JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM
Version 01 - in effect as of: 15 June 2006

CONTENTS

SECTION A. General description of the project

A.1. Title of the project:

Title of the project: RP Global Polish Wind Farm Project
Sectoral scope: (1) Energy industries (renewable/non-renewable sources)
Version: 4
Date: 21/09/2012

A.2. Description of the project:

Project Scenario
This project consists of new wind turbines located at three sites primarily in north-western Poland: Tychowo with 20 turbines of 2.5 MW capacity each with a total capacity of 50 MW, Wałcz with 3 turbines at 1.5 MW capacity each with a total capacity of 4.5 MW and Stramnica wind farm which has 2 wind turbines at 2.3 MW capacity each with a total capacity of 4.6 MW.

Summary of the history of the project (including its JI component)

Date	Event/Action
2006	Start of project development, including JI investigations
23/01/2007	Cooperation Agreement with JI consultant
15/03/2007	Signing of purchase for the first batch of turbines
April 2008	Start of construction
23/09/2008	Start of operation Wałcz
24/02/2009	Start of operation site Tychowo (temporary connection)
08/03/2011	Start of operation Stramnica
19/04/2010	Adoption of Polish NAP (incl JI possibility for wind and existing projects)

Purpose
The purpose of the Project is to produce electricity from wind turbines, i.e. to transform wind energy to electricity using technical devices and to transmit this energy to consumers utilizing existing 15 kV and 110kV distribution grid power system operated by the Distribution Companies ENERGA – Obrót S.A. and ENEA Operator. The wind-generated electricity produced by the Project is to displace the grid electricity (which is mainly generated by conventional power plants based on coal) contributing to greenhouse gases (GHG) reductions within the Polish power system. The Project will help to avoid GHG emissions which would have occurred in the absence of the Project, in business-as-usual scenario. Furthermore, the Project is to support alternate energy sources and sustainable renewable energy development in Poland.

Situation existing prior to the starting date of the project
Same as baseline scenario, see paragraph below.

Baseline Scenario
According to applied CDM methodology ACM0002 “Consolidated baseline methodology for grid connected electricity generation from renewable sources” Version 13.0.0 - *If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:*

Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in

the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

A.3. Project participants:

Party involved	Legal entity Project participants (as applicable)	Please indicate if the Party involved wishes to be considered as Project participants (Yes/No)
Poland (host party)	RP Global Poland Sp. z o.o	No
Austria	RP Global Austria GmbH	No

A.4. Technical description of the project:

A.4.1. Location of the project:

A.4.1.1. Host Party(ies):

Poland

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

West Pomeranian Voivodeship

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

The turbines are located in the following towns:

Site Name	Town	Decimal Lat./Long.
Tychowo	Tychowo	Turbine 1: N 54°20'46.36'' E 16°48'56.12''
		Turbine 7: N 54°21'37.90'' / E 16°45'53.96''
		Turbine 16: N 54°22'36.02'' / E 16°47'25.84''
		Turbine 17: N 54°22'41.13'' / E 16°47'45.74''
		Turbine 20: N 54°22'57.40'' / E 16°49'48.58''

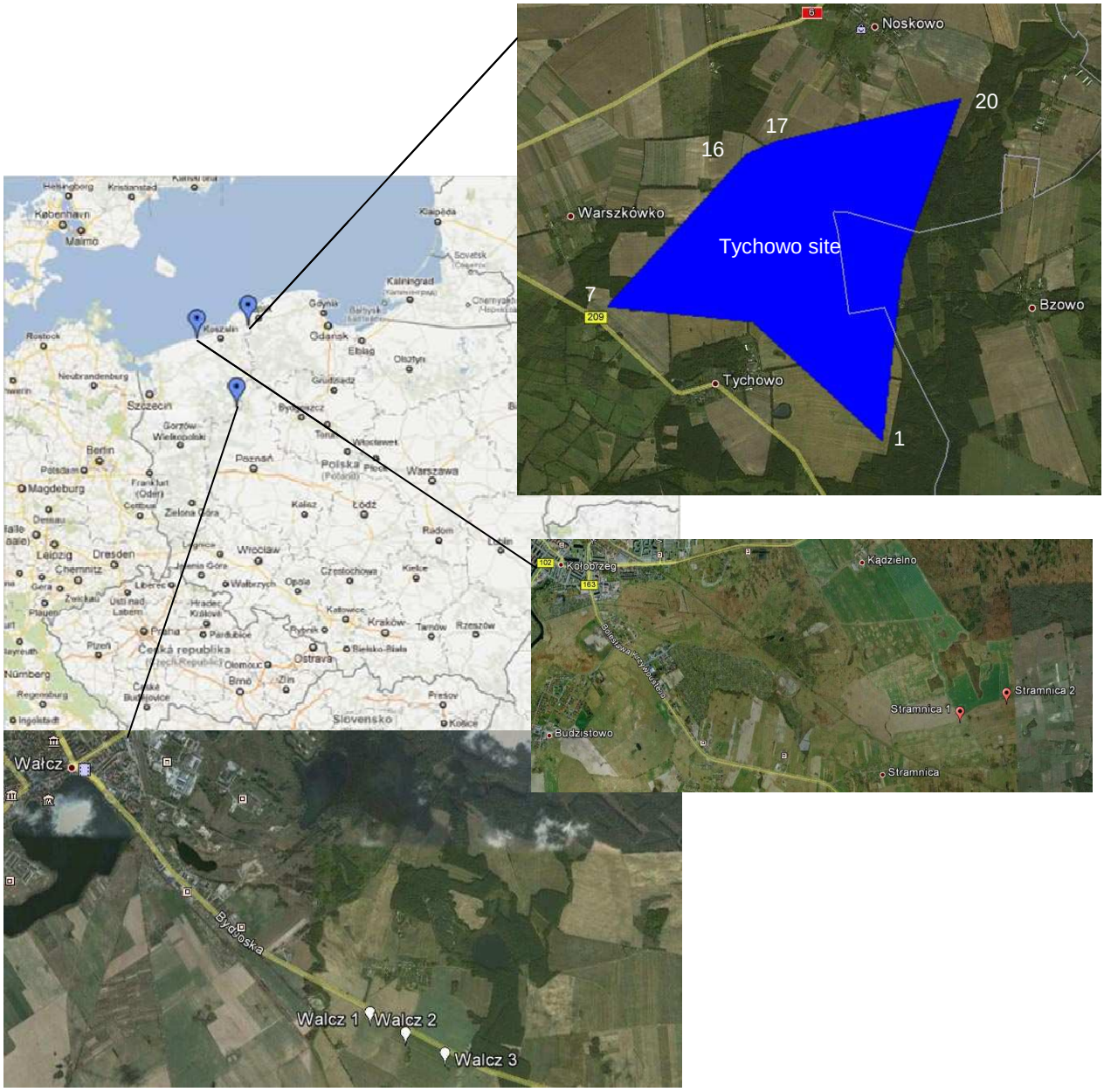
Site Name	Town	Decimal Lat./Long.
Stramnica	Stramnica	Stramnica 1: N 54.159444 / E 15.655556
		Stramnica 2: N 54.161389 / E 15.663889

Site Name	Town	Decimal Lat./Long.
Wałcz	Wałcz	Wałcz 1: N 53.252222 / E 16.5175
		Wałcz 2: N 53.250556 / E 16.5225
		Wałcz 3:

		N 53.248889 / E 16.528056

A.4.1.4. Detail of physical location, including information allowing the unique identification of the project (maximum one page):

The wind farms are in the north-west region of Poland. The decimal latitude and longitude coordinates of each of the locations are in the table above. A map showing the site locations is below.



A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project:

The project includes the following components:

- 25 Wind turbines
- Turbine pads

- Access roads
- 110/30kV substation at Tychowo site
- Connection to grid (OHL and underground cables)
- Wind farm control system;

Tychowo site: All of the 20 turbines employed in this site are Nordex n90 2500 wind turbines with a rated capacity of 2.5 MW each. These turbines have a hub height of 100 meters with blades diameter of 90 meters. The control system used is SCADA NC2.

The project proponent constructed a new 110/30kV transformer station at the project site and a 9 km long OHL to connect to the grid at the 110kV side of substation Sławno, which is owned and operated by the local grid operator Energa. This is also where Energa's commercial meters are located.

Wałcz site: The 3 turbines employed in this site are Nordex S77 wind turbines with a rated capacity of 1.5 MW each. These turbines have a hub height of 100 meters with blades diameter of 77 meters. The control system used is MITA.

The site is connected to the grid by a 1900m long 15kV underground cable to the substation GPZ Wałcz owned and operated by the local grid operator ENEA. The official connection and metering point is at the beginning of the underground cable at the windfarm. This is also where ENEAs commercial meters are located.

Stramnica site: The two turbines employed at this site are Enercon E 82 E2 wind turbines with rated capacities of 2.3 MW. These turbines have a hub height of 100 meters with blades diameter of 82 meters. The control system used is SCADA.

The site is connected to the grid via a 5km underground cable at the 15kV side of substation Kołobrzeg, owned and operated by the local grid operator Energa. This is also where Energa's commercial meters are located.

A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances:

The project generates electricity from wind which is a renewable energy that reduces anthropogenic GHG emissions through displacement of fossil fuel generated electricity. Poland relies on coal-fired plants for approximately 92% of its electricity, with a mix of other fossil fuels and renewables comprising the remainder. At the time of the investment decision end of 2006 (project start date is the ordering of the first turbines on 15/03/2007), wind power only represented 0.26% of the electricity generation in Poland (see the statistics of the Polish Wind Energy Association PWEA, http://www.elektrownie-wiatrowe.org.pl/pl/energetyka-wiatrowa/ewi-w-polsce).
Fossil fuel power plants are the standard and represent the power that would be displaced by the project.

The project construction began in April of 2008 and the start of production at Wałcz is marked with the confirmation of grid connection on 23/09/2008, which is also the start of the crediting period. The crediting period will extend for ten years from the start of production to 22/09/2018. The generation capacity of the project increased from 4.5MW in 2008 to 59.1MW in 2011 as turbines were added to the project. The Tychowo wind farm electricity production began in June, 2009 and the Stramnica wind farm electricity production began in March 2011.

Ex ante emission reductions are not estimated for the years 2008-2011, as real results are available for these years. The emission reductions for the years from 2012 are estimated based on the measured values from the previous years.
The emission reductions in 2008 are negative as the connection to the grid was already established, and electricity was consumed in order to operate the system, but no electricity was yet produced by the wind turbines. The emission reductions increased from 2008 through 2011 as additional turbines were added and started producing electricity. The project capacity in 2012 is 59.1 MW, which results in an annual production of about 124,000 MWh; thus the emissions reductions from 2012 to the end of the crediting period would amount to about 100,688 tonnes CO_2e per year. The estimated annual emission reductions from the project per year are listed in Table A.4.3.1.

The baseline emissions in Table A.4.3.1 are higher than the Project emissions (which are zero); hence the Project reduces anthropogenic emissions of GHG below the levels that would have occurred in the absence of the registered Project activity.

NOTE: The data in the table below was calculated with a published EF for the Polish Grid of 0.812 tCO_2/MWh.

A.4.3.1. Estimated amount of emission reductions over the crediting period:	
Length of crediting period	**10 Years**
Year	**Estimated annual emission reductions, tonnes CO_2e**
2008	-8
2009	33,486
2010	71,603
2011	98,194
2012	100,688
2013	100,688
2014	100,688
2015	100,688
2016	100,688
2017	100,688
2018*	81,378
Total estimated emission reductions over 10-year crediting period, tonnes CO_2e	**888,781**
* The 2018 emission reductions are only through September 22, 2018.	
All emission reductions beyond 2012 are subject to approval by the host party Poland.	

A.5. Project approval by the Parties involved:

SECTION B. Baseline

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

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Indication and description of the approach chosen regarding baseline setting

According to decision 10/CMP.1 paragraph 4 (a) application of baseline and monitoring methodologies approved by CDM EB is acceptable for JI projects.

The CDM Methodology *ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" Version 13.0.0* hereby referred to as (Baseline Methodology ACM0002) is used in its totality. Only where ACM0002 refers to the "*Tool to calculate the emission factor for an electricity system*", the project uses a JI specific approach as the emission factor for the Polish national grid electricity system is provided by the National Centre for Emission Management (KOBiZE)[1]. The emission factor is fixed ex ante.

ACM0002 Version 13.0.0 also refers to the latest approved versions of the following tools:

Tool to calculate the emission factor for an electricity system; Version 02.2.1
Tool for the demonstration and assessment of additionality; Version 06.0.0
Combined tool to identify the baseline scenario and demonstrate additionality; Version 03.0.1
Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion. Version 02

Of these only the *Tool to calculate the emission factor for an electricity system* is applicable for the proposed project activity under JI Track 1.

Justification of the choice of the methodology and why it is applicable to the project

Applicability conditions in Version 13.0.0 of ACM0002 related to wind power activities	Characteristics of the project activity	Applicability criterion met?
This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	The proposed project activity is a new grid-connected wind farm project and no renewable power plant was operated prior to the implementation at the proposed project activity site.	Yes
The methodology is applicable under the following conditions: *• The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;* *• In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or*	The proposed project activity is the installation of a wind power plant.	Yes

[1] see KOBiZE, Joint Implementation Projects Guidebook, February 2012, page 11. http://www.kobize.pl/materialy/opracowania/luty2012/JI_GUIDEBOOK-possibilities_for_realization_of_JI_in_Poland_8-02-2012_final.pdf

tidal power capacity addition projects which use Option 2: on page 11 to calculate the parameter EGPJ,y): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity; *• In case of hydro power plants, one of the following conditions must apply:* *o The project activity is implemented in an existing reservoir, with no change in the volume of reservoir; or* *o The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m2; or* *o The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m2.*		
The methodology is not applicable to the following: • *Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;* • *Biomass fired power plants;* • *Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m2*.	The proposed project activity does not involve switching from fossil fuels to renewable energy. It is neither a biomass fired power plant nor a hydro power plant.	Yes

Application of the approach chosen

Identification of the baseline scenario
Since the proposed project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

> *Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in* the official Polish grid emission factor provided by the National Centre for Emission Management (KOBiZE).

Baseline emissions
Baseline emissions include only CO2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} \cdot EF_{grid,CM,y} \quad \textbf{(1)}$$

Where:

BE_y	=	*Baseline emissions in year y (tCO_2/yr)*
$EG_{PJ,y}$	=	*Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)*
$EF_{grid,CM,y}$	=	The official Polish grid emission factor provided by the National Centre for Emission Management (KOBiZE) (tCO_2/MWh)

Calculation of $EG_{PJ,y}$

The calculation of $EG_{PJ,y}$ is different for (a) greenfield plants, (b) retrofits and replacements, and (c) capacity additions.

The proposed project activity is a greenfield plant therefore (a) applies.

(a) Greenfield renewable energy power plants

If the project activity is the installation of a new grid-connected renewable power plant/unit at a site where no renewable power plant was operated prior to the implementation of the project activity, then:

$$EG_{PJ,y} = EG_{facility,y} \quad \textbf{(2)}$$

Where:

$EG_{PJ,y}$	=	*Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the JI project activity in year y (MWh/yr)*
$EG_{facility,y}$	=	*Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)*

The following tables provide the key information and data used to establish the baseline:

Data/Parameter	$EF_{grid,CM,y}$
Data unit	tCO_2/MWh
Description	CO_2 grid emission factor for grid connected power generation in provided by the National Centre for Emission Management (KOBiZE), June 2011
Time of determination/monitoring	Fixed ex ante
Source of (data to be) used	National Centre for Emission Management (KOBiZE)
Value of data applied (for ex ante calculation/determination)	0.812
Justification of the choice of data or description of measurement methods and procedures (to be) applied	EF approved by the Polish Ministry of the Environment, Designated Focal Point for Joint Implementation
QA/QC procedures (to be) applied	----
Any comment	----

Data/Parameter	$EG_{PJ,y}$
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y*. Net electricity generation is the difference between produced and consumed electricity.
Time of determination/monitoring	to be monitored ex-post
Source of data (to be) used	There are meters installed at substations owned and operated by either Energa Obrót S.A. or ENEA S.A. Operator. These meters are used to continuously monitor the project electricity production as well as the electricity consumed. The meters are bi-directional and have an accuracy class of 0.2s. Energa Obrót S.A. or ENEA S.A. Operator provides transcripts of the readings of the electricity generation to RP Global every month.
Value of data applied (for ex ante calculation/determination)	For ex ante calculation the following values are used: $EG_{PJ,y}$ 2008 -10 MWh $EG_{PJ,y}$ 2009 41,239 MWh $EG_{PJ,y}$ 2010 88,181 MWh $EG_{PJ,y}$ 2011 120,929 MWh $EG_{PJ,y}$ 2012 – 2017 124,000 MWh $EG_{PJ,y}$ 2018 100,219 MWh
Justification of the choice of data or description of measurement methods and procedures (to be) applied	Continuous measurement and at least monthly recording.
QA/QC procedures (to be) applied	Cross check measurement results with measurements from seperate meters located at the turbines, which are relevant for the number of Green Certificates received.

Any comment	--------

Ex ante $EG_{PJ,y}$ is determined as follows:

As the project activity is already fully implemented and data for the net electricity generation is available, the actual data for the period from the start of the crediting period (23/09/2008) until 31/12/2011 is used.

For the years 2012 to 2018, the existing data is used to estimate the respective annual net electricity generation.

This results in the following values for $EG_{PJ,y}$ for the ex-ante calculation:

$EG_{PJ,y}$ 2008	-10 MWh
$EG_{PJ,y}$ 2009	41,239 MWh
$EG_{PJ,y}$ 2010	88,181 MWh
$EG_{PJ,y}$ 2011	120,929 MWh
$EG_{PJ,y}$ 2012 – 2017	124,000 MWh
$EG_{PJ,y}$ 2018	100,219 MWh

Project emissions

ACM0002 states:

For most renewable power generation project activities, $PE_y = 0$. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y} \quad (3)$$

Where:

PE_y	*Project emissions in year y (tCO_2e/yr)*
$PE_{FF,y}$	*Project emissions from fossil fuel consumption in year y (tCO_2/yr)*
$PE_{GP,y}$	*Project emissions from the operation of geothermal power plants due to the release of non-condensables gases in year y (tCO_2e/yr)*
$PE_{HP,y}$	*Project emissions from water reservoirs of hydro power plants in year y (tCO_2e/yr)*

The proposed project activity does not consume any fossil fuels, is not a geothermal power plant and no hydro. Therefore project emissions will be 0.

Leakage

No leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction

and upstream emissions from fossil fuel use (e.g. extraction, processing, transport). These emissions sources are neglected.

No leakage emissions are considered.

Emission reductions

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y \quad (4)$$

Where:
ER_y = Emission reductions in year *y* (t CO_2e/yr)
BE_y = Baseline emissions in year *y* (t CO_2/yr)
PE_y = Project emissions in year *y* (t CO_2e/yr)

Estimation of emissions reductions prior to validation
Estimations of emission reductions are presented under section E of this JI-PDD

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 JI project:

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According to the JI *Guidance on Criteria for Baseline Setting and Monitoring (Version 3) Annex 1*, additionality, paragraph 44 (b) gives the following option for demonstration of additionality:

(b) Provision of traceable and transparent information showing that the same approach for additionality demonstration has already been taken in cases for which determination is deemed final and which can be regarded as comparable, using the criteria outlined for baseline determination in paragraph 12 above;

Paragraph 12 states:

12. If a project participant wishes to use an approach for baseline setting and monitoring already taken in comparable cases, only those JI projects for which determination is deemed final can be considered as comparable. Moreover, a project may be considered comparable if appropriately substantiated and justified, and in any case shall be considered comparable if the following conditions apply:

*(a) **GHG mitigation measure.** The project boundary of the proposed project and the other project(s) encompass similar sources of GHG emissions and the emission reductions are achieved by similar measures; and*

*(b) **Geography and time.** The proposed project and the other project(s) are hosted by the same Party and the period of time between starting dates of the proposed and the other project(s) is not more than five years; and*

*(c) **Scale.** The difference between the proposed project and the other project(s) is less than 50 per cent in terms of the project's output (i.e. power output, capacity increase, etc.) or service provided; and*

*(d) **Regulatory framework.** Between the starting dates of the proposed project and the other project(s) the regulatory framework has not changed in a manner that would affect the baseline of these projects.*

The JI project "Lake Ostrowo Wind Farm" was registered by the JISC (ITL project ID: PL1000063[2]), and is comparable to the proposed project activity according to the provisions of paragraph 12. The following table shows a comparison of the relevant conditions.

	Lake Ostrowo	**RP Global**
Measure	Wind Farm	Wind Farm
Geography	Poland	Poland
Time(Start date)	12/2005 (start of construction)	15/03/2007
Scale	30.6MW (-48%)	59.1MW
Regulatory Framework	same	same

ad Time: The PDD for the Lake Ostrowo Wind Farm project does not specify an explictit JI project start date. It explicitly mentions that the "*Preparations for realisation of the investment commenced at the end of 2002*", and states the start of construction as December 2005, which would be in line with the currently applicable JI regulations. The start date quoted in the PDD is the erection of the first turbines in September 2006. So in any case, the project start of "Lake Ostrowo Wind Farm" was not more than 5 years earlier than that of the proposed project activity.

ad Regulatory Framework: no significant changes in the regulatory framework for the implementation of wind power projects in Poland occurred between the starting dates of the two compared projects.

As the two projects are comparable according to the regulations of the *Guidance on Criteria for Baseline Setting and Monitoring* , the same additionality approach is taken for the proposed project activity.
Barriers due to prevailing practice:
At the time of the investment decision end of 2006 (project start date is the ordering of the first turbines on 15/03/2007), wind power only represented 0.26% of the electricity generation in Poland. See the energy statistics of UNdata (http://data.un.org/Data.aspx?d=EDATA&f=cmID%3AEC), the statistics of wind energy development of the European Wind Energy Association EWEA (http://www.ewea.org/fileadmin/ewea_documents/documents/statistics/cumulative_wind_per_ms_1998_2009_ws.xls) and also the statistics of the Polish Wind Energy Association PWEA (http://www.elektrownie-wiatrowe.org.pl/pl/energetyka-wiatrowa/ewi-w-polsce).

A large share of the 153MW installed wind power capacity at the end of 2006 consisted of small sites with single turbines of up to 1 MW capacity. Out of the few larger wind farms the following four were developed as JI projects:

- Tymien 50MW
- Zagorze 30MW
- Puck 22MW

The only other large windfarms Cisowo (18MW) and Barzowice 5.1MW received financing support from the National Fund for Environment Protection and Water Management and by the Eko Fund.

The proposed project activity can therefore be classified as not being prevailing practice in the host country.

The same approach is used by the registered JI project "Lake Ostrowo Wind Farm" [4]:

[2] http://ji.unfccc.int/JIITLProject/DB/S4IZCRCSRZ9K8LO1W7SF42J9EY24KK/details

[4] http://www.dnv.com/focus/climate_change/upload/pdd%20and%20monitoring%20plan%20-%20lake%20ostrowo.pdf

"Generating the energy by means of wind turbines is not a common practice in Poland. ***In 2003 wind turbines generated not more than 130 GWh*** *(according to official data presented by the Ministry of Environment in Sectoral Operational Programme "Environment" – 124GWh), so the share of wind-generated energy figured out at 0.08% of total electricity production. According to ARE data* ***this figure rose to 142.3 GWh in 2004*** *(0.09% of total electricity production).*
The generation of wind power plants in comparison to other RES was moderate. ***The electricity generation from RES amounted to 2893.9GWh in 2004, only 4.93% of which was produced by wind*** *(around 21% by biomass, 72% by hydropower).*
In Poland there are only 3 professional wind farms with total capacity installed of 53 MW.

All above mentioned investments were feasible by dint of financial support from external sources of financing.
There are also several other small capacity installations. According to knowledge of Project management there were around 22 wind turbines of nominal power lower than 600 kW, distributed around the country. Total capacity of those small installations was up to 10 MW. It is very hard to estimate how many installations coming from re-powering have been really installed in Poland. There are no reliable national statistics about number of small turbines. URE reports about 42 working wind installations, it is not said how many of them are really generating electricity.
Nevertheless, the Lake Ostrowo Project (30.6 MW) can not be compared with projects of small capacity consisting of 1-2 turbines, constructed usually as pilot or demonstrative projects by municipalities or single installations, erected by private people as small units for use of households. Additionally, some of investments, especially those finalized in the end of 90., were based on turbines provided by Polish manufacturer – Nowomag, which, due to the lack of demand for small capacity turbines, is no longer dealing with manufacturing of wind installations. Many of small installations are not working."

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

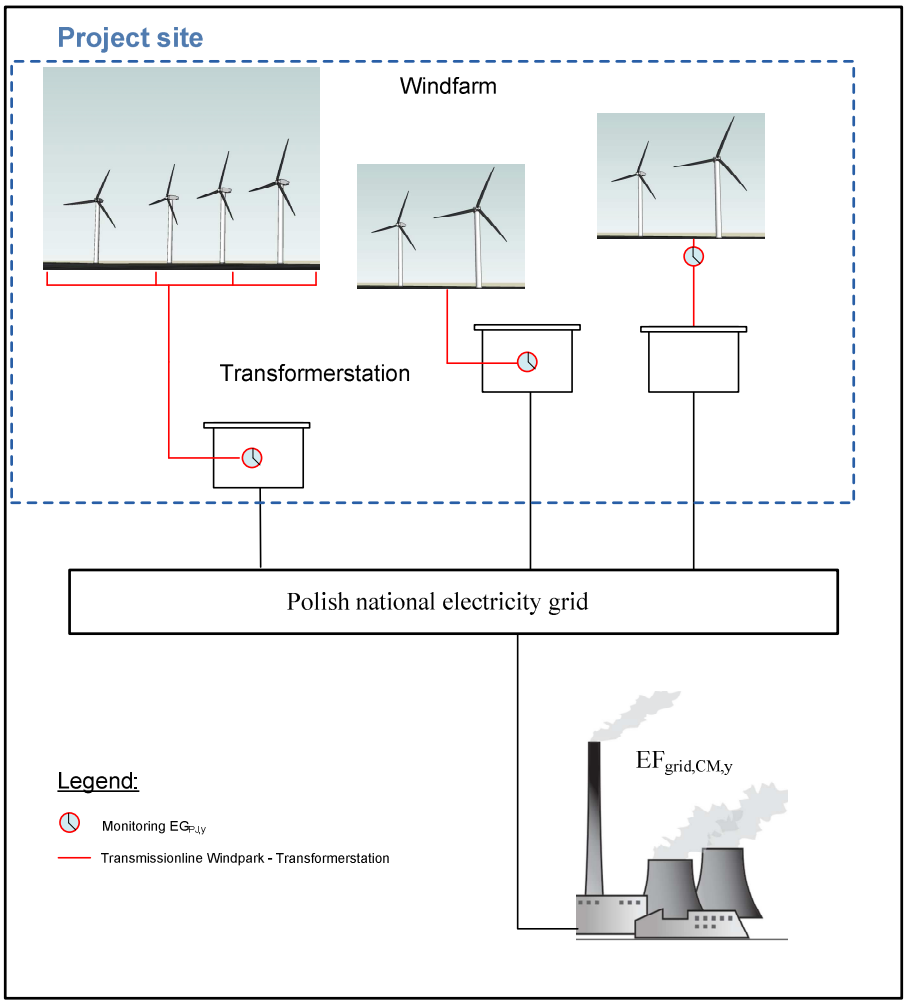
According to ACM0002 the following greenhouse gases and emission sources must be considered to be included or excluded from the project boundary of the proposed project activity:

	Source	Gas	Included	Justification/Explanation
Baseline	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
Project activity	For geothermal power plants fugitive emissions of CH_4 and CO_2 from non-condensable gases contained in geothermal steam	CO_2	No	The project activity is no geothermal power plant
		CH_4	No	
		N_2O	No	
	CO_2 emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants	CO_2	No	The project activity is neither a solar thermal nor a geothermal power plant
		CH_4	No	
		N_2O	No	
	For hydro power plants, emissions of CH_4 from the reservoir	CO_2	No	The project activity is no hydro power plant
		CH_4	No	
		N_2O	No	

Baseline emissions to be included in the boundary of the proposed project are CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. Since the proposed project activity is neither a geothermal nor a hydro power plant nor does it consume fossil fuels no project emissions occur within the project boundary.

The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the Polish national electricity grid where project power plant is connected to.

Project boundary



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

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Date of baseline setting 06/03/2012

Energy Changes Projektentwicklung GmbH
Obere Donaustraße 12/28
1020 Vienna
Austria

Clemens Plöchl clemens.ploechl@energy-changes.com
Oliver Percl oliver.percl@energy-changes.com

SECTION C. Duration of the project / crediting period

C.1. Starting date of the project:

According to the JI guidelines
The starting date of a JI project is the date on which the implementation or construction or real action of the project begins.

The starting date of the project is the signing of the purchase contract for the turbines which was 15/03/2007.

C.2. Expected operational lifetime of the project:

25 years, 0 months.

C.3. Length of the crediting period:

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Starting date of the crediting period shall be 23/09/2008.
Length of the crediting period shall be 10 years 0 months. Crediting after the first Kyoto commitment period(beyond 2012) is subject to the approval by the Designated Focal Point of Poland (or any of its successor institutions) as well as to the design of any post-Kyoto system. The crediting period does not extend the operational lifetime of the project.

SECTION D. Monitoring plan

D.1. Description of monitoring plan chosen:

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According to Guidelines for Users of the Joint Implementation PDD Form Version 04

Step 1 (Indication and description of the approach chosen regarding monitoring)

"Consolidated baseline methodology for grid-connected electricity generation from renewable sources" Version 13.0.0 is chosen (in its totality).

It´s applicability for the proposed project activity is described under section B.1.

Therefore tables provided in sections D.1.1.1., D.1.1.3., D.1.2.1., D.1.3.1. and D.2., of the Joint Implementation PDD Form Version 04 are not applied

Step 2 Application of the approach chosen

a) 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;

None of the parameters and data explicitly mentioned in ACM0002 Version 13.0.0 not to be monitored are relevant in the project case. However ACM0002 Version 13.0.0 p. 14 further specifies

In addition to the parameters listed in the tables below, the provisions on data and parameters not monitored in the tools referred to in this methodology apply.

Data/Parameter	$EF_{grid,CM,y}$
Data unit	tCO_2/MWh
Description	CO_2 grid emission factor provided by the provided by the National Centre for Emission Management (KOBiZE)
Time of determination/monitoring	Fixed ex ante
Source of (data to be) used	National Centre for Emission Management (KOBiZE)
Value of data applied (for ex ante	0.812

calculation/determination)	
Justification of the choice of data or description of measurement methods and procedures (to be) applied	The grid emission factor was approved by the Polish JI DFP
QA/QC procedures (to be) applied	----
Any comment	----

b) Data and parameters that are <u>not monitored</u> throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), <u>but that are not already available</u> at the stage of determination regarding the PDD; and

Not applicable

c) Data and parameters that are <u>monitored throughout the crediting period</u>.

Data/Parameter	$EG_{PJ,y}$
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y*. Net electricity generation is the difference between produced and consumed electricity.
Time of determination/monitoring	to be monitored ex-post
Source of data (to be) used	There are meters installed at substations owned and operated by either Energa Obrót S.A. or ENEA S.A. Operator. These meters are used to continuously monitor the project electricity production as well as the electricity consumed. The meters are bi-directional and have an accuracy class of 0.2s. Energa Obrót S.A. or ENEA S.A. Operator provides transcripts of the readings of the electricity generation to RP Global every month.

Value of data applied (for ex ante calculation/determination)	For ex ante calculation the following values are used: $EG_{PJ,y}$ 2008 -10 MWh $EG_{PJ,y}$ 2009 41,239 MWh $EG_{PJ,y}$ 2010 88,181 MWh $EG_{PJ,y}$ 2011 120,929 MWh $EG_{PJ,y}$ 2012 – 2017 124,000 MWh $EG_{PJ,y}$ 2018 100,219 MWh
Justification of the choice of data or description of measurement methods and procedures (to be) applied	Continuous measurement and at least monthly recording.
QA/QC procedures (to be) applied	Cross check measurement results with measurements from seperate meters located at the turbines, which are relevant for the number of Green Certificates received.
Any comment	--------

Data/Parameter	$EG_{export\text{-}facility,y}$
Data unit	MWh
Description	Quantity of gross electricity generation supplied by the project plant/unit to the grid in year y
Time of determination/monitoring	to be monitored ex-post
Source of data (to be) used	Electricity invoices issued monthly to the local grid operators (Energa or ENEA).
Value of data applied (for ex ante calculation/determination)	For ex ante calculation the following values are used: $EG_{export\text{-}facility,y}$ 2008 0 MWh $EG_{export\text{-}facility y}$ 2009 41,495 MWh $EG_{export\text{-}facility,y}$ 2010 88,439 MWh $EG_{export\text{-}facility,y}$ 2011 121,096 MWh $EG_{export\text{-}facility,y}$ 2012 – 2017 124,200 MWh $EG_{export\text{-}facility,y}$ 2018 100,399 MWh

Justification of the choice of data or description of measurement methods and procedures (to be) applied	Continuous measurement and at least monthly recording.
QA/QC procedures (to be) applied	Cross check measurement results with measurements from seperate meters located at the turbines, which are relevant for the number of Green Certificates received.
Any comment	--------

Data/Parameter	$EG_{import\text{-}facility,y}$
Data unit	MWh
Description	Quantity of electricity consumed by the project plant/unit from the grid in year y
Time of determination/monitoring	to be monitored ex-post
Source of data (to be) used	Electricity invoices issued monthly by the local grid operators (Energa or ENEA).
Value of data applied (for ex ante calculation/determination)	$EG_{import\text{-}facility,y}$ 2008 10 MWh $EG_{import\text{-}facility,y}$ 2009 256 MWh $EG_{import\text{-}facility,y}$ 2010 258 MWh $EG_{import\text{-}facility,y}$ 2011 167 MWh $EG_{import\text{-}facility,y}$ 2012 – 2017 200 MWh $EG_{import\text{-}facility,y}$ 2018 180 MWh
Justification of the choice of data or description of measurement methods and procedures (to be) applied	Continuous measurement and at least monthly recording.
QA/QC procedures (to be) applied	Cross check measurement results with measurements from seperate meters located at the turbines, which are relevant for the number of Green Certificates received.
Any comment	--------

D.1.1. Option 1 – Monitoring of the emissions in the project scenario and the baseline scenario:

D.1.1.1. Data to be collected in order to monitor emissions from the project, and how these data will be archived:								
ID number *(Please use numbers to ease cross-referencing to D.2.)*	Data variable	Source of data	Data unit	Measured (m), calculated (c), estimated (e)	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/ paper)	Comment

>>

D.1.1.1 is not applicable since CDM Methodology ACM0002 Version 13.0.0 is followed in its entirety.

D.1.1.2. Description of formulae used to estimate project emissions (for each gas, source etc.; emissions in units of CO_2 equivalent):

>>

D1.1.2. is not applicable since the proposed project activity does not emit any greenhouse gases

D.1.1.3. Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary, and how such data will be collected and archived:								
ID number *(Please use numbers to ease cross-referencing to D.2.)*	Data variable	Source of data	Data unit	Measured (m), calculated (c), estimated (e)	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/ paper)	Comment

>>

D.1.1.3 is not applicable since CDM Methodology ACM0002 Version 13.0.0 is followed in its entirety.

D.1.1.4. Description of formulae used to estimate baseline emissions (for each gas, source etc.; emissions in units of CO_2 equivalent):

According to ACM0002 Version 13.0.0

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} \quad (1)$$

Where:

BE_y	*Baseline emissions in year y (tCO_2/yr)*
$EG_{PJ,y}$	*Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the JI project activity in year y (MWh/yr)*
$EF_{grid,CM,y}$	*The official Polish grid emission factor provided by the National Centre for Emission Management (KOBiZE)*

Calculation of $EG_{PJ,y}$
The calculation of $EG_{PJ,y}$ is different for (a) greenfield plants, (b) retrofits and replacements and (c) capcity additions. These cases are described next

The proposed project activity is a greenfield plant therefore (a) applies.

(a) Greenfield renewable energy power plants
If the project activity is the installation of a new grid-connected renewable power plant/unit at a site where no renewable power plant was operated prior to the implementation of the project activity, then:

$$EG_{PJ,y} = EG_{facility,y} \quad (2)$$

Where:

$EG_{PJ,y}$	*Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the JI project activity in year y (MWh/yr)*
$EG_{facility,y}$	*Quantity of net electricity generations supplied by the project plant/unit to the grid in year y (MWh/yr)*

The net electricity supplied by the project activity will be measured as follows:

$$\boldsymbol{EG_{facility,y} = EG_{export-facility,y} - EG_{import-facility,y}} \quad (3)$$

Where:

$EG_{facility,y}$ = *Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)*
$EG_{export\text{-}facility,y}$ = *Quantity of gross electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)*
$EG_{import\text{-}facility,y}$ = *Quantity of electricity consumed by the project plant/unit from the grid in year y (MWh/yr)*

D. 1.2. Option 2 – Direct monitoring of emission reductions from the project (values should be consistent with those in section E.):

D.1.2.1. Data to be collected in order to monitor emission reductions from the project, and how these data will be archived:								
ID number *(Please use numbers to ease cross-referencing to D.2.)*	Data variable	Source of data	Data unit	Measured (m), calculated (c), estimated (e)	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/ paper)	Comment

D.1.2.1. is not applicable since CDM Methodology ACM0002 Version 13.0.0 is followed in its entirety

D.1.2.2. Description of formulae used to calculate emission reductions from the project (for each gas, source etc.; emissions/emission reductions in units of CO_2 equivalent):

>> Emission reductions

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y \quad (4)$$

Where:
ER_y = Emission reductions in year y (t CO_2e/yr)
BE_y = Baseline emissions in year y (t CO_2/yr)
PE_y = Project emissions in year y (t CO_2e/yr)

D.1.3. Treatment of leakage in the monitoring plan:

>>

D.1.3.1. If applicable, please describe the data and information that will be collected in order to monitor leakage effects of the project:								
ID number *(Please use numbers to ease cross-referencing to D.2.)*	Data variable	Source of data	Data unit	Measured (m), calculated (c), estimated (e)	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/ paper)	Comment

D.1.3.1. is not applicable since CDM Methodology ACM0002 Version 13.0.0 is followed in its entirety

D.1.3.2. Description of formulae used to estimate leakage (for each gas, source etc.; emissions in units of CO_2 equivalent):

D.1.3.2. is not applicable since the proposed project activity does not result in any leakage emissions

D.1.4. Description of formulae used to estimate emission reductions for the project (for each gas, source etc.; emissions/emission reductions in units of CO_2 equivalent):

According to ACM0002 Version 13.0.0

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} \quad (1)$$

Where:

BE_y	*Baseline emissions in year y (tCO_2/yr)*
$EG_{PJ,y}$	*Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the JI project activity in year y (MWh/yr)*
$EF_{grid,CM,y}$	*The official Polish grid emission factor provided by the National Centre for Emission Management (KOBiZE)*

Calculation of $EG_{PJ,y}$
The calculation of $EG_{PJ,y}$ is different for (a) greenfield plants, (b) retrofits and replacements and (c) capcity additions. These cases are described next

The proposed project activity is a greenfield plant therefore (a) applies.

(a) Greenfield renewable energy power plants
If the project activity is the installation of a new grid-connected renewable power plant/unit at a site where no renewable power plant was operated prior to the implementation of the project activity, then:

$$EG_{PJ,y} = EG_{facility,y} \quad 2$$

Where:

$EG_{PJ,y}$	*Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the JI project activity in year y (MWh/yr)*
$EG_{facility,y}$	*Quantity of net electricity generations supplied by the project plant/unit to the grid in year y (MWh/yr)*

$$\boldsymbol{EG_{facility,y} = EG_{export-facility,y} - EG_{import-facility,y}} \quad 3$$

Where:

$EG_{facility,y}$	=	*Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)*
$EG_{export-facility,y}$	=	*Quantity of gross electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)*
$EG_{import-facility,y}$	=	*Quantity of electricity consumed by the project plant/unit from the grid in year y (MWh/yr)*

Project emissions = 0
Leakage emissions = 0

Emission reductions
Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y \quad 4$$

Where:

ER_y	*Emission reductions in year y (t CO_2e/yr)*
BE_y	*Baseline emissions in year y (t CO_2e/yr)*
PE	*Project emissions in year y (t CO_2e/yr)*

D.1.5. Where applicable, in accordance with procedures as required by the host Party, information on the collection and archiving of information on the environmental impacts of the project:

>>

An Environmental Impact Assessment was performed for the project. Details are presented in Section F.

D.2. 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.

>>

D.2. is not applicable since CDM Methodology ACM0002 Version 13.0.0 is followed in its entirety

D.3. Please describe the operational and management structure that the project operator will apply in implementing the monitoring plan:

>>

The aim of the monitoring plan is to make sure that the net electricity generation delivered to the grid is monitored completely, consistently, reliably and precisely. The details are summarized as follows:

1. Monitoring subject

The data monitored is the net electricity generation delivered to the grid by the project.

The overall responsibility for the monitoring for all three sites lies with the Manager of Operations. The individual monitoring tasks are assigned to members of the local operation team in the monitoring manual, which is part of the site operations procedures.

2. Monitoring apparatus and installation

Monitoring is based on the measurements of the net generated electricity which is done by means of meters installed at the point of grid connection for each site. These meters are owned and operated by the grid operators Energa Obrót S.A. or ENEA S.A. The meters are according to the conditions specified in the DSAs of the individual sites.

For Stramnica site, at the point of grid connection (substation Kolobrzeg) a meter of the type Landis&Gyr E650 (ZMD405CT44) with the serial number 96 250 740 is installed.
For Tychowo site, at the point of grid connection (substation Slawno) two meters of the type Landis&Gyr Dialog (ZMD402CT44) with the serial numbers 95 944 354 (main) and 95 944 353 (resreve) are installed.
ForWałcz site, at the point of grid connection (at the turbines) a meter of the type Landis&Gyr Dialog (ZMD402CT44) with the serial number 85 483 458 is installed.

The digital meters are of accuracy class 0.2s and are bidirectional meters, thus both the electricity delivered to the grid and the electricity consumed is measured. The meter was initially calibrated by the manufacturer.

3. Data monitoring
The quantity of net electricity delivered to the grid by the project will be monitored.
At the end of each month a metering report is sent by the grid operators to the project proponents (cut off is 24h on the last day of each month). These reports include both produced and consumed energy.
On the basis of these reports invoices are prepared and sent to the respective grid operator. The specified amount of electricity ($EG_{export\text{-}facility,y}$), the invoice number and date are entered into the monitoring work book. Additionally, after receipt of an invoice from the grid operator covering the consumed electricity, the amount of electricity ($EG_{import\text{-}facility,y}$), the invoice number and date are enetred into the monitoring workbook.

4. Quality control
The numbers in the metering reports provided by the grid operators will be cross checked for plausibility with the readings from the meters situated at the individual wind turbines.
Recalibration of the metering devices is required every 8 years. The local grid operators are responsible for these recalibrations.

5. Data management
The monthly metering reports will be archived in electronic format by a member of the operation team.
The monthly invoices will be archived in paper format.
All data is kept until 2 years after the end of the total crediting period of the JI project.
The Manager of Operations is responsible for the storage of data.

6. Emergency treatment

The project activity itself is not a potential source of emissions. Therefore no procedures for cases of emergency that could lead to unexpected emissions need to be taken.

In case the meter specified under paragraph 2 breaks down, the information for the month in which no or only incomplete data is available will be taken from the sources used for cross checking.
In case of Tychowo, there is also an additional meter installed in the project owner's substation, which fulfils all requirements to be used as alternative data source for emergency situations. Historical data is available to determine a conservative estimation for line losses.

7. Training

All technical personnel engaged in the operation fulfils the legal requirements for the operation of low/high voltage systems. Additionally the staff has been trained by the turbine manufacturers in order to be able to handle day-to-day operations. Safety instructions were included in these trainings.

D.4. Name of person(s)/entity(ies) establishing the monitoring plan:

>>

Date of establishing the monitoring plan 06/03/2012

Energy Changes Projektentwicklung GmbH
Obere Donaustraße 12/28
1020 Vienna
Austria

Oliver Percl oliver.percl@energy-changes.com
Clemens Plöchl clemens.ploechl@energy-changes.com

SECTION E. Estimation of greenhouse gas emission reductions

E.1. Estimated project emissions:

>>

According to ACM0002 Version 13.0.0

For most renewable power generation project activities, $PE_y = 0$. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$$

Where:

PE_y	*Project emissions in year y (tCO_2e/yr)*
$PE_{FF,y}$	*Project emissions from fossil fuel consumption in year y (tCO_2/yr)*
$PE_{GP,y}$	*Project emissions from the operation of geothermal power plants due to the release of non-condensables gases in year y (tCO_2e/yr)*
$PE_{HP,y}$	*Project emissions from water reservoirs of hydro power plants in year y (tCO_2e/yr)*

The proposed project activity does not consum any fossil fuels, is not a geothermal power plant and no hydro. Therefore project emissions will be 0 for any year.

E.2. Estimated leakage:

>>

Leakage emissions

No leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport). These emissions sources are neglected.

No leakage emissions are considered in the proposed project activity. Leakage emissions will be 0 for any year.

E.3. The sum of E.1. and E.2.:

>>

Sum of E.1. and E.2. equals 0.

E.4. Estimated baseline emissions:

>>

Applying formula 1 $BE_y = EG_{PJ,y} \cdot EF_{grid,CM,y}$ using the following values for data/parameter

$EG_{PJ,y}$ 2008	-10 MWh
$EG_{PJ,y}$ 2009	41,239 MWh
$EG_{PJ,y}$ 2010	88,181 MWh
$EG_{PJ,y}$ 2011	120,929 MWh
$EG_{PJ,y}$ 2012 – 2017	124,000 MWh
$EG_{PJ,y}$ 2018	100,219 MWh

$EF_{grid,CM,y}$ 0.812 tCO_2/MWh

gives the following results

BE_{2008}	-8 tCO_2
BE_{2009}	33,486 tCO_2
BE_{2010}	71,603 tCO_2
BE_{2011}	98,194 tCO_2
$BE_{2012 - 2017}$	100,688 tCO_2
BE_{2018}	81,378 tCO_2

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

>>

ER_{2008}	-8 tCO_2
ER_{2009}	33,486 tCO_2
ER_{2010}	71,603 tCO_2
ER_{2011}	98,194 tCO_2
$ER_{2012 - 2017}$	100,688 tCO_2
ER_{2018}	81,378 tCO_2

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

>>

Year	Estimated project emissions (tonnes of CO_2e)	Estimated leakage (tonnes of CO_2e)	Estimated baseline emissions (tonnes of CO_2e)	Estimated emission reductions (tonnes of CO_2e)
2008	0	0	-8	-8
2009	0	0	33,486	33,486
2010	0	0	71,603	71,603
2011	0	0	98,194	98,194
2012	0	0	100,688	100,688
2013	0	0	100,688	100,688
2014	0	0	100,688	100,688
2015	0	0	100,688	100,688
2016	0	0	100,688	100,688
2017	0	0	100,688	100,688
2018*	0	0	81,378	81,378
Total (tonnes of CO_2 equivalents)	0	0	888,781	888,781
* The 2018 emission reductions are only through September 22, 2018.				
All emission reductions beyond 2012 are subject to approval by the host party Poland.				

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:

>>

Poland requires the assessment of environmental impacts of wind power plants that have a power plant output of 100 MW or more.

An Environmental Impact Assessment (EIA) was carried out for each wind farm and no significant, negative environmental effects of the Project were identified. Pursuant to provisions under the Polish Act

of October 3, 2008 on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments (Official Journal of the Laws, No. 199, Item 1227, No 227, Item 1505; 2009, No 42, Item 340, No. 84, Item 700), the planned investment is a project that may have severe impact on the environment. During the stage of obtaining the building permits the District Office confirmed the necessity to draw up the EIAs for the three project sites and determined the scope of the document. The EIAs were approved by the environmental and sanitary authorities.

The Environment Impact Assessments were carried out during the procedure of the local plan amendment and obtaining the building permit. No significant environmental impacts were identified. During the above mentioned procedures all legally required stakeholders (including the public) had chance to raise comments. There were no claims and comments.

Based on the Environmental Impact Assessment, the Project was approved by the following environmental decisions:

- Wałcz: Decision RB OS 6134(24)2006 of July 25, 2006 issued by municipality of Wałcz (Wójt Gminy Wałcz); amended July 13, 2007
- Tychowo: Decision 10/2007 of August 23, 2007 issued by municipality of Sławno (Wójt Gminy Sławno)
- Stramnica: Decision GKI- V/7624/26/07/08/09 issued by municipality of Kołobrzeg (Wójt Gminy Kołobrzeg)

F.2. If environmental impacts are considered significant by the project participants or the host Party, please provide 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 Project (based on the EIAs) was publicly consulted during environmental assessment procedure. According to this document, in relation to particular fields of the project impact on the environment, the following conclusions were made:

Construction period

1. Noise

Erection of wind turbines required preparation of the construction site. According to the scope of planned works, the site was a potential source of noise from building machines and transport vehicles. The noise effect was typical for building works and temporary, acoustic conditions were acceptable.

2. Soil and natural environment

Influence on soil and flora was limited to roads, working areas, foundation pits and trenches for cables. Consequently, surface layers of soil were piled and to shape the land at the end of construction.

Project Lifetime

1. There are no impacts on air quality: the implementation of the Project will lead to the substitution of electricity produced by fossil fuel power plants. The Project avoids both GHG emissions as well as pollutants, like NOx, SO_2, dust.

2. Effects on biodiversity:

Flora: Some small trees and bushes were cut in the area where the wind turbines and roads are located.

Fauna: Rotating rotor wings can be a hazard to flying birds. Such exposure can be significant only if a wind power plant is located on or near a migration route and passage of birds. However, in the area selected for location of the wind power plant no migration routes of birds have been ascertained.

3. Noise: The noise generated during wind turbine operation comes mainly from rotating rotor blades. The turbines are located far from dwelling places. Calculations of the noise level were performed according to the ISO-9613-2 General Method using the technical data provided by each turbine manufacturer. The results of calculations show that the allowable noise standards are met**.**

No transboundary impacts from the project activity were identified.

SECTION G. Stakeholders' comments

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

The project is in line with the national priorities and regulations and the province and commune planning policy, included in the local spatial development plans of the communities surrounding the wind farms.

The process of obtaining an Amendment to the local spatial development plan for the wind farms and the localization decision for the transmission lines was performed according to the Spatial Development Act. The process of obtaining construction/building permits was performed according to Construction Law Act during the above mentioned administrative procedures the stakeholders consultations have been performed, including public consultations according to Polish Law. The stakeholder's consultation was carried out in accordance to the provisions of the Act October, 3 2008 on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments (Official Journal of the Laws, No. 199, Item 1227, No 227, Item 1505; 2009, No 42, Item 340, No. 84, Item 700).

The period for public comments was open from 04/06/2007 to 25/06/2007. The list of institutions informed about the project during these procedures included 20 parties, among them Environmental Department, Sanitary Department, Civil Aviation Office, State Service for Monuments Protection - Provincial Division, local companies etc. The notifications informing about the project were published on both official website of the municipality Slawno (http://ug.slawno.ibip.pl/public and http://www.gminaslawno.pl) as well as on the community's announcement boards during the administrative procedures.

No remarks to the wind farm project have been submitted by any stakeholders including owners of real estates neighboring the investment area or by inhabitants of neighboring villages.

Annex 1

CONTACT INFORMATION ON PROJECT PARTICIPANTS

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Annex 2

BASELINE INFORMATION

The grid emission factor for the Polish electricity grid was calculated *by the National Centre for Emission Management (KOBiZE)* and approved by the Ministry of the Environment (DFP for JI).

The plant load factor used to estimate the baseline emissions is based on actual electricity generation from 2008 to 2011.

Annex 3

MONITORING PLAN

All information has been provided in section D.3.

Annex 4

Information on project finance for evaluation by KOBiZE

According to the Decree of the Minister of the Environment of 3rd December 2010 on the Project Design Document information on the financial background of the project needs to be included in the PDD. Financial calculations have been made separately for the three sites of the project.

Financing structure:
Tychowo: 65% - bank loan; 35% equity
Stramnica: 75% - bank loan; 25% equity
Wałcz: 80% - bank loan; 20% equity

IRR based on EBIDTA (without ERU revenues):
Tychowo: 7.37%
Stramnica: 13.78%
Wałcz: 9.24%

IRR based on EBIDTA (including ERU revenues):
Tychowo: 8.33%
Stramnica: 14.61%
Wałcz: 10.83%