



CDM Project Activity Registration and Validation Report Form

*(By submitting this form, designated operational entity confirms
that the proposed CDM project activity meets all validation and
registration requirements and thereby requests its registration)*

Section 1: Request for registration

Name of the designated operational entity (DOE) submitting this form	Det Norske Veritas Certification Ltd. (DNV)
Title of the proposed CDM project activity (Section A.1 of the attached CDM-PDD) submitted for registration	Korea Water Resources Corporation (KOWACO) small-scale hydroelectric power plants project
Project participants (Name(s))	Korea Water Resources Corporation (KOWACO)
Sector in which project activity falls	Sectoral Scope Nr. 01
Is the proposed project activity a small-scale activity?	<u>Yes</u> / No (underline as applicable)

Section 2: Validation report

List of documents to be attached to this validation report (please check mark):	
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> The CDM-PDD of the project activity <input checked="" type="checkbox"/> An explanation by the submitting designated operational entity of how it has taken due account of comments on validation requirements received, in accordance with the CDM modalities and procedures, from Parties, stakeholders and UNFCCC accredited non-governmental organizations; <input checked="" type="checkbox"/> The written approval of voluntary participation from the designated national authority of each Party involved, including confirmation by the host Party that the project activity assists it in achieving sustainable development: <ul style="list-style-type: none"> o (Attach a list of all Parties involved and attach the approval (in alphabetical order)) <input checked="" type="checkbox"/> Other documents, including any validation protocol used in the validation <ul style="list-style-type: none"> o Validation Report including a validation protocol and a list of persons interviewed by the validation team during the validation process <input checked="" type="checkbox"/> Information on when and how the above validation report is made publicly available. <input checked="" type="checkbox"/> Banking information on the payment of the non-reimbursable registration fee <input checked="" type="checkbox"/> A statement signed by all project participants stipulating the modalities of communicating with the Executive Board and the secretariat in particular with regard to instructions regarding allocations of CERs at issuance. 	

Executive Summary and Introduction, including

- **Description of the proposed CDM project activity**
- **Scope of validation process (include all documentation that has been reviewed and name persons that have been interviewed as part of the validation, as applicable)**
- **DOE Validation team (list of all persons involved in the validation, describing functions assumed in the validation)**

➤ **Description of the proposed CDM project activity:**

The project is a bundling of 3 small-scale hydro power plants. The project locations are as given below:

1. Andong-dam small-scale hydroelectric power plant, Gyeongsangbuk-do, Andong City, Republic of Korea.
2. Seongnam small-scale hydroelectric power plant, Gyeonggi-do, Seongnam city, Republic of Korea.
3. Jangheung-dam small-scale hydroelectric power plant, Jeollanam-do, Janheung-gun, Republic of Korea.

The project activity aims at using outflows from the existing dams for generation of electricity except for the Seongnam power plant, which will be using outflows from the Seongnam purification plant. The Andong-dam small-scale hydroelectric power plant consists of 3 units each with generation capacity of 500 kW with propeller (tubular) type wheels. The Seongnam small-scale hydroelectric power plant consists of one vertical Francis turbine with generation capacity of 340 kW and the Jangheung-dam project consists of one horizontal Francis turbine of capacity 800 kW.

As a result of the project, it is estimated that 9689 tCO₂/annum will be mitigated.

➤ **Scope of validation process:**

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords, the simplified modalities and procedures for small-scale CDM project activities and the relevant decisions by the CDM Executive Board. The validation team has, based on the recommendations in the Validation and Verification Manual employed a risk-based approach, focusing on the identification of significant risks for project implementation and the generation of CERs.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

➤ **Documents reviewed:**

1. Project Design Document (PDD) for CDM Activity – Korea water Resources Corporation (KOWACO) small-scale hydroelectric power plants project, SSCPDD_KOWACO_small_hydro_english_051024_.pdf (Version 1)
2. Project Design Document (PDD) for CDM Activity – Korea water Resources Corporation (KOWACO) small-scale hydroelectric power plants project SSCPDD_KOWACO_060530.pdf (Version 3)
3. Host country approval letter – Issued by Government of the Republic of Korea, No. 2006-5, dt. July 13, 2006.
4. International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF): Validation and Verification Manual. <http://www.vvmanual.info>.
5. Appendix B of the simplified modalities and procedures for small-scale CDM project activities: Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories. Version 07: 28 November 2005; Indicative simplified baseline and monitoring methodology AMS-I.D: Grid connected renewable electricity

generation. Version 08: 3 March 2006.

6. Appendix C of the simplified modalities and procedures for small-scale CDM project activities: Determining the occurrence of debundling.
7. Revised 1996 IPCC guidelines for national green house gas inventories – Reference Manual (Volume 3).

PERSONS INTERVIEWED

Interview on 12 December 2005

1. Mr. K. S. Han, Site Manager, Yongdam-dam office
2. Mr. Ji Kun Park, Manager, Yongdam-dam office, Planning part.
3. Mr. Yong Seong Kim, Assistant Manager, Yongdam-dam office.

Interview on 13 December 2005

1. Mr. Y. S. Hong, Site Manager, Jangheung-dam office.
2. Mr. H. J. Min, Manager, Jangheung-dam office.
3. Mr. K. S. Jang, Assistant Manager, Jangheung-dam office.

Interview on 15 December 2005

1. Mr. I. K. Hwang, Manager, Andong-dam office, Planning part.
2. Mr. Il-Hwan Choi, Assistant Manager, Andong-dam office.

Interview on 16 December 2005

1. Mr. Il-Bang Jeon, Manager, Daegok-dam office.

Interview on 22 December 2005

1. Mr. Duk Yun Ju, Assistant Manager, Seongnam Regional office.
2. Mr. J. J. Kim, Assistant Manager, Seongnam Regional office.
3. Mr. Jeong-Jo Hong, Manager, KOWACO, Energy Business Department.
4. Mr. Hyoung-Mook Lee, Assistant Manager, KOWACO, Hydropower Utilities Department.

Interview on 24th October 2005

1. Mr. Jeongchae Kim, Asst. Manager, Management Evaluation Team, KEPCO.
2. Mr. Kim, Kwang-Kyu, Asst. Manager, Management Evaluation Team, KEPCO.

➤ DOE Validation team:

The validation team consists of the following personnel:

Mr. Santhosh Jayaram	DNV Certification, India	Team Leader and CDM auditor
Mr. Kim Young-Keun	DNV Certification, Korea	CDM auditor
Mr Michael Lehmann	DNV Certification, Norway	Technical verifier, energy sector expert

For further details, please refer to the "Introduction" and "References" Section of DNV's Validation Report (DNV Report 2006-0446, rev. 03).

Description of methodology for carrying out validation

- **Review of CDM-PDD and additional documentation attached to it**
- **Assessment against CDM requirements (e.g. by use of a validation protocol)**
- **Report of findings by the DOE, e.g. by use of type of findings (e.g. corrective action requests, clarifications or observations). Please explain the way findings are "labelled" during validation.**
- **Include statements or assessments in the section "Conclusions, final comments and validation opinion" below.**

The validation consists of the following three phases:

- I a desk review of the project design, baseline and monitoring plan
- II follow-up interviews with project stakeholders
- III the resolution of outstanding issues and the issuance of the final validation report and opinion.

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

- It organises, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

Findings established during the validation can either be seen as a non-fulfilment of validation criteria or where a risk to the fulfilment of project objectives is identified. Corrective Action Requests (CAR) are issued, where:

- i) mistakes have been made with a direct influence on future project performance or results;
- ii) CDM requirements have not been met; or
- iii) there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be certified.

The validation team may also use the term Clarification (CL) where additional information is needed to fully clarify an issue.

For further details, please refer to the "Methodology" Section of DNV's Validation Report (DNV Report 2006-0446 rev. 03) and the IETA/PCF Validation and Verification Manual (www.vvmanual.info).

Explanation by the submitting designated operational entity of how it has taken due account of comments on validation requirements received, in accordance with the CDM modalities and procedures, from Parties, stakeholders and UNFCCC accredited non-governmental organizations;

- **Description of how and when the PDD was made publicly available**
- **Description of how comments were received and made publicly available**
- **Explanation of how due account has been taken of comments received**
- **Compilation of all comments received (Identify the submitter)**

The PDD was made publicly available on DNV's climate change website (www.dnv.com/certification/climatechange) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 26 October 2005 – 24

November 2005.

No comments were received.

Please refer to the "Comments by Parties, Stakeholders and NGOs" Section of DNV's Validation Report (DNV Report 2006-0446, rev. 03) and the above mentioned CDM website.

Conclusions, final comments and validation opinion

- ***Provide conclusions on each requirement under paragraph 37 of the CDM modalities and procedures, describing how these requirements have been met. This shall include assessments and findings (e.g. corrective action requests, clarifications or observations) in relation to each requirement, including a confirmation that all issues raised have been addressed to the satisfaction of the DOE.***
- ***Final comments and validation opinion***

Det Norske Veritas Certification Ltd. (DNV) has performed a validation of the "Korea Water Resources Corporation (KOWACO) small-scale hydroelectric power plants project" in the Republic of Korea. The validation was performed on the basis of UNFCCC criteria for the Clean Development Mechanism and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the project design documentation and the subsequent follow-up interviews have provided DNV with sufficient evidence to determine the fulfilment of stated criteria. The host country is Republic of Korea and the Annex I country is not yet identified. Republic of Korea fulfils the participation criteria and the DNA from Republic of Korea has confirmed that the project assists in achieving sustainable development. Having an installed capacity of less than

15 MW, the project is eligible as type I small-scale CDM project activity. The project correctly applies the simplified baseline and monitoring methodology AMS-I.D. By generating renewable energy which will displace grid electricity, the project results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario.

Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. The total emission reductions from the project are estimated to be on the average 9689 tCO₂e per year over the selected 7 year crediting period. The emission reduction forecast has been checked and is deemed likely that the state amount is achieved given that the underlying assumptions do not change. Adequate training and monitoring procedures have been implemented.

In summary, it is DNV's opinion that the project, as described in the project design document of 2006-05-30 (Version 3), meets all relevant UNFCCC requirements for the CDM, is eligible as category I.D small-scale CDM project activity and correctly applies the approved simplified baseline and monitoring methodology AMS-I.D. Hence, DNV requests the registration of the "Korea Water Resources Corporation (KOWACO) small-scale hydroelectric power plants project" as a CDM project activity.

For further details, please refer to DNV's Validation Report (DNV Report 2006-0446, rev. 03).

The DOE declares herewith that in undertaking the validation of this proposed CDM project activity it has no financial interest related to the proposed CDM project activity and that undertaking such a validation does not constitute a conflict of interest which is incompatible with the role of a DOE under the CDM.

By submitting this validation report, the DOE confirms that all validation requirements are

Susanne Hafeli Hestvik

met.		
Name of authorized officer signing for the DOE		
Date and signature for the DOE	30 th Aug 2006 <i>d. Wärdeli-Hennrik</i>	
1.1.1.1 Section below to be filled by UNFCCC secretariat		
Date when the form is received at UNFCCC secretariat		
Date at which the registration fee has been received		
Date at which registration shall be deemed final		
Date of request for review, if applicable		
Date and number of registration	Date	Number