



Industrie Service

# Determination Report

Determination of  
the  
Rácalmás Wind Turbine Park

HUNGARY

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<b>Report Title:</b>	Determination of the JI-Project: "Rácalmás Wind Turbine Park", 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 "E.ON Hungária Rt." 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 be confirmed that the submitted project documentation is in line with all requirements set by the Marrakech Accords and the Kyoto Protocol.</p> <p>Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amounts of emission reductions of 204.671 t CO<sub>2e</sub> (to be issued as ERUs) in the intended crediting period from 2008 – 2012 represent a conservative 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>JI</b>	Joint Implementation
<b>KP</b>	Kyoto Protocol
<b>MP</b>	Monitoring Plan
<b>MS</b>	Management System
<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 "E.ON Hungária Rt." in Budapest, Hungary has commissioned TÜV Industrie Service GmbH TÜV SÜD Group, Carbon Management Service, to conduct a determination of the "Rácalmás Wind Turbine Park" 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, employed a risk-based approach in the determination, focusing on the identification of significant risks for project implementation and the generation of emission reductions

### 1.3 GHG Project Description

The project foresees the installation of a wind turbine park between Rácalmás and Perkáta. The project will generate electricity from a renewable source fed into the public grid.

The wind turbines will be erected at one site in the central part of Hungary with a total capacity of 24 MW.

The baseline scenario is reflected by the average emission rate of grid connected thermal power plants, which did not fall under the Hungarian power purchase obligation (PPO) (56/2002 Decree), as it is estimated that the newly implemented equipment will most likely displace these plants with its electricity fed in the grid.

The 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 – grounding installation of towers near Rácalmás - will start in May 2005. The first turbines will operate in April 2006. All measures will be implemented until September 2006.

The project documentation has been developed by E.ON Hungária, Budapest together with CARBON AERO Kft. in Budapest, Hungary.

## 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

In the period between November 10th, 2004 and November 11th, 2004 TÜV SÜD performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the Hungarian company "E.ON Hungária Rt." (project owner), representatives of the Ministry of Water and Environment and representatives of MVM as public utility wholesaler and CARBON-AERO Kft. as consultant of project owner 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
"E.ON Hungária Rt."	Project design, baseline, monitoring plan, environmental impacts, stakeholder comments, additionality, monitoring procedures, calibration of the measurement equipment, documentation, archiving of data
CARBON-AERO Kft.	Project design, baseline, monitoring plan, environmental impacts, stakeholder comments, additionality, monitoring procedures
Hungarian National Focal Point	Approval of the project, project design, stakeholder comments, national and sectoral policy; approval procedure
MVM Hungarian Power Companies Ltd.	stakeholder comments, situation and stage and development of the power sector in Hungary

## 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 totally by the revision of the PDD submitted December 13th, 2004. 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 responses given is 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 original project design documents 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 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.

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 No. 1 (CAR 1):

It is envisaged that the project has to be approved by both countries (Investor Country and Hungary as Host Country) at the end of the validation process. This has been confirmed by the Hungarian National Focal Point. The investor country was not named in the published PDD. The written letters of approval were not available at the time of this determination.

Response:

E.ON Hungária Rt. started preliminary negotiations regarding the investor country. The final decision regarding the buyer will take place after publication of all final National Allocation Plans. The definitive numbers of allocated allowances will be published in the first two month in 2005 accordingly the E.ON Hungária Rt. will name the foreign investor in this period. E.ON Hungária Rt. envisaged to submit the Letter of Approval to validator.

The issuance of ERUs will be done most likely under the "First Track JI"- regime. Therefore, there is no requirement to provide the validator such a LoA in order to forward it to the Supervisory Committee.

#### Clarification Request No. 1 (CR 1):

National guidelines and procedures (G&P) are currently not available for both countries. It has been indicated that the G&P in the host country will be published soon.

Response:

Hungary does not yet have any official JI guidelines published.

#### Corrective Action Request No. 2 (CAR 2):

The project uses state of the art technology. However the given technical informations in the published PDD about the wind farm are very scarcely. The informations about the role of E.ON Hungária, about the wind farm developer; chosen wind turbines with capacity , hub height, number of blades, regulation for different wind situations, guaranteed technical availability.

Response:

E.ON Hungária Rt. will ask for tenders to select the wind turbines supplier. The main technologic specification of wind turbines are the following:

- Wind park's maximum total capacity is 24 MWeI
- Preferred capacity of a turbine is 2 MW, but the E.ON will evaluate offers between 1.5 -2,5 MW capacity if these turbines guarantee better economic figures

- Hub height: 80-100 m
- Wind speed (yearly average): 6.8 m/s at 100 m height

Corrective Action Request No. 3 (CAR 3):

The PDD does not contain any informations about training and maintenance needs. The PDD should contain informations how training, operating, controlling, maintenance will be organized and managed. It should contain how many additional qualified personnel are foreseen. The aspects regarding future responsibilities and quality assurance should also be fixed.

Response:

The wind park will operate with remote control and weekly locale monitoring. It means, the turbines will be connected to the computers of E.ON Hungária Rt. and the Energy Generation Competence Center of E.ON Hungária Rt. will control the wind park from the headquarter. The technical team is heavy involved in the project development and the technology supplier will hold training about the operation of wind turbines. This team gained already experience in operating and controlling wind turbine because they are responsible for the operation of two wind turbines in Mosonszolnok and one turbine in Kulcs. The responsibilities and quality assurance regarding the wind parks operation are agreed with the strict internal regulation of E.ON Hungária Rt. because the operation belongs to the E.ON Hungária Rt. Energy Generation Competence Center.

E.ON Hungária Rt. will sign a long term maintenance agreement with the technology supplier.

### 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.

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 not likely that the foreseen project technology will be substituted during the crediting period by a still more efficient technology.

The final PDD contain informations 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 "Rácalmás Wind Turbine Park"-project 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 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 European Emissions Trading System.

The additionality of the project is proved by a barrier test which shows some risks i.e. on having a forerunner role in dissemination of wind technology and in particular significant risks on economical situation.

Additionality:

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. All data has been used from publicly available sources. 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. 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 No. 2 (CR 2):

A more detailed description should be provided how the emissions of CHP-Plants, which are used also in condensing operation, are corrected.

Response:

E.ON submitted a spreadsheet demonstrating the procedure for the correction of generation figures from these CHP plants, which are also partly operated in condensing manner.

Corrective Action Request No. 4 (CAR 4):

The increase of coal burning in 2015 depends on setting into operation one or two certain power plants, which in part replace older ones. It should be clarified if it is in all probability that the increase of coal burning will already happen in 2011 and 2012 and not later.

With regard to the JI guidelines it is required to use conservative approach for estimating the baseline emissions.

Response:

The increase of coal burning in 2010-2015 depends on setting into operation one or two certain power plans.

- The baseline calculation is based of the MAVIR (Hungarian System Operator)capacity study this study contains the following number regarding the coal based electricity generation capacity and its fuel use:

### Coal plants in 2010

Power plant	Capacity MW	E <sub>prod</sub> TWh	Operation h/a	E <sub>sold</sub> TWh	Coal PJ
Mátra	836	4,870	5825	4,310	51,500
Oroszlány	240	1,000	4167	0,870	13,000
<b>Large-scale plants</b>	<b>1076</b>	<b>5,870</b>	<b>5455</b>	<b>5,180</b>	<b>64,500</b>
New-large scale plants	0	0,000	0	0,000	0,000
<b>Total</b>	<b>1076</b>	<b>5,87</b>	<b>5455,390</b>	<b>5</b>	<b>64,500</b>

### Coal plants in 2015

Power plant	Capacity MW	E <sub>prod</sub> TWh	Operation h/a	E <sub>sold</sub> TWh	Coal PJ
Mátra	636	3,600	5660	3,190	37,500
<b>Large-scale plants</b>	<b>636</b>	<b>3,600</b>	<b>5660</b>	<b>3,190</b>	<b>37,500</b>
New-large scale plants	1000	5,400	5400	4,936	42,500
<b>Total</b>	<b>1636</b>	<b>9</b>	<b>11060,377</b>	<b>8</b>	<b>80,000</b>

The tables show the transformation of coal generation capacities in Hungary between 2010 and 2015. There will be important changes between with the power plant portfolio 2010 and 2015. The Oroszlány power plant totally and two smaller blocks of the Mátra power plant's will close. Meanwhile new coal based capacities will be installed. At the moment there are plans for installation and closure of coal capacities but it is unpredictable to determine the exact date. Therefore it is calculated a linear decrease of coal burning by power plants before the closure and a linear increase of coal use by the installed capacity for the 2010-2015 period. Accordingly the methodology was conservatively defined, because the same calculation method is used for the closure and installation of coal power plants.

#### Corrective Action Request No. 5 (CAR 5):

It should be clarified and described, that the electricity generated by the project does not replace the imported electricity.

#### Response:

The existing import capacities deliver electricity for the free market costumers and for the MVM. The MVM supplies the smaller industrial costumers and the residential costumers. Currently the majority of import capacities are used by the MVM but in the future parallel with liberalization this ratio will change and the free market share will increase. This free market's import capacities are not influenced by the size of the produced renewable electricity because these capacities are in hands of electricity trader companies. These traders can not buy the renewable electricity produced by the project and can not supply their costumers with this renewable electricity. Accordingly they can use their contracted local capacities and their contracted import capacities.

From the other hand the MVM's import capacities are regulated by MVM in accordance with the import contracts. The produced renewable electricity will be used to supply the MVM clients similarly to the import capacities and with PPA covered fossil capacities and other capacities belonging to obligatory off take. Theoretically the produced renewable capacity could replace the import capacity but this could not happen because of economic reason. The imported electricity is usually cheaper than the local production and MVM's decision to

use a more costly electricity to supply their costumers would economically not reasonable. Currently the MVM buys electricity from PPA covered capacities through a cost based system as well.

Corrective Action Request No. 6 (CAR 6):

The PDD should describe the barriers which convincingly show that the project has to overcome obstacles and can not be seen as being the business as usual scenario.

Response:

The revised final PDD describe the project related risks, technical risks, price risks, risks of sources.

Corrective Action Request No.7 (CAR 7):

The used CO<sub>2</sub>-Emissionfactors should be referenced.

Response:

The revised final PDD references the used emission factor.

### 3.2.3 Conclusion

All responses given to the indicated CARs 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 in the final PDD is exactly defined. The PDD says that the first emission reductions will occur in 2006.

The operational lifetime of the project is announced to be 25 up to 30 years. This timeframe is optimistic but not unreasonable.

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

### 3.3.2 Issued CRs

Clarification Request No.3 (CR 3):

Regarding the stadium of planning it is not very likely that the operating start will happen in 2005. The PDD should describe the projects starting date, the certain phases of implementation and a realistic operating date.

Response:

EON submitted a table, which shows the timelines. Construction of grid connection is envisaged to start in May 2005, foundation starts in September 2005 and the erection of turbines in February 2006. the first turbines will operate in April 2006. The wind park will be in full operation in September 2006.

### 3.3.3 Conclusion

The time schedule is clearly described and realistic.

## 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 have been defined and no leakage emissions are monitored according to the monitoring plan as there are no emissions to be expected.

There are lots of positive environmental impacts, besides impact on birds, some transport emissions and emissions during construction. These emissions are not considered to be monitored. Possible negative effects are studied and measured through the steps of gradual authorisation process in Hungary. One result is that the impact to birds will be monitored.

### 3.4.2 Issued CARs/CRs

#### Corrective Action Request No. 8 (CR 8):

The internal demand of electricity is normally smaller than 1% of generation, and therefore it will be neglected. The correct neglectation should be controlled by monitoring the internal demand.

Response:

Internal demand of electricity will be measured and will be reported.

#### Corrective Action Request No. 8 (CAR 9):

It could not be excluded, that there are impacts on the efficiency of fossil fired plants by reducing its generation. The arguments, which clarify the neglecting of these effects, should be described.

Response:

The wind turbine's alternate capacity influence the load of National network with approximately 0,3% - 0,4% of the total Hungarian min load. The impact of this slight load ratio on efficiency of fossil fuel based power plants is not demonstrable. So the impact of this project on the specific CO2 emission increase of fossil fuel based power plant is neglectable.

#### Clarification request No. 4 (CR4):

The impact to birds will be monitored. Which indicators will be monitored?

Response:

The suggested bird monitoring system is under preparation, the final version is not yet available. The E.ON Hungária Rt. will adopt a system that meets the standards of relating EU and Hungarian regulations.

### **3.4.3 Conclusion**

The project fulfils all the prescribed requirements. The relevant Hungarian authority has to supervise the bird monitoring system. For future verifications it is recommended to include these monitoring activities.

## **3.5 Calculation of GHG Emissions**

### **3.5.1 Findings**

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.

### **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, respectively noise and impacts on birds. The PDD discusses this issue in an appropriate manner. The project complies with the environmental legislation in Hungary.

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

See Clarification request No. 4 (CR4) under chapter Monitoring 3.4.2 .

### **3.6.3 Conclusion**

The project fulfils all prescribed requirements completely.

### **3.7 Local stakeholder process**

#### **3.7.1 Findings**

Three different steps of stakeholder communication process were described in the original PDD. The presentation of the project for the residents of Rácalmás was the first step. The second step took place during the construction permission process. The third step should be a residential forum, where E.ON Hungária Rt. wants to invite i.e. the local NGOs and the residents of Rácalmás. During on-site audits it has been shown that there is an interest to cancel this third step.

The PDD discusses this issue in an appropriate manner. The project complies with the legislation in Hungary.

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

Corrective action request No. 5 (CR5):

If the stakeholder process will be changed, the PDD must be updated.

Response:

The last step of stakeholder process, which was described in draft PDD, was cancelled. The PDD was therefore updated. The local stakeholder process is according to the national regulations.

#### **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 documents on its website for 30 days from November the 3<sup>rd</sup> until December the 3<sup>rd</sup>, 2004.

Two comments have been received. The comments are attached in Annex 3

Conclusion on received comments:

The project participants have taken all three comments into account, when preparing the revised PDD.

The revised final PDD take into consideration the aspects of migration birds and the influence of wind farm on efficiency of fossil fired power plants. See above the responses on CAR9 and CR4.

The revised final PDD take into consideration the aspects import of electricity, the influence on nuclear generator and on efficiency of fossil fired fuels. See above CAR5 and CAR9.

The share of net-import referenced to the MAVIR-Study to the year 2012. In absolute figures the net-import will be stable; therefore was the share of imported electricity about 18%.



Industrie Service

## 5 DETERMINATION OPINION

TÜV SÜD has performed a determination of the "Rácalmás Wind Turbine Park" 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.

In our opinion, 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 204.671 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. TÜV SÜD can not guarantee the accuracy or correctness of this information. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the determination opinion.

Munich, 2004-12-17

Munich, 2004-12-17

A blue ink signature of Michael Rumberg, consisting of a stylized 'M' and 'R' followed by a horizontal line.

Michael Rumberg

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

A blue ink signature of Werner Betzenbichler, featuring a large, circular, scribbled 'W' and 'B'.

Werner Betzenbichler

**Responsible Project Manager**



Industrie Service

## ***Determination Protocol***



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

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
<p>1. The project shall have the approval of the Parties involved</p>	<p>Kyoto Protocol Article 6.1 (a)</p>	<p><b>CAR 1</b></p> <p><u>Corrective Action Request:</u> The foreign investor country should be named</p> <p>The Approvals at the end of the validation should be provided</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. This has been confirmed by the Hungarian National Focal Point, on condition that the approval by foreign country exists.-</p> <p>E-ON Hungaria Rt. started preliminary negotiation regarding the investor country. The final decision regarding the buyer will happen after publication of all final National Allocation Plans. The definitive numbers of allocated allowances will be published in the first two month in 2005 accordingly the E-On Hungária Rt. will name the foreign investor in this period. E-ON Hungária Rt. envisaged to submit the Letter of Approval to validator.</p>



REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
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)	☑	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 style="text-align: center;"><b>See CAR 1</b></p> <p>The unknown sponsor Party shall fulfil the obligations as requested.</p>	See comment above; CAR1
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)	☑	There is no domestic action, which would give a real additional incentive to this kind of project.
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 style="text-align: center;"><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 no 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</p>



REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
			shall be applied.
6. The host Party shall be a Party to the Kyoto Protocol	Marrakech Accords, JI Modalities, §21(a)/24	☑	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	☑	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	☑	This issue can not be answered by now as such as the JI system is not installed yet and the Kyoto Protocol has not entered into force.
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	☑	A draft PDD has been submitted in November 2004. A Revised final PDD has been submitted on December 15 <sup>th</sup> , 2004
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	☑	The project design document was made publicly available from November 3 <sup>rd</sup> to December 3 <sup>rd</sup> . Three comments were given.
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	Marrakech Accords, JI Modalities, §33(d)	☑	Table 2, Section F



REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out			
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	☑	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	☑	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 force majeure	Marrakech Accords, JI Modalities, Appendix B	☑	Table 2, Section B.2
15. The project shall have an appropriate monitoring plan	Marrakech Accords, JI Modalities, §33(c)	☑	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?	2	DR, I	The project's spatial boundaries are clearly described for the project installation and respective emissions reduction through electricity generation by renewable energy	<input checked="" type="checkbox"/>	
A.1.2. Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	2	DR, I	Yes, the flowchart presented in the PDD, (Technical description) shows a complete description of the project's system.	<input checked="" type="checkbox"/>	
<b>A.2. Technology to be employed</b>					
A.2.1. Does the project design engineering reflect current good practices?	2	DR, I	Yes, the employed technology does reflect current good practice concerning the installation and operation of wind power plants <ul style="list-style-type: none"> <li>•</li> </ul>	<input checked="" type="checkbox"/>	
A.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	2	DR, I	The project uses state of the art technology. However the given information in the PDD about the wind turbines is very scarcely. The following information should be given at the minimum: <ul style="list-style-type: none"> <li>• Role of Eon Hungary,</li> </ul>	<b>CAR 2</b>	<input checked="" type="checkbox"/>

\* MoV = Means of Verification, DR= Document Review, I= Interview



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<ul style="list-style-type: none"> <li>• Who is wind farm developer?</li> <li>• Chosen wind turbines with capacity , hub height, number of blades, regulation for different wind situations...</li> <li>• Guaranteed technical availability</li> </ul>		
A.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	2	DR, I	It is not likely that the project technology will be substituted by a more efficient technology.	<input checked="" type="checkbox"/>	
A.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	2	DR, I	During the audit it was moreover reported that staff will receive training regarding the technical operation of the new power plant. Additional the project will create new working places for qualified personnel.	<input checked="" type="checkbox"/>	
A.2.5. Does the project make provisions for meeting training and maintenance needs?		DR, I	<p>The PDD does not contain any information about training and maintenance needs.</p> <p><u>Corrective Action Request:</u></p> <p>The PDD should contain information how training, operating, controlling, maintenance will be organized and managed. It should contain how many additional qualified personnel are foreseen.</p> <p>The aspects regarding future responsibilities and quality assurance should also be fixed.</p>	<b>CAR 3</b>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
<b>B. Project Baseline</b>					
<b>B.1. Baseline Methodology</b>					
B.1.1. Is the discussion and selection of the baseline methodology transparent?		DR, I	The discussion and selection is transparent	<input checked="" type="checkbox"/>	
B.1.2. Does the baseline methodology specify data sources and assumptions?		DR, I	Yes, all data used are specified and documented.	<input checked="" type="checkbox"/>	
B.1.3. Does the baseline methodology sufficiently describe the underlying rationale for the algorithm/formulae used to determine baseline emissions (e.g. marginal vs. average, etc.)		DR, I	Mainly, Yes. <u>Clarification Request:</u> Provide a more detailed description for correcting the emissions of CHP-Plants which are used also in condensing operation	<b>CR 2</b>	<input checked="" type="checkbox"/>
B.1.4. Does the baseline methodology specify types of variables used (e.g. fuels used, fuel consumption rates, etc)?		DR, I	Yes, all types of variables are clearly and completely specified.	<input checked="" type="checkbox"/>	
B.1.5. Does the baseline methodology specify the spatial level of data (local, regional, national)?		DR, I	All spatial levels are considered to be appropriate.	<input checked="" type="checkbox"/>	
<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?		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.	<input checked="" type="checkbox"/>	
B.2.2. Has the baseline been determined using conservative assumptions where possible?		DR, I	The increase of coal burning in 2015 depends on setting into operation one or two certain power plants, which in part replace older ones. It should be clarified if it is in all	<b>CAR 4</b>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			probability that the increase of coal burning will already happen in 2011 and 2012 and not later. <u>Corrective Action Request:</u> With regard to the JI guidelines it is required to use conservative approach for estimating the baseline emissions.		
B.2.3. Has the baseline been established on a project-specific basis?		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.	<input checked="" type="checkbox"/>	
B.2.4. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?		DR, I	Yes, the baseline does take into account 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 not been sufficiently discussed by the PDD. <u>Corrective Action Request:</u> It should be clarified and described, that electricity generated by the project does not replace the imported electricity.	<b>CAR 5</b>	<input checked="" type="checkbox"/>
B.2.5. Is the baseline determination compatible with the available data?		DR, I	Yes.	<input checked="" type="checkbox"/>	
B.2.6. Does the selected baseline represent a likely		DR,	Yes, the baseline does represent a likely	<input checked="" type="checkbox"/>	

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
scenario in the absence of the project?		I	scenario in the non project case as it conforms to all legal requirements and the prevailing practice in the Hungarian agricultural sector.		
B.2.7. Is it demonstrated that the project activity itself is not a likely baseline scenario?		DR, I	The PDD refers to various barriers faced by the project, whereas no indication has been delivered how the JI project approval helps to overcome such barriers.  <u>Corrective Action Request:</u>  The PDD should describe the barriers which convincingly show that the project has to overcome obstacles and can not be seen as being the business as usual scenario.	<b>CAR 6</b>	<input checked="" type="checkbox"/>
B.2.8. Have the major risks to the baseline been identified?		DR, I	Yes, the major risks have been determined.	<input checked="" type="checkbox"/>	
B.2.9. Is all literature and sources clearly referenced?		DR, I	Yes, besides the emissions factors.  <u>Corrective Action Request:</u>  The used CO2-emission factors should be referenced.	<b>CAR 7</b>	<input checked="" type="checkbox"/>
<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?		DR, I	The project starting date is not exactly defined. The PDD says that the first emission reductions will occur in 2005.		<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<p>The operational lifetime of the project is announced to be 25 up to 30 years. This timeframe is optimistic but not unreasonable.</p> <p><u>Clarification Request::</u></p> <p>Regarding the stadium of planning it is not very likely that the operating start will happen in 2005. The PDD should describe the projects starting date, the certain phases of implementation and a realistic operating date.</p>	CR 3	
C.1.2. Is the project's crediting time clearly defined?		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.	<input checked="" type="checkbox"/>	
<b>D. Monitoring Plan</b>					
<b>D.1. Monitoring Methodology</b>					
D.1.1. Does the monitoring methodology reflect good monitoring and reporting practices?		DR, I	Yes, the monitoring methodology does reflect current good practice.	<input checked="" type="checkbox"/>	
D.1.2. Is the selected monitoring methodology supported by the monitored and recorded data?		DR, I	<p>The internal demand of electricity is normally smaller than 1% of generation, and therefore it will be neglected. Anyway, there should be a check during operation, that this behaviour is suitable.</p> <p><u>Corrective Action Request:</u></p>	CAR 8	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			The internal energy demand should be monitoring.		
D.1.3. Are the monitoring provisions in the monitoring methodology consistent with the project boundaries in the baseline study?		DR, I	Yes.	<input checked="" type="checkbox"/>	
D.1.4. Have any needs for monitoring outside the project boundaries been evaluated and if so, included as applicable?		DR, I	It has been evaluated, but there is no such need.	<input checked="" type="checkbox"/>	
D.1.5. Does the monitoring methodology allow for conservative, transparent, accurate and complete calculation of the ex post GHG emissions?		DR, I	Yes.	<input checked="" type="checkbox"/>	
D.1.6. Is the monitoring methodology clear and user friendly?		DR, I	Yes, the monitoring methodology is based on existing reporting and quality assurances structures.	<input checked="" type="checkbox"/>	
D.1.7. Does the methodology mitigate possible monitoring errors or uncertainties addressed?		DR, I	Yes	<input checked="" type="checkbox"/>	
<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?		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.	<input checked="" type="checkbox"/>	
D.2.2. Are the choices of project GHG indicators reasonable?		DR, I	See above	<input checked="" type="checkbox"/>	
D.2.3. Will it be possible to monitor / measure the specified project GHG indicators?		DR, I	See above	<input checked="" type="checkbox"/>	

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D.2.4. Will the indicators enable comparison of project data and performance over time?		DR, I	This is more relevant for the baseline indicators (energy generation), which will offer a proof of the project's performance.	<input checked="" type="checkbox"/>	
<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?		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.  <u>Corrective action request:</u>  It could not be excluded, that there are impacts on the efficiency of fossil fired plants by reducing its generation. The arguments, which clarify the neglecting of these effects, should be described.	<b>CAR 9</b>	<input checked="" type="checkbox"/>
D.3.2. Have relevant indicators for GHG leakage been included?		DR, I	See comment above.	<input checked="" type="checkbox"/>	
D.3.3. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?		DR, I	See comment above.	<input checked="" type="checkbox"/>	
D.3.4. Will it be possible to monitor the specified GHG leakage indicators?		DR, I	See comment above.	<input checked="" type="checkbox"/>	
<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?		DR, I	There is one key factor which is required in order to determine the baseline emissions - electricity production of the project – which	<input checked="" type="checkbox"/>	

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			is properly monitored.		
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?		DR, I	The choice is reasonable.	<input checked="" type="checkbox"/>	
D.4.3. Will it be possible to monitor the specified baseline indicators?		DR, I	Yes	<input checked="" type="checkbox"/>	
<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?		DR, I	There are lots of positive environmental impacts, besides impact on birds, some transport emissions and emissions during construction. These emissions are not considered to be monitored. However the impact to birds will be monitored.  <u>Clarification request:</u> Which indicators will be monitored?	<b>CR 4</b>	<input checked="" type="checkbox"/>
D.5.2. Will it be possible to monitor the specified impact indicators?		DR, I	See clarification request above.	See CR2	
<b>D.6. Project Management Planning</b>					
D.6.1. Is the authority and responsibility of project management clearly described?		DR, I	The aspects regarding future responsibilities and quality assurance are not fixed in advance.  See CAR 3	See CAR 3	<input checked="" type="checkbox"/>
D.6.2. Is the authority and responsibility for registration, monitoring, measurement and reporting		DR, I	Yes, all aspects regarding future responsibilities are already fixed in advance	<input checked="" type="checkbox"/>	

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
clearly described?					
D.6.3. Are procedures identified for training of monitoring personnel?		DR, I	See comment 6.1.		
D.6.4. Are procedures identified for emergency preparedness where emergencies can result in unintended emissions?		DR, I	See comment 6.1.		
D.6.5. Are procedures identified for calibration of monitoring equipment?		DR, I	See comment 6.1.	<input checked="" type="checkbox"/>	
D.6.6. Are procedures identified for maintenance of monitoring equipment and installations?		DR, I	See comment 6.1	<input checked="" type="checkbox"/>	
D.6.7. Are procedures identified for monitoring, measurements and reporting?		DR, I	Yes, the procedures regarding monitoring, measurements and reporting are already fixed in advance.	<input checked="" type="checkbox"/>	
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)?		DR, I	The project will be integrated in the existing recording and quality management system.	<input checked="" type="checkbox"/>	
D.6.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?		DR, I	Data uncertainties of directly monitored data (electricity, flow, heat) are deemed to be low.	<input checked="" type="checkbox"/>	
D.6.10. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?		DR, I	The project will be integrated in the existing quality management system.	<input checked="" type="checkbox"/>	
D.6.11. Are procedures identified for project performance reviews?		DR, I	The project will be integrated in the existing quality management system.	<input checked="" type="checkbox"/>	

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.6.12. Are procedures identified for corrective actions?		DR, I	The project will be integrated in the existing quality management system.	<input checked="" type="checkbox"/>	
<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?		DR, I	No parameters have been defined and no project emissions are calculated as such emissions are not to be expected.	<input checked="" type="checkbox"/>	
E.1.2. Are the GHG calculations documented in a complete and transparent manner?		DR, I	See comment above.	<input checked="" type="checkbox"/>	
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?		DR, I	See comment above.	<input checked="" type="checkbox"/>	
E.1.4. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?		DR, I	See comment above.	<input checked="" type="checkbox"/>	
E.1.5. Have all relevant greenhouse gases and source categories listed in Kyoto Protocol Annex A been evaluated?		DR, I	Yes.	<input checked="" type="checkbox"/>	
<b>E.2. Leakage Effect Emissions</b>					
E.2.1. Are potential leakage effects beyond the chosen project boundaries properly identified?		DR, I	Leakage calculations are not requested	<input checked="" type="checkbox"/>	
E.2.2. Have these leakage effects been properly accounted for in calculations?		DR, I	See comment above	<input checked="" type="checkbox"/>	
E.2.3. Does the methodology for calculating leakage comply with existing good practice?		DR, I	See comment above	<input checked="" type="checkbox"/>	

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
E.2.4. Are the calculations documented in a complete and transparent manner?		DR, I	See comment above	<input checked="" type="checkbox"/>	
E.2.5. Have conservative assumptions been used when calculating leakage?		DR, I	See comment above	<input checked="" type="checkbox"/>	
E.2.6. Are uncertainties in the leakage estimates properly addressed?		DR, I	See comment above	<input checked="" type="checkbox"/>	
<b>E.3. Baseline Emissions</b>					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?		DR, I	Yes, all data is based on historic values, which have been verified during the validation process.	<input checked="" type="checkbox"/>	
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?		DR, I	Yes.	<input checked="" type="checkbox"/>	
E.3.3. Are the GHG calculations documented in a complete and transparent manner?		DR, I	Yes.	<input checked="" type="checkbox"/>	
E.3.4. Have conservative assumptions been used when calculating baseline emissions?		DR, I	Yes.	<input checked="" type="checkbox"/>	
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?		DR, I	The indicated emission factor is derived from IPCC.	<input checked="" type="checkbox"/>	
E.3.6. Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?		DR, I	Yes.	<input checked="" type="checkbox"/>	

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
<b>E.4. Emission Reductions</b>					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?		DR, I	Yes.	<input checked="" type="checkbox"/>	
<b>F. Environmental Impacts</b>					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?		DR, I	Yes, the description of the environmental impacts is sufficient.	<input checked="" type="checkbox"/>	
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?		DR, I	Requirements for EIAs exist in the host country and have already been fulfilled. The monitoring plan foresees supervision of the impact on birds.	<input checked="" type="checkbox"/>	
F.1.3. Will the project create any adverse environmental effects?		DR, I	No, the project will not create any adverse environmental effects.	<input checked="" type="checkbox"/>	
F.1.4. Are transboundary environmental impacts considered in the analysis?		DR, I	No, but it can be confirmed that there are no such impacts.	<input checked="" type="checkbox"/>	
F.1.5. Have identified environmental impacts been addressed in the project design?		DR, I	The monitoring plan foresees supervision of the impact on birds.	<input checked="" type="checkbox"/>	
F.1.6. Does the project comply with environmental legislation in the host country?		DR, I	Yes the project complies with the environmental legislation in Hungary and the EU.	<input checked="" type="checkbox"/>	
<b>G. Stakeholder Comments</b>					
G.1.1. Have relevant stakeholders been consulted?		DR	Yes, there has been a lot of effort to conduct a stakeholder process. <u>Corrective action request:</u> If the stakeholder process will be changed, the PDD must be updated.	<b>CAR 10</b>	

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
G.1.2. Have appropriate media been used to invite comments by local stakeholders?		DR	Yes	<input checked="" type="checkbox"/>	
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?		DR	Yes	<input checked="" type="checkbox"/>	
G.1.4. Is a summary of the stakeholder comments received provided?		DR	Yes	<input checked="" type="checkbox"/>	
G.1.5. Has due account been taken of any stakeholder comments received?		DR	There have been no comments, which would have required any further action.	<input checked="" type="checkbox"/>	

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

Draft report clarifications and corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<b>CAR 1</b>	Table 1 #1	<p>E-ON Hungaria Rt. started preliminary negotiation regarding the investor country. The final decision regarding the buyer will happen after publication of all final National Allocation Plans. The definitive numbers of allocated allowances will be published in the first two month in 2005 accordingly the E-On Hungária Rt. will name the foreign investor in this period.</p> <p>E-ON Hungária Rt. will submit the Letter of Approval to TÜV SÜD at the time of its availability.</p>	The CAR will be kept valid until the submission of the required document.
<b>CAR 2</b>	A.2.2	Project owner supplied with relevant technical information, which give us the impression, that the chosen technology is state of the art. The supplied information are confidential.	<p>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. It is, moreover, not likely that the project technology will be substituted by a more efficient technology.</p> <p>This issue is considered to be resolved.</p>
<b>CAR 3</b>	A.2.5	The wind park will operate with remote control and weekly locale monitoring. E-ON Hungária Rt. will control the wind park by the head-quarter. The technical team is heavy involved	<p>The final PDD contain information how training, operating, controlling, maintenance will be organized and managed.</p> <p>All aspects regarding future responsibilities and</p>



Draft report clarifications and corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
		<p>in the project development and the technology supplier will hold training about the operation of wind turbines. This team gained already experience in operating and controlling wind turbine because they are responsible for the operation of three already implemented wind turbines. The responsibilities and quality assurance is integrated in the existing system of E-ON Hungaria Rt..</p> <p>E-ON Hungária Rt. will sign a long term maintenance agreement with the technology supplier.</p>	<p>quality assurance are determined. This issue is considered to be resolved.</p>
<p><b>CAR4</b></p>	<p>B.2.2</p>	<p>There will be important changes between with the power plant portfolio 2010 and 2015. The Oroszlány power plant totally and two smaller blocks of the Mátra power plant's will close. Meanwhile new coal based capacities will be installed. At the moment there are plans for installation and closure of coal capacities but it is unpredictable to determine the exact date. Therefore it is calculated a linear decrease of coal burning by power plants before the closure and a linear increase of coal use by the installed capacity for the 2010-2015 period. Accordingly the methodology was conservatively defined, because the same calculation method is used for the closure and installation of coal power plants.</p>	<p>The explanation is sufficiently and has been included into the revised PDD. This issue is considered to be resolved.</p>



Draft report clarifications and corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<p><b>CAR5</b></p>	<p>B.2.4</p>	<p>The existing import capacities deliver electricity for the free market customers and for the MVM. The MVM supplies the smaller industrial customers and the residential customers. Currently the majority of import capacities are used by the MVM but in the future parallel with liberalization this ratio will change and the free market share will increase. This free market's import capacities are not influenced by the size of the produced renewable electricity because these capacities are in hands of electricity trader companies. These traders can not buy the renewable electricity produced by the project and can not supply their customers with this renewable electricity. Accordingly they can use their contracted local capacities and their contracted import capacities.</p> <p>From the other hand the MVM's import capacities are regulated by MVM in accordance with the import contracts. The produced renewable electricity will be used to supply the MVM clients similarly to the import capacities and with PPA covered fossil capacities and other capacities belonging to obligatory off take. Theoretically the produced renewable capacity could replace the import capacity but this could not happen because of economic reason. The imported electricity is usually cheaper than the</p>	<p>Due to this suitable explanation, which is also reflected by the revised PDD, the replacement of import capacities is unlikely.</p> <p>The issue is considered to be resolved.</p>



Draft report clarifications and corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
		local production and MVM's decision to use a more costly electricity to supply their customers would economically not reasonable. Currently the MVM buys electricity from PPA covered capacities through a cost based system as well.	
<b>CAR6</b>	B.2.7	<p>Project owner supplied us with business plan and with a sensitivity analysis, which show the additional financial benefit by the JI revenue stream.</p> <p>The given information is confidential.</p> <p>The revised PDD also emphasizes further barriers and risks like technical risks, weather risks and the risk changing the feed in tariff regulation after 2010.</p>	<p>The additionality of the project has been proved by the remaining barriers, which put considerable risks to such investments. It could be confirmed that the aspect of JI revenues is fostering the decision towards this project.</p> <p>The issue is considered to be resolved.</p>
<b>CAR7</b>	B.2.9	By the baseline calculation we used the IPPC 1996 specific emission figures.	The issue is considered to be resolved.
<b>CAR8</b>	D.1.2	The project owner confirmed that internal demand of electricity will be measured and will be reported.	The issue is considered to be resolved. This parameter has to be included in the future monitoring activities.
<b>CAR9</b>	D.3.1	The wind turbine's alternate capacity influence the maximal load of National network with approximately 0.3% - 0.4% of the total Hungarian min load. The impact of this slight load ratio on efficiency of fossil fuel based power plants is not demonstrable. So the impact of this project	<p>The impact of this project on the specific CO2 emission increase of fossil fuel based power plant is negligible.</p> <p>The issue is considered to be resolved.</p>



Draft report clarifications and corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
		on the specific CO2 emission increase of fossil fuel based power plant is negligible.	
<b>CAR10</b>	G.1.1.	The last step of stakeholder process, which was described in draft PDD, was cancelled. The PDD was therefore updated.	The local stakeholder process is according to the national regulations. The issue is considered to be resolved.
<b>CR1</b>	Table 1 #5	Hungary does not have any official JI guidelines published. The issue is out of the responsibility of the project participants.	Orally it has been confirmed that there are no further requirements as those defined by the Marrakech Accords. The issue is considered to be resolved.
<b>CR2</b>	B.1.3	E.ON submitted a spreadsheet demonstrating the procedure for the correction of generation figures from these CHP plants, which are also partly operated in condensing manner.	The explanation given by this spreadsheet is transparent and sufficient. This issue is considered to be resolved.
<b>CR3</b>	C.1.1	E.ON submitted a table, which shows the timelines. Construction of grid connection is envisaged to start in May 2005, foundation starts in September 2005 and the erection of turbines in February 2006. The first turbines will operate in April 2006. The wind park will be in full operation in September 2006.	The time schedule is clearly described now. This issue is resolved.
<b>CR4</b>	D.5.1	The suggested bird monitoring system is under preparation, the final version is not yet available. The E-ON Hungária Rt. will adopt a system that meets the standards of relating EU and Hungarian regulations.	This issue is considered to be resolved. For future verifications it is recommended to include these monitoring activities.



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## ***Annex 2: Determination Reference List***

Report	2004-12-15	Validation of the "Racalmás Wind Turbine Park" 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 E.ON Hungaria conducted on November 11th, 2004 by auditing team of TÜV SÜD</p> <p>Validation team on site:  Werner Betzenbichler (Project manager)      TÜV Industrie Service Gmb, TÜV SÜD Group  Klaus Nürnberger (ghg trainee)              TÜV Industrie Service Gmb, TÜV SÜD Group  Dr. Csaba Hargittay (ghg trainee)            EMI-TÜV Bayern Kft.</p> <p>Interviewed persons:  Zoltan Korenyi                                      E.ON Hungária Rt.  Andras Juhasz                                      CARBON-AERO Kft.</p>
2.	<p>On-site interview at the offices of the Ministry of Environment and Water of Hungary conducted on November 10th, 2004, by auditing team of TÜV SÜD</p> <p>Validation team on site  Werner Betzenbichler                              TÜV Industrie Service GmbH TÜV SÜD Group  Klaus Nürnberger                                    TÜV Industrie Service GmbH, TÜV SÜD Group</p> <p>Interviewed persons:  József Feiler                                        Ministry of Environment and Water</p>
3.	<p>On-site interview at the offices of the MVM as public utility wholesaler conducted on November 10th, 2004, by auditing team of TÜV SÜD</p> <p>Validation team on site  Werner Betzenbichler                              TÜV Industrie Service GmbH TÜV SÜD Group  Klaus Nürnberger                                    TÜV Industrie Service GmbH, TÜV SÜD Group</p> <p>Interviewed persons:  Karoly Gerse                                        MVM</p>



## **Annex 3: Comments**

### **First Comment**

#### Article 4.1

The description of the actual situation in the Hungarian Electricity System is not correct (the size of the imported electricity amounts roughly 20 %, etc.).

#### Article 4.2

The compensation paid by the system operator is less than the loss of the mandatory purchase because MVM have to down regulate the cheap generators. (The regulated wholesale price is containing not only the variable costs but the fixed too.) So the wholesaler is not compensated for the renewable and CHP electricity purchase. The increasing of the mandatory off-take will increase the size of losses (and the same times the size of the compensation paid by the customers). The missing fast response generating capability (like pump storage hydro plants) of the existing system with the increasing size of non dispatchible renewable and CHP capacity will require to install new fast response units which will increase the customers prices also.

#### Article 6.3 f)

The efficiency limitation (over 65 %) will be removed because it is not in harmony with the current CHP regulation.

#### Article 7. (Page 16., paragraph 2), Article 7.4

The obligatory off-take will be influencing the electricity produced by the nuclear generator (in the case if not other - fossil fuelled - generator could be down ramped, which is the situation very often today also) and the efficiency and CO2 emission of other generators (the fossil fuelled generators have to operate with minimum load to be ready to replace the variable or missing load of wind generators and in this case the emission will be much higher than at normal - optimum – load). So the decreasing of the CO2 emission will be much lower than the calculated in your baseline scenario.

#### Article 7.4 (Page 20., paragraph 2)

The size of obligatory off-take will be influencing the size of the electricity generated on the base of the take or pay agreements (the wholesaler can not use the all amount of contracted electricity because of the variable feed in from renewable generators) which is the case today also (in the consequence of enlarged small scale CHP generation as a result of stimulative feed in tariffs).

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MVM

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## Second Comment:

WWF Hungary welcomes companies' effort to improve the efficiency of the use of renewable energies in Hungary. It is in line with WWF's efforts to control climate change by cutting GHG emission all over the world. No doubt, Hungary is lagging behind in using renewable energies and every intention to improve recent situation should be welcome! Therefore, WWF Hungary welcomes the plan to build two wind turbine parks in our country. We also welcomes that at Kimle you are using ground cables that are safer for birds.

However, we do also have some concerns regarding the potential environmental effects of these projects. Having read the documents on netinform website and having seen then locations we have found two elements that we are concerned about.

1. Impacts on birds (Chapter 11.8 at Kimle and 10.8 at Rácalmás project description). Indeed, most of the birds may be able to avoid collision. However, this is true only in the daylight (and even in daylight bigger birds might collide) and as a matter of fact most of the bird species are migrating at night. Therefore it is very important that wind turbine park should be out of the migration routes. In the case of the Hungarian sites, both wind turbine parks are on the edge of an important migration route - the Danube. The airspace of the river is a traditional migration route for birds. It is stated in your document that \*A special study proved that no negative impact on birds discovered there.\* However, you do not mention any reference or availability regarding that. Unfortunately we have not found such a study. We know, however, a report about a \*bird-killer\* wind turbine park - in Germany. Nevertheless, we do not say that the wind turbine parks in Hungary are conflicting migration routes, but it would be important to carry out a more detailed survey on this issue. Especially in the case of Kimle Wind Turbine Park, which is located between two Natura 2000 sites being only a couple of km away from them.

It is also important to mention at this point that, although visual impact (Chapter 11.6 at Kimle and 10.6 at Rácalmás project description) is an important factor, turbines should be well visible from far in order to give chance birds to avoid collision.

2. Infrasound (Chapter 11.5 at Kimle and 10.5 at Rácalmás project). You say that although you have measured the infrasound level, you do not mention any data saying that it is not relevant because there is no Hungarian legislation about it. In our opinion, even if this is the case:

- you should apply EU's precautionary principle and use relevant pieces of legislative information (limit values) of your country or of a country where such information is available;
- you should make your results/estimations on infrasound (and sound) level publicly and easily available also on your website.

We propose therefore to make a more detailed preliminary EIA with special regard on the above-mentioned issues. We also propose to involve NGOs when the preliminary EIA is being done. This way you can use additional expertise and you can gain wider public acceptance.

Giving appropriate references would be an essential step to make your opinion more acceptable.

In summary WWF Hungary welcomes your plan but we would like to ensure that environmental and nature conservation interests are not conflicting. Therefore, we are ready to cooperate in order to achieve a result that is beneficiary for all of us.



Industrie Service

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