



VALIDATION REPORT

KOREA WATER RESOURCES CORPORATION (KOWACO) SMALL-SCALE HYDROELECTRIC POWER PLANTS PROJECT IN REPUBLIC OF KOREA

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DET NORSKE VERITAS



VALIDATION REPORT

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Approved by: Einar Ternes Director	Organisational unit: DNV Certification, International Climate Change Services
Client: Korea Water Resources Corporation (KOWACO)	Client ref.: Kyul-Ho Kwak

DET NORSKE VERITAS AS

DNV Certification

Veritasveien 1,
1322 HØVIK, Norway
Tel: +47 67 57 99 00
Fax: +47 67 57 99 11
<http://www.dnv.com>
Org. No: NO 945 748 931 MVA

Summary:

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 on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the subsequent decisions by the CDM Executive Board.

The validation consisted of the following three phases: i) a desk review of the project design, baseline and monitoring plan, ii) follow-up interviews with project stakeholders and iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

In summary, it is DNV’s opinion that the project, as described in the project design document (*version 3*), meets all relevant UNFCCC requirements for the CDM and correctly applies the Indicative 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.

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***Abbreviations***

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CH ₄	Methane
CL	Clarification request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNV	Det Norske Veritas
DNA	Designated National Authority
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
KEPCO	Korea Electric Power Corporation
KOWACO	Korea Water Resources Corporation
MP	Monitoring Plan
N ₂ O	Nitrous oxide
NGO	Non-governmental Organisation
ODA	Official Development Assistance
PDD	Project Design Document
UNFCCC	United Nations Framework Convention on Climate Change



1 INTRODUCTION

Korea Water Resources Corporation (KOWACO) has commissioned Det Norske Veritas Certification Ltd. (DNV) to perform a validation of the “*Korea Water Resources Corporation (KOWACO) small-scale hydroelectric power plants project*” in the Republic of Korea. This report summarises the initial findings of the validation of the project, performed on the basis of UNFCCC criteria for small-scale CDM projects, as well as criteria given to provide for consistent project operations, monitoring and reporting.

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

1.1 Validation Objective

The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

1.2 Scope

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 /4/ and the relevant decisions by the CDM Executive Board. The validation team has, based on the recommendations in the Validation and Verification Manual /3/ 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.

1.3 Description of Proposed CDM Project

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.

2 METHODOLOGY

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.

This draft validation report summarises the findings after phase I and II of the validation.

In order to ensure transparency, a validation protocol was customised for the project, according to the Validation and Verification Manual /3/. 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.

The validation protocol consists of three tables. The different columns in these tables are described in Figure 1.

The completed validation protocol for the “Korea Water Resources Corporation (KOWACO) small-scale hydroelectric power plants project” is enclosed in Appendix A to this report.

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.



Validation Protocol Table 1: Mandatory Requirements for CDM Project Activities			
Requirement	Reference	Conclusion	Cross reference
<i>The requirements the project must meet.</i>	<i>Gives reference to the legislation or agreement where the requirement is found.</i>	<i>This is either acceptable based on evidence provided (OK), a Corrective Action Request (CAR) of risk or non-compliance with stated requirements or a request for Clarification (CL) where further clarifications are needed.</i>	<i>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 Validation process.</i>

Validation Protocol Table 2: Requirement Checklist				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
<i>The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.</i>	<i>Gives reference to documents where the answer to the checklist question or item is found.</i>	<i>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.</i>	<i>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.</i>	<i>This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). A request for Clarification (CL) is used when the validation team has identified a need for further clarification.</i>

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

Figure 1 Validation protocol tables



2.1 Review of Documents

The Project Design Document (PDD) /1/ submitted by KOWACO in its original as well as revised versions and additional background documentation related to the project design and baseline were reviewed as a part of the validation.

2.2 Follow-up Interviews

Follow-up interviews were performed in the period of December 12-16, 2005 in Korea with representatives from KOWACO and on 24 October 2005 with representatives of Korea Electric Power Corporation (KEPCO).

The main topics of the interviews are summarised in Table 1.

Table 1 Interview topics

Interviewed organisation	Interview topics
KOWACO (Interviews conducted at all sites and head office)	<ul style="list-style-type: none"> ➤ Technology applied and operational lifetime ➤ Provisions for training, operation and maintenance ➤ Monitoring and reporting procedures ➤ Additionality ➤ Baseline methodology ➤ Estimated emission reductions and emission factors applied ➤ Stakeholder consultation process and environmental impacts ➤ Legal compliance
KEPCO	<ul style="list-style-type: none"> ➤ Clarifications pertaining grid data ➤ Assumptions in baseline determination

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve any outstanding issues which needed to be clarified for DNV's positive conclusion on the project design. The initial validation identified three *corrective action requests* and nine requests for *clarification*. The corrective action requests and requests for clarification were presented to the project participants in DNV's draft validation report of 2006-03-15 (rev. 1) were resolved during communications between the Client and DNV. To guarantee the transparency of the validation process, the concerns raised and responses given are documented in the validation protocol in Appendix A.

Since modifications to the project design were necessary to resolve DNV's concerns, the Client decided to revise the PDD and resubmitted the PDD. There were further 2 revisions in the PDD. The latest revision is SSCPDD_KOWACO_060530.pdf. After reviewing the revised PDD, DNV issued this final validation report and opinion.



3 VALIDATION FINDINGS

In the following sections the findings of the validation are stated. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

3.1 Participation Requirements

The only project participant is Korea Water Resources Corporation (KOWACO). The Party involved, i.e. Republic of Korea as host Party meets the requirements to participate in the CDM. The project is approved by the DNA of Korea /2/. No Annex I Party is yet identified.

The validation did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards Korea.

3.2 Project Design

The project is a bundling of 3 small-scale hydro power plants located in the Republic of Korea.

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.

The technology applied is deemed current good practice and is not expected to be replaced within the crediting period.

The project will have all inherent benefits of a renewable energy project. It will also result in better utilisation of the water resources.

The starting date is identified as the commercial operation starting date. The earliest date is 08 September 2003 and the latest is 30 November 2005. The operational lifetime of the project is estimated around 30 years and a renewable crediting period of 7 years starting on 1 January 2007 is selected, since the last project, Jangheung-dam small scale hydro-electric project started operation 30 November 2005.

3.3 Baseline Determination

The project has selected the baseline methodology of category I.D “Grid connected renewable electricity generation” (AMS-I.D) of the “Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories” /4/. This baseline is applicable for renewable energy generation units including hydro.

The project qualifies as small-scale CDM project activity as the combined total maximum output capacity of 2.64 MW_e is less than the 15 MW_e capacity limit specified under small-scale category I.D.

The Korean National grid is considered for the determination of a baseline grid electricity emission coefficient. The project uses the average of the approximate operating margin and build margin for determination of the baseline emission factor. In the calculation of the approximate operating margin, the generation from hydro, nuclear, low cost biomass and geothermal power



plants are excluded. In the calculation of build margin, capacity additions of most recent 21.81% of existing plants are used.

The approximate operating margin is calculated as an average of data available for the three years 2002, 2003 and 2004, which is the most recent statistics available at the time of PDD submission. The build margin is calculated using data of 2004. The baseline emission factor determined ex-ante will be used for calculation of emission reductions.

It is verified that the estimation of baseline emissions is conservative.

3.4 Additionality

The latest version of PDD /1/ (Version 3) includes an NPV analysis which clearly demonstrates a negative NPV for each project. This substantiates the existence of financial barrier coupled with the risk of changes in operating condition due to water availability. The latest version of PDD also dropped 2 projects from the earlier bundled 5 projects since the economical analysis did not bring out any substantiation of the additionality for these components.

3.5 Monitoring Plan

The project is a renewable energy generation project and thus the monitoring requirement under small-scale category I.D. is used in this project. As required in the approved simplified monitoring methodology AMS-I.D, the monitoring plan involves direct continuous monitoring of the net electricity supplied to the grid.

The monitoring plan also involves monitoring of data required for estimating the baseline emission factor at the beginning of each crediting period.

All data will be archived electronically for a period of 2 years after the crediting period.

Electricity meters will be calibrated once in 3 years.

3.6 Calculation of GHG Emissions

The relevant GHG emission will be only CO₂.

There are no project emissions and leakages envisaged in this project.

In terms of correctness and transparency of formulas and factors used for estimating the GHG emissions some clarifications were requested, these clarifications have attended to and were verified by the validation team.

3.7 Environmental Impacts

The host country legislation does not require an analysis of the environmental impacts of the project activity because of the small-scale nature of the hydro power projects. However, the Jangheung-dam small-scale hydroelectric is analyzed for the environmental impacts of the project activity because it has constructed a part of a dam at the same time. No adverse environmental effects are envisaged.



3.8 Comments by Local Stakeholders

The local stakeholder approval is required for issuance of project approvals. It was confirmed that direct meetings were conducted with the stakeholders to get their approvals. The project approvals were also verified during the validation.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

The PDD /1/ 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.



5 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.



REFERENCES

Documents provided by the project proponent that relate directly to the project:

- /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)
SSCPDD_KOWACO_Ver.02_hydro_english_060428.pdf (Version 2)
SSCPDD_KOWACO_060530.pdf (Version 3)
- /2/ *Host country approval letter* – Issued by Government of the Republic of Korea, No. 2006-5, dt. July 13, 2006.

Background documents related to the design and/or methodologies employed in the design or other reference documents:

- /3/ International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF): *Validation and Verification Manual*. <http://www.vvmanual.info>
- /4/ 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.
- /5/ Appendix C of the simplified modalities and procedures for small-scale CDM project activities: *Determining the occurrence of debundling*.
- /6/ Revised 1996 IPCC guidelines for national green house gas inventories – Reference Manual (Volume 3)

Persons interviewed during the validation or persons who contributed with other information that are not included in the documents listed above:

- /7/ 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.

/8/ 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.

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APPENDIX A

VALIDATION PROTOCOL FOR SMALL-SCALE CDM PROJECT ACTIVITIES

Table 1 Mandatory Requirements for Small Scale Clean Development Mechanism (CDM) Project Activities

Requirement	Reference	Conclusion	Cross Reference / Comment
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art. 12.2	Not applicable	Table 2, Section E.4.1 Annex I party has not been identified yet.
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	OK	Table 2, Section A.3
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art. 12.2.	OK	Table 2, Section E.4.1
4. The project shall have the written approval of voluntary participation from the designated national authority of each party involved	Kyoto Protocol Art. 12.5a, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	OK	
5. The emission reductions should be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	OK	Table 2, Section E.1 to E.4
6. Reduction in GHG emissions must be additional to any that would occur in absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Kyoto Protocol Art. 12.5.c, Simplified Modalities and Procedures for Small Scale CDM Project Activities §26	OK	Table 2, Section B.2.1
7. In case public funding from Parties included in Annex I is used for the project activity, these Parties shall provide an affirmation that such funding does not result in a diversion of official development assistance	Decision 17/CP.7, CDM Modalities and Procedures Appendix B,	OK	No public funding from Parties in Annex I involved.

Requirement	Reference	Conclusion	Cross Reference / Comment
and is separate from and is not counted towards the financial obligations of these Parties	§ 2		
8. Parties participating in the CDM shall designate a national authority for the CDM	CDM Modalities and Procedures § 29	OK	Republic of Korea: Environment Cooperation Division, Ministry of Foreign Affairs and Trade.
9. The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol	CDM Modalities and Procedures § 30, 31b	OK	Republic of Korea ratified the protocol on 8 November 2002. Annex I party has not been identified yet.
10. The participating Annex I Party's assigned amount shall have been calculated and recorded	CDM Modalities and Procedures §31b	Not applicable	Annex I party has not been identified yet.
11. The participating Annex I Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7	CDM Modalities and Procedures §31b	Not applicable	Annex I party has not been identified yet.
12. The proposed project activity shall meet the eligibility criteria for small scale CDM project activities set out in § 6 (c) of the Marrakesh Accords and shall not be a debundled component of a larger project activity	Simplified Modalities and Procedures for Small Scale CDM Project Activities §12a,c	OK	Table 2, Section A.1
13. The project design document shall conform with the Small Scale CDM Project Design Document format	Simplified Modalities and Procedures for Small Scale CDM Project Activities, Appendix A	OK	
14. The proposed project activity shall confirm to one of the project categories defined for small scale CDM project activities and uses the simplified baseline and monitoring methodology for that project category	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22e	OK	Table 2, Section A.1.3, B and D
15. Comments by local stakeholders are invited, and a summary of these provided	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22b	OK	Table 2, Section G

Requirement	Reference	Conclusion	Cross Reference / Comment
16. If required by the host country, an analysis of the environmental impacts of the project activity is carried out and documented	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22c	OK	Table 2, Section F
17. Parties, stakeholders and UNFCCC accredited NGOs have been invited to comment on the validation requirements and comments have been made publicly available	Simplified Modalities and Procedures for Small Scale CDM Project Activities §23b,c,d	OK	The PDD was made publicly available on 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 to 24 November 2005. No comments were received.

Table 2 Requirements Checklist

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
A. Project Description The project design is assessed.					
A.1. Small scale project activity It is assess whether the project qualifies as small scale CDM project activity.					
A.1.1. Does the project qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?	/1/ /7/	DR I	Yes. The project is a bundling of 3 hydroelectric power plants with a combined total maximum output capacity of 2.64 MW _e , which is less than the 15 MW _e capacity limit specified for type I.D small-scale CDM project activities. An inconsistency was observed in the data presented in Table 1 of PDD and the equipment specifications verified during the site visit. Correction of the PDD is requested. Reference in PDD to Appendix B should be to the latest version, Version 07, 28 November 2005, and to version 08, 3 March 2006, of the simplified baseline and monitoring methodology AMS-I.D.	CL-1 CL-2	OK
A.1.2. The small scale project activity is not a debundled component of a larger project activity?	/1/ /5/ /7/	DR I	The project is not a de-bundled component, as KOWACO has no other small scale project registered or an application to register another small scale project in the same project category and technology/measure, within the previous 2 years and within 1 km of the present project boundary.		OK
A.1.3. Does proposed project activity confirm to one of the project categories defined for small scale CDM project activities?	/1/ /4/	DR	Yes the project conforms to category I.D small scale CDM projects. The project is a grid connected renewable electricity generation unit		OK

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

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			(Hydro).		
A.2. Project Design Validation of project design focuses on the choice of technology and the design documentation of the project.					
A.2.1. Are the project's spatial (geographical) boundaries clearly defined?	/1/ /7/	DR I	Yes, it is clearly defined. The spatial boundary of the project includes the individual project sites. The Physical locations of the project are: 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, Jangheung-gun, Republic of Korea.		OK
A.2.2. Are the project's system (components and facilities used to mitigate GHG's) boundaries clearly defined?	/1/	DR	Yes, the components of each hydroelectric power plant include the turbine, generator and transformer. For calculation of the baseline grid emission factor the power plants generating and exporting to the Korean grid are selected as the electricity system boundary.		OK
A.2.3. Does the project design engineering reflect current good practices?	/1/ /7/	DR I	Yes, the selection of equipments was based on the location, available resources and efficiency.		OK
A.2.4. Will the project result in technology transfer to the host country?	/1/	DR	No. The technology is available in the Korea.		OK
A.2.5. Does the project require extensive initial	/1/	DR	The project does not require extensive training		OK

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

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
training and maintenance efforts in order to work as presumed during the project period? Does the project make provisions for meeting training and maintenance needs?	/7/	I	since the technology is not new, but training on the operation and maintenance is provided by the equipment manufacturer.		
A.3. Contribution to Sustainable Development The project's contribution to sustainable development is assessed					
A.3.1. Will the project create other environmental or social benefits than GHG emission reductions?	/1/	DR	Yes, The project will have all inherent benefits of a renewable energy project. It will also result in better utilisation of the water resources.		OK
A.3.2. Will the project create any adverse environmental or social effects?	/1/ /7/	DR I	No. The project activity aims at using the outflows from existing dams or purification plants for generation of electricity.		OK
A.3.3. Is the project in line with sustainable development policies of the host country?	/1/	DR	The project is likely to be in line with sustainable development policies of the host country (Korea). However, written confirmation that the project meets the host country specific CDM requirements and assists in achieving sustainable development has not yet been obtained.	CAR-1	OK
A.3.4. Is the project in line with relevant legislation and plans in the host country?	/1/ /7/	DR I	During interviews it was indicated that all 3 projects have permits for construction and operation of small-scale hydroelectricity power plants. But evidence of same was not available for verification.	CL-3	OK

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

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
B. Project Baseline The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.					
B.1. Baseline Methodology It is assessed whether the project applies an appropriate baseline methodology.					
B.1.1. Is the selected baseline methodology in line with the baseline methodologies provided for the relevant project category?	/1/ /4/	DR	The project has selected the simplified baseline methodology for category I.D “Grid connected renewable electricity generation” of the “simplified modalities and procedure for small scale CDM project activity” This baseline is applicable for renewable energy generation units that supply electricity to an electricity distribution system and includes hydro, wind, geothermal and biomass projects. The project being a hydroelectricity project conforms to the category I.D. The Korean electricity distribution system is dominated by fossil fuel based generation units (Around 62.5%).		OK
B.1.2. Is the baseline methodology applicable to the project being considered?	/1/ /4/	DR	The simplified small scale CDM project category I.D is applicable since the project comprises of hydroelectricity power plants with a total capacity of less than 15 MW _e .		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
B.2. Baseline Determination It is assessed whether the project activity itself is not a likely baseline scenario and whether the selected baseline represents a likely baseline scenario.					
B.2.1. Is it demonstrated that the project activity itself is not a likely baseline scenario due to the existence of one or more of the following barriers: investment barriers, technology barriers, barriers due to prevailing practice or other barriers?	/1/ /7/	DR I	<p>The existence of barrier is not substantiated effectively.</p> <p>The PDD indicates that the biggest barrier is an investment barrier. The barrier analysis includes a comparison with nuclear (1000 MW), coal (500 & 200 MW), heavy oil (100 MW), LNG (450 MW), pumping (400 MW) power plants as BAU scenario. But the capacities of these power plants used for comparison are very high compared to the project capacity (max 1.8 MW) and are not representative in demonstrating an investment barrier for small-scale hydroelectric power plants.</p> <p>Also the investment analysis is based on unit cost of electricity production and not on the tariff paid per unit generation.</p> <p>The PDD also identifies an investment risk barrier related to non firm electricity production due to lack of availability of water. But this is not substantiated with data.</p> <p>The version 2 of the PDD includes an NPV analysis which clearly demonstrates a negative NPV for each project. This substantiates the existence of financial barrier coupled with the risk of changes in operating condition due to availability of water.</p> <p>The difference in the discount rate between Andong (8%) and other projects (7.5%) shall be</p>	CL-4	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			explained. The calculations were verified and it is found the Unit cost of Seongnam Small Scale Hydroelectric is not correct, it should be 47.35.		
B.2.2. Is the application of the baseline methodology and the discussion and determination of the chosen baseline transparent and conservative?	/1/	DR	Yes, the application of the methodology and the discussion and determination of the chosen baseline are transparent. The average of the approximate operating margin and build margin is used to determine the baseline. In calculation of the approximate operating margin emission coefficient, the generation from hydro, nuclear, low cost biomass and geothermal power plants are excluded. In the calculation of the build margin emission coefficient, capacity additions of most recent 21.81% of existing plants are used. As per the forecast for electricity composition published by MOCIE, the determination of the baseline emission coefficient and considering the ex-ante baseline emission coefficient for the first crediting period seems to be conservative, since the major capacity additions between 2005 to 2010 are expected to be fossil fuel based power plants.		OK
B.2.3. Are relevant national and/or sectoral policies and circumstances taken into account?	/1/	DR	Yes, it is considered, refer comments in B.2.2.		OK
B.2.4. Is the baseline selection compatible with the available data?	/1/ /8/	DR I	Yes, the baseline is determined using data from KEPCO.		OK
B.2.5. Does the selected baseline represent the most likely scenario describing what would have occurred in absence of the project	/1/ /8/	DR I	Yes. Considering all data drawn on the most recent years and forecast for electricity composition published by MOCIE, the selected baseline		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
activity?			represent the most likely scenario describing what would have occurred in absence of the project activity.		
C. Duration of the Project / Crediting Period It is assessed whether the temporary boundaries of the project are clearly defined.					
C.1.1. Are the project's starting date and operational lifetime clearly defined?	/1/ /7/	DR I	The project starting date is not clearly defined. The starting date mentioned against each project is not in the requested dd/mm/yyyy format. It is also not clear, whether the dates represent starting of project construction or starting of generation. Proof for the project starting date has not been submitted for verification. The expected operational lifetime of the hydroelectric power plants will be 30 years.	CL-5	OK
C.1.2. Is the assumed crediting time clearly defined (renewable crediting period of seven years with two possible renewals or fixed crediting period of 10 years with no renewal)?	/1/ /7/	DR I	A renewable crediting period of seven years with two possible renewals is selected. The starting date of the first crediting period will be 01/01/2007, since the Jangheung-dam small scale hydro-electric project started operation in 30 November 2005.		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
D. Monitoring Plan The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed.					
D.1. Monitoring Methodology It is assessed whether the project applies an appropriate monitoring methodology.					
D.1.1. Is the selected monitoring methodology in line with the monitoring methodologies provided for the relevant project category?	/1/ /4/	DR	The project falls under category I.D of appendix B of the simplified modalities and procedures of small scale CDM project activities and the monitoring methodology used is in line with the same.		OK
D.1.2. Is the monitoring methodology applicable to the project being considered?	/1/ /4/	DR	Yes, the project being a small scale hydroelectricity project, the monitoring methodology applicable would be as under category I.D of appendix B.		OK
D.1.3. Is the application of the monitoring methodology transparent?	/1/	DR	Yes		OK
D.1.4. Will the monitoring methodology give opportunity for real measurements of achieved emission reductions?	/1/	DR	Yes. There is direct monitoring of the net electricity supplied to the grid, which will reduce electricity generation by other power plants. All required data is monitored to update the emission factor before the start of each crediting period.		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
D.2. Monitoring of Project Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	/1/	DR	No project emissions are envisaged.		OK
D.2.2. Are the choices of project GHG indicators reasonable?	/1/	DR	Not applicable.		OK
D.2.3. Will it be possible to monitor / measure the specified project GHG indicators?	/1/	DR	Not applicable.		OK
D.2.4. Will the indicators give opportunity for real measurements of project emissions?	/1/	DR	Not applicable.		OK
D.3. Monitoring of Leakage If applicable, it is assessed whether the monitoring plan provides for reliable and complete leakage data over time.					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/	DR	No leakage envisaged.		OK
D.3.2. Are the choices of leakage indicators reasonable?	/1/	DR	Not applicable.		OK
D.3.3. Will it be possible to monitor / measure the specified leakage indicators?	/1/	DR	Not applicable.		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
D.3.4. Will the indicators give opportunity for real measurements of leakage effects?	/1/	DR	Not applicable.		OK
D.4. Monitoring of Baseline Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
D.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining baseline emissions during the crediting period?	/1/	DR	Yes. The monitoring plan provides for the collection of all data required for estimating the ex-ante emission factor once before start of each crediting period and the continuous monitoring of electricity supplied to grid. The data will be archived electronically till 2 years after the crediting period.		OK
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	/1/	DR	Yes, the baseline indicators that will be monitored are: <ol style="list-style-type: none"> 1. Net electricity supplied to grid – direct measurement. And at the start of each crediting period. <ol style="list-style-type: none"> 2. Emission factor (OM, BM and combined) 3. Details of fuel (quantity, net calorific value, emission factor coefficient) 4. Electricity generation of each plant in the grid. 5. Name of plants contributing to OM and BM calculations. 		OK
D.4.3. Will it be possible to monitor / measure the specified baseline indicators?	/1/	DR	Yes.		OK
D.4.4. Will the indicators give opportunity for real measurements of baseline emissions?	/1/ /7/	DR I	Yes, the net electricity supplied to the grid will be directly measured. The indicators used for the calculation of the emission factor will be monitored	CL-6 CL-7	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			<p>from data from KEPCO and calculated using IPCC default values.</p> <p>NCVi – it is confirmed during interviews that local value will be considered hence reference to IPCC default values in comments column of table D.2.1.3 shall be removed.</p> <p>In Section D.4 of PDD, there is a reference to off site transportation and under Table 8 reference to wind turbine, which are not relevant to the project. Corrections in the PDD are requested.</p>		
D.5. Project Management Planning It is checked that project implementation is properly prepared for and that critical arrangements are addressed.					
D.5.1. Is the authority and responsibility of project management clearly described?	/1/	DR	Yes, the authority and responsibility of project management lies with the individual site management centre.		OK
D.5.2. Is the authority and responsibility for registration monitoring measurement and reporting clearly described?	/1/	DR	Yes, the authority and responsibility for registration, monitoring, measurement and reporting lies with the individual site management centre.		OK
D.5.3. Are procedures identified for training of monitoring personnel?	/1/	DR	Yes, the procedures are identified.		OK
D.5.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/	DR	No emergencies are envisaged which can cause unintended emissions.		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
D.5.5. Are procedures identified for calibration of monitoring equipment?	/1/ /4/	DR	Yes, the procedures are identified. The meters will be calibrated when they are installed and re-calibrated for every 3-5 years, but the new revised version of the simplified baseline and monitoring methodology AMS-I.D requires the meters to be re-calibrated at appropriate intervals according to manufacturers specification, but at least once in 3 years.	CAR-2	OK
D.5.6. Are procedures identified for maintenance of monitoring equipment and installations?	/1/	DR	Yes, the procedures are identified.		OK
D.5.7. Are procedures identified for monitoring, measurements and reporting?	/1/	DR	Yes, the procedures are identified.		OK
D.5.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	/1/ /7/	DR I	Yes, under their existing Quality and Environment Management System have identified procedures.		OK
D.5.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	/1/	DR	Yes, the procedures are identified.		OK
D.5.10. Are procedures identified for internal audits of GHG project compliance with operational requirements as applicable?	/1/ /7/	DR I	Yes, the existing Quality and Environment Management System have such procedures.		OK
D.5.11. Are procedures identified for project performance reviews?	/1/ /7/	DR I	Yes, the existing Quality and Environment Management System have such procedures.		OK
D.5.12. Are procedures identified for corrective actions?	/1/ /7/	DR I	Yes, the existing Quality and Environment Management System have such procedures.		OK

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

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
E. Calculation of GHG emission It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.					
E.1. Project GHG Emissions The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.					
E.1.1. Are all aspects related to direct and indirect project emissions captured in the project design?	/1/	DR	No project emissions are envisaged.		OK
E.1.2. Have all relevant greenhouse gases and sources been evaluated?	/1/	DR	Not Applicable.		OK
E.1.3. Do the methodologies for calculating project emissions comply with existing good practice?	/1/	DR	Not Applicable.		OK
E.1.4. Are the calculations documented in a complete and transparent manner?	/1/	DR	Not Applicable.		OK
E.1.5. Have conservative assumptions been used?	/1/	DR	Not Applicable.		OK
E.1.6. Are uncertainties in the project emissions estimates properly addressed?	/1/	DR	Not Applicable.		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
E.2. Leakage It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed.					
E.2.1. Are leakage calculation required for the selected project category and if yes, are the relevant leakage effects assessed?	/1/	DR	No leakage effects are envisaged.		OK
E.3. Baseline GHG Emissions The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.					
E.3.1. Are the baseline emission boundaries clearly defined and do they sufficiently cover sources for baseline emissions?	/1/	DR	Yes, the baseline boundary covers all projects producing electricity in the national grid.		OK
E.3.2. Are all aspects related to direct and indirect baseline emissions captured in the project design?	/1/	DR	Only direct emissions resulting from use of fossil fuels are captured, the indirect emissions like transportation of fuel are not considered.		OK
E.3.3. Have all relevant greenhouse gases and sources been evaluated?	/1/	DR	The relevant GHG is only CO ₂ and the sources are fossil fuel based power generating stations.		OK
E.3.4. Do the methodologies for calculating baseline emissions comply with existing good practice?	/1/	DR	Yes.		OK
E.3.5. Are the calculations documented in a complete and transparent manner?	/1/ /7/	DR I	The values of total supplied electricity to the grid are not consistent. The justification given during the interviews was that the co-generation power plants were not	CL-8	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			included in the calculation for conservativeness. The same shall be documented transparently.		
E.3.6. Have conservative assumptions been used?	/1/ /8/	DR I	Fraction of carbon oxidised is also taken as IPCC default values. But the value of 0.98 for coal is a global average; this is dependant on coal and can go down to 0.91. During interviews it was indicated by officials of KEPCO, the exact values are unavailable, and a study is in progress and results are awaited. However, in the absence of any more specific values the use of IPCC default values are acceptable.		OK
E.3.7. Are uncertainties in the baseline emissions estimates properly addressed?	/1/ /8/	DR	Local values for the calorific values of different fuels are used, but the variance is found high. Clarifications are requested with regard to the uncertainties of monitoring and measurement. E.g. Year 2002: Coal: max 6344 and min 5465 Year 2003: Coal: max 6354 and min 5655 Diesel oil: max 9242 and min 7515 Year 2004: Coal: max 6530 and min 5430 Diesel oil: max 11731 and min 8721	CL-9	OK
E.4. Emission Reductions Validation of baseline GHG emissions will focus on methodology transparency and completeness in emission estimations.					
E.4.1. Will the project result in fewer GHG	/1/	DR	Yes, The project will result in reduction of about		OK

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

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
emissions than the baseline case?			9689 t CO ₂ per annum.		
F. Environmental Impacts It is assessed whether environmental impacts of the project are sufficiently addressed.					
F.1.1. Does host country legislation require an analysis of the environmental impacts of the project activity?	/1/ /7/	DR I	No, the host country legislation does not require an analysis of the environmental impacts of the project activity because of the small-scale nature of the hydroelectric power projects. However, the environmental impacts of the Jangheung-dam small-scale hydroelectric project are analyzed because it has constructed a part of a dam at the same time.		OK
F.1.2. Does the project comply with environmental legislation in the host country?	/1/ /7/	DR I	During interviews it was indicated that all 3 projects have permits for construction and operation of small-scale hydroelectricity power plants. But evidence of these permits was not available for verification.	CL-3	OK
F.1.3. Will the project create any adverse environmental effects?	/1/ /7/	DR I	No adverse environmental effects envisaged.		OK
F.1.4. Have environmental impacts been identified and addressed in the PDD?	/1/	DR	Not applicable, since there are no adverse environmental effects associated with the project.		OK
G. Comments by Local Stakeholder Validation of the local stakeholder consultation process.					
G.1.1. Have relevant stakeholders been consulted?	/1/ /7/	DR	It is not clear from the PDD whether appropriate local stakeholders have been consulted. Details of the consultation process are not submitted for verification.	GAR-3	OK
G.1.2. Have appropriate media been used to	/1/	DR	Yes, direct meetings were conducted as part of	GAR-3	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
invite comments by local stakeholders?	/7/		project approval process.		
G.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/1/ /7/	DR	Yes, the project approval requires agreements from stakeholders. The project is issued approvals.	CAR-3	OK
G.1.4. Is a summary of the comments received provided?	/1/ /7/	DR	No adverse comments.	CAR-3	OK
G.1.5. Has due account been taken of any comments received?	/1/ /7/	DR	No adverse comments.	CAR-3	OK

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Table 3 Resolution of Corrective Action and Clarification Requests

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
CAR 1: Written confirmation that the project meets the host country specific CDM requirements and assists in achieving sustainable development has not yet been obtained.	A.3.3	Received the DNA approval, dated July 13 2006.	Verified, OK.
CAR 2 The meters are calibrated when they are installed and re-calibrated for every 3-5 years, but the new revised version of the simplified baseline and monitoring methodology AMS-I.D requires the meters to be re-calibrated at appropriate intervals according to manufacturers specification, but at least once in 3 years.	D.5.5	PDD was revised. The meters will be re-calibrated once in 3 years.	OK
CAR 3 Details of the local stakeholder consultation process are not submitted for verification.	G.1.1	PDD was revised. The agreement with stake holders about environmental issues is one of requirements of governmental approval for the project. The approvals were submitted for verification.	Verified, OK.
CL 1: Inconsistencies were observed in the data presented in the Table 1 of the PDD and the equipment specifications verified during the site visit. Correction of the PDD is requested.	A.1.1	Table 1, A 4.2 of PDD was revised. The equipment specifications were reflected into PDD. The bundling sites also reduced from 5 sites to 3 sites because of the lack of additionality.	OK
CL 2	A.1.1	PDD was revised as the latest version.	OK

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
Reference in PDD to Appendix B should be to the latest version, Version 07, 28 November 2005 and to the latest version of AMS-I.D, version 08, 3 March 2006.			
<p>CL3</p> <p>During interviews it was indicated that all 3 projects have permits for construction and operation of small-scale hydroelectricity power plants. But evidence of these permits was not available for verification.</p>	A.3.4	The evidence of these permits was submitted.	OK.
<p>CL4</p> <p>The existence of barrier is not substantiated effectively.</p> <p>The PDD indicates that the biggest barrier is an investment barrier. The barrier analysis includes a comparison with nuclear (1000 MW), coal (500 & 200 MW), heavy oil (100 MW), LNG (450 MW), pumping (400 MW) power plants as BAU scenario. But the capacities of these power plants used for comparison are very high compared to the project capacity (max 1.8 MW) and are not representative for demonstrating an investment barrier.</p> <p>Also the investment analysis is based on unit cost of electricity production and not on the tariff paid per unit generation.</p> <p>The PDD also identifies an investment risk barrier related to non firm electricity production due to lack of availability of water.</p>	B.2.1	<p>PDD was revised to include NPV calculations to substantiate investment barrier. The NPV of each project is found negative.</p> <p>The project planning was conducted at different periods and the discount rate of that period is considered. Evidence submitted to DOE.</p> <p>The calculation of Seongnam Small Scale Hydroelectric was corrected.</p>	Verified the corrections and applied discount rates. OK.

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
<p>But this barrier is not substantiated with data.</p> <p>The version 2 of the PDD includes an NPV analysis which clearly demonstrates a negative NPV for each project. This substantiates the existence of financial barrier coupled with the risk of changes in operating condition due to availability of water.</p> <p>The difference in the discount rate between Andong (8%) and other projects (7.5%) shall be explained.</p> <p>The calculations were verified and it is found the Unit cost of Seongnam Small Scale Hydroelectric is not correct, it should be 47.35.</p>			
<p>CL-5</p> <p>The project starting date is not clearly defined.</p> <p>The starting date mentioned against each project is not given in the required dd/mm/yyyy format. It is also not clear, whether the dates represent starting of project construction or starting of generation. Proof of the project starting date has not been submitted for verification.</p>	C.1.1	<p>PDD was revised.</p> <p>The project starting date is clearly defined and the starting date mentioned against each project is given in the required dd/mm/yyyy format. The dates represent starting of generation.</p>	OK
<p>CL-6</p> <p>NCVi – it is confirmed during interviews that local value will be considered. Hence, the reference to IPCC default values in comments column of table D.2.1.3 needs to</p>	D.4.4	<p>PDD was revised. The reference to IPCC default values in comments column of table D.2.1.3 was removed.</p>	OK

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
be removed.			
<p>CL 7</p> <p>In Section D.4 of the PDD, there is a reference to off site transportation and under Table 8 reference to a wind turbine, which are not relevant to project. Correction of the PDD is requested.</p>	D.4.4	PDD was revised. The reference to off site transportation and under Table 8 reference to a wind turbine is deleted.	OK
<p>CL 8</p> <p>The values of total supplied electricity to grid are not consistent.</p> <p>The justification given during the interviews was that the co-generation power plants were not included in the calculation for conservativeness. The same shall be documented transparently.</p>	E.3.5	It is reflected into PDD that the co-generation power plants were not included in the calculation for conservativeness.	OK.
<p>CL 9</p> <p>The local values of calorific value for fuel are used but the variance is found high. Clarifications are requested on the uncertainties of monitoring and measurement.</p>		It is confirmed by KEPCO responsible person that the data is correct. Since the project uses the published data by KEPCO the uncertainties are minimal.	Verified with KEPCO official, confirmed the data is correct. OK.

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