

**CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD)
Version 03 - in effect as of: 22 December 2006**

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Revision history of this document

Version Number	Date	Description and reason of revision
01	21 January 2003	Initial adoption
02	8 July 2005	<ul style="list-style-type: none">• The Board agreed to revise the CDM SSC PDD to reflect guidance and clarifications provided by the Board since version 01 of this document.• As a consequence, the guidelines for completing CDM SSC PDD have been revised accordingly to version 2. The latest version can be found at http://cdm.unfccc.int/Reference/Documents.
03	22 December 2006	<ul style="list-style-type: none">• The Board agreed to revise the CDM project design document for small-scale activities (CDM-SSC-PDD), taking into account CDM-PDD and CDM-NM.

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SECTION A. General description of small-scale project activity
A.1 Title of the small-scale project activity:

Rakit Hydro Power Project in Indonesia
Version 1
05/08/2009

A.2. Description of the small-scale project activity:

The project activity is a small-scale project activity involving the development of a 0.5 MW run-of-river mini hydroelectric power plant that will export the generated electricity to the Jawa-Madura-Bali grid (hereinafter referred to as JAMALI Grid). The project activity is located in Central Java Province, Indonesia and utilizes the existing flow of Rakit River to generate electricity.

The development of the project activity would reduce greenhouse gas (GHG) emissions produced by the regional grid generation mix which is mainly dominated by fossil fuel based power plants. Emission reduction from hydroelectric power projects arise as they replace grid electricity with a zero-emission source of electricity generation.

The project will install one turbine generators of 500kW and the generated electricity will be fed into the regional grid through sale to state-owned company Perusahaan Listrik Negara (hereinafter referred to as PLN). A power purchase agreement will be entered into with PLN for the export of electricity. In the absence of the project activity the electricity would have continued to be generated by the existing generation mix operating in the JAMALI grid.

Contribution of the project activity to sustainable development

The project activity will contribute to sustainable development through socio-economic development in the region. The project activity will lead to the creation of employment in the project area for skilled and unskilled laborers during the construction and operation phase of the project. Availability of electricity in the region will promote the development of rural industries. Being a run-of-river hydro power plant, the project activity will not result in rehabilitation and resettlement (R&R) issues.

Contribution of the project activity to environmental well being

The project activity will lead to positive environmental impacts. The project activity, which is a zero emission electricity generation, will reduce GHG emissions produced from fossil based power generation, particularly in the JAMALI grid. Apart from this, the development of the project activity will not result in degradation of natural resources at the project site or in nearby areas.

A.3. Project participants:

Name of Party involved ((host) indicates a host Party)	Private and/or public entity (ies)project participants (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participants (Yes/No)

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Indonesia (Host)	Private Entity: PT. Mandala Pratama Energi	No
United Kingdom	Private Entity: Agrinergy Pte Ltd	No

Contact details as listed in Annex I.

A.4. Technical description of the small-scale project activity:

A.4.1. Location of the small-scale project activity:

A.4.1.1. Host Party(ies):

Republic of Indonesia

A.4.1.2. Region/State/Province etc.:

Central Java Province

A.4.1.3. City/Town/Community etc.:

Rakit Village, Rakit Subdistrict, Banjarnegara Residency

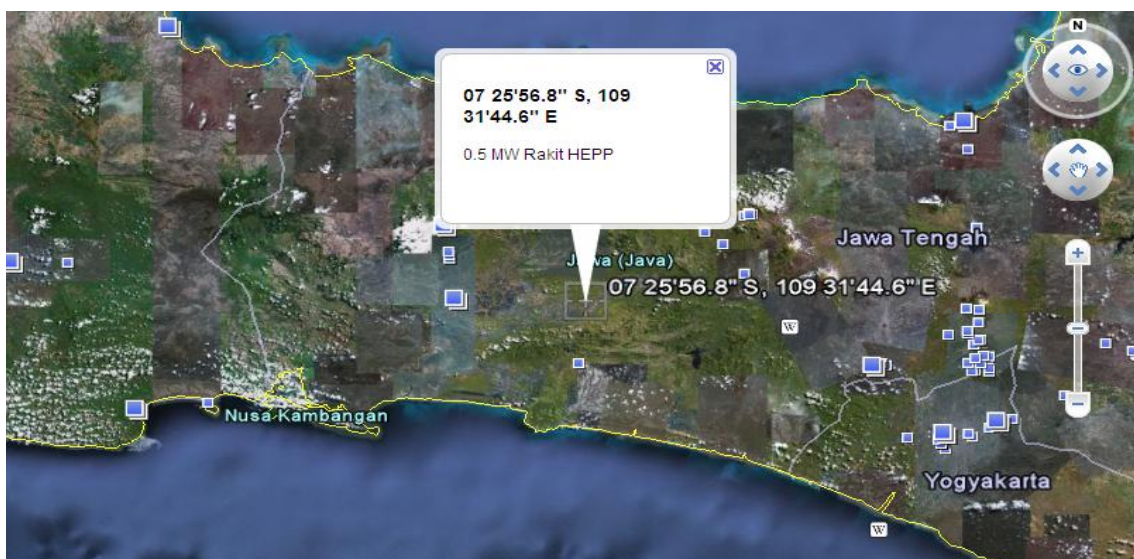
A.4.1.4. Details of physical location, including information allowing the unique identification of this small-scale project activity :

The geographical coordinates of the project activity site are:

Latitude: 07⁰ 25' 56.8" South

Longitude: 109⁰ 31' 44.6" East

The power plant site is located about 125 km from Jakarta, the capital city of Indonesia. The elevation is 130 m above sea level. The project activity location is clearly represented in the map below:



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A.4.2. Type and category (ies) and technology/measure of the small-scale project activity:

Sectoral Scope 1: Energy Industries (Renewable/non-renewable sources)

Type I: Renewable Energy Projects

Category D: Grid connected renewable electricity generation

The project activity involves the construction of a small-scale run-of-river hydroelectric power plant. The technology of the run-of-river power generation applied to the project activity involves the conversion of the energy from falling water into rotating shaft power, which can be used to drive an electricity generator. The technology utilized is environmentally safe and sound.

The selected turbine to be used in the project activity is a Kaplan type turbine. The electricity generated by the project activity will be supplied to the Rakit sub-station for proper interconnection to the JAMALI grid through a medium voltage transmission line of 20 kV built by the project owners. The major equipments of the project activity will be procured from China and the main technical parameters are as below:

Parameter	Value
Type	Kaplan
Installed capacity	500 kW
Dependable flow	7.9m ³ /sec
Runner diameter	1.6m
Speed	250rpm
Head	7.70m
Frequency	50Hz
Generator voltage	400V, 3 phase

A.4.3 Estimated amount of emission reductions over the chosen crediting period:

A seven year renewable crediting period has been chosen.

Year	Estimation of annual emission reductions in tonnes of CO ₂ e
Year 1	2,998
Year 2	2,998
Year 3	2,998
Year 4	2,998
Year 5	2,998
Year 6	2,998
Year 7	2,998
Total estimated reductions (tonnes of CO₂ e)	20,986
Total number of crediting years	7
Annual average of the estimated reductions over the crediting period (tCO₂e)	2,998

A.4.4. Public funding of the small-scale project activity:

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The project proponent confirms that there is no public funding involved in the financing of the project activity.

A.4.5. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity:

Appendix C, paragraph 2 of the Simplified Modalities and Procedures for Small-Scale CDM project activities states:

“A proposed small-scale project activity shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity:

- *With the same project participants;*
- *In the same project category and technology/measure; and*
- *Registered within the previous 2 years; and*
- *Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point”*

The project proponent confirms that there are no other small-scale CDM projects with the same project participants that have been registered within 1 km of the project boundary of the proposed small-scale activity within the previous 2 years.

Furthermore, it is confirmed that the proposed project activity is not a debundled component of a large scale project activity.

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SECTION B. Application of a baseline and monitoring methodology
B.1. Title and reference of the approved baseline and monitoring methodology applied to the small-scale project activity:

AMS ID – Grid connected renewable electricity generation
Version 14

B.2 Justification of the choice of the project category:

Project Type: I
Category: D

S. No.	Applicability Criteria	Project Activity
1	This category comprises renewable energy generation units, such as photovoltaics, hydro, tidal/wave, wind, geothermal and renewable biomass, that supply electricity to and/or displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit.	The proposed project activity generates power by utilizing the water of Rakit River. The electricity supplied by the project activity to the grid will replace existing and planned electricity generation at the JAMALI grid, the majority of which is fossil fuel based.
2	If the unit added has both renewable and nonrenewable components (e.g.. a wind/diesel unit), the eligibility limit of 15MW for a small scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15MW.	The project does not incorporate a mix of renewable and non-renewable components. The project involves the installation of only a 0.5MW hydro power plant which is below the 15MW limit for a small scale CDM project activity.
3	Combined heat and power (co-generation) systems are not eligible under this category.	The project activity produces hydroelectric power and hence is not a cogeneration system.
4	In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	The project activity is a new hydro power plant and does not involve the addition of renewable energy generation unit at an existing facility.
5	Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category. To qualify as a small-scale project, the total output of the modified or retrofitted unit shall not exceed the limit of 15 MW.	The project activity is a new power plant and does not seek to retrofit or modify an existing facility.

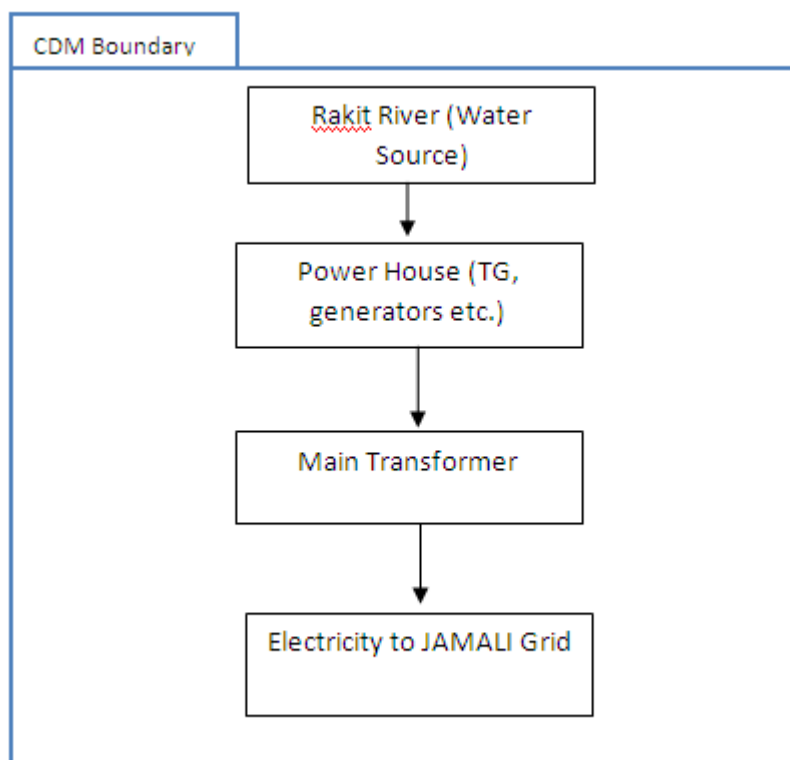
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It can therefore be concluded that the project activity qualifies as a Type ID project.

B.3. Description of the project boundary:

As per paragraph 6 of the methodology - “*The physical, geographical site of the renewable generation source delineates the project boundary.*”

The project boundary includes the equipments installed for the operation of the hydro power plant – the main elements of which are the turbine, generator and the transformer. In terms of gases, the project boundary is restricted to CO₂. The below diagram clearly explains the project boundary of the project activity.



For the purpose of the project activity, the relevant grid is defined by the power generating units serving the same grid as the project activity. PLN has developed seven main power grids in Indonesia – Java-Madura-Bali (JAMALI), Sumatera, West Kalimantan, South and Central Kalimantan, East Kalimantan, South Sulawesi and North Sulawesi. As the project activity is situated in Central Java province, the JAMALI grid is chosen for the analysis which falls in the spatial boundary of the project activity.

B.4. Description of baseline and its development:

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As evident from the data used for the calculation of the emission factor of JAMALI grid, the power generation in the grid is principally fossil fuel based. Thus for the project activity i.e. the installation of a new grid connected renewable power plant, two possible baseline scenarios have been identified as:

1. The proposed project activity without CDM i.e. the construction of a new hydro electricity generation plant with an installed capacity of 0.5MW connected to the regional grid, implemented without CDM status.
2. Continuation of the current situation i.e. electricity will continue to be generated by the existing generation mix operating in the JAMALI grid.

Alternative 1 – The barrier analysis in Section B.5 shows that the proposed project faces an investment barrier that would prevent its implementation without the CDM benefits.

Alternative 2 – This represents a plausible baseline scenario and it does not face any barriers.

From the above analysis alternative 2, the JAMALI grid has been taken as the baseline and baseline emissions have been calculated in accordance with paragraph 9 and 10 of the methodology.

Paragraph 9 of the methodology states – “For all other systems, the baseline emissions is the product of electrical energy baseline $EG_{BL,y}$ expressed in kWh of electricity produced by the renewable generating unit multiplied by an emission factor.”.

Paragraph 10 of the methodology states - “The Emission Factor can be calculated in a transparent and conservative manner as follows:

(a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the ‘Tool to calculate the Emission Factor for an electricity system’.

OR

(b) The weighted average emissions (in kg CO₂e/kWh) of the current generation mix. The data of the year in which project generation occurs must be used.

Calculations must be based on data from an official source (where available) and made publicly available.”

The baseline emission factor for the project activity has been adopted from the latest version (dated 19/01/2009) of the “New Baseline Information on Emission Factor of CDM project of the electricity in Sumatera and JAMALI” published by Kementerian Negara Lingkungan Hidup (DNA in Indonesia), following the approach in paragraph 10 as a combined margin consisting of combination of operating margin and build margin. The emission factor has been fixed ex-ante for the crediting period.

Paragraph 11 of the methodology states – “In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, where the existing and new units share the use of common and limited renewable resources (e.g., streamflow, reservoir capacity, biomass residues), the potential for the project activity to reduce the amount of renewable resource available to, and thus electricity generation by, existing units must be considered in the determination of Baseline Emissions, project emissions, and/or leakage, as relevant.”

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The project does not involve the addition of renewable energy generation units at an existing renewable power generation facility as there is currently no power generation on the site, thus negating baseline scenario specified above.

Paragraph 12 of the methodology states – “*For project activities that seek to retrofit or modify an existing facility for renewable energy generation the baseline scenario is the following:*”

The project does not seek to retrofit or modify an existing facility as there is currently no power generation on the site, thus negating baseline scenario specified in paragraph 12 above.

B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered small-scale CDM project activity:

The purpose of this section is to demonstrate that the proposed project activity is additional to the baseline scenario described above. This will be accomplished by means of the general guidelines established in the “Attachment A to the Appendix B of the simplified modalities and procedures for small scale CDM project activities”.

The most important barrier to the incorporation of the Project Activity is the investment barrier.

Investment barrier:

The Project proponent (PP) has estimated the return from the project activity by working out the project IRR and comparing the same with the benchmark to determine the adequacy of the returns. Weighted Average Cost of Capital (WACC) is taken as the benchmark for comparison with the project IRR. It is observed that the project IRR is less than the benchmark and therefore revenues from CDM play an important role in making the project feasible.

Benchmark

The benchmark is based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. All financial information used for the benchmark determination is publicly available.

Since the project is financed both by equity and debt, WACC is considered an appropriate benchmark which represents the weighted average cost of debt and equity funds invested in the project. Since no power companies are listed in the Jakarta Stock Exchange, the expected cost of equity and weighted average of cost of capital (WACC) for the infrastructure industry in Indonesia has been calculated as follows:

WACC is a calculation of the firm’s cost of capital by proportionally weighing each source of capital (debt and equity). The cost of capital was calculated using the Capital Asset Pricing Model (CAPM). The CAPM describes the cost of equity for a company’s stock as equal to the risk-free rate plus a premium that investors expect for bearing the systematic risk inherent in the stock. Systematic risk emanates from external, macroeconomic factors, which affect all assets in a particular way albeit with different magnitudes. The size of the premium is proportionate to the degree of volatility of the company’s stock versus the market portfolio.

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1. Cost of equity – The cost of equity has been determined based upon the Capital Asset Pricing Model (CAPM) using the data from Jakarta Stock Exchange (JKSE).

$$R_e = R_f + \beta_a (R_m - R_f)$$

Where:

R_e	Expected return on equity
R_f	Risk free return on an investment
B_a	Equity Beta
R_m	Expected market rate of return

2. Cost of debt – The Cost of debt has been ascertained from the Investment lending rate prevalent during the period July 2007-Jun 2008, provided by the Bank of Indonesia, resulting in the average rate of 13.00%, The cost of debt has been adjusted by the tax rate for Indonesia.

$$R_d = \text{Interestrate} * (1 - t)$$

Where:

R_d	Cost of debt
t	Tax rate

3. Weighted Average Cost of Capital (WACC) – The benchmark has been calculated using the above parameters. Using the above values we arrive at a WACC of 19.35% as a conservative and appropriate benchmark for the project activity.

The calculated benchmark is conservative since investing in a small-scale hydropower project is more risky. The period of assessment of the project activity has been taken as equal to the lifetime of 30 years. The project IRR without CDM revenue comes out to be 14.01% and is lower than the benchmark thereby stressing the need for CDM revenues in the project activity. The CDM revenues make the project activity financially feasible for the project proponents. This clearly demonstrates that the project activity faces an investment barrier and is not attractive without CDM financing.

Sensitivity analysis

The sensitivity analysis has been done in accordance with EB 41, Annex 45 ‘*Guidance on the Assessment of Investment Analysis*’ paragraph 16 and 17. As per the tool the project’s viability is evaluated through a change of $\pm 10\%$ in the parameters which have a major impact on the returns from the project:

1. Initial investment cost
2. Electricity tariff
3. Operation and maintenance cost

The hydro project is expected to have investment cost over runs due to increase in the development period. Also considering the high inflation rate in Indonesia, it is unlikely the initial investment estimate would be reduced. However in line with the tool a $\pm 10\%$ change has been given to the initial investment cost.

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Initial Investment cost	-10%	Base Case	+10%
Without CDM IRR	15.92%	14.01 %	12.43%

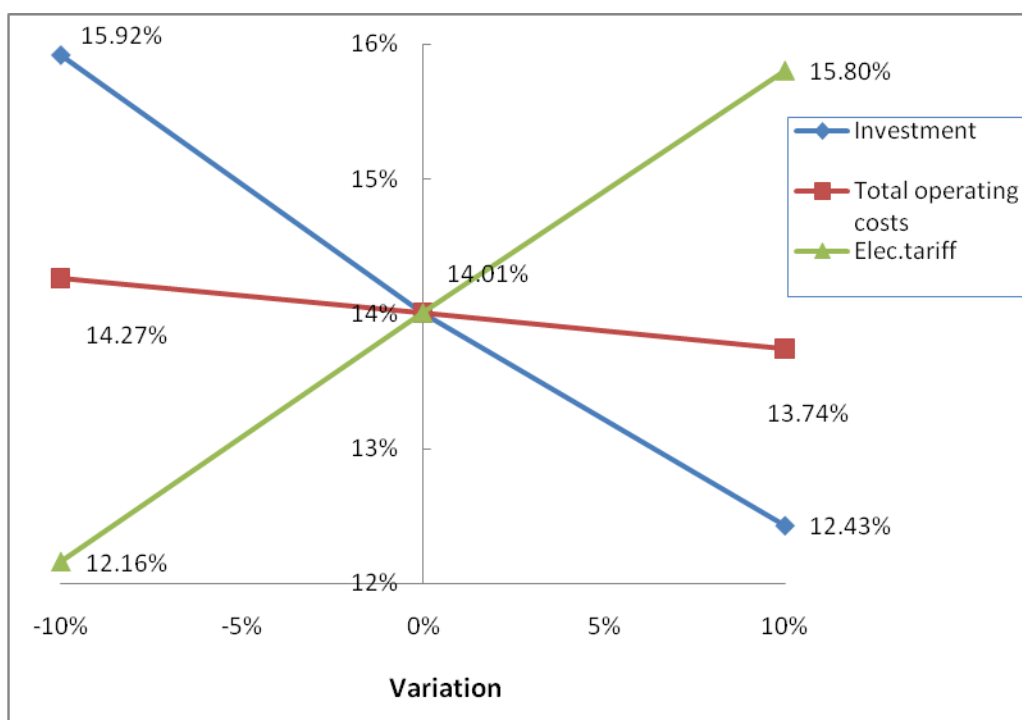
The electricity tariff has also been given a ±10 sensitivity since it has a major impact on the project returns.

Electricity tariff	-10%	Base Case	+10%
Without CDM IRR	12.16%	14.01%	15.80%

Since total operating costs have a significant effect on the financial returns of the project, these have been varied by ±10%.

Total operating cost	-10%	Base Case	+10%
Without CDM IRR	14.27%	14.01%	13.74%

The above results have been shown graphically below and it is evident that the project is not financially viable without the CDM revenues. The registration of the project activity as a CDM project and obtaining carbon finance helps mitigate these risks and CDM is thus a deciding factor in proceeding with the project.



CDM consideration

In line with Annex 46, EB41 since the start date of the project activity is after 02/08/2008, the project proponents have notified the Designated National Authority (DNA) of Indonesia and the UNFCCC about

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their intention to seek CDM status¹. The email and letters will be provided to the validator during the site visit.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

Baseline Emissions (BE_y)

In line with paragraph 9 of the methodology the baseline emissions have been calculated by the following formula:

$$BE_y = EG_y * EF_{grid,CM,y} \quad \text{Equation 1}$$

Where:

BE_y	Baseline emissions in year y, tCO ₂
EG_y	Net electricity exported by the project activity in year y, MWh
$EF_{grid,CM,y}$	Combined margin CO ₂ emission factor for JAMA I grid connected power generation in year y, tCO ₂ /MWh

Since the grid carbon dioxide emission factor determined in section B4 has been fixed ex-ante, this equation may be simplified to the following:

$$BE_y = EG_y * 0.891 \quad \text{Equation 2}$$

Project Emissions (PE_y)

The project activity will not give rise to project emissions, as no fossil fuel will be combusted in the project activity

Leakage (L_y)

Paragraph 14 of the methodology states – “If the energy generating equipment is transferred from another activity, leakage is to be considered.”

No equipment transfer takes place thus no leakage is envisaged for the project activity.

Emission Reductions (ER_y)

$$ER_y = BE_y - PE_y - L_y \quad \text{Equation 3}$$

Where:

ER_y	Emissions reductions generated in year y, tCO ₂
BE_y	Baseline Emissions in year y, tCO ₂

¹ <http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html>

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PE_y Project emissions in year y , tCO_2
 L_y Leakage emissions in year y , tCO_2

Since project emission and leakage values are zero the above equation reduces to:

$$ER_y = BE_y \quad \text{Equation 4}$$

Substituting the value of BE_y from equation 2 emission reductions value becomes:

$$ER_y = EG_y * 0.891 \quad \text{Equation 5}$$

B.6.2. Data and parameters that are available at validation:

Data / Parameter:	$EF_{grid,CM,y}$
Data unit:	tCO_2/MWh
Description:	Combined margin CO_2 emission factor for JAMALI grid connected power generation in year y
Source of data used:	DNA of Indonesia
Value applied:	0.891
Justification of the choice of data or description of measurement methods and procedures actually applied :	<p>Latest version (dated 19/01/2009) of the “<i>New Baseline Information on Emission Factor of CDM project of the electricity in Sumatera and JAMALI</i>” published by National Commission for CDM in Indonesia</p> <p>http://dna-cdm.menlh.go.id/Downloads/Others/KomnasMPB_Grid_Sumatera_JAMALI_2008.pdf</p>
Any comment:	This parameter has been fixed ex-ante.

B.6.3 Ex-ante calculation of emission reductions:

The emission reductions are calculated from equation 5 in Section B.6.1.

$$ER_y = EG_y * 0.891$$

The project activity is expected to generate 3,580 MWh of electricity annually and the auxiliary consumption of the plant is 215 MWh. The annual emission reductions from the project activity are therefore estimated at 2,998 tCO_2 from the above equation.

$$ER_y = 2,998 tCO_2$$

B.6.4 Summary of the ex-ante estimation of emission reductions:

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Year	Estimation of project activity emission reductions (tCO ₂ e)	Estimation of baseline emissions (tCO ₂ e)	Estimation of leakage (tCO ₂ e)	Estimation of emission reductions (tCO ₂ e)
Year 1	0	2,998	0	2,998
Year 2	0	2,998	0	2,998
Year 3	0	2,998	0	2,998
Year 4	0	2,998	0	2,998
Year 5	0	2,998	0	2,998
Year 6	0	2,998	0	2,998
Year 7	0	2,998	0	2,998
Total (tonnes CO₂e)	0	20,986	0	20,986

B.7 Application of a monitoring methodology and description of the monitoring plan:
B.7.1 Data and parameters monitored:

Data / Parameter:	EG _{gross}
Data unit:	MWh
Description:	Gross electricity generated by the project activity in year y
Source of data to be used:	Plant records
Value of data	3,580
Description of measurement methods and procedures to be applied:	A logbook will be maintained on the site to record hourly readings from the energy meter. The readings will be taken by the shift supervisor. This hourly data will be signed off at the end of every shift by the engineer in charge of the shift and again at the end of each day by the power plant manager.
QA/QC procedures to be applied:	The energy meter will be calibrated at least once in three years subject to national standards.
Any comment:	All data will be kept for a minimum of 2 years following issuance of certified emission reductions or the end of the crediting period, whichever is later.

Data / Parameter:	EG _{aux}
Data unit:	MWh
Description:	Auxiliary consumption by the project activity in year y
Source of data to be used:	Plant records
Value of data	215
Description of measurement methods and procedures to be applied:	A logbook will be maintained on the site to record hourly readings from the energy meter. The readings will be taken by the shift supervisor. This hourly data will be signed off at the end of every shift by the engineer in charge of the shift and again at the end of each day by the power plant manager.
QA/QC procedures to be applied:	The energy meter will be calibrated at least once in three years subject to national standards.

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Any comment:	All data will be kept for a minimum of 2 years following issuance of certified emission reductions or the end of the crediting period, whichever is later.
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Data / Parameter:	EG_y
Data unit:	MWh
Description:	Net electricity exported by the project activity in year y
Source of data to be used:	Plant records
Value of data	3,365
Description of measurement methods and procedures to be applied:	Joint meter readings will be taken at the interconnection point monthly by representatives from the project activity and PLN. This reading will act as the basis for calculation of emission reductions.
QA/QC procedures to be applied:	This can be cross checked against the electricity invoices. The meter at interconnection point will be calibrated as agreed upon in the PPA with PLN.
Any comment:	All data will be kept for a minimum of 2 years following issuance of certified emission reductions or the end of the crediting period, whichever is later.

Data / Parameter:	EG_{import}
Data unit:	MWh
Description:	Electricity imported by the project activity in year y
Source of data to be used:	Plant records
Value of data	--
Description of measurement methods and procedures to be applied:	Joint meter readings will be taken at the interconnection point monthly by representatives from the project activity and PLN.
QA/QC procedures to be applied:	This can be cross checked against the electricity invoices. The meter at interconnection point will be calibrated as agreed upon in the PPA with PLN.
Any comment:	All data will be kept for a minimum of 2 years following issuance of certified emission reductions or the end of the crediting period, whichever is later.

B.7.2 Description of the monitoring plan:

Internal Audits

An internal audit will be carried out every year to ensure that the monitoring parameters are being monitored in accordance with Section B.7.1.

Monitoring procedures

There will be three 8 hour shifts and the readings from energy meters will be taken on an hourly basis by the shift supervisor and recorded in logbooks. This hourly data will be signed off at the end of every shift by the engineer in charge of the shift and again at the end of each day by the power plant manager. The power plant manager will analyze the data every month and report to the head office.

Period of archiving

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The monthly data will be archived electronically at the end of the month and invoices of electricity sales will be maintained.

Training requirements

The suppliers of the equipments will train the staff in- charge during erection, to operate and maintain the equipments efficiently. Apart from this, the equipment supplier will provide complete manuals and documentation providing details for the maintenance schedule and the required activities associated with it. Employees will be given periodic training after the commissioning of the power plant to ensure proper monitoring of the parameters in Section B.7.1.

Calibration of equipments

The meters will be calibrated regularly by an independent third party and the calibration will be conducted according to national standards. The calibration certificates will be made available at the time of verification.

QA/ QC of monitored data

The monitored data will be reported through PT. Mandala Pratama Energi to Agrinergy Pte Ltd. on a monthly basis for the calculation and estimation of emission reductions. This data will be checked against initial estimates and a summary report will be provided quarterly by Agrinergy. If the project is not performing as expected or if there are any negative impacts on the volume of emission reductions obtained, on the basis of the monthly data being monitored, a report will be sent to PT. Mandala Pratama Energi outlining where the project is deviating in its generation of emission reductions and the immediate measures which need to be undertaken to maintain the expected generation of emission reductions from the operation of this project. Should there be significant changes to the set-up or operation of the plant, these will be notified to Agrinergy and amendments to the PDD will be requested through a DOE.

The uncertainty in data is low as the data will be regularly monitored by Agrinergy Pte Ltd.

All data will be kept for a minimum of 2 years following issuance of certified emission reductions or the end of the crediting period, whichever is later.

B.8 Date of completion of the application of the baseline and monitoring methodology and the name of the responsible person(s)/entity(ies)

29/05/2009

Varsha Tripathi, Agrinergy Pte Ltd, varsha.tripathi@agrinergergy.com

Bhawna Singh, Agrinergy Consultancy Pvt Ltd, bhawna.singh@agrinergergy.com

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SECTION C. Duration of the project activity / crediting period
C.1 Duration of the project activity:
C.1.1. Starting date of the project activity:

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No real action has as yet taken place in the implementation of the project activity. Equipment ordering is expected to begin in November hence start date is taken as:

01/11/2009²
C.1.2. Expected operational lifetime of the project activity:

>>

30 years-00months

C.2 Choice of the crediting period and related information:
C.2.1. Renewable crediting period
C.2.1.1. Starting date of the first crediting period:

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01/07/2010 or the date of registration (whichever is later)

C.2.1.2. Length of the first crediting period:

>>

7 y- 00 m

C.2.2. Fixed crediting period:
C.2.2.1. Starting date:

>>

Not Applicable

C.2.2.2. Length:

>>

Not Applicable

² This will be updated when there is some real action in the project activity implementation.

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SECTION D. Environmental impacts

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D.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:

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Referring to the Regulation of Minister of Environment No.11 Year 2006³, an Environmental Impact Assessment is not required for a hydroelectric power project whose capacity is less than 50 MW. Since the capacity of this project is only 0.5 MW, it does not require an EIA to be carried out. However Environmental Management Plan and Environmental Monitoring Plan were developed for the project activity.

The Upaya Pengelolaan Lingkungan Hidup (UKL) and Upaya Pemantauan Lingkungan Hidup (UPL) of the project activity have already been submitted by PT Mandala Pratama Energi and this has been approved by the Head of Environment Office of Banjarnegara Regency on 18/04/2009.

The project activity is a zero emission source and hence will not have any negative influence on the air and water quality during its operation. The environmental impact of the project activity is not significant since the production capacity is small.

D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:

The project activity will not result in any significant impact to the environment.

³ <http://www.menlh.go.id/popup.php?cat=201&id=2531>

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SECTION E. Stakeholders' comments

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E.1. Brief description how comments by local stakeholders have been invited and compiled:

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The stakeholders of this CDM project activity include the local population, local government who are involved in different roles at different stages in the project activity.

The local population is considered the major stakeholder with respect to the project activity. Comments and consent from the local stakeholders regarding the project activity have been sought through:

1. Publishing a notification of the project activity in a local newspaper “*Radar Banyumas*” dated 23/07/2009 by the project owner for inviting comments of local population.
2. Organising a stakeholder meeting at the project site on 28/07/2009 which was attended by local people. This included the Head of Rakit Village, Rakit Village Secretary and several Custom Heads and Society Representatives of Rakit Village. The villagers were informed of the company’s intention to install the hydropower plant and also the intention to seek CDM status for it. Comments/ feedbacks were invited from them. The minutes of meeting will be provided to the DOE during validation.

The project activity has obtained necessary approvals from:

S. No.	Stakeholder authority	Approval	Date
1	Governor of Banjarnegara Regency	Principal permit	28/07/2008
2	Department of Public Works	Utilization of Banjarcayana irrigation channel	25/09/2008
3	Governor of Banjarnegara Regency	Location permit	18/11/2008
4	Department of management of Serayu and Citanduy water resources	Utilization permit of PSDA land	18/12/2008
5	Head of permit services of Banjarnegara Regency	Construction permit	12/02/2009
6	Governor of Banjarnegara Regency	Extension of principal permit	04/082009

E.2. Summary of the comments received:

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Minutes of the meeting will be available to the DOE during validation and site visit.

E.3. Report on how due account was taken of any comments received:

>>

There were no negative comments received in the stakeholder consultation and the local people welcomed the implementation of the project activity.

CDM – Executive Board

Annex 1**CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY**

Organization:	PT. Mandala Pratama Energi
Street/P.O.Box:	Jl. Pangeran Antasari No. 20, Cilandak Barat
Building:	
City:	Jakarta
State/Region:	
Postfix/ZIP:	12430
Country:	Indonesia
Telephone:	+62 21 75905006
FAX:	+62 21 75905137
E-Mail:	--
URL:	--
Represented by:	
Title:	Director
Salutation:	Mr.
Last Name:	Fatahillah
Middle Name:	
First Name:	Ikrar
Department:	
Mobile:	--
Direct FAX:	+62 21 75905137
Direct tel:	+62 21 75905006
Personal E-Mail:	rakit@agrinergy.com

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Organization:	Agrinergy Pte Ltd
Street/P.O.Box:	10 Hoe Chiang Road
Building:	#08-04 Keppel Towers
City:	Singapore
State/Region:	
Postfix/ZIP:	089315
Country:	Singapore
Telephone:	+65 6592 0400
FAX:	+65 6592 0401
E-Mail:	
URL:	www.agrinergy.com
Represented by:	
Title:	Director
Salutation:	Mr
Last Name:	Atkinson
Middle Name:	
First Name:	Ben
Department:	
Mobile:	
Direct FAX:	+65 6592 0401
Direct tel:	+65 6592 0400
Personal E-Mail:	ben.atkinson@agrinergy.com

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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

No public funds have been used in the project activity.

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Annex 3

BASELINE INFORMATION

Please refer to Section B.4.

Annex 4

MONITORING INFORMATION

Please refer to section B.7.
