

THE GOLD STANDARD MICRO-SCALE SCHEME PROJECT DESIGN DOCUMENT FORM - Version 2.2

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SECTION A. General description of micro-scale project activity

A.1 Title of the micro-scale project activity:

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Title: Campion II Mini hydro power project ("The project")

Version no.: v2.3

Date: 04/01/2019

A.2. Project participants:

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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 participant (Yes/No)
Sri Lanka (Host)	Bogawantalawa Tea Estate PLC	No

A.3 Description of the micro-scale project activity:

A.3.1. Location of the micro-scale project activity:

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A.3.1.1. Host Country:

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Sri Lanka

A.3.1.2. Region/State/Province etc.:

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Central Province, Nuwara Eliya District

A.3.1.3. City/Town/Community etc:

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Bogawantalawa, Campion Estate

A.3.1.4. Details of physical location, including information allowing the unique identification of this micro-scale project activity:

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The proposed project is located at upper Kehelgamu Oya running through Campion Estate in Bogawantalawa in Nuwara Eliya District, Sri Lanka.

The weir point is located at co-ordinates 80° 42' E and 6° 52' 06" N. The physical location of the weir is proposed just downstream of the bridge across Kehelgamu oya near Campion bazaar. The physical location of the power house (co-ordinates 80° 40'56" E and 6° 52'46" N) is proposed at the right bank of Kehelgamu oya near the Bogawana factory.

Access to the project site is from the Colombo–Hatton Road and 150 km downstream of Bogawana factory. Fig. 01 below shows the location of Campion II Mini hydro power project.

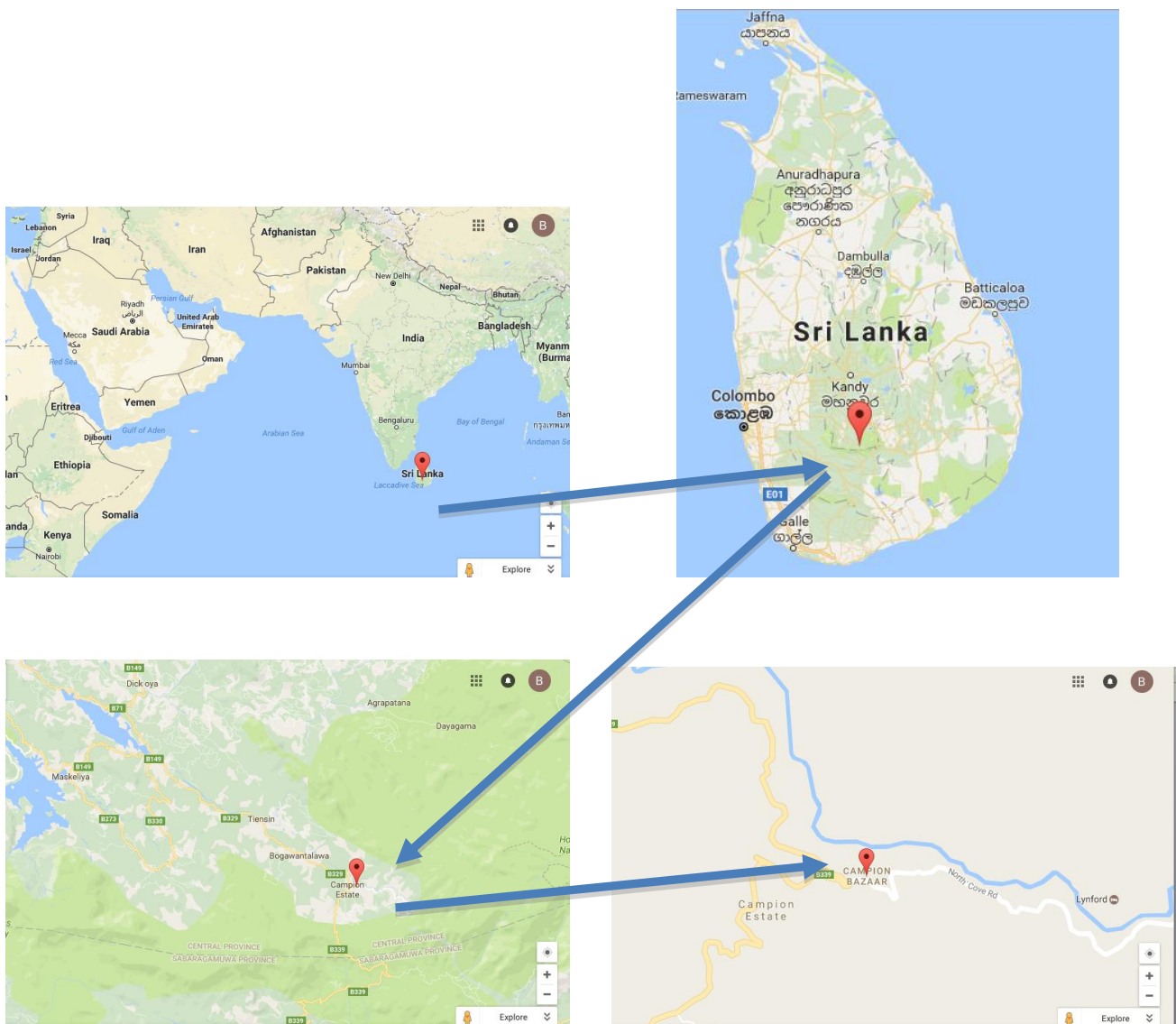


Fig. 01: Location of Power Plant

Fig.02 below shows the locations of the weir and the power house in the 1: 50,000 map. These are prepared based on the maps prepared by Survey Department of Sri Lanka³.

A.3.2. Description including technology and/or measure of the micro-scale project activity:

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The proposed project is an in-stream plant and therefore the water used will be released back to the same stream. The geographical and land use pattern at the site suggests that this project shall be a constructed to have approximately equal lengths of canal and penstocks for water conveyance. The water stream is partially blocked by building a weir and will be diverted via a channel along the bank of the river to reach the forebay tank. Then the water is carried down to the turbine via steel penstocks. After running through turbines, the tail water will be diverted back to the same stream. A 33 kV line will be built to make the grid connection. The power generated would be fed to the CEB grid. The installed capacity will be 1 MW and the expected average annual energy generation is in the range of 4.179 GWh.

Activities of the project consist of

- a) Initial feasibility study to determine the quantity and rate of water flow
- b) Topographical study to determine the optimum location for water intake and discharge
- c) Geological study to determine the location of water intake, water channel and power station etc.

The intake structure comprising of a weir and a headrace channel of about 1440 m in length and a forebay is used to take water from the stream to the powerhouse. According to the feasibility study report, there will be a 550 m long penstock connecting the forebay to the power house. The water in the penstock is made to drive the Francis horizontal turbines, which drive the alternators to generate electricity. Voltage level of the electricity generated is raised to 33 kV and connected to the national electricity grid through appropriate switchgear and protection systems.

Table 2 below gives the parameters of the equipment identified for this project.

Table 02: Technical Details of Campion II mini hydro power Plant (source: FSR 2015/03)

Campion II Mini hydro power project	Technical Specification	
General	Catchment Area	25 km ²
	Mean Flow	1.29 m ³ /s
	Design Flow	1.76 m ³ /s
	Gross Head	76 m
	Net Head	72 m
	Installed Capacity	1 MW
	Mean Annual Energy Generation	4.179 GWh

Weir & Intake	Type		Concrete Gravity
	Max. Height		1 m
	Length		18 m
Channel (intake pipe)	Type		Reinforced Concrete
	Length		1.05 m
	Flow area		1.6 m width * 1.4 m height
Penstock	Type		Spirally welded
	Length		550 m
Powerhouse	Size of building		
	Hydraulic turbines	Type	Francis horizontal (2 units)
		Rated flow	1.76 m ³ /s
	Generator	Type	Synchronous Generator

Most of the equipment such as turbine, alternator, electrical switchgear etc. will be imported. All civil works are to be carried out using locally available materials. This project will help transfer the technology from foreign countries to the host country. Therefore, by registering this as a Gold Standard project environmentally safe technologies can be transferred from developed countries to Sri Lanka, which is a developing country.

A.3.3 Estimated amount of emission reductions over the chosen crediting period:

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The estimated annual emission reduction is 3,013¹ tons CO_{2eq}, which is lower than 5,000 tonnes CO_{2e} per year, and therefore the project is classified as Micro-Scale project in accordance with the Gold Standard VER Manual thresholds.

A.3.4. Public funding of the micro-scale project activity:

>> *Please refer to ODA declaration form (Annex D)*

¹ Based on grid EF for Sri Lanka in 2016 (0.7210 tCO_{2eq}/MWh).

SECTION B. Application of an existing baseline and monitoring methodology or of a new methodology submitted as part of this project activity

B.1. Title and reference of the existing or new baseline and monitoring methodology applied to the micro-scale project activity:

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The project used the approved methodology “AMS-I.D. Grid Connected renewable electricity generation” (Version 18), EB81.

In line with application of the methodology the project draws on the following tools: “Tools for demonstration of additionality of small scale project activities, version 12.0” and; “Tool to calculate the emission factor for an electricity system” (version 05.0).

For more information regarding the methodology, please refer to <http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>

B.2 Justification of the choice of the methodology and applicability:

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The methodology AMS-I.D. (Version 18) is applicable to the proposed project:

1. The project activity is a newly-built renewable energy project (hydro power).
2. The project supplies electricity to grid that is or would have been supplied by at least one fossil fuel fired generating unit.
3. The installed capacity of the project is 1.0 MW, which is within the limit of 15 MW stipulated by the chosen (small-scale) methodology.
4. The project is not a combined heat and power (co-generation) project.

No	Eligibility Criteria	Project Activity	Criteria Met?
1	<p>This methodology is applicable to project activities that:</p> <ul style="list-style-type: none"> (a) Install a Greenfield plant; (b) Involve a capacity addition in (an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); 	The project activity is a green field plant	yes

	<p>or</p> <p>(e) Involve a replacement of (an) existing plant(s).</p>		
2	<p>Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:</p> <p>(f) The project activity is implemented in an existing reservoir with no change in the volume of reservoir;</p> <p>(g) The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m²;</p> <p>(h) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m².</p>	<p>No reservoir was built for this power plant</p>	<p>Not Applicable</p>
3	<p>If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.</p>	<p>The project comprises only the renewable components.</p> <p>The entire project activities are hydro turbines only.</p> <p>No other non-renewable components available</p>	<p>Not Applicable</p>
4	<p>Combined heat and power (co-generation) systems are not eligible under this category.</p>	<p>Project activity comprises renewable energy generation units based on hydro power.</p>	<p>Not applicable</p>

5	In the case of project activities that involve the capacity 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 ² from the existing units.	Project activity does not involve any addition of renewable energy generation units at an existing renewable power generation facility. This is a greenfield plant	Not applicable
6	In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW	this project is a green field power plant	Not applicable
7	In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as “AMS-I.C.: Thermal energy production with or without electricity” shall be explored	This is hydro power project	Not applicable

² Physically distinct units are those that are capable of generating electricity without the operation of existing units, and that do not directly affect the mechanical, thermal, or electrical characteristics of the existing facility. For example, the addition of a steam turbine to an existing combustion turbine to create a combined cycle unit would not be considered “physically distinct”.

8	In case biomass is sourced from dedicated plantations, the applicability criteria in the tool “Project emissions from cultivation of biomass” shall apply	This is a hydro power project	Not Applicable
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B.3. Description of the project boundary:

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According to methodology AMS-I.D (version 18), the project boundary encompasses the physical, geographical site of the renewable generation source. As to the proposed project, the boundary therefore is the project power plant including the water diversion structure, and the power house. The project replaces equivalent power generated from national electricity grid in Sri Lanka (“the national grid”).

B.4. Description of the baseline and its development as per the chosen methodology:

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According to methodology AMS-I.D. (version 18), the baseline of the project is the electricity produced by the proposed project multiplied by a combined margin (CM) which consists of the combination of operating margin (OM) and build margin (BM) of the national grid.

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 micro-scale project activity:

This step comes after the identification of the baseline. The project has been found additional by using the “Tools for demonstration of additionality of small scale project activities, version 12.0”.

The project was initiated originally by Champion Hydro Pvt Ltd in 2009. Initial Feasibility Study Report (FSR) was completed in 2009 and the total investment was estimated to be LKR 220 million. However, due to the difficulties in accessing the finance and length project approval process, it took nearly five years to sign the standard power purchase (SPPA) agreement. By the time SPPA was signed by the project developer, material, equipment and labour costs have been increased significantly. As such, the project developer conducted the revised FSR in 2015. Since the project investment has been increased from 220 mLKR in 2009 to 355 mLKR in 2015, and the project IRR dropped to 8.04% in 2015 from 35% in 2009. The the project IRR based on the revised FSR in 2015 (8.04 %) is lower than the expected return on investment of 12.15%³ (annual interest rate calculated as per tariff notification in 2009).

³ This has been calculated in accordance Tariff notification note issued by Sri Lanka Sustainable Energy Authority in 2009. An annual interest rate of $0.5 \times (\text{AWDR} + \text{AWFDR}) + 5.5\%$ has been used as the interest rate on debts, repayable in equal installments over six years. The Average Weighted Deposit Rate (AWDR) and the Average Weighted Fixed Deposit Rate (AWFDR) were taken to be the average rate of six months ending 28th February 2015 published by the Central Bank of Sri Lanka. The interest rate so calculated and used for the calculation of tariffs was 12.15% per year. This is more conservative given the fact that annual interest as of 29th July 2017 (at the time of starting of the project activity) will be 13.33%, which is higher than the assumed interest rate of 12.15%.

Date	Events
2009	Initial Feasibility study
09.09.2011	Obtained approval for the project activity from Agricultural Authority
10.05.2011	Obtained approval for the project activity from National Water Supply and Drainage Board
11.07.2011	Obtained no objection letter for the project activity from Irrigation department
05.10.2011	Obtained no objection letter for the project activity from Local Government
12.10.2011	Stakeholder consultation for IEE study
06.06.2012	The project participant submitted the Initial environmental examination report to the Central Environment Authority (CEA).
20.07.2012	Obtained the environmental approval for the implementation of the project activity. This is valid until 19.07.2015
17.01.2013	Obtained letter of intent for the project activity from Ceylon Electricity Board (CEB)
02.07.2013	Obtained energy permit for the project activity from Sri Lanka Sustainable Energy Authority
01.04.2014	The project participant signed the standardised power purchase agreement with CEB
19.05.2014	Obtained electricity generation licence for 20 years for the project activity from the Public utility commission of Sri Lanka
03.2015	Revised feasibility study report due to escalation of the material, equipment and labour costs
13.07.2015	Extension was requested for the environment approval letter from Central Environment Authority.
10.09.2015	Obtained the extension for Environment approval from CEA. This is valid until 19.07.2018.
26.02.2016	Sub lease agreement between Bogawantalawa Tea Estate PLC and Campion hydro Pvt Ltd has been entered into after considering the carbon credit benefits.
05.07.2016	The Construction contract was signed between construction company and the project developer.
25.07.2016	The EPC contract was signed between the project developer and the EPC contractor.
28.04.2017	Commercial operation of the project activity was started on 28.04.2017.

The table above clearly shows that the project owner took the potential of carbon credits into consideration before the project construction with the purpose of overcoming the barriers towards the implementation of the proposed project activity.

For the real and continuing actions to secure the carbon credits, the PP has hired a carbon credit consultant on 28th March 2017 to obtain the carbon credits from Gold Standard after considering the carbon credit benefits before signing the lease agreement on 26th February 2016..

Project additionality has been demonstrated using “Tool for demonstration of additionality of small scale project activities Version 12.0 ”

As per the small scale additionality tool, project participants shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers:

(a) Investment barrier: a financially more viable alternative to the project activity would have led to higher emissions;

(b) Technological barrier: a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the project activity and so would have led to higher emissions;

(c) Barrier due to prevailing practice: prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions;

(d) Other barriers: without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or capacity to absorb new technologies, emissions would have been higher.

As such, since the project activity faces investment barriers, option (a), investment barrier was used to demonstrate the additionality.

Identification of alternatives to the project activity consistent with current laws and regulations

Define alternatives to the project activity

The realistic and reliable alternatives available to the proposed project that provide outputs or services comparable with the proposed carbon fund project activity include:

Alternative 1: The proposed project activity undertaken without being registered as a carbon credit project activity;

Alternative 2: Construction of a fossil fuel-fired power plant with equivalent amount of annual electricity output or installed capacity;

Alternative 3: Construction of a new power plant from other renewable source from wind, biomass, and solar with equivalent amount of annual electricity output or installed capacity; and

Alternative 4: Provision of equivalent amount of annual power output by the national grid where the proposed project is connected into.

For Alternative 1, without carbon credits revenues, the project IRR is 8.04 %, which is lower than the benchmark rate 12.15%. Therefore, the project not undertaken as a carbon credit project activity satisfies Sri Lanka’s regulations, but is not economically attractive, and the Alternative 1 is not feasible. Refer to step 2 for more details of IRR.

For Alternative 3, other renewable energy resources (such as wind power, solar power, geothermal etc.) are relatively scarce within the national grid. This scenario is to construct renewable power plants, which can supply equivalent electricity annually as the project. Other renewable sources energy includes biomass, wind, and solar. However, those kinds of energy are strongly depended on climate and natural resources, and are still in the investigation phase and can bring only poor economic benefits, which cannot be operated without support from the national policies. Moreover, the utilization of biomass and wind power are just in the very beginning in Sri Lanka, therefore it's not feasible for the project owner to invest another renewable power plant with equivalent annual net electricity generation supplied to the grid. Thus Scenario 3 is not feasible.

The realistic and credible alternative scenarios to the project activity are Alternative 2 and 4.

Application of compulsory laws and regulations

The installed capacity of the project activity is 1MW. Considering the same amount of annual electricity generation, the alternative for the project should be a fuel-fired power plant with an installed capacity lower than 1MW. However, according to Sri Lankan's regulations (Long Term Generation plan prepared by CEB), construction of fuel-fired power plants with the installed capacity lower than 60 MW is not allowed. Therefore, Alternative 2 does not comply with Sri Lankan relevant laws and regulations and is not a feasible alternative.

Alternative 4 is practical and feasible, so the baseline scenario is the provision of an equivalent amount of annual power output by the national grid into which the project is connected.

Investment Analysis

Determine appropriate analysis method

According to the "Tool for investment analysis" (version 08), there are three options for applying the investment analysis. Option 1 simple cost analysis Option 2 investment comparison analysis or benchmark analysis.

Option 3 benchmark analysis

The proposed project will generate electricity sales in addition to carbon fund revenues, so Option 1 not applicable. The investment comparison analysis (Option 1) is only applied when the baseline is an invested project. In the case of the proposed project, the alternative scenario is for the national grid to produce the same amount of electricity, which is not a newly invested project. Therefore, the investment comparison analysis (Option 2) is not appropriate. As benchmark IRR (Financial Internal Return Rate) is available, Option 3 is chosen to demonstrate the additionality.

Apply benchmark analysis:

Justification of the benchmark⁴.

Considering the existing barriers for implementing hydropower generation project it is evident that generation of power in Sri Lanka by use of fossil fuel is business as usual. Project Proponent of the project activity has faced a significant investment barrier which is evident considering the computed

⁴ http://www.cbsl.gov.lk/htm/english/_cei/ir/i_4.asp?date=&Mode=2&Page=2

Internal Rate of Return (IRR) for the project activity without carbon finance benefits and comparing it with prevailing benchmark in Sri Lanka.

The Internal Rate of Return (IRR) of the project was estimated and compared with investment benchmark rate. The Project Proponent used 6 months Average Weighted Prime Lending Rate (AWPLR) published by the Central Bank of Sri Lanka as the benchmark for the purpose of comparison with after tax project IRR. The benchmark (AWPLR) used for this analysis is publicly available on the Central Bank of Sri Lanka website. Therefore, the use of this benchmark is in conformity with the clause 12 of the “Guidelines on the assessment of investment analysis, Version 05” which permits the use of local commercial lending rates as suitable benchmark for comparing with project IRR in an investment analysis.

The project proponent undertook the investment analysis for the project activity based on the standard power purchase agreement signed in 2014 and with capacity of 1 MW and found that the project IRR was 8.04% (FSR 2015), which is again significantly less than the benchmark rate of 12.15%⁵ (Tariff notification note issued by Sri Lanka Sustainable Energy Authority in 2009).

Calculation and comparison of financial indicators

Based on the above-mentioned benchmark, the calculation and comparative analysis of financial indicators for the proposed project are carried out as follows

S.No.	Parameters	Value	Source
1	Installed Capacity (MW_	1 MW	FSR 2015
2	Annual Estimated Electricity generation (GWh/year	4.179	FSR 2015
3	Plant Load Factor	47.71%	FSR 2015
4	Selling price LKR per kWh	10.02-19.28	SPPA
6	Operations & Maintenance cost (as a % of capital cost) for the first year	10.65 mLKR	FSR 2015
7	Yearly escalation in O&M cost	6.5% - 10.3%	SPPA
8	Total Project Cost (LKR Mn)	355	FSR 2015
9	Total Loan Amount (LKR Mn)	215	FSR 2015

⁵ This has been calculated in accordance Tariff notification note issued by Sri Lanka Sustainable Energy Authority in 2009. An annual interest rate of $0.5 \times (\text{AWDR} + \text{AWFDR}) + 5.5\%$ has been used as the interest rate on debts, repayable in equal installments over six years. The Average Weighted Deposit Rate (AWDR) and the Average Weighted Fixed Deposit Rate (AWFDR) were taken to be the average rate of six months ending 28th February 2015 published by the Central Bank of Sri Lanka. The interest rate so calculated and used for the calculation of tariffs was 12.15% per year.

10	Total Equity Amount (LKR Mn)	140	FSR 2015
11	Average rate of Interest on Loan	12.15%	Calculated as per Para 6.3 of the Tariff Explanatory Note dated 24/04/2009. Please refer "Interest calculation" sheet in the investment analysis.
12	Loan Repayment Period (years)	7.5	FSR 2015
13	Grace Period (years)	2	FSR 2015
15	Economic Service Charges (% of Revenue)	0.25% (During the tax exemption period)	Economic service Charge Act, No. 13 of 2006 (Sri Lanka) ⁶
		0.5% (After the tax exemption period)	
16	Depreciation per year (for tax purpose LKR Mn)	21.38	Calculated as per The Inland Revenue Act of 2006 ⁷
17	Residual value of assets at the end of 2036 (LKR Mn)	26.5	10% of the Asset value assumed for calculation
18	Tax rate	0-10%	Inland revenue act no.10 of 2006
19	Social Responsibility Levy (% of Income Tax)	1.5%	Finance Act no.05, 2005 (Sri Lanka) ⁸ & Finance (Amendment) Act No. 8 of 2008 ⁹

Sensitivity Analysis

In order to test the robustness of the conclusion made on the above investment analysis, evaluation has been carried out to ascertain how IRR or the project viability change with the change of key parameters such as project cost or power generation. In terms of the clause 20 and 21 of the annex 5 "Guidelines on the Assessment of Investment Analysis", version 05 issued by the EB in its 62nd meeting, sensitivity analysis need to be carried out only on variables which constitute more than 20% of either total project costs or total project revenue considering a + 10% variation in selected variables. In terms of these guidelines, the project proponent has identified variation in project cost, variation in power generation, variation in tariff and variation in O &M cost by 10% on either side for the sensitivity analysis. The project proponent has performed sensitivity analysis based on the tariff announced in 2009 (Table 13).

Sensitivity analysis of variation in project cost

⁶ <http://www.inlandrevenue.gov.lk/publications/Acts/ESC/ESCActNo.13%5BE%5D2006.pdf>

⁷ <http://www.inlandrevenue.gov.lk/publications/Acts/IR/IRActNo.10%28E%292006.pdf>

⁸ <http://www.inlandrevenue.gov.lk/publications/Acts/SRLV/FActNo.5%5BE%5D2005.pdf>

⁹ [http://documents.gov.lk/Acts/2008/Finance%20\(Amendment\)%20Act,%20No.%208/Act%20No.%208E.pdf](http://documents.gov.lk/Acts/2008/Finance%20(Amendment)%20Act,%20No.%208/Act%20No.%208E.pdf)

The sensitivity analysis of the 10% variation scenario of project cost, project revenue, power generation, electricity tariff, and O&M costs indicates that the project IRR does not reach the benchmark rate of 12.15%.

10 % change in Total Project Cost

Category	90%	95%	100%	105%	110%
Project Cost	11.55%	9.76%	8.04%	6.36%	4.70%

10 % change in annual electricity generation

Category	90%	95%	100%	105%	110%
Annual electricity generation	4.45%	6.33%	8.04%	9.64%	11.15%

10 % change in O&M Expenses

Category	90%	95%	100%	105%	110%
O&M Expenses	8.88%	8.48%	8.04%	7.54%	6.95%

Scenarios at which the IRR reaches to the benchmark of 12.15%

Category	Changes of the estimated value at which the project IRR reaches the benchmark (%)	Justification
Project Cost	-12%	This is very unlikely to go down given the fact that Sri Lanka Rupee has been steadily depreciating since the starting of the project activity. This had an impact on the project cost as the most of the equipment had to be imported and had to pay in USD.
Annual electricity generation	+12%	This is also unlikely to increase given the several years drought faced in Sri Lanka
O&M Expenses	-50%	Due to increase cost of living, this is also unlikely to decrease

B.6 Emission reductions:

B.6.1. Explanation of methodological options or description of new proposed approach:

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This project is a small scale, run-of-river hydropower plant, with 1 MW of installed capacity (below the 15MW threshold of small – scale CDM project), that displaces fossil fuel fired electricity generation from thermal power plant to the National Grid of Sri Lanka. This fulfills the requirement for applying methodology AMS 1.D. Version 18 for CDM small-scale projects. This section explains the procedure used for the calculation of emission reductions including baseline emission, project emission and leakage emission in terms of AMS I.D.

As per the AMS 1.D. Version 18, the emission reduction of this project was calculated using following procedure.

Emission Reductions:

The emission reduction by the project activity is denoted by,

$$ER_y = BE_y - PE_y - LE_y$$

Where,

ER_y - Emission reduction per annum by project activity in tCO₂ e/year

BE_y - Baseline emissions in tCO₂e/year

PE_y - Project emissions in tCO₂e/year

LE_y - Leakage in ton of tCO₂e/year

Since there will be no leakage emission and project emission anticipated from the proposed Kithulgala Hydropower CDM Project the Emission reductions are, $ER_y = BE_y$

Baseline Emission

As per the guidance provided in AMS I.D Version 17 (point 11) for this project the baseline emissions are the product of electrical energy baseline *EGBL_y* expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor as;

$$BE_y = EG_{BL, y} * EFCO_2, grid, y$$

Where: *BE_y*

Baseline Emissions in year *y* (t CO₂)

EGBL_y

Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year *y* (MWh)

EFCO_{2, grid, y}

CO₂ emission factor of the grid in year *y* (t CO₂/MWh)

Calculation of baseline emission factor

In accordance with the “Methodical Tool – Version 05.0.0 “ Tool to calculate the emission factor for an electricity system” base line emission factor can be calculated as:

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 (Version 05.0.0).

OR

(b) The weighted average emissions (in tCO₂e/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.

Of these two options, option A was used to calculate the baseline emission factor using Combined Margin (CM) and Operating Margin (OM) emission factor using following steps. ("EB 70 Annex 22, Methodical Tool – Version 05.0.0 "Tool to calculate the emission factor for an electricity system")

STEP 1. Identify the relevant electricity system

STEP 2. Choose whether to include off-grid power plants in the project electricity system (optional).

STEP 3. Select a method to determine the operating margin (OM)

STEP 4. Calculate the operating margin emission factor according to the selected method

STEP 5. Calculate the build margin (BM) emission factor

STEP 6. Calculate the combined margin (CM) emission factor

STEP 1. Identify the relevant electricity system

In Sri Lanka there is only one electricity transmission and distribution system which is owned and operated by state owned entity known as Ceylon Electricity Board (CEB). Kithulgala hydropower plant in this PDD will be connected to this network. Therefore for this analysis CEB electric power system was used.

STEP 2. Choose whether to include off-grid power plants in the project electricity system (optional).

Option 1: Only grid power plants are included in the calculation

Option 2: Both grid power plants and off-grid power plants are included in the calculation

In Sri Lanka off-grid power plants are not significant and therefore, Option 1 is used in the calculation.

STEP 3. Select a method to determine the operating margin (OM)

The operating margin emission factor (EF_{grid,OM,y}) can be calculated based on one of the following methods:

- (a) Simple OM, or
- (b) Simple adjusted OM, or
- (c) Dispatch Data Analysis OM, or
- (d) Average OM.

Of these, the Simple Operating Margin method can only be used where low-cost/must run resources constitute less than 50% of total grid generation in

- 1) Average of the five most recent years, or
- 2) Based on long term normal for hydroelectricity production.

As shown in the Table 07, the low-cost/must run power plant in Sri Lanka constitute only 44.87% of total grid connected power generation (taking as an average of power generation of five most recent years). Since low-cost/must run power plants contributes less than 50% of the total power generation in the country, simple OM method can be elected for the calculation of Operating Margin emission factor as demonstrated by following equation.

For the simple OM, the emissions factor can be calculated using either of the two following data vintages:

Ex ante option: A 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation, without requirement to monitor and recalculate the emissions factor during the crediting period, or

Ex post option: The year in which the project activity displaces grid electricity, requiring the emission factor to be updated annually during monitoring. If the data required calculating the emission factor for year y is usually only available later than six months after the end of year y , alternatively the emission factor of the previous year ($y-1$) may be used.

In this project, the Simple OM has been calculated EX-ANTE, using the data vintages for years y , as the full generation-weighted average for the most recent 3 years for which data are available at the time of PDD submission.

STEP 4. Calculate the operating margin emission factor according to the selected method

Simple OM: The Sustainable Energy Authority of Sri Lanka has calculated the CO₂ Operating Margin emission factor of the CEB grid

Parameter	Value	Unit	Source
Simple Operating Margin - 2014	0.6938	tCO ₂ /MWh	Annex 22 (Sri Lanka Energy Balance 2015), Page No: V

STEP 5. Calculate the build margin(BM) emission factor

The Sustainable Energy Authority of Sri Lanka has calculated the CO₂ Build Margin emission factor of the CEB grid for the year 2014.

Parameter	Value	Unit	Source
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Build Margin - 2014	0.7490	tCO ₂ /MWh	Annex 22 (Sri Lanka Energy Balance 2015), Page No: V
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STEP 6. Calculate the combined margin (CM) emission factor

The calculation of the combined margin (CM) emission factor ($EF_{grid,CM,y}$) is based on one of the following methods:

- (a) Weighted average CM; or
- (b) Simplified CM

The project proponent has opted for Option A *i.e.* estimation of Combined Margin by weighted average method

(a) Weighted average CM

The combined margin emissions factor is calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$$

Where:

$EF_{grid,BM,y}$ - Build margin CO₂ emission factor in year y (tCO₂/MWh)

$EF_{grid,OM,y}$ - Operating margin CO₂ emission factor in year y (tCO₂/MWh)

W_{OM} - Weighting of operating margin emissions factor (%)

W_{BM} - Weighting of build margin emissions factor (%)

The following default values should be used for w_{OM} and w_{BM} :

- Wind and solar power generation project activities: $w_{OM} = 0.75$ and $w_{BM} = 0.25$ (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods.
- All other projects: $w_{OM} = 0.5$ and $w_{BM} = 0.5$ for the first crediting period, and $w_{OM} = 0.25$ and $w_{BM} = 0.75$ for the second and third crediting period, unless otherwise specified in the approved methodology which refers to this tool.

Since this PDD is about a hydropower project weighting of OM and BM are selected as $W_{OM} = 0.5$ and $W_{BM} = 0.5$

Parameter	Value	Unit	Source
Simple Operating Margin - 2014	0.6938	tCO ₂ /MWh	Annex 22 (Sri Lanka Energy Balance 2015), Page No: V
Build Margin - 2014	0.7490	tCO ₂ /MWh	Annex 22 (Sri Lanka Energy Balance 2015), Page No: V
Weighting of OM	0.50		http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v5.0.pdf
Weighting of BM	0.50		http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v5.0.pdf
Combined Margin	0.7210	tCO ₂ /MWh	Annex 22 (Sri Lanka Energy Balance 2015), Page No: V

Project Emissions (PE_y):

For most renewable energy project activities, PE_y = 0

The project activity has no plan to use diesel generator sets.

Therefore

PE_y = 0

Leakage (LE_y):

As per category AMS I.D/ Version 17, leakage is to be considered only if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity. Since this does not apply for the project activity, there is no leakage associated with the project activity and therefore, leakage is zero.

LE_y = 0

Emission Reductions

Since there are no project emissions and leakage emissions, the emission reductions by the project activity are given by the following formula:

$$ER_y = BE_y$$

Where,

ER_y - Emission reduction per annum by project activity in tCO₂e/year

BE_y - Baseline emissions in tCO₂e/year

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

>> (Copy this table for each data and parameter)

Data / Parameter:	EF_{grid,OM,y}
Data unit:	tCO ₂ /MWh
Description:	Operating margin CO ₂ emission factor for grid connected power generation in year y.
Source of data used:	Grid Emission factors published by Sustainable Energy Authority of Sri Lanka Annex 22 (Sri Lanka Energy Balance 2015), Page No: V
Value applied:	0.6938
Justification of the choice of data or description of measurement methods and procedures actually applied:	Calculated as per the “Tool to calculate the emission factor for an electricity system” as 3-year generation weighted average using data for years 2012,2013 and 2014. The data are obtained from Grid Emission factors published by Sustainable Energy Authority of Sri Lanka.
Any comment:	For the calculation of Baseline Emission

Data / Parameter:	EF_{grid,BM,y}
Data unit:	tCO ₂ /MWh
Description:	Build margin CO ₂ emission factor for grid connected power generation in year y.
Source of data used:	Grid Emission factors published by Sustainable Energy Authority of Sri Lanka Annex 22 (Sri Lanka Energy Balance 2015), Page No: V
Value applied:	0.7490
Justification of the choice of data or description of measurement methods and procedures actually applied:	The value applied is taken from Grid Emission factors published by Sustainable Energy Authority of Sri Lanka is an official source which is made publicly available. (Through Annual Publication named “Sri Lanka Energy Balance”) (Annex 22)

Any comment:	For the calculation of Baseline Emission
--------------	--

Data / Parameter:	$EF_{grid,CM,y}$
Data unit:	tCO ₂ /MWh
Description:	Combined margin CO ₂ emission factor for grid connected power generation in year y.
Source of data used:	Grid Emission factors published by Sustainable Energy Authority of Sri Lanka Annex 22 (Sri Lanka Energy Balance 2015), Page No: V
Value applied:	0.7210
Justification of the choice of data or description of measurement methods and procedures actually applied:	The value applied is taken from Grid Emission factors published by Sustainable Energy Authority of Sri Lanka is an official source which is made publicly available. (Through Annual Publication named “Sri Lanka Energy Balance”) (Annex 22)
Any comment:	For the calculation of Baseline Emission

B.6.3 Ex-ante calculation of emission reductions:

>>

Calculation of Baseline Emission:

$$BE_y = EG_{BL,y} * EF_{CO_2, grid, y}$$

Where: BE_y Baseline Emissions in year y (t CO₂)

EG_{BL,y} Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)

EF_{CO₂, grid, y} CO₂ emission factor of the grid in year y (t CO₂/MWh)

Table 08: Calculation of Baseline Emission

Parameters	Value	Unit
Plant Capacity	1	MW
No. of operating days (24 Hrs.Operation)	365	days
PLF as per Feasibility Study report 2015	47.71%	%

Gross Energy Generation	4179	MWh
Net Electricity Generated (for Grid Supply)	4179	MWh
Grid Emission Factor (CEB Grid)	0.7210	tCO ₂ /MWh
Baseline emission	3,013	tCO ₂ /year

Baseline emission = 3,013 tCO₂/year

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

>>

Year	Estimation of project activity emission (tCO ₂)	Estimation of baseline emissions (tCO ₂)	Estimation of leakage (tCO ₂)	Estimation of overall emission reductions (tCO ₂)
Year 1	0	3,013	0	3,013
Year 2	0	3,013	0	3,013
Year 3	0	3,013	0	3,013
Year 4	0	3,013	0	3,013
Year 5	0	3,013	0	3,013
Year 6	0	3,013	0	3,013
Year 7	0	3,013	0	3,013
Total (tCO ₂)	0	21,093	0	21,093

B.7 Application of a monitoring methodology and description of the monitoring plan as per the existing or new methodology applied to the micro-scale project activity:

B.7.1 Data and parameters monitored:

(Copy this table for each data and parameter)

Data / Parameter:	EG_{BL,y}
Data unit:	MWh/year
Description:	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y
Source of data to be used:	<p>Separate monthly invoice issued by the CEB to the power developer certifying the receipt of power from the power plant based on the export meter reading and the import of power from the CEB grid based on the import meter reading.</p> <p>The net electricity supplied to the grid calculated as the difference between the export and import.</p>
Value of data	4,179
Description of measurement methods and procedures to be applied, inc. frequency:	<p>The electricity exported to the grid will be measured by the main meter and check meter installed at the power plant.</p> <p>The electricity imported to the grid will be measured by the main meter and check meter installed at the power plant site.</p> <p>Both the readings will be recorded monthly at an agreed date and time by both the PP and CEB in the presence of PP representatives and personnel from CEB.</p> <p>Based on the readings, invoices will be issued for export and import of electricity separately.</p> <p>The main and check meters are installed and sealed by the CEB. Only main meter readings will be taken into account and in case of main meter failure check meter readings will be considered for that particular month.</p> <p>Continuous Monitoring Monthly recording</p>
QA/QC procedures to be applied:	<p>Ceylon Electricity Board (CEB) will install a main meter and if there is a failure of that meter a backup meter (check meter) reading will be taken.</p> <p>Accuracy: Acceptable to CEB - Accuracy class 1 as specified by Ceylon Electricity Board.</p> <p>Calibration of the above meters will be done once a year.</p> <p>In cases where the CEB does not initiate meter calibration in line with the 1 year calibration frequency of the main meter, monthly energy reading of the main and check meters will be compared from the due date of the calibration of the main meter. Then, lowest out of two readings will be taken as the monthly net electricity supplied to the grid during the delayed calibration period. For the period of delayed calibration, the amount of net electricity supplied to the grid will be adjusted according to the guidelines provided in appendix-calibration of CDM validation and verification standard for Project</p>

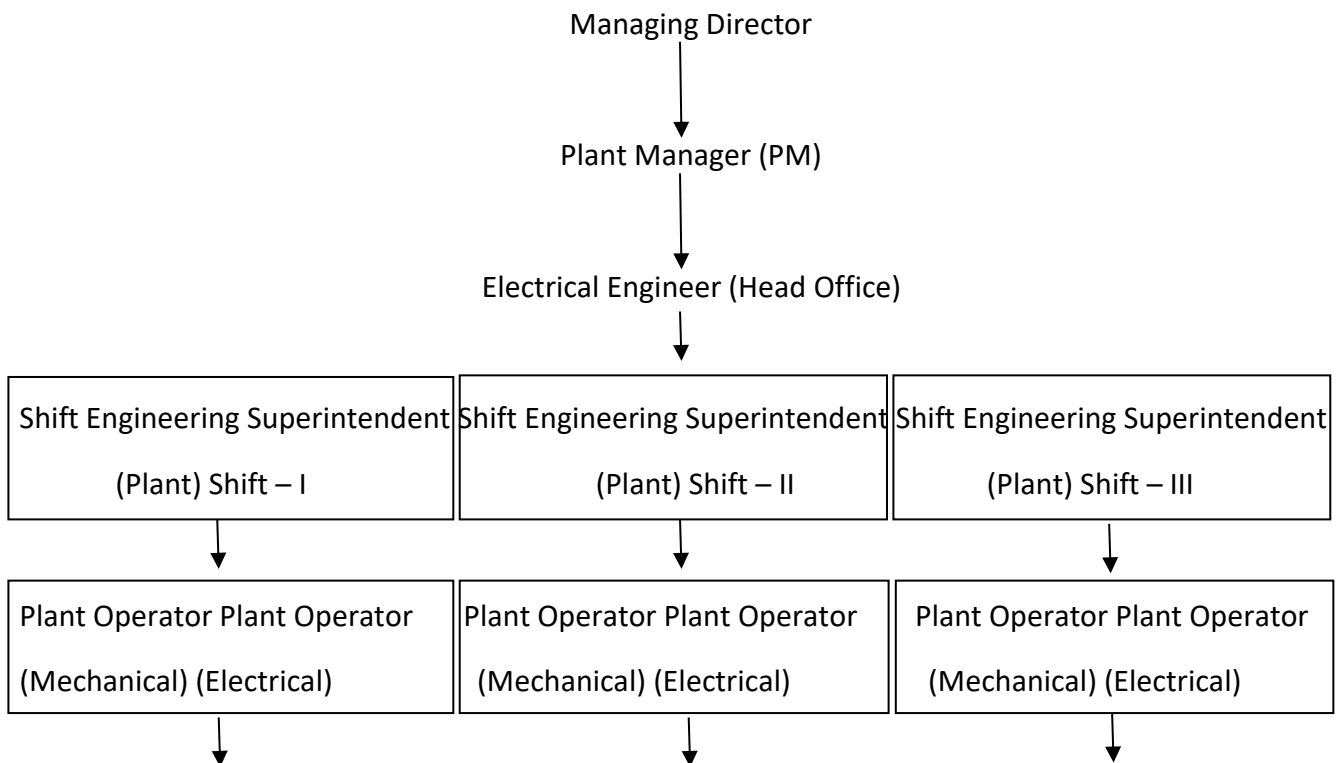
	Activities (version 02.0).
Any comment:	Net electricity generation will be measured in kWh and converted into MWh
B.7.2 Description of the monitoring plan:	

>>

Monitoring Organization

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data would rest with the Plant Manager (PM) of Campion II Hydro Power Plant. A team of experienced personnel in various disciplines will assist the Shift Engineering Superintendents in plant operation, measurements and management. The primary responsibility of the team is to measure, monitor, and record and report the information on various data items to the Engineer-in-Charge, in accordance with the applicable standards. The responsibility of review, storage and archiving of information in good condition would lie with the PM. The PM would undertake periodic verifications and onsite inspections to ensure the quality of the data collected by the team and initiate steps in case of any abnormal conditions. An internal verification report would be prepared for review by the PM, which would be later submitted for verification by an independent entity (DOE). The team including the Engineer-in-Charge would be appointed by the PM in advance before the start of project operations. The Engineer-in-Charge would report to the PM and seeks guidance in case of conflicts or difficulties in order to maintain the monitoring organization in good spirit.

Organization Chart



Helper

Helper

Helper

Parameter Required Monitoring

This monitoring plan would require monitoring of all parameters indicated in section B.7.1 of the PDD. Necessary documents required for verification of the data would be maintained for later archiving. Using the power exported to the grid, emission reductions would be calculated as illustrated in Section B 6.3. Emission reductions generated by the project would be monitored at regular intervals and would be reported to the Managing Director.

Procedures for training of monitoring personnel

The project would employ qualified and experienced persons for plant operation. Basic personnel to deal with monitoring of parameters are Shift Engineering Superintendents. The project would maintain standard log sheets and formats to record the monitoring parameters. The persons would be given proper training to maintain the plant records. The Engineer-in-charge of the Plant would be the designated person to verify, compile and archive all the monitored data. The parameters to be monitored during the crediting period would be provided in a tabular format to the designated person. The Shift Engineering Superintendents and the Engineer-in-charge of the Plant would be provided necessary training with respect to maintenance of the relevant monitoring records to enable him/her to deal the monitoring independently. The training would be provided to the monitoring personnel for monitoring of the following parameters:

- Electricity Export
- Gross electricity generated
- Periodical calibration of monitoring equipment

Procedures for documentation and storage

Operations of the hydropower project will be overseen by the Shift Engineering Superintendent (ES) of the company. The company will have three Shift Engineering Superintendent (ES) for each of the three shifts. The Shift Engineering Superintendent (ES)'s position will be occupied by qualified electrical engineers who have obtained necessary training in plant operations, data monitoring, report generation etc. For the smooth operations of the plant, the company will have Two Plant Operators (Mechanical and Electrical) and one helper for each of three shifts to help the shift Engineering Superintendent. The Shift Engineering Superintendents would record the parameters every day during the operation of the plant. Since the project is a hydropower project, only the following energy related data are to be monitored: Gross Electricity generation, Energy Export and import. The Energy meter readings would be taken at the end of each shift at a designated time every day to ensure constant recording frequency of parameter. The recorded parameters would be documented every day in the standard log books maintained at the plant. The day to day records would be verified by Engineer in charge, compiled and documented for preparation of internal verification reports. The net electricity exported to the grid will be recorded from the export meter installed within the premises, jointly with the representatives of Ceylon Electricity Board in the last week of each month. This reading will be taken as the basis for raising invoice on the CEB for the payment against net electricity exported to the grid. The energy imported from the CEB grid is recorded in the import meter installed by the CEB for

billing the project activity for the electricity imported from the CEB grid. This record will be maintained by the project proponent at the project site as well as at the head office.

Procedure to increase accuracy and completeness

Qualified electrical superintendents record electricity meter reading at the end of each shift at a designated time every day to ensure constant recording frequency of the parameters. The recorded parameters are documented in the standard log books and those are verified by the Electrical Engineer. PP has no intention to use diesel generator in the plant. Therefore, diesel fuel consumption is not required to monitor.

Internal audits

The company will introduce an internal verification system for documentation and safe storage of data. Internal verification would be carried out as per the monitoring plan and whenever necessary. An internal verification report would be prepared for review by the PM. The PM would verify the records independently with reference to the power exported and imported. Internal verification reports are the basic documents for the monitoring and storage of plant operational data. The Managing Director of the company will visit the plant once in a month and conduct an internal audit of various monitoring parameters of the project. The Managing Director will review all safety installations, operating procedures, monitoring records, etc. and will discuss any corrective action to be taken for the smooth functioning of the plant.

Procedures for Corrective actions

The parameters to be monitored during a crediting period would be compiled as internal verification report for every quarter of each crediting year and submitted to the Managing Director for review. The parameters include the Gross generation, Auxiliary consumption, Energy export, and Import. Based on the verification report submitted by Shift Engineering Superintendents the Engineer-in-Charge would assess the performance of plant. The PM would discuss and recommend necessary mechanism to improve the operational efficiency of the plant and directs the respective person to rectify the problem.

QA & QC Procedures

The projects would employ such equipment or instruments that would measure, record, report, monitor and control of various key parameters of the plant. These monitoring and controls would be the part of the Control Systems of hydroelectric plant. For measuring the energy exported / imported main meter and a check meter as required would be in service. The check meter reading will be used to measure electricity export/import in case of failure of the main meter. The CEB officials will replace the main meter immediately on PP request. Both the meters would be calibrated and sealed at least once a year as per the CEB standard. The continuous and accumulated readings of SCADA and cumulative meter readings are compared and when any deviation is found the meter will be checked for defects. The defective meters will either be calibrated or replaced with the new meter if the meters are beyond the range of calibration. Records of these test certificates would be maintained for verification. Hence, high quality is ensured with the above parameters. Delivery records would be used and kept for checking the consistency of the recorded data.

Emergency Preparedness Plan

The emergency plan envisaged in the monitoring plan is the failure of both meters simultaneously. In that case the PP will not consider the emission reduction for that particular period even though the electricity is supplied to the grid.

Data Storage & Archiving

All the data items monitored under the monitoring plan would be kept for 2 years after the end of crediting period or the last issuance of CERs, for this project activity, whichever occurs later. Methodology proposed to be adopted for determining base line emission factor is the combined margin of the generating mix in the CEB grid system, which represents the intensity of carbon emissions of the grid system. The baseline emission factor would be adopted from the CEB published generation data for the latest available year for the CEB grid and the same would be used for the future projection and would be reviewed each year based on data published by the CEB. The monitored data would be presented to an independent verification agency or DOE to whom verification of emission reductions is assigned.

Maintenance of Equipments

All the equipments used in the project activity will undergo scheduled maintenance as specified in the operational manual of the equipment supplier. The PM is responsible to oversee the maintenance activity on periodic basis.

<p>B.8 Date of completion of the application of the existing or new baseline and monitoring methodology and name of the responsible person(s)/entity(ies)</p>
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>>

20.04.2017

H.M. Buddika Hemashantha

Chief Executive Officer, Climate Smart Initiatives (Pvt) Ltd (ClimateSI)

buddika@climatesi.com

<p>SECTION C. Duration of the project activity / crediting period</p>
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<p>C.1 Duration of the project activity:</p>

<p>C.1.1. Starting date of the project activity:</p>

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05.07.2016 (Date at which the construction agreement was signed between the project developer and construction company)

C.1.2. Expected operational lifetime of the project activity:

20 years

C.2 Choice of the crediting period and related information:

C.2.1. Renewable crediting period

Renewable

C.2.1.1. Starting date of the first crediting period:

Expected data: 12.05.2017 (date at which the project design document and passport were submitted for pre-feasibility assessment)

C.2.1.2. Length of the first crediting period:

7 years, Renewable 2 more times

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

>> N/A

C.2.2.2. Length:

>> N/A

SECTION D. Stakeholders' comments

As this project is a retroactive project, the stakeholder consultation could not be conducted according to Gold Standard Rules.

However, stakeholders have been invited to comment on the project activity during the construction and as part of Initial Environment Examination (IEE). The following stakeholders were invited:

1. 4 Union leaders of the Bogawana Estates (representatives of labours),
2. Leader of youth society,
3. Manager of the Bogawana estate
4. Local policy makers and representatives of local authorities

The stakeholders requested to renovate the existing Kovil in the Bogawana Estate, job opportunities for the labours, change the channel path due to potential impact of the tea plantation.

The participants did not mention any negative impact upon the environmental parameters such as soil, water quality and quantity, etc. Moreover, everyone agreed that the project would be beneficial to both the environment and their communities and expect positive social benefits.

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

Following the procedures and guidance in the Gold Standard documentation, a “Stakeholder Feedback Round” (SFR) has been organized for the “Campion II Mini-hydro Power Project of Bogawantalawa Tea Estate PLC”.

The invitation organization and the meeting have been carried out according to the:

Gold Standard V.2 Toolkit and its annexes.

There has not been any kind of discrimination (based on sex, gender, political beliefs, religion, social status etc.) in the selection of the local stakeholders and all stakeholders are invited to the SFR without any kind of filtering out or prejudices to allow stakeholders to voice their concerns and comments about the Project freely.

The invitation to the SFR is carried out using different modes of communication:

Direct invitations to identified stakeholders

Cat. Code	Organization (if relevant)	Name of invitee	Way of invitation	Date of invitation	Confirmation received? Y/N
A	Bogawana Estate	Nalindu De Alwis	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	S.N.Liyanage	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	Sanmugan	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	V.Kalaichelvan	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	S.Sulosana	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	Sudaralingam	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	B.Krishna moorthi	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	M.Lavanya	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	M.Raja	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	P.Ashok Kumar	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	V.Manoharam	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	M.Chantan	Visit & Call	1st Nov 2017	Y
A	Bogawana Estate	R.Mageshwaran	Visit & Call	1st Nov 2017	Y

A	Bogawana Estate	J.Ramalayan	Visit & Call	1st Nov 2017	Y
B	Bogawanthalawa	Thusitha Bandara	Visit & Call	1st Nov 2017	Y
C	Save the Children	Mr. Aaron K. Hawkins	Visit &Call	1st Nov 2017	
C	Save the Children	Dr.K. Rayi	Visit &Call	1st Nov 2017	
D	Lanka Mother and Child Foundation	Ms.S. Rajarammohan	Visit &Call	1st Nov 2017	
D	CARE International	Mr. S Prabhakaran	Visit &Call	1st Nov 2017	
E	CEA	Mr. S. Wattegoda	Visit &Call	1st Nov 2017	
E	Range Forest Office	Mr.P. Yellegrama	Visit &Call	1st Nov 2017	
F	Soil Scientist	Mr.S.Thilakarathna	Visit &Call	1st Nov 2017	

Public invitation (internet: Gold Standard Registry)

“Please note that GS 5923 has been uploaded on 11th September 2017 for 60 days SFR, which will end on 10th November. Herewith you will find the link for your feedback.

https://mer.markit.com/br-reg/public/project.jsp?project_id=10400000012689

please confirm the receipt of this e-mail.”

All the international invitees were separately invited to comment the project.

Text of invitations

1st November 2017

Dear Sir/Madam,

STAKEHOLDER FEEDBACK ROUND FOR CAMPION II MINI HYDRO POWER PROJECT IN SRI LANKA BY BOGAWANTHALAWA TEA ESTATE PLC AND CAMPION HYDRO PVT LTD

Bogawanthalawa Tea Estate Plc (“Bogawanthalawa”) is implementing a Gold Standard Voluntary Emissions Reduction (VER) project, which involves increasing share of non-conventional renewable energy share in Sri Lanka.

The proposed project is an in-stream plant and therefore the water used will be released back to the same stream. The power generated would be fed to the CEB grid. The installed capacity will be 1 MW and the expected average annual energy generation is in the range of 4.179 GWh.

As a Gold Standard VER project, it is a requirement that the project meets the sustainable development criteria for the host country statutory regulations. The key stakeholder’s requirements for the project have also got to be identified and adequately addressed. How the stakeholder requirements have been met will be discussed during the stakeholder feedback round. In addition, a site visit will be conducted together with the stakeholders participated.

The purpose of this letter is to invite you to a stakeholder feedback round which is to be held in our XX office on 10th November 2017 starting from 10:00 until 14:00. During the meeting, the project details, including any anticipated positive and negative impacts, and the planned mitigation measures, status of the implementation of the measures, feedback received from Gold Standard secretariat, and additional measures to be taken will be presented to the participants who will then be requested to give their feedback on the project.

In case of any need for the further clarification, please contact the undersigned.

Thank you,

Yours sincerely,

Thusitha

Agenda of the meeting

1. Introduction of participants
2. Introduction and background to the meeting, climate change and Gold Standard process and requirements - Buddika Hemashantha, ClimateSI
3. Overview of Campion II Mini Hydro Power project - Thusitha Yapa, GM, Bogawanthala Tea Estate Plc
 - a. Background
 - b. Objectives

- c. Description
- d. Project benefits and impacts
- e. Project implementation status
- 4. Comments and feedback from participants
- 5. AOB
- 6. Site visit to Campion II Mini Hydro Power project
- 7. End

D.2. Summary of the comments received:

<u>Stakeholder Comment</u>	<u>Assessment</u>	<u>Response to Comment</u>
to renovate the existing Kovil in the Bogawana Estate		Developer is happy to contribute this activity as a CSR Project
Provide the job opportunities for the labours	Employment	Developer Agreed and currently 8 labourers from the community are employed in the commissioned power plant
Install the net on the forebay	It is the safety issue	Developer agreed to install the nets, Though the forebay is in a private Location and inaccessible normally.

List of Participants for the Stakeholder Feedback Round:

Date and time- 10th November 2017 10.00 -14.00			
Location- Office			
Name of Participant, Job/Position	Male/Female	Organization	Contact Details
In the community			

Nalindu De Alwis	Male	Bogawana Estate	
S.N.Liyanage	Male	Bogawana Estate	
Sanmugan	Male	Bogawana Estate	
V.Kalaichelvan	Male	Bogawana Estate	
S.Sulosana	Female	Bogawana Estate	
Sudaralingam	Male	Bogawana Estate	
B.Krishna moorthi	Male	Bogawana Estate	
M.Lavanya	Male	Bogawana Estate	
M.Raja	Male	Bogawana Estate	
P.Ashok Kumar	Male	Bogawana Estate	
V.Manoharam	Male	Bogawana Estate	
M.Chantan	Male	Bogawana Estate	
Mansoor	Male	Bogawana Estate	
R.Mageshwaran	Male	Bogawana Estate	
M.Jashindan	Male	Bogawana Estate	
J.Ramalayan	Male	Bogawana Estate	
Thusitha Bandara	Male	Bogawanthalawa	

D.3. Report on how due account was taken of any comments received and on measures taken to address concerns raised:

Installation of Safety net on forebay tank

During the stakeholder feedback round, a net on the forebay tank was requested by the stakeholders concerning the safety of the people. Though the forebay system is located in a private location and the location is not on widely used area of the estate, People are attracted towards the structure. However, the developer agreed to install the net on the forebay tank and headrace canal.

Renovation of the Temple on the Estate Premises

Stakeholders also requested that the temple in the estate premises has to be renovated. Accordingly, the developer has agreed to do so as a CSR project on their behalf.

Job opportunity for the People around the Location of the project

During the construction of the project, around one hundred workers were employed from the estate community.

Now after the commissioning of the plant, eight workers are employed from the community on a five-year contract and they will be permanently appointed thereafter, until their retirement age of 65 Years

D.4. Report on the Continuous input / grievance mechanism:

- As part of the grievance mechanism, a record book is being kept at the estate office, which can be accessed by the stakeholders at any time.
- The complaints can also be registered through e-mail.
- The usual way of complaining through the management hierarchy of the estate is also remains.
- Furthermore, e-mail of GS (info@goldstandard.org) as well as the GS telephone number +41 (0) 22 788 7080 are printed and posted on office notice board as part of the grievance mechanism.

	Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)	Justification
Continuous Input / Grievance Expression Process Book	As part of the grievance mechanism, a record book is being kept at the estate office, which can be accessed by the stakeholders at any time.	This is the most practical way to get the input from the stakeholders. Bogawana Estate has been using such books since last few years to get the comments and feedback from the stakeholders
Telephone access	+94 718 510 116, +94 775 311 131	
Internet/email access	thusithayapa@bpl.lk	
Nominated Independent Mediator (optional)		
Gold Standard	TP: +41 (0) 22 788 7080 E-Mail:	Gold standard e-mail and telephone number are printed and pasted on the office notice board as a part of the grievance mechanism. GS is a

	info@goldstandard.org	neutral body in case the stakeholders feel reluctant to submit complains to the developer about the project. Also this can be an easily accessible mechanism for the global stakeholders as well.
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All issues identified during the crediting period through any of the Methods shall have a mitigation measure in place that should be added to the monitoring plan.

D.5. Report on stakeholder consultation feedback round:

Stakeholder feedback round report has been enclosed as a separate report

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	Bogawanthalawa Tea Estate PLC
Street/P.O.Box:	No. 153, Nawala road
Building:	
City:	Narahenpita, Colombo
State/Region:	Western Province
Postfix/ZIP:	
Country:	Sri Lanka
Telephone:	
FAX:	
E-Mail:	
URL:	
Represented by:	
Title:	Head of Sustainability and Research & Development
Salutation:	Mr.
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Annex 2 - Information regarding Public Funding

Project financing for this project activity will not use Official Development Assistance (ODA) Funds as defined in the Gold Standard Manual for Project Developers. There are no loans or grants being provided by International Finance Institutions, which include ODAs.

Copies of these documents will be submitted to the DOE upon the site visit.