

DAK PSI 3 AND 4 HYDROPOWER PROJECT

Document Prepared By Kyoto Energy Pte. Ltd.

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Table of Contents

1	Project Details	3
1.1	Summary Description of the Project.....	3
1.2	Sectoral Scope and Project Type.....	4
1.3	Project Proponent.....	4
1.4	Other Entities Involved in the Project.....	4
1.5	Project Start Date.....	4
1.6	Project Crediting Period.....	4
1.7	Project Scale and Estimated GHG Emission Reductions or Removals.....	5
1.8	Description of the Project Activity.....	5
1.9	Project Location	5
1.10	Conditions Prior to Project Initiation	6
1.11	Compliance with Laws, Statutes and Other Regulatory Frameworks	6
1.12	Ownership and Other Programs	6
1.12.1	Proof of Title.....	7
1.12.2	Emissions Trading Programs and Other Binding Limits	7
1.12.3	Participation under Other GHG Programs	7
1.12.4	Other Forms of Environmental Credit.....	7
1.12.5	Projects Rejected by Other GHG Programs	7
1.13	Additional Information Relevant to the Project.....	7
2	Application of Methodology.....	7
2.1	Title and Reference of Methodology	10
2.2	Applicability of Methodology	10
2.3	Project Boundary.....	10
2.4	Baseline Scenario	10
2.5	Additionality.....	10
2.6	Methodology Deviations	10
3	Quantification of GHG Emission Reductions and Removals	10
3.1	Baseline Emissions	11
3.2	Project Emissions.....	11
3.3	Leakage	11
3.4	Summary of GHG Emission Reductions and Removals	11
4	Monitoring	11
4.1	Data and Parameters Available at Validation	12
4.2	Data and Parameters Monitored	12
4.3	Description of the Monitoring Plan	12
5	Environmental Impact.....	12
6	Stakeholder Comments	12

1 PROJECT DETAILS

1.1 Summary Description of the Project

Completion of this section is not mandatory as per the latest version of the VCS Standard (version 3.3, hereafter referred to as the VCS Standard) since the proposed project activity is validated under the CDM. However, a table summarizing the key technological specification is provided below. For detailed description of the project activity please refer to the Section A.2 of the registered PDD of the project activity¹.

Table 1. The main technologies used in the project.

Dak Psi 3 cascade		Value
TURBINE	Model	Francis Turbine- horizontal axis
	Quantity	3
	Capacity	5.208 MW
	Rate speed	500 rpm
	Runaway speed	946 rpm
	Efficiency	88.62%
GENERATOR	Model	3 phase synchronization with horizontal axis
	Quantity	3
	Capacity	5 MW
	Rated speed	500 rpm
	Runaway speed	946 rpm
	Cosφ	0.8
	Efficiency	96.00%

Dak Psi 4 cascade		Value
TURBINE	Model	Francis Turbine, horizontal axis
	Quantity	3
	Capacity	10.3093 MW
	Rated Speed	500 rpm
	Runway Speed	1234 rpm
	Efficiency	91%
TOR GENERATOR	Model	3 phase synchronization with horizontal axis
	Quantity	3
	Capacity	10 MW

¹Registered PDD is available on UNFCCC webpage :
<http://cdm.unfccc.int/Projects/DB/KEMCO1307604296.67/view>

	Rated speed	500 rpm
	Runaway speed	1234 rpm
	Cosφ	0.8
	Efficiency	97%

1.2 Sectoral Scope and Project Type

Sectoral scope: 1. Energy industries (renewable - / nonrenewable sources)

Project Type: Renewable Energy Projects.

The proposed project activity is not a grouped project.

1.3 Project Proponent

Dak Psi Hydropower Investment and Development Joint Stock Company

(The Project Owner and responsible for the implementation of the proposed project activity)

Address: No. 762C, Pham Van Dong street, Pleiku city, Gia Lai province, Vietnam

Phone: +84 59 3867070 Fax: +84 59 3867071

Represented by: Ms. Mau Thi Thanh Xuyen

1.4 Other Entities Involved in the Project

Kyoto Energy Pte Ltd

(VCS Consultant to Dak Psi 3 and 4 Hydropower Project)

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1.5 Project Start Date

According to VCS Standard, the project start date is the date on which the project began generating GHG emission reductions or removals. Hence for the project, start date is considered as the first Commercial Operation Date (COD) of the first unit on 09/10/2010.

1.6 Project Crediting Period

The project's crediting period is of 10 years and renewable twice. However, as the project is already registered under CDM project, the last date of the VCS crediting period would end at the end of the 21 years of the CDM crediting period.

The current crediting period under VCS starts on 09/10/2010 and lasts 10 years. Further, the PP confirms that for monitoring periods of this project which fall under both VCS and CDM crediting period, only one of the schemes will be used to claim emission reductions so as to avoid double counting. A written confirmation of the same is provided by the PP to the DOE in this regard.

1.7 Project Scale and Estimated GHG Emission Reductions or Removals

Project	x
Large project	

Years	Estimated GHG emission reductions or removals (tCO ₂ e)
Year 1	64,576
Year 2	64,576
Year 3	98,423
Year 4	98,423
Year 5	98,423
Year 6	98,423
Year 7	98,423
Year 8	98,423
Year 9	98, 423
Year 10	98, 423
Total estimated ERs	719,690
Total number of crediting years	10
Average annual ERs	89,961

1.8 Description of the Project Activity

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section A.4.3 of the registered PDD of the proposed project activity².

1.9 Project Location

- (a) Host Party(ies): Socialist Republic of Viet Nam
- (b) Region/ State/ Province, etc.: Kon Tum Province,
- (c) City/ Town/ Community, etc.: Dak Ha and Tu Mo Rong Districts
- (d) Physical/ Geographical location: GPS coordinates: 14°46'30"N ; 107°59'50"E

²Registered PDD is available on UNFCCC webpage :
<http://cdm.unfccc.int/Projects/DB/KEMCO1307604296.67/view>

The figure consists of three maps illustrating the location of the project site:

- Top Map:** A map of Vietnam showing its neighboring countries (China to the north, Laos to the west, and Cambodia to the south) and its provinces. The text "TRUNG QUỐC" (China) is visible at the top, and "THÁI LAN" (Thailand) and "CAM PU CHIA" (Cambodia) are visible at the bottom.
- Middle Map:** A map of Kon Tum province, showing its districts. The text "Kon Tum Province" is written in a box with an arrow pointing to the province.
- Bottom Map:** A detailed map of the project site area, showing the intersection of roads and the location of the project site (marked with a black dot). The map includes a legend for road types (National Road, Provincial Road, District Road, etc.) and distances. The text "Project site" is written in a box with an arrow pointing to the black dot.

Figure 1: Project location

1.10 Conditions Prior to Project Initiation

"Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to Calculate the Emission Factor for an Electricity System".

Therefore, the proposed project activity primarily implemented for power generation and not with a purpose to create GHG emissions and their subsequent reduction, removal or destruction.

1.11 Compliance with Laws, Statutes and Other Regulatory Frameworks

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section B.5 of the registered PDD of the proposed project activity³.

³Registered PDD is available on UNFCCC webpage :
<http://cdm.unfccc.int/Projects/DB/KEMCO1307604296.67/view>

1.12 Ownership and Other Programs

1.12.1 Right of Use

The Vietnamese Designed National Authority (DNA), which is within the Ministry of the Natural resources and Environment (MONRE), has issued a letter of authorization (LOA) showing that the project proponent as stated in the section 1.3 is the owner of the plant and that the proposed project activity will generate a reduction of GHG emission under the Kyoto Protocol.

1.12.2 Emissions Trading Programs and Other Binding Limits

The project has not participated in any Emissions Trading Programs and Other Binding Limits prior to the CDM registration date. The first monitoring period in the VCS program is prior to the CDM registration date. The related emission reductions have not and will not be claimed under any other GHG programs.

For the subsequent requests of VCUs issuance, if any, it will be ensured that the emission reductions of the project will not be used for compliance with another emissions trading program or to meet binding limits on GHG emissions.

1.12.3 Participation under Other GHG Programs

The project has been registered as CDM project on 06/11/2011 as reference number 4891 and CERs have been claimed from the CDM- registration date.

1.12.4 Other Forms of Environmental Credit

The project has been purely taken up as CDM project and has not been applied for any other form of environmental credit.

1.12.5 Projects Rejected by Other GHG Programs

The project have not been rejected by any GHG program.

1.13 Additional Information Relevant to the Project

Eligibility Criteria

Not applicable since the proposed project activity is not a grouped project.

Leakage Management

According to CDM methodology ACM0002 (which has been applied by the proposed project activity), leakage emissions are considered as zero for the proposed project.

Commercially Sensitive Information

There is no commercially sensitive information for the project

Further Information

The proposed project activity is particularly contributing to the improvement of the local community along the three pillars of the sustainable development:

A - Environmental benefits:

The proposed project activity has positive impacts with respect to the environment. It is offsetting fossil fuel use and lowering greenhouse gas emissions while helping the country to cope with the growing demand of energy.

An Environmental Impact Assessment (EIA) has been prepared by an independent third party consultant and has been approved by local authorities. It mainly results in showing that the project is not harmful to the environment since there are no endangered species within the project area and since the land is of poor quality of the ecosystem. Further, any potential negative impacts (such as the noise and the dust during the construction) will be mitigated and monitored as stated in official documents (and are mostly seen during construction phase, not operation). It has specifically to be highlighted that since the project is located in steep slope, the water of the river used in the plant is not suitable for fish habitat. Hence the project does not impact the aquatic ecosystem which is not the case of most accumulation / storage hydropower plants.

Besides, thanks to its implementation, the project will contribute to raise the awareness on climate change among the local community (through the stakeholder meeting) or at a larger scale through the donation of part of the CER revenue to the Vietnam Environment Protection Fund (for further details, please see the “economic benefits”).

Finally, the power density of the proposed project activity is far above the UNFCCC threshold of 10 W/m² for project emission calculation. This means that the ecological footprint of the project is particularly low for a hydropower project, and that the potential risk to the environment is very limited.

B - Social benefits

As per the Environmental Impact Assessment approved, new roads have been constructed and are now connecting remote villages.

Besides, the project is also improving the local economy through local employment during both the construction period (short-term jobs) and the operation (long-term jobs) of the plant. Some of these jobs require high level of expertise which is contributing to the increase of the local standard of living. The level of local knowledge will also increase due to the transfer of technology.

Finally, it has to be highlighted that this project activity is of relatively small scale and that no residential land is impacted. Thus, no indigenous people have to resettle due to the implementation of the proposed project activity.

C - Economic benefits

In Viet Nam, all the CDM registered projects especially beneficial for the local community. Indeed, as per the Vietnamese Circular No: 58/2008/TTLT-BTC-BTN&MT issued by the Ministry of Natural Resources and Environment and by the Ministry Of Finance, 1.2% of the CER revenue from the implementation of Renewable Energy Sources projects will be given to the Vietnam Environment Protection Fund (VEPF). This money will notably be used for supporting the propagation, disseminate information and improve the public awareness in relation to climate change and CDM.

The economy will also be improved both at a small scale (job creation) and at larger scale since it is satisfying the growing energy demands within the region and the country.

2 APPLICATION OF METHODOLOGY

2.1 Title and Reference of Methodology

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section B.1 of the registered PDD of the proposed project activity⁴.

2.2 Applicability of Methodology

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section B.2 of the registered PDD of the proposed project activity⁵.

2.3 Project Boundary

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section B.3 of the registered PDD of the proposed project activity⁶.

2.4 Baseline Scenario

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section B.4 of the registered PDD of the proposed project activity⁷.

2.5 Additionality

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section B.5 of the registered PDD of the proposed project activity⁸.

2.6 Methodology Deviations

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The registered PDD has not applied for any methodology deviations.

⁴Registered PDD is available on UNFCCC webpage :
<http://cdm.unfccc.int/Projects/DB/KEMCO1307604296.67/view>

⁵Registered PDD is available on UNFCCC webpage :
<http://cdm.unfccc.int/Projects/DB/KEMCO1307604296.67/view>

⁶Registered PDD is available on UNFCCC webpage :
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⁷Registered PDD is available on UNFCCC webpage :
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⁸Registered PDD is available on UNFCCC webpage :
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3 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

3.1 Baseline Emissions

Average annual baseline emissions from the project activity in the first crediting period of 10 years are 89,961 tons of CO₂. For further detail please refer to the Section B.6.1 of the registered PDD of the proposed project activity⁹.

3.2 Project Emissions

The project emission is zero. For further detail please refer to the Section B.6.1 of the registered PDD of the proposed project activity¹⁰.

3.3 Leakage

The leakage emission is zero. For further detail please refer to the Section B.6.1 of the registered PDD of the proposed project activity¹¹.

3.4 Summary of GHG Emission Reductions and Removals

The net annual average emissions reductions from the project activity during the first crediting period are 89,961 tons of CO₂. For further detail please refer to the Section B.6.1 of the registered PDD of the proposed project activity¹².

⁹Registered PDD is available on UNFCCC webpage :
<http://cdm.unfccc.int/Projects/DB/KEMCO1307604296.67/view>

¹⁰Registered PDD is available on UNFCCC webpage :
<http://cdm.unfccc.int/Projects/DB/KEMCO1307604296.67/view>

¹¹Registered PDD is available on UNFCCC webpage :
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¹²Registered PDD is available on UNFCCC webpage :
<http://cdm.unfccc.int/Projects/DB/KEMCO1307604296.67/view>

4 MONITORING

4.1 Data and Parameters Available at Validation

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section B.6.2 of the registered PDD of the proposed project activity¹³.

4.2 Data and Parameters Monitored

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section B.7.1 of the registered PDD of the proposed project activity¹⁴.

4.3 Description of the Monitoring Plan

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section B.7.2 of the registered PDD of the proposed project activity¹⁵.

5 ENVIRONMENTAL IMPACT

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section D of the registered PDD of the proposed project activity¹⁶.

6 STAKEHOLDER COMMENTS

Completion of this section is not mandatory as per VCS Standard since the proposed project activity is validated under the CDM program. The content of this paragraph is detailed in the Section E of the registered PDD of the proposed project activity¹⁷.

¹³Registered PDD is available on UNFCCC webpage :
<http://cdm.unfccc.int/Projects/DB/KEMCO1307604296.67/view>

¹⁴Registered PDD is available on UNFCCC webpage :
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¹⁵Registered PDD is available on UNFCCC webpage :
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¹⁶Registered PDD is available on UNFCCC webpage :
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¹⁷Registered PDD is available on UNFCCC webpage :
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