



Industrie Service

# Determination Report

Determination of the  
Sopronkövesd Wind Farm

HUNGARY

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<b>Summary:</b>				
<p>The Certification Body "Climate and Energy" of TÜV Industrie Service GmbH TÜV SÜD Group, has been ordered by the Hungarian company "Hungarowind Kft." in Budapest to determine the above mentioned project.</p> <p>The determination of this project has been performed by document reviews, interviews by e-mail and on-site inspections, audits at the locations of the project and interviews at the offices of the client.</p> <p>As the result of this procedure, it can not be confirmed that the submitted project documentation is in line with all requirements set by the Marrakech Accords and the Kyoto Protocol and relevant guidelines of Hungarian Designated National Authority. This opinion is caused by the sole remaining outstanding issues regarding the Letter of Approvals of the involved Annex-I-Parties.</p> <p>Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 415.786 tons CO<sub>2e</sub> (to be issued as ERUs) in the intended crediting period from 2008 – 2012 represents a reasonable estimation using the assumptions given by the project documents.</p>				
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## Abbreviations

<b>CAR</b>	Corrective action request
<b>CR</b>	Clarification request
<b>DOE</b>	Designated Operational Entity
<b>DP</b>	Determination Protocol
<b>EIA / EA</b>	Environmental Impact Assessment / Environmental Assessment
<b>ER</b>	Emission reduction
<b>ERU</b>	Emission Reduction Unit
<b>GHG</b>	Greenhouse gas(es)
<b>IRR</b>	Internal Rate of Return
<b>JI</b>	Joint Implementation
<b>KP</b>	Kyoto Protocol
<b>MP</b>	Monitoring Plan
<b>MS</b>	Management System
<b>NGO</b>	Non Governmental Organisation
<b>NPV</b>	Net Present Value
<b>PDD</b>	Project Design Document
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VVM</b>	Validation and Verification Manual



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## 1 INTRODUCTION

### 1.1 Objective

The Hungarian company "Hungarowind Kft." in Budapest, Hungary has commissioned TÜV Industrie Service GmbH TÜV SÜD Group to conduct a determination of the "Sopronkövesd Wind Farm" with regard to the relevant requirements for JI project activities. The determination serves as a conformity test of the project design and is a requirement for all JI projects. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Determination is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reductions (in particular ERUs - in the first commitment period under the Kyoto Protocol).

UNFCCC criteria refer to the Kyoto Protocol Article 6 criteria and the Guidelines for the implementation of Article 6 of the Kyoto Protocol as agreed in the Marrakech Accords.

### 1.2 Scope

The determination scope is defined as an independent and objective review of the project design document (PDD), the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. TÜV SÜD has, based on the recommendations in the Validation and Verification Manual (see [www.vvmanual.info](http://www.vvmanual.info)), employed a risk-based approach in the determination, focusing on the identification of significant risks for project implementation and the generation of emission reductions

This report is based on the PDD which has been issued July, 2005. The version from July, 2005 was published on the website of [www.netinform.de](http://www.netinform.de). According to CARs and CRs indicated in the audit process the client decided to revise the PDD. The final version submitted in August 2005 serves as the basis for the final conclusions presented herewith.

### 1.3 GHG Project Description

The project foresees the installation of a wind farm between the villages Sopronkövesd and Nagylos, near Sopron in North-Transdanubia of Hungary. The project will generate electricity from a renewable source to be fed into the public grid.

Thirty wind turbines will be erected at one site in the Western part of Hungary with a total capacity of 45 MW.

The baseline scenario is reflected by the average emission rate of grid connected power plants, which are not / will not be subject to the Hungarian power purchase obligation (PPO) (56/2002 Decree) and which will not be operated under must-run conditions. It is estimated that the newly



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implemented equipment will most likely displace fossil fired plants with its electricity fed into the grid.

Electricity produced from the wind farm will be directly fed into the public Hungarian electricity grid. Thus electricity from fossil sources (coal, oil, natural gas) will be substituted by electricity from renewable sources.

The project – installation of the Sopronkövesd wind farm - will start in October 2005 . All measures will be implemented until June 2006.

The Project Participant of the Host Country is Hungarowind Kft. as owner of permits and licenses. Hungarowind Kft. will supply the Emission Reduction Units ERUs.

The project documentation has been developed by Vertis Environmental Finance in Budapest, Hungary and Hungarowind Kft in Budapest.

## 2 METHODOLOGY

In order to ensure transparency, a determination protocol was customised for the project, according to the Validation and Verification Manual (VVM). The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The determination protocol serves the following purposes:

- It organises, details and clarifies the requirements a JI project is expected to meet;
- It ensures a transparent determination process where TÜV SÜD has documented how a particular requirement has been validated and the result of the determination.

The determination protocol consists for this project of three tables. The different columns in these tables are described in Figure 1.

The completed determination protocol is enclosed in Annex 1 to this report.



<b>Determination Protocol Table 1: Mandatory Requirements</b>			
<b>Requirement</b>	<b>Reference</b>	<b>Conclusion</b>	<b>Cross reference</b>
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided ( <b>OK</b> ), or a <b>Corrective Action Request (CAR)</b> of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the determination report. <b>O</b> is used in case of an outstanding, currently not solvable issue, <b>AI</b> means Additional Information is required.	Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent determination process.

<b>Determination Protocol Table 2: Requirement checklist</b>				
<b>Checklist Question</b>	<b>Reference</b>	<b>Means of verification (MoV)</b>	<b>Comment</b>	<b>Draft and/or Final Conclusion</b>
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in six different sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided ( <b>OK</b> ), or a <b>Corrective Action Request (CAR)</b> due to non-compliance with the checklist question (See below). <b>Clarification</b> or <b>Additional Information</b> is used when the independent entity has identified a need for further clarification or more information.

<b>Determination Protocol Table 3: Resolution of Corrective Action and Clarification Requests</b>			
<b>Draft report clarifications and corrective action and additional Information requests</b>	<b>Ref. to checklist question in table 2</b>	<b>Summary of project owner response</b>	<b>Determination conclusion</b>
If the conclusions from the draft determination are either a Corrective Action Request or a Clarification or Additional Information Request, these should be listed in this section.	Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification or Additional Information Request is explained.	The responses given by the Client or other project participants during the communications with the independent entity should be summarised in this section.	This section should summarise the independent entity's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".



## 2.1 Review of Documents

The project participants submitted a PDD and additional background documents related to the project design and baseline. A review for all these documents has been performed in order to identify all issues for discussion during the follow-up interviews on-site and by phone or email.

## 2.2 Follow-up Interviews

On July 27<sup>th</sup> and 28<sup>th</sup>, 2005 TÜV SÜD performed on-site and email interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the Hungarian company "Hungarowind Kft" (project owner) and representatives of Vertis Environmental Finance as project developers have been interviewed.

The main topics of the interviews are summarised in Table 1. The complete and detailed list of all persons interviewed is enclosed in Appendix 2 to this report.

**Table 1: Interview topics**

Interviewed organisation	Interview topics
Hungarowind Kft.	Project design, baseline, monitoring plan, environmental impacts, permits and licenses, stakeholder comments, additionality, monitoring procedures, calibration of the measurement equipment, documentation, archiving of data
Vertis Environmental Finance	Project design, baseline, monitoring plan, environmental impacts, stakeholder comments, additionality, monitoring procedures, calibration of the measurement equipment, documentation, archiving of data
Hungarian National Focal Point	Approval of the project, JI-Guidelines



## 2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination is to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified in order to achieve a positive conclusion during the assessment process. Clarification Requests raised by TÜV SÜD have been resolved in most parts by the "Response Paper" submitted August 12, 2005 prepared by Vertis Environmental Finance. Furthermore additional documents have been submitted separately in order to provide the required evidences. To guarantee the transparency of the determination process, the concerns raised are and the response given are summarised in chapter 3 below. The whole process is documented in more detail in the final determination protocol in Annex 1.

## 3 DETERMINATION FINDINGS

In the following sections the findings of the final determination are stated. The determination findings for each determination subject are presented as follows:

- 1) The findings from the desk review of the project design document and the findings from interviews during the follow up visit are summarised. A more detailed record of these findings can be found in the Determination Protocol in Annex 1.
- 2) Where TÜV SÜD has identified issues that needed clarification or that represented a risk to the fulfilment of the project objectives, a Clarification or Corrective Action Request, respectively, has been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Annex 1.
- 3) Where Clarification and Corrective Action Requests have been issued, the response by the project participants to resolve these requests is summarized in the final determination report.
- 4) The final conclusions of the determination are presented consecutively.

### 3.1 Project Design

#### 3.1.1 General Findings

There is no official form to be used in the context of the PDD development of JI projects besides the guidance given under the CDM. The submitted PDD as well as its revision are considered to cover all aspects necessary to describe the project and to assess its conformity with the underlying regulations.

The foreseen technology does reflect current good practice for generation of electricity using wind energy. The project uses technology that goes beyond the state of the art in the host country. Moreover it is unlikely that the foreseen project technology will be substituted during the crediting period by a still more efficient technology.



Hungary has ratified the Kyoto Protocol on August 21<sup>st</sup> 2002. The Ministry for Environment and Water was appointed as national focal point in Hungary and has issued National JI-Guidelines regarding additionality and the establishment of baselines in June 2005.

The project starting date is clearly defined as well as the crediting period which will cover the years 2008-2012 in accordance with the first commitment period (generation of ERUs).

Under regular conditions the operational lifetime of the project will exceed this indicated time frame.

### **3.1.2 Issued CARs/CRs**

#### Corrective Action Request (CAR1):

It is envisaged that the project has to be approved by both countries (Investor Country and Hungary) at the end of the validation process. A written letter of approval was not available at the time of this determination.

Response:

The foreign investor country will be identified. The Approvals will be provided at the end of the validation.

#### Clarification Request (CR1):

It should be clarified before end of the validation, whether national guidelines and procedures of the investor country for the approval of JI projects are officially available.

Response:

Hungarowind Kft. is in discussions with two potential buyers, investor countries, but at the moment of writing no final decision was made. It is expected that the carbon buyer will be known at the end of September 2005.

#### Clarification Request (CR2):

It should be clarified and confirmed, that all given technical details will remain in the PDD though with a new supplier. If not, the PDD should be revised.

Response:

In case that a new equipment supplier will be chosen the technical details will be kept in order to prevent new permitting and alterations of agreements already in place. Therefore, there will be no need for revising the PDD.

#### Clarification Request (CR3):

Does the Long Term Service Agreement guarantee for a specific technical availability of each turbine? If yes which availability will be guaranteed?

Response:

The LTCSA guarantees the technical availability of the whole wind park, calculated as a mathematical formula. In case of Sopronkövesd Wind Farm, the park has an availability of 97%, which means that 97% of capacity is available all the time, irrespective to a certain turbine



Clarification Request (CR4):

The wind farm has a park efficiency of 90.7 %. This means a suboptimal figure. The investment for each turbine could, given a different spacing, a higher return of invest. Which reasons are responsible to this value of park efficiency?

Response:

Location was the main factor in deciding what will be the installed capacity of the wind farm. The space available for construction was limited due to the vicinity with both villages, and as a result the actual capacity was considered a good compromise from investment point of view on return. However, a park efficiency of 90.7% is not regarded as unusual in the wind industry. For comparison, we mention that there is a wind park in Germany with an efficiency of only 85%. The figure of 90.7% was determined via software modelling.

### **3.1.3 Conclusion**

The project status is in a comparative early stage; therefore the project does not yet fulfil formally all belonging criteria set for the approval of JI-projects. The Letter of Approvals by both parties, investor and host country, shall be submitted to TÜV SÜD at time of its availability. In case the issuance of ERUs will be done under the "First Track JI"- regime, there is no requirement to provide the validator such a LoA in order to forward it to the Supervisory Committee. Under that circumstance the issue can be considered to be resolved otherwise it will be considered as an outstanding issue requiring a final revision of this validation report.

The foreseen technology does reflect current good practice for generation of electricity using wind energy. The project uses technology that goes beyond the state of the art in the host country. Taking into account the foreseen Long Term Service Agreement with the equipment supplier it is moreover very unlikely that the foreseen project technology will be substituted during the crediting period by a still more efficient technology .

The PDD contains information how training, operating, controlling, maintenance will be organized and managed. The aspects regarding future responsibilities and quality assurance are fixed.

## **3.2 Baseline**

### **3.2.1 Findings**

The baseline of the Hungarian "Sopronkövesd Wind Farm" is established in a project-specific manner. The emission reductions result from the replacement of energy generation by the Hungarian grid.

The baseline does take into account the Hungarian JI-Guidelines and the major national and/or sectoral policies, macro-economic trends and political developments. Relevant key factors are described and their impact on the baseline and the project risk is evaluated. Forecasting the built margin studies were consulted, which are also referenced by authorities for conducting the national allocation plan in terms of the European Emissions Trading System.



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The additionality of the project is proven by using a stepwise approach to demonstrate that the project is additional. This approach is very similar to the "Additionality Tool" which is the general tool applied in CDM.

The PDD shows in particular that there is a lack of local expertise (i.e.: in Hungary there is no existing electricity connection of a wind farm to the grid) and common practice in Hungary (six turbines which operates independently with an installed wind capacity of 3.4 MWe).

Next to this the financial issues play an important role; in particular the national regulated feed-in-tariff system which is not guaranteed for a longer term. The financial additionality has been proven by calculating IRR according Hungarian JI-Guidelines. The proof was done by using a very conservative scenario regarding the electricity production which is assumed to be 18 % lower than the expected generation. With this proof the project meets the financial additionality criteria of 8%.

The on-site assessment has given a special focus on the environmental additionality and on the price risks, which strongly depend on the national regulated feed-in-tariff system which is not guaranteed for a longer term. It is clearly demonstrated that the creation of the wind turbine park is additional compared to the presented baseline scenario. This scenario is realistic and represents the recent behaviour in the power sector of Hungary.

Replacement of energy generation by the Hungarian grid:

The PDD uses an approach, which includes the recent Hungarian electricity data and the forecast electricity data. The approach excludes hydro power plants, nuclear power plants and CHP installations which are subject to Hungarian "power purchase obligation". This approach is transparent, reproducible and conservative and is also used in the Hungarian JI-Guidelines. It delivers standard grid factors for this baseline, which are considered to be appropriate for such small additions as given by this project.

### 3.2.2 Issued CARs/CRs

#### Clarification Request (CR5):

The costs for Long Term Service Agreement are expensive and the biggest part of operation costs. Which services does this Long Term Service Agreement offer which goes beyond state of the art?

Response:

It is normal to have maintenance as 60% of yearly operating costs since the wind farm has no expenses with personnel and raw materials. Further, the pricing for LTCSA used in the PDD is according to indicative offer by GE Windenergy. Above from maintenance services, LTCSA covers alterations of technology with the purpose of improving the energy yield. In practice this means that components of turbines may be replaced by improved versions, if available. GE Windenergy will receive a bonus for every kWh supplementary produced in this way. During validation meeting of July 29, 2005 such an offer was available for review for the validation team.

#### Clarification Request (CR6):

Does the Guidelines foresee to monitor the baseline?

Response:



The JI Guidelines were issued by the Hungarian DNA (Ministry of Environment and Water Management) and no request for monitoring the emissions factors was expressed. According to the Hungarian DNA, in case that these factors will be revised it will affect new projects only.

### **3.2.3 Conclusion**

All responses given to the indicated CRs are resolving the belonging issues. The project fulfils the criteria on baselines as set for the approval of JI-projects.

## **3.3 Duration of the Project**

### **3.3.1 Findings**

The project starting date is defined. The PDD says that the expected completion date will be in June 2006. The operational lifetime of the project is announced to be 20 years. This timeframe is reasonable.

The crediting period is defined as being from 2008 – 2012 in accordance with the first commitment period defined in the Kyoto Protocol.

The time schedule is clearly described and realistic.

### **3.3.2 Conclusions**

The project is in compliance with the requirements.

## **3.4 Monitoring Plan**

### **3.4.1 Findings**

The monitoring methodology does reflect current good practice and is supported by the monitored and recorded data. The monitoring provisions are in line with the project boundaries.

No indicators for project emissions have been defined and no leakage emissions are monitored according to the monitoring plan as there are no emissions to be expected.

Some transport emissions and emissions during construction have to be assessed. These emissions are not considered to be monitored.

### **3.4.2 Issued CARs/CRs**

#### Corrective Action Request (CAR3):

The internal demand of electricity is normally smaller than 1% of generation. If neglected it should be controlled by monitoring the internal energy demand. Do the foreseen measuring devices measure in both directions (output/feed-in and input/demand)?

Response:



According to the plan for connection to the grid, the measuring devices will be able to measure in both directions the electricity production as well as the electricity consumption on-site. The consumption on-site is represented by electricity used to start the turbines after a period of being out of operations. According to the equipment supplier, GE Windenergy GmbH, this consumption will be 5,000kWh per year per turbine, respectively 150MWh for the whole park. The turbine is state-of-the-art technology which will have incorporated a solar cell to produce electricity and be used when needed. The impact of the on site consumption on total yearly electricity production is considered as not relevant (0.12% in 118 GWh). Nevertheless the consumption on-site is part of the monitoring plan.

Clarification Request (CR7):

It should be clarified how the calibration of the measuring devices will be managed (primary and control meters).

Response:

After meters being installed, an engineer of MAVIR (the Hungarian system operator) will perform the calibration of the meters in front of Hungarowind and E.ON EDASZ staff and seal them. Further calibration and opening of the meters will happen in front of representatives of all parties (Hungarowind, MAVIR, E.ON EDASZ) and as regulated by "IRÁNYELV az AVE, NVE rendszer elszámolási célú mérőberendezéseire és a Mérési Központok kialakítására" by MAVIR (Guidelines regarding measuring devices and establishment of metering stations) from October 10, 2004.

Clarification Request (CR8):

No procedures are identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation). The documentation of the envisaged practice should be submitted.

Response:

A Data Management System will be in place which will handle data stored in hard-copy and electronically. The data will be collected by Hungarowind and be in the responsibility of Mrs. Monika Lőrincz, as mentioned in the PDD.  
Further information see Annex 2 "Response by Vertis Environmental Finance"..

### **3.4.3 Conclusion**

The internal demand is measured and the data are foreseen to be collected and stored. In the revised PDD the internal demand is now part of the monitoring plan. The project fulfils all the prescribed requirements.

## **3.5 Calculation of GHG Emissions**

### **3.5.1 Findings**

The project's spatial boundaries are clearly described.

Uncertainties in the GHG emissions estimates are addressed in the documentation.

The calculation is based on a spreadsheet, which is described and used by the monitoring plan. All figures and links have been checked. No error has been detected. All input data is derived either from literature or from historic and forecasted data on fuel demand and energy production, which has been verified during this assessment.



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Leakage calculation are not requested. Nonetheless, the impact of the project to EU Emission Trading Scheme (EU-ETS) must be taken into account. The energy sector is within the mandatory EU-ETS. Therefore the emission reduction will result in free EU-allowances in case the NAP of Hungary will not already include this aspect in the planning. It is not clear whether the Hungarian government will set aside some allowances for projects impacting the EU-ETS. The exclusion of the project itself from EU-ETS (which is already confirmed) is not sufficient to cover this potential of leakage.

Anyway there is no possibility to judge such risks or potential leakages at this time as no allocation plan for 2008 to 2012 is yet released. It is the duty of the Hungarian government under the EU-ETS regulations to take care on the impacts of JI projects when developing its next allocation plan.

No further aspects of leakage have been identified.

Thus, the project will result in fewer GHG emissions than the baseline scenario.

### **3.5.2 Issued CARs/CRs**

No such requests have been issued.

### **3.5.3 Conclusion**

The project fulfils all the prescribed requirements completely.

## **3.6 Environmental Impacts**

### **3.6.1 Findings**

There are few negative environmental impacts, in particular noise. An "preliminary" EIA was prepared with two afterwards modification. The EIA-study takes into consideration possible effects on construction and operation of the wind farms like impacts on water, air, soil, fauna and noise. The PDD discusses this issue in an appropriate manner. The project complies with the environmental legislation in Hungary. There were no recommendations on further monitoring of construction and operation activities, as their effects on environment are considered temporary and minimal.

### **3.6.2 Issued CARs/CRs**

No such requests have been issued.

### **3.6.3 Conclusion**

The project fulfils all prescribed requirements completely.

## **3.7 Local stakeholder process**

### **3.7.1 Findings**

Authorities and stakeholders have been consulted during the process of approval of the project. Two local stakeholder meetings were held on March 19<sup>th</sup>, 2004 in Nagylózs and September 1<sup>st</sup>, 2004 in Sopronkövesd. The confirmations of the local stakeholder meeting were submitted.

### **3.7.2 Issued CARs/CRs**

#### Corrective Action Request (CAR4):

It should be shown that the meeting with village people have taken place and which comments and objections were given. The information about the meeting with the village people of Sopronkövesd and Nagylózs should be added in the PDD.

Response:

Confirmation regarding these meetings was received from the city halls of both villages. Scanned versions of these letters were provided. Content of the letters was summarized in the PDD.

### **3.7.3 Conclusion**

The project fulfils all the prescribed requirements completely.

## **4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS**

TÜV SÜD published the project design document on its website for 30 days from July 12<sup>th</sup> until August 10, 2005

No comments have been received in this period.



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## 5 DETERMINATION OPINION

TÜV SÜD has performed a determination of the "Sopronkövesd Wind Farm" in Hungary. The determination was performed on the basis of relevant JI criteria.

The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria.

There is a remaining issue concerning the indication of the investor country and the required letters of approval. Under the condition that this issue will be rectified sufficiently it is our opinion, that the project meets all relevant UNFCCC requirements for JI.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amounts of emission reductions of 415.786 t CO<sub>2</sub>e in the crediting period from 2008 – 2012 (to be issued as ERUs) represent a realistic estimation using the assumptions given by the project documents. As these figures will depend on the future performance of the project, this confirmation gives no guarantee on the realisation.

The determination is based on the information made available to us and the engagement conditions detailed in this report. The determination has been performed using a risk-based approach as described above. The only purpose of the report is its use during the registration process as JI project. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the determination opinion, which will go beyond that purpose.

Munich, 2005-08-18

Munich, 2005-08-18

A blue ink signature of Michael Rumberg.

Michael Rumberg

**Deputy Head of Certification Body  
"Climate and Energy"**

A blue ink signature of Klaus Nürnberger.

Klaus Nürnberger

**Responsible Project Manager**



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## ***Determination Protocol***



**Table 1 Mandatory Requirements for Joint Implementation (JI) Project Activities**

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
1. The project shall have the approval of the Parties involved	Kyoto Protocol Article 6.1 (a)	<p><b>CAR 1</b></p> <p><u>Corrective Action Request:</u> The foreign investor country should be identified.</p> <p>The Approvals should be provided at the end of the validation.</p>	<p>It is envisaged that the project will be approved by both countries (investor country and Hungary) at the end of the validation process. The Hungarian National Focal Point has issued a Letter of Endorsement which shows in principle the support of the project.</p> <p>Hungarowind Kft. is in discussion with two buyers. The final decision regarding the buyer will happen later. Hungarowind Kft. envisaged submitting the Letter of Approval to the validator.</p>
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur	Kyoto Protocol Article 6.1 (b)	p	Table 2, Section B.2
3. The sponsor Party shall not acquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7	Kyoto Protocol Article 6.1 (c)	<p><b>See CAR 1</b></p> <p>The unknown sponsor Party shall fulfil the obligations as requested.</p>	See comment above; CAR1



REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3	Kyoto Protocol Article 6.1 (d)	p	
5. Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and procedures for the approval of JI projects	Marrakech Accords, JI Modalities, §20	<p><b>CR 1</b></p> <p><u>Clarification Request :</u></p> <p>It should be clarified before end of the validation, whether such guidelines are officially available.</p>	<p>National guidelines and procedures (G&amp;P) for JI projects are available in the host country. The Hungarian designated national focal point Ministry of Environment and Water has already published. There are further requirements than those given by the Marrakech Accords.</p> <p>Investor Party shall have a designated national focal point, too. Before end of the validation, existing national guidelines of investor party shall be applied.</p>
6. The host Party shall be a Party to the Kyoto Protocol	Marrakech Accords, JI Modalities, §21(a)/24	p	Verified at UNFCCC website
7. The host Party's assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts	Marrakech Accords, JI Modalities, §21(b)/24	p	Third National Communication is available
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4	Marrakech Accords, JI Modalities, §21(d)/24	p	This issue can not be answered by now as such as the JI system is not installed



REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
			yet.
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination	Marrakech Accords, JI Modalities, §31	p	A PDD has been submitted in July 2005, which contains the most relevant information.
10. The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments	Marrakech Accords, JI Modalities, §32	p	The project design document was made publicly available from July 14 <sup>th</sup> , 2005 to August 12 <sup>th</sup> . Within the comment period no comments have been received.
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out	Marrakech Accords, JI Modalities, §33(d)	p	Table 2, Section F
12. The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project	Marrakech Accords, JI Modalities, Appendix B	p	Table 2, Section B.2
13. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	Marrakech Accords, JI Modalities, Appendix B	p	Table 2, Section B.2
14. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to	Marrakech Accords, JI Modalities, Ap-	p	Table 2, Section B.2



Industrie Service

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
force majeure	pendix B		
15. The project shall have an appropriate monitoring plan	Marrakech Accords, JI Modalities, §33(c)	p	Table 2, Section D

**Table 2 Requirements Checklist**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
<b>A. General Description of Project Activity</b>					
<b>A.1. Project Boundaries</b>					
A.1.1. Are the project's spatial (geographical) boundaries clearly defined?	1, 2, 3, 12	DR, I	The project's spatial boundaries are clearly described for the project installation and respective emissions reduction through electricity generation by renewable energy.	p	p
A.1.2. Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	1, 2, 3, 12	DR, I	Yes, the Technical Description (1.7 Results and activities of the project) presented in the PDD, shows a complete description of the project's system. However the turbine supplier could be changed.  <u>Clarification request:</u> It should be clarified and confirmed, that all given technical details will remain in the PDD though with a new supplier. If not, the PDD should be revised.	<b>CR2</b>	p
<b>A.2. Technology to be employed</b>					
A.2.1. Does the project design engineering reflect current good practices?	1, 2, 3, 6, 24, 12	DR, I	Yes, the employed technology does reflect current good practice concerning the installation and operation of wind power plants	p	p
A.2.2. Does the project use state of the art technology or would the technology result in a significantly	1,2,	DR,	The foreseen technology does reflect cur-		

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
better performance than any commonly used technologies in the host country?	3, 6, 24	I	<p>rent good practice for generation of electricity using wind energy. The project uses technology that goes beyond the state of the art in the host country. It is, moreover, not likely that the project technology will be substituted by a more efficient technology.</p> <p><u>Clarification Request:</u></p> <p>The wind farm has a park efficiency of 90.7%. This means a suboptimal figure. The investment for each turbine could, given a different spacing, a higher return of invest. Which reasons are responsible to this value of park efficiency?</p>	<b>CR3</b>	p
A.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1, 2, 3, 6, 24	DR, I	<p>It is not likely that the project technology will be substituted by a more efficient technology. It is foreseen by purchasing the turbines to sign a Long Term Service Agreement, which includes potential alterations of the technology with the aim of improving the energy yield.</p> <p><u>Clarification request:</u></p> <p>Does the LTCSA guarantee for a specific technical availability of each turbine? If yes which availability will be guaranteed?</p>	<b>CR4</b>	p
A.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1, 2, 3	DR, I	<p>The turbine supplier will be obliged to organize training for responsible maintenance staff. It is foreseen by purchasing the tur-</p>	p	p

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			bines that the operator of wind farm will sign a long term maintenance agreement with the turbine supplier. This agreement includes potential alterations of the technology with the aim of improving the energy yield.		
A.2.5. Does the project make provisions for meeting training and maintenance needs?	1, 2, 3	DR, I	The turbine supplier will be obliged to organize training for responsible maintenance staff. Vertis will organize a workshop for the Hungarowind personnel to make sure that monitoring requirements will be met.  The aspects regarding future responsibilities and quality assurance are also fixed.	p	p
<b>B. Project Baseline</b>					
<b>B.1. Baseline Methodology</b>					
B.1.1. Is the discussion and selection of the baseline methodology transparent?	1,2, 3, 8, 10, 11, 17	DR, I	The discussion and selection in the Baseline Study is transparent. The “Guidelines for JI-projects regarding baseline emissions for projects in the energy sector” issued by the Hungarian DNA have been taken into consideration.	p	p
B.1.2. Does the baseline methodology specify data sources and assumptions?	1,2, 3, 8, 11,	DR, I	Yes, all data used are specified and documented.	p	p
B.1.3. Does the baseline methodology sufficiently describe the underlying rationale for the algo-	1, 2 3, 8,	DR, I	The PDD refers to the Hungarian “Guidelines for JI-projects regarding baseline	p	p

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rhythm/formulae used to determine baseline emissions (e.g. marginal vs. average, etc.)	11,		emissions for projects in the energy sector” In determining the emission factors for the Hungarian power sector the MAVIR-Study “Medium and short term capacity planning of Hungarian electricity sector” was used.		
B.1.4. Does the baseline methodology specify types of variables used (e.g. fuels used, fuel consumption rates, etc)?	1,2, 3, 11	DR, I	Yes, all types of variables are clearly and completely specified. The PDD refers to the Hungarian “Guidelines for JI-projects regarding baseline emissions for projects in the energy sector”	p	p
B.1.5. Does the baseline methodology specify the spatial level of data (local, regional, national)?	1,2, 3,11	DR, I	All spatial levels are considered to be appropriate.	p	p
<b>B.2. Baseline Determination</b>					
B.2.1. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?	1,2, 3, 11	DR, I	The discussion and determination of the chosen baseline is transparent and reflect the situation as required due to altered legislation and the resulting need for changes.	p	p
B.2.2. Has the baseline been determined using conservative assumptions where possible?	1,2, 3, 11	DR, I	Yes, the Hungarian Guidelines has used conservative approach for estimating the baseline emissions.	p	p
B.2.3. Has the baseline been established on a project-specific basis?	1,2, 3, 11	DR, I	Yes the baseline is established in a project specific manner. The use of a generic approach concerning the grid factor is deemed to be suitable.	p	p
B.2.4. Does the baseline scenario sufficiently take into	1,2,	DR,	Yes, the baseline does take into account	p	p

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account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	3, 11	I	the major national and/or sectoral policies, macro-economic trends and political developments. Relevant key factors are described and their impact on the baseline and the project risk is evaluated. The issue of electricity imports has been discussed during the audit. Taking into consideration the mandatory take-off of renewable energy the lower prices for electricity import makes it evident that renewable electricity will not substitute imports.		
B.2.5. Is the baseline determination compatible with the available data?	1, 2, 3, 11	DR, I	Yes.	p	p
B.2.6. Does the selected baseline represent a likely scenario in the absence of the project?	1, 2, 3, 11	DR, I	Yes, the baseline does represent a likely scenario in the non project case as it conforms to all legal requirements and the prevailing practice in the Hungarian energy sector.	p	p
B.2.7. Is it demonstrated that the project activity itself is not a likely baseline scenario?	1, 2, 3, 5, 11, 22	DR, I	The additionality of the project is proven by using the "Additionality Tool" which is the general tool applied in CDM and applies stepwise approach to demonstrate that the project is additional. Most important risks/barriers are the revenues from feed-in tariffs, because they are not guaranteed for a specific time and the technology risk because Hungary does not have any experi-		

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			ences with the connection of such wind farms to the electricity grid. Another issue is the PPA, because it is not precisely at that time and must be reviewed after the end of the first year of operation.  <u>Clarification request:</u> The costs for LTCSA seem to be high. They are the biggest part of operation costs. Are there any reasons for it? Which services are offered which goes beyond state of the art?	<b>CR5</b>	p
B.2.8. Have the major risks to the baseline been identified?	1,2,3	DR, I	No, no risks have been determined to the baseline. The baseline is given from Hungarian DNA and was currently issued. Therefore it is not probably that the baseline will change.  <u>Clarification request:</u> How long will the Guidelines be valid? Does the Guidelines foresee to monitor the baseline or will the Guidelines itself be revised?	<b>CR6</b>	p
B.2.9. Is all literature and sources clearly referenced?	1,2,3,4	DR, I	Yes, besides the indicated fact that the import of electricity is cheaper than the electricity which is produced in Hungary.  <u>Corrective Action Request:</u> The fact that the import of electricity is cheaper than the electricity which is pro-	<b>CAR2</b>	p

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			duced in Hungary should be referenced.		
<b>C. Duration of the Project/ Crediting Period</b>					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1, 2, 3	DR, I	The project starting date is exactly defined. The PDD says that the date of commissioning will be in June 2006. The operational lifetime of the project is announced to be 20 years. This timeframe is reasonable.	p	p
C.1.2. Is the project's crediting time clearly defined?	1, 2, 3	DR, I	Yes the crediting period is defined as being from 2008 – 2012 in accordance with the first commitment period defined in the Kyoto Protocol.	p	p
<b>D. Monitoring Plan</b>					
<b>D.1. Monitoring Methodology</b>					
D.1.1. Does the monitoring methodology reflect good monitoring and reporting practices?	1, 2, 3, 4	DR, I	Yes, the monitoring methodology does reflect current good practice.	p	p
D.1.2. Is the selected monitoring methodology supported by the monitored and recorded data?	1, 2, 3, 4, 17	DR, I	The internal demand of electricity is normally smaller than 1% of generation, and therefore it can be neglected. Anyway, there should be a check during operation, that this behaviour is suitable.  <u>Corrective Action Request:</u> The internal energy demand should be monitored. Do the foreseen measuring devices measure in both direction (out-	<b>CAR3</b>	p

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			put/feed-in and input/demand)?		
D.1.3. Are the monitoring provisions in the monitoring methodology consistent with the project boundaries in the baseline study?	1, 2, 3, 4	DR, I	Yes.	p	p
D.1.4. Have any needs for monitoring outside the project boundaries been evaluated and if so, included as applicable?	1, 2, 3, 4	DR, I	It has been evaluated, but there is no such need.	p	p
D.1.5. Does the monitoring methodology allow for conservative, transparent, accurate and complete calculation of the ex post GHG emissions?	1, 2, 3, 4	DR, I	Yes.	p	p
D.1.6. Is the monitoring methodology clear and user friendly?	1, 2, 3, 4	DR, I	Yes.	p	p
D.1.7. Does the methodology mitigate possible monitoring errors or uncertainties addressed?	1, 2, 3, 4	DR, I	Yes. The measuring devices will include a primary meter (owned, operated and calibrated by E.on Edasz) and a control meter (owned, operated and calibrated by project operator)	p	p
<b>D.2. Monitoring of Project Emissions</b>					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	1, 2, 3, 4	DR, I	No indicators have been defined and no project emissions are monitored according to the monitoring plan as such emissions are not to be expected.	p	p
D.2.2. Are the choices of project GHG indicators reasonable?	1, 2, 3, 4	DR, I	See above	p	p
D.2.3. Will it be possible to monitor / measure the	1, 2,	DR,	See above	p	p

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specified project GHG indicators?	3, 4	I			
D.2.4. Will the indicators enable comparison of project data and performance over time?	1, 2, 3, 4	DR, I	This is more relevant for the baseline indicators (energy generation), which will offer a proof of the project's performance.	p	p
<b>D.3. Monitoring of Leakage</b>					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	1, 2, 3, 4	DR, I	No indicators have been defined and no leakage emissions are monitored according to the monitoring plan as there are no emissions to be expected.	p	p
D.3.2. Have relevant indicators for GHG leakage been included?	1, 2, 3, 4	DR, I	See comment above.	p	p
D.3.3. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	1, 2, 3, 4	DR, I	See comment above.	p	p
D.3.4. Will it be possible to monitor the specified GHG leakage indicators?	1, 2, 3, 4	DR, I	See comment above.	p	p
<b>D.4. Monitoring of Baseline Emissions</b>					
D.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining the baseline emissions during the crediting period?	1, 2, 3, 4	DR, I	There is one key factor which is required in order to determine the baseline emissions - electricity production of the project – which is properly monitored.	p	p
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	1, 2, 3, 4	DR, I	The choice is reasonable.	p	p
D.4.3. Will it be possible to monitor the specified baseline indicators?	1, 2, 3, 4	DR, I	Yes.	p	p

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<b>D.5. Monitoring of Social and Environmental Impacts</b>					
D.5.1. Does the monitoring plan provide for the collection and archiving of relevant data on social and environmental impacts?	1, 2, 3, 4	DR, I	No, the Environmental Impact Assessment shows that there are not any relevant environmental impacts. The construction permission which takes into consideration the EIA does not foresee any monitoring of environmental impacts. However Hungarowind will have to ensure that the local inspectorate for environment has site access to perform necessary noise level measurements during wind farm operation.	p	p
D.5.2. Will it be possible to monitor the specified impact indicators?	1, 2, 3, 4	DR, I	See comment above	p	p
<b>D.6. Project Management Planning</b>					
D.6.1. Is the authority and responsibility of project management clearly described?	1, 2, 3, 4	DR, I	The aspects regarding future responsibilities and quality assurance are fixed in advance.	p	p
D.6.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	1, 2, 3, 4	DR, I	Yes, all aspects regarding future responsibilities are already fixed in advance	p	p
D.6.3. Are procedures identified for training of monitoring personnel?	1, 2, 3, 4	DR, I	The turbine supplier will be obliged to organize training for responsible maintenance staff. Vertis will organize a workshop for the Hungarowind personnel to make sure that monitoring requirements will be met.	p	p
D.6.4. Are procedures identified for emergency pre-	1, 2,	DR,	There is no need for this; emergencies can	p	p

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paredness where emergencies can result in unintended emissions?	3, 4	I	not result in unintended emissions. The internal demand will be measured.		
D.6.5. Are procedures identified for calibration of monitoring equipment?	1, 2, 3, 4	DR, I	The controlling engineer will be responsible for the technical quality of the collected data. E.on Edasz is responsible for calibration of its monitoring equipment.  <u>Clarification request:</u> It should be clarified how the calibration of the measuring devices will be managed (primary and control meters).	<b>CR7</b>	␣
D.6.6. Are procedures identified for maintenance of monitoring equipment and installations?	1, 2, 3, 4	DR, I	Data uncertainties of directly monitored data (i.e. electricity) are deemed to be low. An independent federal agency OMH (National Office of Measures of Hungary) is in charge of checking the meters and guaranteeing their operation within close, officially set parameters.	␣	␣
D.6.7. Are procedures identified for monitoring, measurements and reporting?	1, 2, 3, 4	DR, I	Yes, the procedures regarding monitoring, measurements and reporting are already fixed in advance.	␣	␣
D.6.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	1, 2, 3, 4	DR, I	No, respective procedures are not identified yet.  <u>Clarification request</u> No procedures are identified for day-to-day records handling (including what records to keep, storage area of records and how to	<b>CR8</b>	␣

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			process performance documentation). The documentation of the envisaged practice should be submitted.		
D.6.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	1, 2, 3, 4	DR, I	Corrections will be applied according to the rules in Governmental Decree 56 of 2002. E.on Edasz is responsible for these procedures. The procedure for replacing missing data is identified.	p	p
D.6.10. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	1, 2, 3, 4	DR, I	The responsibility for monitoring supervision is fixed.	p	p
D.6.11. Are procedures identified for project performance reviews?	1, 2, 3, 4	DR, I	Data about wind conditions and electricity supplied to the grid will be sent also to Germania Windpark GmbH, which has the experience to supervise the project performance. These data are the basis for further maintenance and corrective actions.	p	p
D.6.12. Are procedures identified for corrective actions?	1, 2, 3, 4	DR, I	Yes, it is identified in the Long Term Service Agreement with the turbine supplier.	p	p
<b>E. Calculation of GHG Emissions by Source</b>					
<b>E.1. Predicted Project GHG Emissions</b>					
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	1, 2, 3, 4, 10	DR, I	No parameters have been defined and no project emissions are calculated as such emissions are not to be expected.	p	p
E.1.2. Are the GHG calculations documented in a	1, 2,	DR,	See comment above.	p	p

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
complete and transparent manner?	3, 4	I			
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?		DR, I	See comment above.	p	p
E.1.4. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	1, 2, 3, 4	DR, I	See comment above.	p	p
E.1.5. Have all relevant greenhouse gases and source categories listed in Kyoto Protocol Annex A been evaluated?	1, 2, 3, 4	DR, I	Yes.	p	p
<b>E.2. Leakage Effect Emissions</b>					
E.2.1. Are potential leakage effects beyond the chosen project boundaries properly identified?	1, 2, 3, 4	DR, I	Leakage calculations are not requested	p	p
E.2.2. Have these leakage effects been properly accounted for in calculations?	1, 2, 3, 4	DR, I	See comment above	p	p
E.2.3. Does the methodology for calculating leakage comply with existing good practice?	1, 2, 3, 4	DR, I	See comment above	p	p
E.2.4. Are the calculations documented in a complete and transparent manner?	1, 2, 3, 4	DR, I	See comment above	p	p
E.2.5. Have conservative assumptions been used when calculating leakage?	1, 2, 3, 4	DR, I	See comment above	p	p
E.2.6. Are uncertainties in the leakage estimates properly addressed?	1, 2, 3, 4	DR, I	See comment above	p	p
<b>E.3. Baseline Emissions</b>					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been	1, 2, 3, 4,	DR,	Yes, all data is based on historic values, which have been verified during the valida-	p	p

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
chosen as reference for baseline emissions?	10	I	tion process.		
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	1, 2, 3, 4	DR, I	Yes.	p	p
E.3.3. Are the GHG calculations documented in a complete and transparent manner?	1, 2, 3, 4	DR, I	Yes.	p	p
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	1, 2, 3, 4	DR, I	Yes.	p	p
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	1, 2, 3, 4	DR, I	The indicated emission factor is derived from IPCC.	p	p
E.3.6. Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?	1, 2, 3, 4	DR, I	Yes.	p	p
<b>E.4. Emission Reductions</b>					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1, 2, 3, 4	DR, I	Yes.	p	p
<b>F. Environmental Impacts</b>					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	1, 2, 3, 4, 16, 18	DR, I	Yes, the description of the environmental impacts is sufficient.	p	p
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1, 2, 3, 4, 16,	DR, I	Requirements for EIAs exist in the host country and have already been fulfilled. Construction permits were issued, which	p	p

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	18, 19		take the results of EIA into account.		
F.1.3. Will the project create any adverse environmental effects?	1, 2, 3, 4, 16, 18, 19	DR, I	No, the project will not create any adverse environmental effects.	p	p
F.1.4. Are transboundary environmental impacts considered in the analysis?	1, 2, 3, 4, 16, 18, 19	DR, I	Yes, the EIA considers transboundary impacts; it can be confirmed that there are no such impacts.	p	p
F.1.5. Have identified environmental impacts been addressed in the project design?	1, 2, 3, 4, 16, 18, 19	DR, I	See comment F1.3.	p	p
F.1.6. Does the project comply with environmental legislation in the host country?	1, 2, 3, 4, 16, 18, 19	DR, I	Yes the project complies with the environmental legislation in Hungary and the EU.	p	p
<b>G. Stakeholder Comments</b>					
G.1.1. Have relevant stakeholders been consulted?	1, 2, 3, 4, 5, 7, 8, 9,	DR	Yes, the project participants put a lot of effort to conduct a stakeholder process, which goes beyond the legal requirements.		

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	13, 14, 15, 16, 20, 21, 23		<u>Corrective Action Request</u> It should be shown that the meeting with village people have taken place and which comments and objections were given. The information about the meeting with the village people of Sopronkövesd and Nagylos should be added in the PDD.	<b>CAR4</b>	p
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	1, 2, 3, 4,	DR	Yes	p	p
G.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1, 2, 3, 4,	DR	Yes	p	p
G.1.4. Is a summary of the stakeholder comments received provided?	1, 2, 3, 4, 20, 21	DR	Yes	p	p
G.1.5. Has due account been taken of any stakeholder comments received?	1, 2, 3, 4, 20, 21	DR	There have been no comments, which would have required any further action.	p	p

**Table 3 Resolution of Corrective Action and Clarification Requests**

<b>Draft report clarifications and corrective action requests</b>	<b>Ref. to checklist question in table 2</b>	<b>Summary of project owner response</b>	<b>Determination conclusion</b>
<p><b>CAR 1</b> It is envisaged that the project has to be approved by both countries (Investor Country and Hungary) at the end of the validation process. A written letter of approval was not available at the time of this determination.</p>	<p>Table 1 #1</p>	<p>The foreign investor country will be identified. The Approvals will be provided at the end of the validation.</p>	<p>This issue is not resolved yet.</p>
<p><b>CAR 2</b> The fact that the import of electricity is cheaper than the electricity which is produced in Hungary should be referenced.</p>	<p>B.2.9.</p>	<p>Import of electricity is concluded through daily auctioning (organized by MAVIR) for cross-border capacities. The contracts resulting from auctioning are not publicly accessible, so no prices are available for review. Main sources of import are Poland (physically via Slovakia), Romania, Slovakia and Ukraine.  The complete response see Annex 2 of the validation report.</p>	<p>It could be expected that generated electricity from renewable sources will not displace imports of electricity in Hungary. This issue is considered to be resolved.</p>

<p><b>CAR 3</b></p> <p>The internal demand of electricity is normally smaller than 1% of generation, and therefore it can be neglected. The correct neglect should be controlled by monitoring the internal energy demand. Do the foreseen measuring devices measure in both directions (output/feed-in and input/demand)?</p>	<p>B.1.1</p>	<p>According to the plan for connection to the grid, the measuring devices will be able to measure in both directions the electricity production as well as the electricity consumption on-site. The consumption on-site is represented by electricity used to start the turbines after a period of being out of operations.</p> <p>According to the equipment supplier, GE Windenergy GmbH, this consumption will be 5,000kWh per year per turbine, respectively 150MWh for the whole park. The turbine is state-of-the-art technology which will have incorporated a solar cell to produce electricity and be used when needed. The impact of the on site consumption on total yearly electricity production is considered as not relevant (0.12% in 118 GWh). Nevertheless the consumption on-site is part of the monitoring plan.</p>	<p>The internal demand will be measured. The internal demand in normal conditions will be far below 1% of production. These data will be collected and stored.</p> <p>The revised PDD takes into account the internal demand as part of the monitoring plan.</p> <p>This issue is considered to be resolved.</p>
<p><b>CAR 4</b></p> <p>It should be shown that the meeting with village people have taken place and which comments and objections were given. The information about the meeting with the village people of Sopronkövesd and Nagylos should be added in the PDD.</p>	<p>G.1.1.</p>	<p>Confirmation regarding these meetings was received from the city halls of both villages. Scanned versions of these letters were submitted to the auditor team. Content of the letters was summarized in the PDD.</p>	<p>This issue is considered to be resolved.</p>

<p><b>CR1</b> It should be clarified before end of the validation, whether national guidelines and procedures of the investor country for the approval of JI projects are officially available..</p>	<p>Table 1 #5</p>	<p>The seller is in discussions with two potential buyers, investor countries, but at the moment of writing no final decision was made. It is expected that the carbon buyer will be known at the end of September 2005.</p>	<p>This clarification request remains an outstanding issue.</p>
<p><b>CR2</b> It should be clarified and confirmed, that all given technical details will remain in the PDD though with the new supplier. If not, the PDD should be revised.</p>	<p>A.1.2.</p>	<p>In case that a new equipment supplier will be chosen the technical details will be kept in order to prevent new permitting and alterations of agreements already in place. Therefore, there will be no need for revising the PDD.</p>	<p>This issue is considered to be resolved.</p>
<p><b>CR3</b> The wind farm has a park efficiency of 90.7 %. This means a suboptimal figure. The investment for each turbine could, given a different spacing, a higher return of invest. Which reasons are responsible to this value of park efficiency?</p>	<p>A.2.2.</p>	<p>Location was the main factor in deciding what will be the installed capacity of the wind farm. The space available for construction was limited due to the vicinity with both villages, and as a result the actual capacity was considered a good compromise from the point of view investment/return. However, a park efficiency of 90.7% is not regarded as unusual in the wind industry. For comparison, we mention that there is a wind park in Germany with an efficiency of only 85%. The figure of 90.7% was determined via software modelling.</p>	<p>The park efficiency is reasonable under the given conditions. This issue is considered to be resolved.</p>
<p><b>CR4</b> Does the LTCSA guarantee for a specific technical</p>	<p>A.2.3</p>	<p>The LTCSA guarantees the technical availability of the whole wind park, calculated as a mathematical formula. In case of So-</p>	<p>This issue is considered to be resolved.</p>

availability of each turbine? If yes which availability will be guaranteed?		pronkövesd Wind Farm, the park has an availability of 97%, which means that 97% of capacity is available all the time, irrespective to a certain turbine	
<b>CR5</b> The costs for LTCSA seem to be high. They are the biggest part of operation costs. Are there any reasons for it? Which services are offered which goes beyond state of the art?	B.2.7.	It is normal to have maintenance as 60% of yearly operating costs since the wind farm has no expenses with personnel and raw materials. Further, the pricing for LTCSA used in the PDD is according to indicative offer by GE Windenergy. Above from maintenance services, LTCSA covers alterations of technology with the purpose of improving the energy yield. In practice this means that components of turbines may be replaced by improved versions, if available. GE Windenergy will receive a bonus for every kWh supplementary produced in this way. During validation meeting of July 29, 2005 such an offer was available for review for the validation team.	Taken into account the offered services of LTCSA the costs are in a reasonable level and have been verified. This issue is considered to be resolved.
<b>CR6</b> How long will the Guidelines be valid? Does the Guidelines foresee to monitor the baseline or that the Guidelines will be revised in short term?	B.2.8.	The JI Guidelines were issued by the Hungarian DNA (Ministry of Environment and Water Management) and no request for monitoring the emissions factors was expressed. According to the Hungarian DNA, in case that these factors will be revised it will affect new projects only.	The JI Guidelines do not request to monitor the indicated emissions factors. This issue is considered to be resolved.
<b>CR7</b> It should be clarified how the calibration of the measuring devices will be man-	D.6.1.	After meters being installed, an engineer of MAVIR (the Hungarian system operator) will perform the calibration of the meters in front of Hungarowind and E.ON EDASZ staff and seal	The calibration of the measuring devices is well organized. This issue is considered to be resolved.

aged (primary and control meters).		them. Further calibration and opening of the meters will happen in front of representatives of all parties (Hungarowind, MAVIR, E.ON EDASZ) and as regulated by "IRÁNYELV az AVE, NVE rendszer elszámolási célú mérőberendezéseire és a Mérési Központok kialakítására" by MAVIR (Guidelines regarding measuring devices and establishment of metering stations) from October 10, 2004	
<p><b>CR8</b></p> <p>No procedures are identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation). The documentation of the envisaged practice should be submitted.</p>	D.6.8.	<p>A Data Management System will be in place which will handle data stored in hard-copy and electronically. The data will be collected by Hungarowind and be in the responsibility of Mrs. Monika Lőrincz, as mentioned in the PDD.</p> <p>Further information see Annex 2 "Response by Vertis Environmental Finance"</p>	This issue is considered to be resolved.

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Industrie Service

## ***Determination Reference List***

Report	2005-08-18	Determination of the "SOPRONKÖVESD Wind Farm" in Hungary Information Reference List	Page 1 of 2	 Industrie Service
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Reference No.	Document or Type of Information
1.	<p>On-site interviews at the offices of Vertis conducted on July 27th, 2005 by auditing team of TÜV SÜD</p> <p>Validation team on site:            Klaus Nürnberger (Project manager)      TÜV Industrie Service GmbH, TÜV SÜD Group            Tamás Békés (Local Expert)                      EMI-TÜV Bayern Kft, TÜV SÜD Group</p> <p>Interviewed persons:            Mónika Lörincz    HungaroWind Kft.            Corina Pintér    Vertis Environmental Finance</p>
2.	<p>On-site interviews at the offices of Hungarowind conducted on July 28th, 2005 by auditing team of TÜV SÜD</p> <p>Validation team on site:            Klaus Nürnberger (Project manager)      TÜV Industrie Service GmbH, TÜV SÜD Group            Tamás Békés (Local Expert)                      EMI-TÜV Bayern Kft, TÜV SÜD Group</p> <p>Interviewed persons:            Mónika Lörincz    HungaroWind Kft.            Corina Pintér    Vertis Environmental Finance</p>
3.	Project Design Document for JI project "Sopronkövesd wind farm", submitted July 2005
4.	Project Design Document for JI project "Sopronkövesd wind farm", submitted August 2005
5.	Letter of Endorsement "Sopronkövesd Wind Farm" from Ministry of Environment and Water of the Republic of Hungary Jan. 10,2004
6.	The plan for connecting by ETV-ER• TERV (2004.11.10 (P224150/1000/0 )
7.	Permission for grid connection from local electricity distribution company E.ON-EDASZ (2004-12-09)
8.	MVM RT (Hungarian Electricity Company) disclaimer declaration (2004-11-30, 56/2002 GKM Rendelet)
9.	Approval of Connection Plan from MAVIR (The Hungarian electricity controller)
10.	The Hungarian regulations influencing the baseline scenario is the Hungarian Electricity Law 2001/CX modified by law LXXIX of

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Reference No.	Document or Type of Information
	2005
11.	Guidelines for Joint Implementation projects regarding additionality and baseline emissions for projects in the energy sector Issued by Hungarian Ministry of Environment in June 2005
12.	General Plan of Wind Farm Project , June of 2005.
13.	Letter of Endorsement from FERT• -HANSÁG National Park (2004-10-04)2005-05-02)
14.	Permission of Aeronautical Authority – Polgári Légiközlekedési Hatóság;
15.	Agreement of Landed Property Use ( 018/9 hrsz, Sopronkövesd, 0249/8 hrsz Nagylózs, 0264/1 Sopronkövesd)
16.	Permission of Regional Authority of Environment (2005-05-02)
17.	Approval of Connection Plan to electricity grid from E.ON-EDASZ regional electricity distributor
18.	Preliminary Environment Study of Project by Blautech Ltd. (VJ-200112704-A)
19.	Modified Expert's Report to Permission of Environment Protection (VJ-2004032601)
20.	Letter from Municipality of Sopronkövesd, Confirmation Stakeholder Meeting, August 2005
21.	Letter from Municipality of Nagylózs, Confirmation Stakeholder Meeting, August 2005
22.	Presentation done by Dr. Andrew Garrad, the managing director of Garrad Hassan and Partners Ltd, London, spring 2005
23.	Power Purchase Agreement; Halozatesatla Kozasi Szerződés Kiserömuvekkal, HC_ESZ 009/2005; 2005.04.19
24.	Energy yield assessment report; Deutsche WinGuard Germania Windpark, Report No. 04054, second amendment



Industrie Service

***Response by Vertis Environmental Finance  
on  
the clarifications and corrective action requests  
by TÜV Industrie Service,***

Draft report clarifications and corrective action requests  
by TÜV Industrie Service,  
Carbon Management Service on July 29, 2005

## Sopronkövesd Wind Farm

Response by Vertis Environmental Finance

11 August 2005

### CAR 1

C: The foreign investor country should be identified. The Approvals should be provided at the end of the validation.

A: The foreign investor country will be identified. The Approvals will be provided at the end of the validation.

### CAR 2

C: The fact that the import electricity of electricity is cheaper than the electricity which is produced in Hungary should be referenced.

A: The fact that Hungary is a net importer of electricity is documented in the PDD in Table 15 for the period 1999-2003. For 2004, the situation remained unchanged as can be seen in the table below (source of information is MAVIR, Yearly report 2004, data in GWh):

Country	Import	Export	Import/export balance
Austria	308	738	-430
Croatia	112	2,043	-1,931
Romania	99	55	44
Serbia Montenegro	67	115	-48
Slovakia	6,995	105	6,890
Ukraine	2,947	0	2,947
Total	10,528	3,056	7,472

Due to the liberalized electricity market, electricity consumers with the exception of households are free to enter the market, choose their electricity supplier and consequently may import electricity according to their needs. Import of electricity is concluded through daily auctioning (organized by MAVIR) for cross-border capacities. The contracts resulting from auctioning are not publicly accessible, so no prices are available for review. Main sources of import are Poland (physically via Slovakia), Romania, Slovakia and Ukraine. Information was also provided through an interview with Mr. Alajos Stróbl, Head of Capacity Planning Department of MAVIR.

### CAR 3

C: The internal energy demand should be monitored. Do the foreseen measuring devices measure in both directions (output/feed-in and input/demand)?

A: According to the plan for connection to the grid, the measuring devices will be able to measure in both directions the electricity production as well as the electricity consumption on-site. The consumption on-site is represented by electricity used to start the turbines after a period of being out of operations.

According to the equipment supplier, GE Windenergy GmbH, this consumption will be 5,000kWh per year per turbine, respectively 150MWh for the whole park. The turbine is state-of-the-art technology which will have incorporated a solar cell to produce electricity and be used when needed. Given that the impact of the on site consumption on total yearly electricity production is immaterial (0.12% in 118GWh), it will not be part of the monitoring plan.

#### CAR 4

C: It should be shown that the meeting with village people have taken place and which comments and objections were given. The information about the meeting with the village people of Sopronkövesd and Nagylózs should be added in the PDD.

A: Confirmation regarding these meetings was received from the city halls of both villages. Scanned versions of these letters are attached. Content of the letters was summarized in the PDD.

#### CR1

C: It should be clarified before end of the validation, whether such guidelines are officially available.

A: The seller is in discussions with two potential buyers, investor countries, but at the moment of writing no final decision was made. It is expected that the carbon buyer will be known at the end of September 2005.

#### CR2

C: It should be clarified and confirmed, that all given technical details will remain in the PDD though with the new supplier. If not, the PDD should be revised.

A: In case that a new equipment supplier will be chosen the technical details will be kept in order to prevent new permitting and alterations of agreements already in place. Therefore, there will be no need for revising the PDD.

#### CR3

C: Does LTCSA guarantee for a specific technical availability of each turbine? If yes, which availability will be guaranteed?

A: The LTCSA guarantees the technical availability of the whole wind park, calculated as a mathematical formula. In case of Sopronkövesd Wind Farm, the park has an availability of 97%, which means that 97% of capacity is available all the time, irrespective to a certain turbine.

CR4

C: The wind farm has a relatively low park efficiency of 90.7%. This means that done investment for each turbine could not have a return of invest as possible. Which reasons are responsible to low park efficiency? Why are the wind turbines so near together?

A: Location was the main factor in deciding what will be the installed capacity of the wind farm. The space available for construction was limited due to the vicinity with both villages, and as a result the actual capacity was considered a good compromise from the point of view investment/return. However, a park efficiency of 90.7% is not regarded as unusual in the wind industry. For comparison, we mention that there is a wind park in Germany with an efficiency of only 85%. The figure of 90.7% was determined via software modelling.

CR5

C: The costs for LTCSA seem to be high. They are the biggest part of operation costs. Are there any reasons for it? Which services are offered which goes beyond state of the art?

A: It is normal to have maintenance as 60% of yearly operating costs since the wind farm has no expenses with personnel and raw materials. Further, the pricing for LTCSA used in the PDD is according to indicative offer by GE Windenergy. Above from maintenance services, LTCSA covers alterations of technology with the purpose of improving the energy yield. In practice this means that components of turbines may be replaced by improved versions, if available. GE Windenergy will receive a bonus for every kWh supplementary produced in this way. During validation meeting of July 29, 2005 such an offer was available for review for the validation team.

CR6

C: How long will the Guidelines be valid? Does the guidelines foresee to monitor the baseline or that the Guidelines will be revised in the short term?

A: The JI Guidelines were issued by the Hungarian DNA (Ministry of Environment and Water Management) and no request for monitoring the emissions factors was expressed. According to the Hungarian DNA, in case that these factors will be revised it will affect new projects only.

CR7

C: It should be clarified how the calibration of the measuring devices will be managed (primary and control meters)

A: After meters being installed, an engineer of MAVIR (the Hungarian system operator) will perform the calibration of the meters in front of Hungarowind and E.ON EDASZ staff and seal them. Further calibration and opening of the meters will happen in front of representatives of all parties (Hungarowind, MAVIR, E.ON EDASZ) and as regulated by "IRÁNYELV az AVE, NVE rendszer elszámolási célú mér•berendezéseire és a Mérési Központok kialakítására" by MAVIR (Guidelines regarding measuring devices and establishment of metering stations) from October 10, 2004.

CR8

C: No procedures are identified for day -to-day records handling (including what records to keep, storage area of records and how to process performance documentation). The documentation of the envisaged practice should be submitted.

A: A Data Management System will be in place which will handle data stored in hard-copy and electronically. The data will be collected by Hungarowind and be in the responsibility of Mrs. Monika L•rincz, as mentioned in the PDD.

Documentation to be stored in hard copy

Hard copy documentation concerning both preparation and operation phases will be stored at the headquarters of Hungarowind. The documentation will be stored in such a way that provides easy access during verification periods. In the table below there are indicated the key items to be stored in hard-copy:

Document index ref. no	Document title	General description of the document	Source of information	Date entered
	PDD, spreadsheets and supporting documentation	Detailed project description for the purpose of Joint Implementation registration	As delivered by Vertis	
	Validation report	Report received from validator showing that the project fulfils all necessary conditions for being registered as Joint Implementation project under the Kyoto Protocol	As delivered by the validation team	
	Monitoring report	A database in Excel will be created in order to collect data and perform calculations of ERUs.		
	Reports regarding measurements and visits on-site			
	Data transmitted daily via GPRS from site regarding electricity production	Database in electronic format. A software will be installed which will manage the database.		
	Invoices and receipts regarding electricity production	Commercial documents to be received from E.ON EDASZ.		
	General records on project management, including data collection and management systems			

The collection of hard copy documentation will form the paper archive.

Documentation to be stored electronically

All the documentation available in hard copy will be stored electronically as well. At the end of every working day, the documents located on the server of Hungarowind will be saved on back-up media. The collection of these will form the electronic archive.

The monitoring plan was adapted to include these provisions.