accuracy. In addition, all metered data will be double checked by receipts of electricity sales, with SCADA system as back-up. Vildara, UAB will collect and keep copies of calibration and maintenance documents of power devices. In the case of setting of prime commercial metering device failure, dispatched to the grid energy will be controlled through secondary metering device that is connected in parallel to prime energy meter (usually system has two energy meters).

D.4. Brief description of the operational and management structure that will be applied in implementing the monitoring plan:

It is planed that the operation and maintenance (O&M) works of Kaisiadorys wind power park will be done by company Enercon Gmbh that will have an agreement on such services with Vildara, UAB. The company Vildara, UAB has two employees – CEO and chief accountant. The company's CEO shall perform all Project based supervision works.
The monitoring report based on monitoring plan will be prepared by Vildara's director based on monthly deeds of transfer and acceptance received from Lesto side. Monitoring of supplied and consumed (for own purposes if necessary) power will be measured by the commercial power meters. The commercial meters data will be

transferred to Lesto side by SCADA system (through telemetry way) and based on those readings Lesto will issue invoices to Vildara, UAB. Moreover data on net energy output into national grid will be published officially on Litgrid website.
The received original invoices will be kept into Vildara, UAB accountancy for 10 year period.
For the quality assurance, an audit company will be contracted to revise company's financial results including the monitoring reports. Revision will include verification of the data sources and calculations. Power dispatch documents will be archived at Vildara, UAB for later reference for the proof of the monitoring results. Lesto are responsible for the periodical supervision, calibration and maintenance of the commercial power metering devices.

D.5. Name of person(s)/entity(ies) establishing the monitoring plan:

Prepared by: Prepared by: Vildara, UAB (Project participant), represented by CEO Aleksandr Spiridonov Tel. +370-687-41976, Fax.+370-5-2137577 E-mail. Aleksandr.spiridonov@vildara.lt

SECTION E. Estimation of greenhouse gas emission reductions

E.1. Estimated project emissions and formulae used in the estimation:

Park's energy consumption from the grid value will be covered by equal value of generated power, i.e. supplied to the national grid power will be reduced by this value. It means power consumption emissions will be accounted and therefore project emissions are considered equal to zero.

E.2. Estimated leakage and formulae used in the estimation, if applicable:

There are no direct or indirect emissions outside the project boundary attributable to the project activity.

E.3. Sum of E.1. and E.2.:

E.1.+ E.2.= 0

E.4. Estimated baseline emissions and formulae used in the estimation:

Baseline emissions (BE) are calculated as following:

$BE = E_{KP} \times EF_{GRID}$

Where,
BE = Baseline emissions (tCO2/year)
E_{KP} = Net Electricity supplied to the grid by the project (MWh/year)
EF_{GRID} = Emission factor of the power plants based on fossil fuel (0,626 tCO2/MWh)

Calculation of EF_{GRID} is presented in B1 and monitoring in D.4.

$E_{KP} = Esup - Econ$

Where:
Esup = Electricity supplied to the grid by the project (MWh/year)
Econ = Electricity consumed from the grid by the project (MWh/year)

E_{SP} values are based on power production forecast (see A.4.3.).
Total baseline emissions (BE) are

Year	2012	Total:
Baseline emissions = Project emission Reductions, tCO2	4666	**4666**

E.5. Difference between E.4. and E.3. representing the emission reductions of the project:

Because project emissions are zero, the emissions reductions are the same as the baseline emissions.

Year	2012	Total:
Baseline emissions = Project emission Reductions, tCO2	4666	**4666**

E.6. Table providing values obtained when applying formulae above:

Table 10. Project emission reductions

Year	Estimated project emissions (tonnes of CO2 equivalent)	Estimated leakage (tonnes of CO2 equivalent)	Estimated baseline emissions (tonnes of CO2 equivalent)	Estimated emission reductions (tonnes of CO2 equivalent)
2012	0	0	4666	4666
Total:	**0**	**0**	**4666**	**4666**

After year 2012 by following year estimated annual emission reduction – 9331 tones of CO2 equivalent.

SECTION F. Environmental impacts

F.1. Documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party:

According to the Communications No.KR12-58/4 of Kaunas Regional Department of Environment of Lithuanian Ministry of Environment of January 13, 2009, the conclusion, concerning the environmental impact of the planned economic activity, was drawn that the environmental impact assessment of the planned economic activity – installation and maintenance of wind power plants – is not required. The above stated conclusion was drawn because (the extract from the above mentioned documents):

- Planned economic activity place is not in protected areas;
- According to Kaisiadorys general plan planned economic activity place corresponds for engineer infrastructure purpose, wind power place is selected in the terrain plan.

Potential environmental impacts are described below.

Atmosphere

The project is considered to result not only in reduction of GHG but also in reduction of other pollutants such as SO2 and NOx. These pollutants are released to the atmosphere while generating electric power at Lietuvos elektrine. To calculate reductions of SO2 and NOx, the following formulas are used:

$E_{SO2} = P_{MWh} \times EF_{SO2}$

Where:
P_{MWh} - is the electric power dispatched to the national grid, MWh/year;
EF_{SO2} – is the emissions factor, defining how many tones of SO2 is emitted to the atmosphere while producing 1 MWh of electric power.

$E_{NOx} = P_{MWh} \times EF_{NOx}$

Where:
P_{MWh} - is the electric power dispatched to the national grid, MWh/year;

EF_{NOx} - is the emissions factor, defining how many tones of NOx emerge, while producing 1 MWh of electric power.

The results of projected SO2 and NOx reduction during year 2012 are given in Table 11.

Table 11. SO2 and NOx emission reductions

Pollutant	kg of pollutant/MWh	Amount of pollutant saved during the crediting period
SO2	0,45	6,7 t
NOx	0,95	14,2 t

Water

There are no open water pools within the project area. There is no risk to pollute the surface and/or ground water during the maintenance of the wind power park project. Water is not used for technological purposes in the wind power park so the wastewater will not be formed. Surface run-off from the wind power park territory will be drained away. For this purpose, drainage systems are reconstructed within the project area.

Soil

There will not be any significant impact on soil. The project area mainly consists of farmlands. During the construction process, in the power plant fundament areas, road construction areas and cable laying areas the upper layer of the soil which is 0,2-0,3m thick, will be separated and stored apart from other soil layers. After construction works are finalized, the loam will be re-cultivated and planted according to projects plans in order to avoid soil erosion.

Flora / Fauna

Based on data of operating wind power plants, there is no evidence of the impact of wind power plants on biological diversity. Hence, measures to recreate environmental biodiversity are not necessary. There are no envisaged tree cuttings or relocation in the project area. A grass-plot will be set in the area. There are no wild animal accumulation, feeding, mating, wintering of migration points in the project area that should be protected.

Impacts on birds

Kaisiadorys wind power park is far away from bird migration routes. The probability of birds colliding with the wind power plants is very low. Therefore the impacts on birds are considered negligible. A study from the Danish Ministry of the Environment states that high voltage power lines is much greater danger to birds than the wind turbines themselves.
According to results of the studies performed by Danish and German scientists – wind power plants have no impacts on migration routes of birds. The studies in ES show that the risk of bird collisions with wind power plants is much smaller compared to the risks of bird collision with high voltage air power lines, cars, skyscraper, glass facades of buildings. After long term observations, the conclusions were drawn that birds have changed their migration routes according to new obstructions evolved on their way.

Impacts on animals

Noise, shadow and blinking effects and landscape fragmentation effect made by wind power park can disturb natural wildlife. However, Kaisiadorys wind power park is surrounded by farmlands and rural areas situated away from wild animal habitats. Hence, the impact on wild animals is considered negligible.

Protected areas

There are no protected areas within or nearby the project site. There are no protected species of flora or fauna within or close to the project site. Among other sources, such data was verified at the State Service for protected Areas under the Ministry of Environment[14].
All nearest protected areas are within sufficient range away from the project site:

Kaukines botanic-zoological reservation (about 2,5 km)
Strosiunu landscape reservation (about 5,9 km)
Kauno mariu regional park (about 12,2 km)
Strevininku forest (about 8,2 km)

Cultural heritage

No valuable cultural heritages are registered in the Project area.

Waste

Waste in wind power park is minimal. No oil lubricants are used in Enercon turbines as there are no gear boxes in the construction. Any spare parts that are substituted with new ones during the operation and maintenance period of wind power park will be removed from the project site and recycled by the maintenance service provider.

Physical impact

Electromagnetic field

Electromagnetic field is formed around high voltage air power lines, at the transformer substations and other open power installations. Electromagnetic field is measured by the intensity of electric field (E, V/m) and by the intensity of magnetic field (H, A/m). Permissible intensity of electric field in residential (building) areas is up to 1kV/m without limitations for allowed exposure time and up to 5 kV/m in "green" zones (parks, gardens etc.) without limitation for exposure time (HN 104: 2000).
The potential sources of electromagnetic field in wind power park (generators and transformers) are generating low voltage and up to 100kW power capacity. The intensity of electric and magnetic fields are lower than the permissible level for residential areas (1kV/m). Electro-technical equipment of wind power plants are mounted in 90m height from the surface in the metal, connected to earth baskets, which perform as electromagnetic shields. Zone of electromagnetic impact is not present in wind power park territory or in neighboring areas.

[14] State cadastre of protected areas http://stk.vstt.lt

Noise

The sanitary zone with the radius of 105 m, was set around wind power plants according to the requirements. Maximum allowed noise level in the residential areas is 55dB at the night time and 65dB at the daytime (HN 33:2007). It is estimated that the Kaisiadorys wind power park's noise level satisfy allowable values after 80m therefore no additional measures are needed to mitigate this impact.
The closest living area (grange) is 310m away from the wind power park.

Visual impact

Wind power plants make landscape more urbanized. However, if the right planning concept is used – a visual impact can be minimized. The positioning of wind power plants is made optimal to integrate it into the landscape. The towers of wind power plants are painted into bright grey color which will fade them in the sky background.
Also, wind power plants, like all tall buildings cast shadow on the neighboring areas when the sun is visible. It also causes a blinking effect due to rotation of wind turbine wings. The shadowing effect is not relevant for the project. According to the preliminary calculations – shadows will be cast not more than 250m from the wind power plants. Bearing in mind that the closest living area are approx. 310 meters away – the shading effect is not considered as an impact.

F.2. If environmental impacts are considered significant by the project participants or the host Party, provision of conclusions and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:

The environmental impacts are nor considered as significant.

SECTION G. Stakeholders' comments

G.1. Information on stakeholders' comments on the project, as appropriate:

During detailed plan preparation, compulsory public consideration procedures were undertaken where stakeholders had possibilities to express his opinion. Compulsory written agreements of residents in surrounding areas were obtained during the process of detailed planning and technical project preparation process. Stakeholders have not expressed any objections.
The following steps were made during the stakeholder process (Table 12):

Table 12. Stakeholder process

Date	Description
2009-01-13	Conclusion of the Kaunas regional department for environmental protection regarding project the environmental impact assessment.
2010-03-01	Obtained written approvals from all living neighbours of the site.
2010-03-26	Announcement about public consideration of project special plan in the newspaper „Atspindziai“
2010-05-12	Consideration of the special plan by the board of Kaisiadorys municipality
2010-10-28	Decision of the board of Kaisiadorys municipality regarding the approval of the project special plan.
2011-01-27	Obtained protocol of hygiene examination of the project documentation prepared by Kaunas centre of public health (Visuomenes sveikatos centras)
2011-02-02	Decision of the board of Kaisiadorys municipality regarding the issuance of building permit.

Annex 1

CONTACT INFORMATION ON PROJECT PARTICIPANTS

Organisation:	Vildara, UAB
Street/P.O.Box:	Strošiūnų I k.
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Annex 2

BASELINE INFORMATION

Implementing Joint Implementation projects in Lithuania, where the result is the reduction in the power use or power generation, which would indirectly reduce the amount of generated power in the installations of the EU allowance trading scheme, it is offered to use the pollution factor equal to 0,626 tCO2/MWh of the electricity generated.

Annex 3

MONITORING PLAN

Emission reductions from the project will be calculated by multiplying annual amount of power dispatched to the grid by emissions factor:

$ER = E_{KP} \times EF_{GRID}$

Where:
ER – emission reductions, tCO2
E_{KP} – Net annual power production at Kaisiadorys wind power park (the difference between produced and consumed power), MWh.
EF_{GRID} – emission factor for power production in Lithuania, i.e. 0,626 tCO2/MWhe

ER will be calculated for a past period (for ex. previous year), using annual power supplied and consumed data. The following monitoring form will be used to monitor Net annual power production and ER. Monitoring procedures are described in D2.

YEAR:_____

Month	Power dispatch confirmation document No.	Date of issuance of power dispatch confirmation document	Power supplied to the grid (Esup), MWh	Power consumed from the grid (Econ), MWh	Net annual power production (E_{KP}), MWh	Amount of Emission Reduction (ER), tCO_2e	Name of the person in charge	Signature
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								
Total:								

ER = E_{KP} x 0,626

E_{SP} = Esup-Econ

- - - - -