Hydro Corporation CJSC

Validation of the Argichi Small Hydroelectric CDM project

January 2008
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Validation of the Argichi Small Hydroelectric CDM project
24Jan08
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1 Validation Statement

Introduction, responsibilities and scope

The management of Hydro Corporation CJSC and the Danish Environmental Protection Agency asked us to validate the Project Design Document (PDD) of the Argichi Small Hydroelectric CDM project in Armenia. The management of Hydro Corporation CJSC is responsible for the preparation of the PDD in accordance with Article 12 of the Kyoto Protocol and the Guidelines for the implementation of Article 12 of the Kyoto Protocol in the Marrakech Accords.

Our responsibility is to issue a validation statement on whether the PDD has been prepared in accordance with Article 12 of the Kyoto Protocol and the Guidelines for the implementation of Article 12 of the Kyoto Protocol in the Marrakech Accords and on the assumptions and methods applied for the calculation of the estimated emission reductions.

Activities Undertaken

Our activities included:

- Assessment of the PDD in relation to compliance with Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords;
- On-site interviews with the management of Hydro Corporation CJSC and its consultant involved in the preparation of the PDD and the collection of the reported data;
- Assessment of the internal documents used for preparing the Project Design Document.
- Review of the applied assumptions and methods for the calculation of the estimated emission reductions.

Validation Opinion

In our opinion, the PDD has been properly prepared on the basis of Article 12 of the Kyoto Protocol and the Guidelines for the implementation of Article 12 of the Kyoto Protocol in the Marrakesh Accords¹.

Based on our activities undertaken, assuming the project will be realised, nothing came to our attention that causes us to believe that the applied assumptions and methods do not provide a reasonable basis for the estimated emission reductions of 13,331 tonnes of CO₂ per year over a 10 years crediting period. Actual emission reductions may differ from the estimated emission reductions since anticipated events do not always occur as expected.

¹ Document reference FCCC/CP/2001/13/Add.2
The sole purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, KPMG Sustainability BV can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

Amstelveen, 24 January 2008

Wim Bartels

Director of KPMG Sustainability B.V.
2 Introduction

The management of Hydro Corporation CJSC (HC CJSC) and the Danish Environmental Protection Agency (Danish EPA) asked us to validate the Project Design Document (PDD) of the proposed Clean Development Mechanism (CDM) project activity “Argichi Small Hydroelectric CDM project” in Armenia.

This project is a small-scale CDM project, because of the size of the expected emissions.

This document contains KPMG’s findings and gives a validation opinion for the project. This report does not summarise the PDD in detail, the readers are advised to familiarise themselves with the project specific PDD before interpreting this report.

This section gives a brief description of the project, specifies the objectives and scope of the validation, and explains the methodology that was used during the validation process. Section three presents the findings of the validation.

2.1 Project description

The project being proposed by HC CJSC consists of constructing a 8.5MW small hydroelectric power plant, connected to the grid, on the Argichi river in Armenia. The project will reduce greenhouse gas emissions by avoiding fossil fuel-based electricity generation by other generators on the grid. The electricity generated by Argichi SHPP will be sold to the Armenian Electricity Network (AEN).

The PDD for the project was initially developed using AMS I.D. (Grid connected renewable energy generation), version 9. During the development of the project, the methodology AMS I.D. version 9 was replaced with AMS I.D. version 12.

The PDD (based on version 9) was placed on the UNFCCC website for public comment from 16 September 2006 until 23 October 2006.

2.2 Objective

The objective of this validation is to assess the proposed project activity against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board.
3 Methodology

The validation process consists of three steps:

- Desk review, during which the PDD is analysed and a validation plan is made.
- Site visit, interviews and document review. The site visits and interviews with the project developers and authors of the documentation are essential elements in the validation process. Therefore, a visit to the project site and interviews with both the project developers, and the authors of the PDD were included in the validation process.
- Resolution of Clarification Requests and Corrective Action Requests.

For the validation of CDM project a risk based approach has been adopted, which has been described below.

The risk based approach

The purpose of the validation is to give an independent opinion on the information in the PDD, which comprises of:

- the baseline study;
- the monitoring plan;
- the stakeholder consultation report; and
- the Environmental Impact Assessment (EIA) if preparing an EIA is a legal requirement in the host country.

The validation activities consider the risks associated with these four elements during the validation process.

The baseline

Various risks are assessed during the validation process to enable the validator to form an opinion on the available evidence. The most important risk is misstating the emissions in the baseline scenario. This risk is affected by:

- quality of the data used and the quality of the data sources;
- monitoring procedures and the methodologies used for calculating, or estimating emissions;
- project boundaries, and leakage.

The project developers should explain in the Project Design Document how a conservative approach has been followed for setting the project baseline.
A conservative approach means:

- Selecting a most likely baseline scenario which has relatively low emission levels.
- Where emissions can be measured, calculated or estimated, the accuracy of such data can vary considerably. In cases where the emissions data are less accurate the lowest value of the confidence range should be applied for setting the baseline.
- Addressing leakage, i.e. if the project results in emissions reductions within its boundary whilst elsewhere emissions increase as an indirect effect of the Project.
- In the case where assumptions have to be made these assumptions should be conservative and should not lead to high emission levels in the most likely baseline scenario.

It is the task of the validator to assess the accuracy of the emissions data used, the data sources and the assumptions and estimates made by the authors of the baseline study.

**Monitoring**

In the monitoring section in the PDD, the parameters that should be monitored during the crediting period are described. The risk related to the monitoring plan is that it is incomplete or inappropriate in such a way that following the plan may lead to inaccurate emission data and therefore inaccurate emissions reduction data.

The risks related to the monitoring plan are the following:

- the overview of emissions sources is not complete, because sources are missing;
- the frequency of the measurements is insufficient;
- leakage effects are not being monitored.

The role of the validator is to challenge the monitoring plan on these risks and determine whether the plan is sufficiently robust to generate accurate emissions data during the crediting period.

**Environmental Impact Assessment**

If the national legislation in the host country requires the preparation of an EIA, such a study should be prepared and an English summary of this study should be part of the PDD. The role of the validator is to assess whether the project developers have incorporated the relevant environmental aspects in the EIA.

**Stakeholder consultation report**

The project developers should prepare a stakeholder consultation report in which the process of local stakeholder consultation should be described together with the stakeholder comments and the corrective actions taken by the project developers as a consequence of the stakeholder consultation process.

The risk is that this process is not properly carried out or that important stakeholders did not get the opportunity to raise comments. To what extent stakeholder consultation should be organised
depends to a large extent on the impact of the project on the environment and the local community around the project area. The validator discusses the local stakeholder consultation process with the project developers and reviews the stakeholder consultation chapter in the PDD. Again this is done using a risk-based approach focusing on the most important potential issues.

It is also a requirement that an international stakeholder consultation process is performed, this requires the PDD to be made available on the website of the UNFCCC for 30 days. Comments from stakeholders are addressed to the validator and are taken into consideration in the validation.

*Organisation of the validation process*

The risk based approach to validation is organised using the approach shown in the steps below. The five basic steps are:

1. The project starts with understanding the PDD.
2. Based on the first review of the PDD the main risks are identified. The area of attention for the validation are identified and validation process designed.
3. The data gathering systems, the data sources used and the assumptions made are analysed.
4. Based on this analysis the remaining uncertainty is determined and forms the basis for the detailed data testing.
5. If the remaining area of uncertainty has been reduced to an acceptable level the validation report and the validation statement including an opinion is issued.

*The validation statement and the validation report*

The validation statement includes our opinion whether the PDD has been properly prepared on the basis of Article 12 of the Kyoto Protocol and the Guidelines for the implementation of Article 12 of the Kyoto Protocol in the Marrakesh Accords.

The validation report describes in more detail the findings of our validation. The statements and the reports together contain all our findings and should not be used in isolation. The format of the reports is based on the compliance criteria for CDM described in the Kyoto Protocol and the Marrakech Accords and the guidance from the CDM Executive Board.
3.1 Validation Team

The following team has carried out the validation:

Table 1: Validation team

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization and role in the project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric Koudijs</td>
<td>KPMG Sustainability, The Netherlands, project manager/lead validator</td>
</tr>
<tr>
<td>Stirling Habbitts</td>
<td>KPMG Sustainability, The Netherlands, technical assistant/reviewer</td>
</tr>
<tr>
<td>Arno Mosikyan</td>
<td>KPMG Armenia, Yerevan, Armenia, technical assistant and translator</td>
</tr>
</tbody>
</table>

3.2 Brief CV’s of the validation team members

Mr. Eric Koudijs, the lead validator, is senior environmental consultant of KPMG Sustainability in The Netherlands, specialised in validation of JI and CDM projects. He has more than 15 years experience in the area of environmental management and compliance. From 1999 until July 2002 he was permanently based in KPMG Romania as director of KPMG Environmental Services for Central and Eastern Europe. He has been responsible for the first validations by KPMG of JI and CDM projects. He has substantial experience in the Energy Sector and in verification of environmental and HSE reports.

Mr. Stirling Habbitts, the validator of the projects travelled to Armenia for the on site assessment and the interviews with the project developers. Stirling was previously with KPMG South Africa where he worked on a range of CDM projects including projects for the World Bank Prototype Carbon Fund.

Mr. Arno Mosikyan, acted as interpreter in the project team. He is a management consultant at KPMG Armenia. He has 5 years experience in the area of management consulting and regulatory compliance. From 2004 he was permanently based in KPMG Armenia as a management consultant at the Risk Advisory Department.
4 The Validation

This section describes activities that were performed during the validation and the timing that was attributable to these activities. The findings for each component of the PDD are compared with the requirements as set out in the reference material.

4.1 Activities

In January 2006 KPMG Sustainability provided a proposal to Arjermek LLC (Att. Mr. Karen Arabyan) in Armenia to undertake the validation of the Argichi small-scale CDM-project.

In May 2006, the Danish Environmental Protection Agency, took over the responsibility for validation of the project.

KPMG Sustainability received the first draft version of the PDD on 6 June 2006. This draft document was reviewed and discussed during the visit to offices in Yerevan, Armenia. The project location on the Argichi River in Armenia was also visited. During the visits the main author of the draft PDD, Mr Karen Arabyan of Arjermek LLC, was present together with the management of HC CJSC.

Table 2: Overview of validation activities prior to final validation

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 – 12 June 2006</td>
<td>Desk review of the draft PDD; version 6 June 2006</td>
</tr>
<tr>
<td>12 – 16 June 2006</td>
<td>Interviews in Yerevan, Armenia with:</td>
</tr>
<tr>
<td></td>
<td>1. Mr Grigor Arakelyan, HC CJSC head office (project developer)</td>
</tr>
<tr>
<td></td>
<td>2. Mr Karen Arabyan, Arjermek LLC (project consultant)</td>
</tr>
<tr>
<td></td>
<td>3. Mr. Aram Gabrielyan and Artyom Kharazyan, Armenian Ministry of Nature Protection and DNA</td>
</tr>
<tr>
<td></td>
<td>4. Nikolay Grigoryan and Armen Arshakyan, Public Services Regulatory Commission in Armenia</td>
</tr>
</tbody>
</table>

The project site was also visited during this week.

On 20 June 2006 the Corrective Action Requests (CARs) and Clarification Requests (CRs) were sent to HC CJSC, with requests for further documentary evidence. During July 2006 the CARs and CRs were discussed with the project consultant and further documentary evidence was obtained and sent to KPMG by the project consultant.
A revised PDD was received on 20 August 2006 for publication for stakeholder consultation on the UNFCCC website.

The PDD based on AMS I.D. version 9, and was approved for publishing by us and subsequently placed on the UNFCCC CDM web site for public comments from 16 September 2006 until 15 October 2006.

The PDD was then revised by the project consultant to use AMS I.D. version 12 (instead of version 9).

In May 2007 the Danish Environmental Protection Agency (DEPA) withdrew from the project and requested KPMG Sustainability to continue with the validation as a unilateral CDM project.

In August 2007 the PDD was updated based on the new version of the methodology. The changes were limited and there were no changes in the environmental or social impact of the project. Therefore we concluded the validation without new public consultation. We reviewed the final version of the PDD in August 2007 and the project developers took notice of the corrective actions requests.

### 4.2 Baseline Study

The **baseline** scenario for a CDM project is the scenario that reasonably represents the anthropogenic emissions by sources of Greenhouse Gases (GHGs) that would occur in the absence of the certified project activities within the project boundary. The PDD contains arguments and analysis to demonstrate this.

The project specific baseline study has been based on the methodology of ACM0002, that specifies how the baseline should be prepared. Next to this, the PDD has to demonstrate compliance with UNFCCC requirements. More specifically, the baseline has to describe in a transparent and conservative manner the choices of:

1. Assumptions.
2. Parameters.
3. Data sources.
4. Key factors.
5. Additionality.
6. Give consideration to uncertainties.

Our findings have been set out against the baseline requirements in Table 3. The sources for the requirements are the Marrakech Accords.
### Table 3: Baseline Study Findings

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>The baseline shall be established on a project specific basis and/or using a multi project emission factor.</td>
<td>The baseline methodology selected has been taken from AMS I.D. ‘Grid connected renewable electricity generation’, version 12. The combined margin (CM) from this version of AMS I.D. has been used, which requires a combination of operating margin (OM) and build margin (BM) calculated according to the procedures prescribed in the approved methodology ACM0002 (version 6). The project consultant performed the collection of data related to the fuel consumption, carbon contents of the fuels and the electricity consumption from the units supplying electricity to the Armenian Electricity Network (AEN). Data was obtained from the Armenian Public Services Regulatory Commission. Data was actual data from the units producing electricity for the grid. In cases where actual data were lacking, assumptions were made based on IPCC default values.</td>
</tr>
<tr>
<td>The baseline should be in line with the selected methodology.</td>
<td>The baseline has been developed in line with ACM0002. The Operating Margin is calculated on the basis of the option (b) Simple Adjusted OM. As per the ACM0002 methodology, the Dispatch Data Analysis is the first methodological choice. Calculating a Dispatch Data Analysis operating margin was not possible due to the fact that data is not gathered and made publicly available from an official source. The Simple Adjusted OM was used instead of the Simple OM Method because generation by low-cost/must-run power sources exceeds 50% of the total. The choice of baseline was properly motivated in the PDD.</td>
</tr>
<tr>
<td>The baseline shall be established in a transparent manner with regards to the choice of approaches, assumptions, methodologies, parameters, data sources and key factors.</td>
<td>In the PDD the applied baseline methodology is discussed in detail and is well argued and supported. The baseline has been established in a transparent manner. The spreadsheet calculating the baseline emissions, project emissions and the expected emission reductions has been made using the formulas of ACM0002. The baseline methodology selected has been taken from AMS I.D. ‘Grid connected renewable electricity generation’, version 12, and the combined margin (CM) from this version of AMS I.D. has been used, which requires a combination of operating margin (OM) and build margin (BM) calculated according to the procedures prescribed in the approved methodology ACM0002. Approaches, methodologies, parameters, data sources and key factors have been described in a transparent manner.</td>
</tr>
</tbody>
</table>
Hydro Corporation CJSC  
Validation of the Argichi Small Hydroelectric CDM  
January 2008

### Requirement | Finding
---|---
The baseline shall be established taking into account relevant national and/or sectoral policies and circumstances such as sector reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector. | The PDD includes a detailed analysis of the local situation with regards to the relevant policies and circumstances. In section B5 the PDD describes how the project activity meets the additionality criteria. A thorough analysis of the barriers is presented taking into account investment barriers, technical barriers and barriers related to prevailing practice. In this section the project proponents adequately described the relevant national and/or sectoral policies, local fuel availability, power sector expansion plans, and the economic situation in the project sector. Assertions made in section B5 were supported with documented evidence provided to the validator.

The baseline shall be established in such a way that CERs cannot be earned for decreases in activity levels outside the project activity or due to force majeure. | CERs can only be earned from the supply of electricity produced by hydropower from the Argichi River. No sources of leakage have been identified, decreases in activity outside the project activity or force majeure are adequately addressed and no CERs can be earned for these decreases.

The baseline shall be established using conservative assumptions | The project proponents used as much as possible actual fuel consumption data, carbon content data and supplied electricity data to calculate emission factors of individual units. A significant effort was made to obtain actual data. Only where actual data were not available default values were used. This approach increases the accuracy of the emission factor for the Armenian grid.

Statement of how anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the certified CDM project activity. | The type and category of the project matches with methodology AMS-I.D. as specified in Appendix B of the indicative simplified baseline and monitoring methodologies for small-scale CDM project activities. Justification for additionality of the project under the UNFCCC simplified modalities is to establish the additionality of the project activity according to the Attachment A of Appendix B, which lists various barriers, out of which, at least one barrier should be identified due to which the project would not have occurred. The PDD presents different barriers and outlines how the project faced specific financial barriers related to raising capital for the project. This is a barrier, because interest rates of commercial banks in Armenia are very high, banks only provide loans with short payback periods, and because banks limit the total amount that they will loan to any one project (further detail and specific limits are provided in the PDD). Evidence was provided to the validator to show that Hydro Corporation CJSC had applied to local banks and other institutions for credit, and that all the loan applications were denied or the offered conditions were unfeasible in the context of the project. The project was delayed as a result of not securing finance, and was subject to penalties from the Public Services Regulating Commission because it was not implemented within the timeframe specified in the construction License. To overcome this barrier, the project requires the additional finance by the EBRD/EIB Carbon Credit Fund (MCCF) only if the project would acquire CDM status. An e-mail with this information from the EBRD/EIB Multilateral Carbon Credit Fund Carbon Manager was sent to the validator. Without this funding the project would not occur.

### 4.3 Monitoring Plan

The Monitoring Plan (MP) describes the data collection, data correction, and archiving systems that are required to estimate or measure the anthropogenic emissions by sources of GHGs within
the project boundary during the crediting period. Our findings are set out against the requirements for a monitoring plan in Table 4.

Table 4: Monitoring Plan Findings

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The monitoring plan shall include a plan for the collection and archiving of all relevant data necessary for estimating or measuring anthropogenic emissions by sources and/or anthropogenic removals by sinks of GHGs occurring within the project boundaries.</td>
<td>The project emissions will be zero (hydropower project). The monitoring table for project emissions in the PDD has been based on the monitoring table from AMS I.D. It describes the monitoring of relevant data necessary for estimating or measuring GHG emissions within the project boundaries.</td>
</tr>
<tr>
<td>The monitoring plan shall include a plan for the collection and archiving of all relevant data necessary for determining the baseline of anthropogenic emissions by sources and/or anthropogenic removals by sinks of GHGs within the project boundary during the crediting period.</td>
<td>The baseline emissions will be calculated based on ex-post monitoring of the emissions of the electricity grid. The monitoring parameters in chapter B7 of the PDD include monitoring for the baseline emissions. This has been based on the monitoring requirements from AMS I.D. It describes the monitoring of relevant data necessary for determining the baseline GHG emissions during the crediting period.</td>
</tr>
<tr>
<td>The monitoring plan shall include a plan for the identification of all potential sources of, and the collection and archiving of data on increased anthropogenic emissions by sources and/or reduced anthropogenic removals by sinks of greenhouse gases outside the project boundary that are significant and reasonably attributable to the project during the crediting period.</td>
<td>The emissions of the national grid will be monitored during the crediting period. The parameters included in this monitoring have been adequately described in chapter B7.</td>
</tr>
<tr>
<td>The project boundary shall encompass all anthropogenic emissions by sources and/or removals by sinks of greenhouse gases under the control of the project participants that are significant and reasonably attributable to the Article 12 project.</td>
<td>The project boundaries have been clearly defined in the PDD in accordance with AMS I.D.. The project emissions will be zero (hydropower project).</td>
</tr>
<tr>
<td>The monitoring plan shall include a plan for the collection and archiving of information about environmental impacts, in accordance with procedures as required by the host Party, where applicable.</td>
<td>Potential environmental impacts related to the water flow in the Argichi river are included in the monitoring plan.</td>
</tr>
<tr>
<td>The monitoring plan shall include a plan for procedures for the periodic calculation of the reductions of anthropogenic emissions by sources and/or enhancements of anthropogenic removals by sinks by the proposed Article 12 project, and for leakage effects, if any. Leakage is defined as the net change of anthropogenic emissions by sources and/or removals by sinks of greenhouse gases which occurs outside the project boundary, and that is measurable and attributable to the Article 12 project;</td>
<td>Section B7 of the PDD describes the monitoring methodology and plan, and includes periodic calculation of the operating and build margins and resulting reductions. This requirement refers to the monitoring of leakage from the project. The project has clearly defined boundaries. No sources of leakage were identified.</td>
</tr>
</tbody>
</table>
4.4 Environmental Impacts

All power generation projects carried out in Armenia are required to conduct an environmental Impact Assessment (EIA). An EIA was conducted, and the Head of the Commission for Environmental Impact Assessment under the Ministry of Nature Protection stipulated the following requirements for the project following the EIA:

1. Maintaining a flow of one cubic meter per second in the Argichi river;
2. Construction of a fishpass to allow fish to pass the plant; and
3. Improve the surrounding environment of the HPP (plants, green lawns, bushes, trees, etc) by investing 11,561 thousand AMD (approx. USD 30 000).

The water flow is included in the monitoring plan, and will also be monitored by the local environmental authorities and the data will be submitted to Ministry of Nature Protection. The construction of the fishpass, as well as improvement of surrounding environment of the HPP are included in plans and designs of the plant.

4.5 Local Stakeholder Consultation

Section E of the PDD describes the stakeholder consultation process including the comments received and how due account was taken of any comments received.

Hydro Corporation organized a stakeholder meeting to inform stakeholders and to consult with stakeholders on environmental and social impacts of the project. Invitations to attend the meeting were sent to Representatives of neighboring villages (Madina, Verin Getashen), the Municipality of Martuni city, the Ecological Dept of Gegharcunic Marz, the Ministry of Nature Protection, the Ministry Of Energy, the Public Services Regulatory Commission, NGOs and the Armenian Electricity Network (AEN).

The meeting was recorded. Overall the local community expressed their support of the proposed project. The majority of the questions were related to economic and community aspects. All questions and comments were addressed at the meeting to the satisfaction of the attendees.

4.6 International Stakeholder Consultation

One set of comments was received during the international stakeholder consultation. This was from the Environmental Engineering Group of the Hokkaido Electric Power Co Inc, which stated that it is a company trying to develop a hydro power plant as a CDM project in Armenia. The comments were requests for additional data and explanation on the calculation of the
baseline and emissions reductions. The comments were taken into account by revisiting the calculation and confirming the validity of the data and calculation method. The company did not raise any issues or objections to the project, and is not directly impacted by the project.

4.7 **Host Country Approval**

The Armenian Designated National Authority (DNA) approved the project on 23 November 2006. The Host Country Approval Letter has been attached in Annex D.

4.8 **Approval of Voluntary Participation from the DNA of an involved Party**

The project is developed as unilateral CDM project. Therefore no Approval Letter of Voluntary Participation of another involved Party is required.

4.9 **Confirmation of the start of the crediting period**

The project developers confirmed to the validator in writing that they will not commence the crediting period prior to registration.
5 Corrective Action Requests

The corrective actions requested by KPMG Sustainability have been included in Annex B.
## A Key Data

**Table 6. Project key data**

<table>
<thead>
<tr>
<th>Project name</th>
<th>&quot;Argichi Small Hydroelectric CDM project&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project description</td>
<td>Construction of a 8.5 MW Small Hydroelectric grid connected renewable energy project on the Argichi river in Armenia.</td>
</tr>
</tbody>
</table>
| Project proponents | CJSC “Hydro Corporation”  
Mr Grigor Arakelyan, Director  
Sayat-Nova str.  
19, Ani Plaza Hotel  
Yerevan  
375001  
Republic of Armenia  
+374 10 520 838  
+374 10 520 775  
hydrocorp@xter.net |
| Other parties participate in the project. A full list of project participants has been added to the PDD in annex 1. |
| Validator | KPMG Sustainability BV  
Amstelveen  
The Netherlands  
Tel. +31 6 5155 3429  
Fax. +31 20 656 4510  
E-mail: koudijs.eric@kpmg.nl |
B Corrective Action Request

On the basis of the validation process and the interviews described in Table 2, the following issues were raised. All issues have been satisfactorily resolved.

Table 7: Correction Action Requests

<table>
<thead>
<tr>
<th>Ref. to the PDD</th>
<th>Draft report clarifications and corrective action requests by validation team</th>
<th>Summary of project owner response</th>
<th>Validation team conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole document.</td>
<td><strong>Corrective Action Request 1:</strong>&lt;br&gt;The English and grammar used in the PDD are weak and can be improved. Please seek assistance to check and where necessary improve the English and grammar.</td>
<td>Corrected, refer to revised PDD.</td>
<td>Closed.</td>
</tr>
<tr>
<td>A.2</td>
<td><strong>Corrective Action Request 2:</strong>&lt;br&gt;In section A.2, the PDD makes reference to indicators for the assessment of the project’s contribution to sustainable development stipulated by the Armenian Ministry for Nature Protection. The Armenian government has not published final criteria for the assessment of the contribution of CDM projects to sustainable development in Armenia, but is currently working on producing such criteria. Please explain where the criteria used in the PDD originate and why they are considered applicable.</td>
<td>Corrected, refer to revised PDD.</td>
<td>Closed.</td>
</tr>
<tr>
<td>B.1.1</td>
<td><strong>Corrective Action Request 3:</strong>&lt;br&gt;In section B1.1, the project title is provided as a response: “Argichi Small Hydroelectric CDM Project”. The response to this section should be the title of the baseline methodology, not the title of the project. This is partly provided in the next line in the response, namely “Type I: Renewable Energy Projects”, however this should also state “Type I.D.-Grid connected renewable electricity generation”.</td>
<td>Corrected, refer to revised PDD.</td>
<td>Closed.</td>
</tr>
</tbody>
</table>
## Corrective Action Request 4: Baseline operating margin

The “Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories” (the Methodology) outlines two options for data vintages for calculating the approximate operating margin emission factor and the weighted average emission factor:

- **Option 1:**
  A 3-year average, based on the most recent statistics available at the time of PDD submission.

- **Option 2:**
  The year in which project generation occurs, if emission factor is updated based on ex post monitoring.

Please state explicitly which of these two options is chosen, and please state which year applies to the data for the initial baseline calculation used in the PDD (i.e., for which year or year(s) are the specific fuel consumption figures of 380-400geqv/kWhe valid?).

<table>
<thead>
<tr>
<th>Ref. to the PDD</th>
<th>Draft report clarifications and corrective action requests by validation team</th>
<th>Summary of project owner response</th>
<th>Validation team conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.5.</td>
<td><strong>Corrective Action Request 4:</strong> Baseline operating margin</td>
<td>Corrected, refer to revised PDD.</td>
<td>Closed.</td>
</tr>
</tbody>
</table>

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Hydro Corporation CJSC  
Validation of the Argichi Small Hydroelectric CDM  
January 2008
## Corrective Action Request 5:

**Baseline build margin**

The Methodology states that “The Build Margin emission factor is derived from a sample group which consists of either the five most recently built power plants or the power plant capacity additions in the electricity system that comprise 20% of the system generation and that have been built most recently. From these two options, project proponents are requested to use that sample group that comprises the larger annual generation.”

The baseline calculation in the PDD does not show which sample group comprises the larger annual generation, and does not therefore show that sample group that comprises the larger annual generation has been used. Please specifically show this in the baseline.

Corrected, refer to revised PDD. Closed.

## Corrective Action Request 6:

**Baseline build margin**

The Methodology states that the build margin emission factor can be calculated using either of the following data vintages:

- **Option 1**
  Most recent information available on plants already built at the time of PDD submission.

- **Option 2**
  For the first crediting period, the emission factor is updated based on ex-post monitoring. For subsequent crediting periods, the emission factor should be calculated ex-ante, as described in option 1 above.

Please state explicitly which of these two options is chosen.

Corrected, refer to revised PDD. Closed.
<table>
<thead>
<tr>
<th>Ref. to the PDD</th>
<th>Draft report clarifications and corrective action requests by validation team</th>
<th>Summary of project owner response</th>
<th>Validation team conclusion</th>
</tr>
</thead>
</table>
| B.5. | **Corrective Action Request 7:**  

*Baseline build margin*

The build margin calculation in the PDD uses emissions intensity data for expected future capacity expansions for the periods 2008-2009/2012. If option 2 above is used, please explain the specific approach to updating the emission factor (for the first crediting period based on ex-post monitoring, and for subsequent crediting periods based on ex-ante monitoring) with reference to the expected future capacity expansions used in the calculation of the build margin. | Corrected, refer to revised PDD. | Closed. |
| B.2. | **Corrective Action Request 8:**  

In section B2, the guidelines for the completion of the SSC PPD state “Please explain the basic assumptions of the baseline methodology in the context of the project activity. Provide the key information and data used to determine the baseline scenario (variables, parameters, data sources etc.) in table form.”  

Please add this explanation and table to this section. | Corrected, refer to revised PDD. | Closed. |
<table>
<thead>
<tr>
<th>Ref. to the PDD</th>
<th>Draft report clarifications and corrective action requests by validation team</th>
<th>Summary of project owner response</th>
<th>Validation team conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.3. Corrective action request 9:</td>
<td>The PDD includes statements indicating that the project has had difficulty attracting financing. This is presented in the explanation for additionality in section B.3. of the PDD. Some of these statements are listed below. Please provide more detail to support these statement, including explanations of which other financial institutions (other than the EBRD) have been approached for financing, what the outcome of each of these approaches was. The relevant statements are as follows: “According to Armenian Banks information dept funding is not available for this type of innovative project activities” “It means that the company has to find another source of financing or to increase equity investment which is impossible for such projects considering difficulties with security sharing and lack of equity.” “[Armenian Banks] are not interested in crediting with terms over 2-3 years.” Please also add why the CDM overcomes the difficulty of financing.</td>
<td>Corrected, refer to revised PDD.</td>
<td>Closed.</td>
</tr>
</tbody>
</table>
### Corrective Action Request 10:

In section B.3., a number of barriers are listed to the project development, for example “The head of the Water Resource Management Agency has too much authority” and “Another barrier is the vague procedure of obtaining property rights for the land”. Please consider the relevance of these barriers to the concept of Additionality. In particular, only include barriers in this section if the presence of the CDM process changes the characteristic of the barrier in such a way that with the CDM, the barrier is overcome.

Corrected, refer to revised PDD. Closed.

### Corrective Action Request 11:

At the end of section B.3., on the subject of Additionality, a conclusion is presented which includes the following statements:

“[The CDM finance] …will improve the financial attractiveness of the project.”

“It will also increase the confidence of the Project’s developers and potential investors.

“Without the presence of the CDM and the availability of carbon financing, the project would not overcome the mentioned barriers”

Taking into account the corrective actions above, please provide a more detailed and specific explanation of why the project activity would not have occurred anyway due to at least one of the barriers listed in the simplified modalities and procedures for small-scale CDM project activities, for example the barrier of “financial resources”.

Corrected, refer to revised PDD. Closed.
<table>
<thead>
<tr>
<th>Ref. to the PDD</th>
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</tr>
</thead>
<tbody>
<tr>
<td>D.3.</td>
<td>Corrective Action Request 12:</td>
<td>Corrected, refer to revised PDD.</td>
<td>Closed.</td>
</tr>
<tr>
<td></td>
<td>Currently the monitoring plan as it appears in the PDD</td>
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<tr>
<td></td>
<td>includes monitoring of the CO2 emission factor for the grid and the</td>
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<td></td>
<td>CO2 operating margin emission factor of the grid. The CO2 operating</td>
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<td></td>
<td>margin emission factor appears twice in the monitoring plan.</td>
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<tr>
<td>B.5.</td>
<td>Clarification Request 1:</td>
<td>Clarified, refer to revised PDD.</td>
<td>Closed.</td>
</tr>
<tr>
<td></td>
<td>Baseline data sources</td>
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<tr>
<td></td>
<td>The calculation of the baseline includes the following information and</td>
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<tr>
<td></td>
<td>data obtained from the Ministry of Energy:</td>
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<td></td>
<td>• “According to information provided by Ministry of Energy of Armenia</td>
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<td></td>
<td>and Armenian thermal power plants, specific fuel consumption is</td>
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<td></td>
<td>380-400geqv/kWhe (380g of coal equivalent) and power plants own</td>
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<td>consumption (PPOC) is about 7-10% ((i.e. delivered electricity is app.</td>
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<tr>
<td></td>
<td>0.9-0.93 of the total generated electricity).”</td>
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<tr>
<td></td>
<td>• “In accordance with Armenian Ministry of Energy the new thermal</td>
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<td></td>
<td>power plants will be more efficient in comparison with existing and</td>
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<tr>
<td></td>
<td>specific fuel consumption will be about 320geqv/kWhe”.</td>
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<td></td>
<td>• “The thermal power units operating on natural gas have been assessed</td>
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<td>with a characteristic specific emission intensity of 0.562 t CO2 per</td>
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<td></td>
<td>MWh or 562 t CO2/GWhe delivered.”</td>
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<td></td>
<td>Please explain the specific source (eg: official report, website or</td>
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<td></td>
<td>other form of communication) for this information, and include a</td>
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<td></td>
<td>reference to an official source of information as far as possible.</td>
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<tr>
<td>Ref. to the PDD</td>
<td>Draft report clarifications and corrective action requests by validation team</td>
<td>Summary of project owner response</td>
<td>Validation team conclusion</td>
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<tr>
<td>B.4</td>
<td><strong>Clarification Request 2:</strong></td>
<td>Clarified, refer to revised PDD.</td>
<td>Closed.</td>
</tr>
<tr>
<td></td>
<td>In section B.4, it is stated that “as the transmission line reaches the Armenian Electricity Network (AEN), the AEN will also be included in the project’s boundary”. The project boundary encompasses the physical, geographical site of the renewable generation source according to AMS-I.D. Please clarify the statement about the AEN in the PDD, and in particular clarify which part of the Armenian Electricity Network will be included in the project boundary.</td>
<td></td>
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<tr>
<td>B.5</td>
<td><strong>Clarification Request 3:</strong></td>
<td>Clarified, refer to revised PDD.</td>
<td>Closed.</td>
</tr>
<tr>
<td></td>
<td><strong>Baseline data sources</strong></td>
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<tr>
<td></td>
<td>The calculation of the baseline includes the following information on future electricity capacity expansions in Armenia:</td>
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<tr>
<td></td>
<td>• a new 400 MW thermal power unit at Hrazdan TPP will be launched in 2008;</td>
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<tr>
<td></td>
<td>• a new 215 MW unit at Yerevan TPP in 2008-2009;</td>
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<tr>
<td></td>
<td>• small-scale hydro power plants (total app. 62 MW during 2007-2012);</td>
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<td></td>
<td>Please explain the specific source (eg: official report, website or other form of communication) for this information, and include a reference to an official source of information as far as possible.</td>
<td></td>
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<tr>
<td></td>
<td>Please also explain the basis for the assumption of the power supply proportion of 62/615 referred to shortly after the above list.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hydro Corporation CJSC  
Validation of the Argichi Small Hydroelectric CDM  
January 2008

<table>
<thead>
<tr>
<th>Ref. to the PDD</th>
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</tr>
</thead>
</table>
| F.1            | **Clarification Request 4:**  
It is understood that a new Environmental Impact Assessment Report for the Argichi project will be available after June 2006, from the organisation Expertise Environnement”. Please refer to this and consider this in section F.1.  
In section F.1. it is also stated “The liquidation of small quantity of bushes (not being of interest) will be compensated by a new planting after the end of construction. The area will acquire its own ecologic indices it used to have in the past, if revegetation requirements of all soils will be carried out. A part of carbon finance will be used for this objective.” Please explain this more clearly. | Clarified, refer to revised PDD. | Closed. |
| C1.1 and C2.2.1| **Clarification Request 5:**  
Please consider whether the dates listed in section C1.1 and C2.2.1 are still valid and amend them if necessary. | Clarified, refer to revised PDD. | Closed. |
| F.1            | **Clarification Request 6:**  
In section F.1. in the PDD it is stated that the project will ensure a minimum water flow of 1.0m3/second in the river for ecological reasons. Please provide an explanation of how the project will ensure that this minimum water flow is maintained for example in periods of reduced rain or flow levels in the river. | Clarified, refer to revised PDD. | Closed. |
| F.1            | **Clarification Request 7:**  
It is stated in section F.1. “With the aim of preservation of fish species of river Argichi, a graded fish way is provided in the project.”  
Please provide updated information on the construction of the fish pass, or dates for planned construction. | Clarified, refer to revised PDD. | Closed. |
<table>
<thead>
<tr>
<th>Ref. to the PDD</th>
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</thead>
</table>
| D.3. | **Opportunity for Improvement 1:**  
It is stated that a minimum water flow in the river of 1.0m³/s will be maintained for ecological reasons. Consider including regular monitoring of the water flow in the river in the monitoring plan to provide a record that this has been achieved. | Improvement opportunity implemented, refer to revised PDD. | Closed. |
| D.3. | **Opportunity for Improvement 2:**  
The monitoring plan includes the electricity generation of the plant measured hourly, which will also indicate when the plant is operating and when it is not. As an additional check, consideration could be given to separate monitoring of the operating time and downtime (eg: for maintenance) of the plant, for cross-checking against the electricity output. | Separate monitoring of downtime will be carried out as part of plant operation. | Closed. |
| D.4. | **Opportunity for Improvement 3:**  
The word “qualified” used in section D.4. is not appropriate in this context. Consider using another word. | Improvement opportunity implement, the relevant section was re-written, refer to revised PDD. | Closed. |
### Table 7a: Additional Correction Action Requests and Clarification Requests after review of the PDD received on 6 August 2007

<table>
<thead>
<tr>
<th>Ref. to PDD</th>
<th>Draft report clarifications and corrective action requests by validation team</th>
<th>Summary of project owner response</th>
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</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Chapter A1 should contain the version number and the date of the PDD.</td>
<td>Has been included in the final version.</td>
<td>Closed</td>
</tr>
<tr>
<td></td>
<td>Please modify the PDD accordingly.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The methodologies AMS I-D and ACM0002 require using 5 years of historical data for calculating the grid emission factor for hydropower projects.

Alternatively the grid emission factor can be determined based on ex-post monitoring.

The PDD (version 6Aug07) has not been based on ex-post monitoring. The PDD has also not been based on a full 5 years set of data.

The lambda factor has only been based on the 2005 data.

The electricity generation has not been based on the actual kWh delivered to the grid. Auxiliary electricity use has been assumed (7%).

No actual fuel consumption of the thermal is used but an estimated average (385 kgce). It is not clear for which year this number is used.

Either provide us with a calculation of the grid emission factor based on a full set of historical data over 5 years or modify the PDD to ex-post monitoring of the grid emission factor (OM as well as BM).

It was decided to monitor the grid emission factor ex-post. In the latest version of the PDD the grid emission factors have been included in chapter B7.
Ref. to the PDD | Draft report clarifications and corrective action requests by validation team | Summary of project owner response | Validation team conclusion
---|---|---|---
A.4.3 | Chapter A.4.3 has not been filled out. See the Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD). | Has been corrected. | Closed
B.6.2 and B7 | ACM0002 states for export: "Electricity exports should not be subtracted from electricity generation data used for calculating and monitoring the baseline emission rate". Including imports and assuming an emission factor of 0 kg CO2/kWh for the baseline is conservative and in line with ACM0002. | Has been corrected in the final version of the PDD and the calculation spreadsheet. | Closed

The barrier analysis states that the financial barrier is the only barrier that can not be overcome without carbon revenues.

In the situation where DEPA was involved in financing the project it was clear how the project overcame this barrier. In the new situation it is not clear that the financing of the project has been concluded. We should also give an opinion on whether the emission reductions of the project are likely to occur. If the financing of the project has not been concluded it is uncertain whether the project will be fully implemented.

Please include in the PDD how the financial barrier was overcome.

This chapter has been rewritten in the final version of the PDD. The project developers convincingly motivated that the project would not proceed without CDM registration.

The Team Leader for the EBRD/EIB Multilateral Carbon Credit Fund Carbon Manager sent us an e-mail stating that CER purchase is a necessary condition for the project to be implemented.

Has been corrected.
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Annex 1</td>
<td>PDD Annex I lists contact details for the company “Energocor” Ltd., which does not appear to be an authorized participant in this project. Please provide revised documentation including only authorized participants in this section.</td>
<td>The name of Energocor Ltd has been removed from the PDD in the final version.</td>
<td>Closed.</td>
</tr>
<tr>
<td></td>
<td>Please provide confirmation that the project participants will not commence the crediting period prior to registration.</td>
<td>The project participants confirmed that the crediting period will start at December 2008. The project start date is February 2008.</td>
<td>Closed.</td>
</tr>
<tr>
<td>C1 and C2</td>
<td>The dates in chapter C are not in the right format (DD/MM/YYYY). Please modify this.</td>
<td>Latest version contains dates in the right format</td>
<td>Closed</td>
</tr>
</tbody>
</table>
### List of reviewed documents

**Table C.1. Project specific documentation**

<table>
<thead>
<tr>
<th>Document Reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A100</td>
<td>Original business plan of the construction of turbines</td>
</tr>
<tr>
<td>A101</td>
<td>Project Idea Note (PIN) for CDM project development</td>
</tr>
<tr>
<td>A110</td>
<td>Technical documentation for the turbines specifying their capacities (MWh)</td>
</tr>
<tr>
<td>A111</td>
<td>Argichi HPS General Explanatory Note</td>
</tr>
<tr>
<td>A120</td>
<td>Environmental Impact Assessment (EIA) report, with English translation, including reference to the minimum required waterflow. Section in technical plan above, page 38. EIA was subsequently redone, received:</td>
</tr>
<tr>
<td>A122</td>
<td>- New copy, Armenian version</td>
</tr>
<tr>
<td>A123</td>
<td>- New copy, with English Translation</td>
</tr>
<tr>
<td>A160</td>
<td>Loan agreement with Danish EPA for project</td>
</tr>
<tr>
<td>A161</td>
<td>- Letter &amp; e-mail from Danish EPA</td>
</tr>
<tr>
<td>A162</td>
<td>- Letter from EBRD indicating interest in financing the project</td>
</tr>
<tr>
<td>A163</td>
<td>- Letter of intent from Cascade Credit for financing the project</td>
</tr>
<tr>
<td>A164</td>
<td>- Letter of intent on project development and purchase of emission reductions from Danish EPA to HydroCorp.</td>
</tr>
<tr>
<td>A180</td>
<td>Evidence from Cascade Credit Union. Letter specifically says the following:</td>
</tr>
<tr>
<td></td>
<td>- commercial loans for more than two years are not available in Armenia, the interest rates charged are 18% pa, the maximum loan that they will provide is $1 million over 8 years.</td>
</tr>
<tr>
<td>A210</td>
<td>Licenses/permits required by law for the operation of the hydropower station, contained in the back of the business plan.</td>
</tr>
<tr>
<td>A211</td>
<td>- Letter from PSRC giving permission for construction of turbine</td>
</tr>
</tbody>
</table>
A212 - Letter from PSRC giving warming for failure to construct the plant within the period of the licence

A220 Information and map of protected sites and residential areas in the vicinity of the project location


A241 Evidence for the stakeholder consultation process

A250 Letter of Approval (LoA) for project issued on 23 November 2006. Ref. N0002552; 1(2) – 04/1836

A290 PIN format from Ministry of Nature Protection that included draft sustainable development criteria as used in the PDD.

A300 Letters and other communication with Banks indicating that finance is not available or not viable because of prohibitive financing conditions such as interest rates / down payments / repayment terms.

A310 E-mail from the Team Leader for the EBRD/EIB Multilateral Carbon Credit Fund Carbon Manager stating that they see CER purchase contribution as the necessary condition for the project to be implemented.

Table C.1 Baseline documentation

<table>
<thead>
<tr>
<th>Document Reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B134</td>
<td>CDM project evaluation criteria</td>
</tr>
<tr>
<td>B132</td>
<td>Fuel consumption statistics for Hrazdan and Yerevan Thermal Power Plants, from the Public Services Regulatory Commission of Armenia</td>
</tr>
<tr>
<td>B140</td>
<td>Information about the composition of the grid power generation including names of power plants, types of power plants, fuel/energy sources, dates built.</td>
</tr>
<tr>
<td>B141</td>
<td>Page from the Settlement Centre report showing electricity produced by different generators in 2005 (in Armenian) – provides kWh information for 2005</td>
</tr>
<tr>
<td></td>
<td>Annual report of the Ministry of Energy in the Republic of Armenia for 2005 (in Armenian, partial translation, includes a table on page 4</td>
</tr>
</tbody>
</table>
with a breakdown of the electricity production from each type of electricity source – hydro, thermal, nuclear) (in several parts) – gives some info for 2005, but not broken down

B142 - Reference on electricity energy (capacity) system supplied in Jan-Mar 2006 – includes both actual electricity produced and capacity, appears to included all electricity producers in Armenia as well as the small Hydro Plants recently added to the system. These make up a small percentage of the total. – only for 2006

B143 - “Main indicators of Electric Power System for 2006” includes reference to particular power suppliers and their contributions to the grid from the website of Public Services Regulatory Commission of the Republic of Armenia.


B145 - Black Sea Energy Survey by the IAE includes survey of the Armenian energy sector, pgs 67-91 – old (from 2000)


B147 - IEA link with overview of Armenia energy – only has 2003 energy balances

B148 - Dates of Establishment of Power Stations – does not include dates for hydro

B149 - Key World Energy Statistics – only for 2003, weblink from EIA report

B180 - Delivery of Electricity 1Q 2006 from the website of Public Services Regulatory Commission of the Republic of Armenia.

B181 - ANNUAL REPORT OF THE PUBLIC SERVICES REGULATORY COMMISSION OF THE REPUBLIC OF ARMENIA FOR YEAR 2005 – includes number of recent licences issued for new power plants and tariff info.

B182 - Article “Energy Sector of Armenia” – has construction dates for old power plants; has some info, but only up to 2002.

B183 - Decree of the Government of Armenia On conducting ceremonies for celebration of 100 years anniversary of Armenian Energy Sector

B184 - IAEA Energy and nuclear power planning study for Armenia – construction dates and capacities of thermal plants and older hydro plants

Additional Electricity Supply statistics from the PSRC website: [MW per month for each power station]

B160 - Electric Power System Electricity Supply (supplied power) 2004

B161 - Electric Power System Electricity Supply (supplied power) 2005
| B162 | Main indicators of the electricity power system for 2004 |
| B163 | Main indicators of the electricity power system for 2005 |

Plan of the Ministry of Energy with regard to the extension of generating capacities in Armenia

| B150 | Energy Sector Development Strategies in the Context of Economic Development in Armenia – dated 2005, but no statistics for consumption by power plant |
| B153 | Armenian Power Sector 2002 Least Cost Plan: Appendices |

Key economic statistics in Armenia including interest rates and inflation rates (eg: consumer price index)

| B170 | Spreadsheet called Economic which contains CPI (inflation) and Lending rates (around 16.5%). |
| B171 | Part of report called Financial Market with information on interest rates and other financial statistics in Armenia. |
| B172 | Part of a report called Macro Economic Indicators with information on interest rates and inflation |
| B174 | Main indicators of Armenian commercial banks and their change |
| B175 | State Budget Indicators |
| B176 | Loans |
| B177 | Main monetary indicators |
| B178 | Law on 2005 State Budget |
| B179 | 2006-2008 medium-term public expenditure framework |
| B170-1 | Sources of economic information |

| B190 | Report from PA Consulting Group, summarizing main barriers to the implementation of small-scale hydropower projects |
B199 - Special study evaluation of energy efficiency in bank projects
B201 - PA Consulting Group: net workload forecast

B196 - Agreement for the sale of electricity – this is a standard decree that refers to the price that will be paid for hydro power in Armenia.
B197 - List of power stations in Armenia and the year that they were built provided by the PSRC (see the “List of companies licensed for SHPP”)

Information on the Banking Sector and availability of finance in Armenia:

B194 Banking Services monthly bulletin, from Arka News Agency, with interest rates and commercial bank lending conditions for 13 local banks:
B195 Regulation n 2 of the central bank of armenia on prudential standards for banking. Arno: On page 11, I have marked for you the normative which is mandatory for all banks with regards to the exposure of risk towards a single borrower.
D Letter of Approval of the Host Country

To: Project Participants
Hydro Corporation CJSC, Yerevan, Republic of Armenia
Danish Environmental Protection Agency, Copenhagen, Denmark

Letter of Approval

1. As Minister of Nature Protection of the Republic of Armenia and appointed Designated National Authority for the Clean Development Mechanism (CDM) under the Kyoto Protocol of the United Nations Framework Convention on Climate Change, I hereby confirm:
   (i) The Republic of Armenia has ratified the United Nations Framework Convention on Climate Change in May 14, 1993 and the Kyoto Protocol in December 25, 2002;
   (ii) The Republic of Armenia participates voluntarily in the Clean Development Mechanism and in the Project identified in paragraph 1(iii) of this letter;
   (iii) Based on the information provided in the letter as defined in the Project Design Document “Argichi Small Hydroelectric CDM project”, submitted on October 24, 2008 to the Designated National Authority of Armenia for the CDM, and other supporting documents, the implementation of the proposed Project will assist the Republic of Armenia in achieving sustainable development objectives.

2. I further inform that the “Project” can be submitted to the Clean Development Mechanism Executive Board in order to request registration of the “Project” as a Clean Development project activity.

3. I henceforth declare that the Designated National Authority of Armenia for CDM reserves the right to submit the CDM Executive Board a request for review of the “Project” in case the Project Design Document submitted to the CDM Executive Board for registration does not correspond to the document identified in paragraph 1(iii) above.

Please note that the issuance of this Letter of Approval shall not exempt the Project Participants from complying with all applicable laws, rules and regulations of the Republic of Armenia.

Project Participants shall regularly update the Designated National Authority for CDM in Armenia on the status of implementation of the “Project”. Based on the provided information, the Designated National Authority for CDM will evaluate compliance of the “Project” implementation with the conditions stipulated in the approved Project Design Document.

I look forward to the project smooth start up according to the procedures.

Yours Sincerely,

Minister of Nature Protection of the Republic of Armenia
and Designated National Authority for the Clean Development Mechanism
under the Kyoto Protocol

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Sincerely,

[Signature]