

ANNEX R – PASSPORT TEMPLATE

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SECTION A. Project Title

[See Toolkit 1.6]

Title: Adavikanda, Kuruwita Division Mini Hydro Power Project

Date: 07/10/2017

Version no.: 01

SECTION B. Project description

[See Toolkit 1.6]

Estimated project start date: The start date of the project activity is 21/01/2008, it corresponds to date of Signing of Contract for Penstock clearing, transportation & painting with M/s APS & Liyanage (Pvt.) Ltd).

The main purpose of this project activity is to generate electricity from a small-scale hydropower plant and supply of power generated to the Sri Lankan national utility grid which is Ceylon Electricity Board. Alternate Power Systems (Pt.) Ltd. is the promoter of the proposed project activity. The project activity involves installation of run-of-river 6.5 MW mini hydro power plant in Sri Lanka.

The generated power from this project activity will be supplied to the grid. The generation of electricity from hydro power is a clean technology as there is no fossil fuel fired or no GHG gases are emitted during the process. Therefore, the project activity led to reduction in GHG emissions as it displaces power from fossil fuel based electricity generation in the regional grid.

The project will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 13,483 tCO₂e per annum, thereon displacing 19,929 MWh/year amount of electricity from the generation-mix of power plants connected to the electricity grid, which is mainly dominated by thermal/fossil fuel based power plant. The project leads to reduction in GHGs and achieve sustainable development of the host country.

The Project activity will contribute to the sustainable development of Sri Lanka in the following ways:

Economic dimension

The project activity contributes to sustainable development by generating economic growth in the region; conserving natural resources by substituting fossil fuels used power generation facilities. This can help Sri Lanka to reduce its overall fossil fuel consumption, thus improving energy security.

For the construction, the Project employs only local residents for the semi-skilled and un-skilled jobs and maximum extent possible for the skilled jobs. This will boost the local economy and overall income of local people.

Environmental dimension

The renewable electricity generated by the project will displace electricity produced by fossil fuel power plants on the grid. By displacing the electricity generated with fossil fuel in the local grid, the

Project activity will also reduce GHG emissions. The project activity will reduce greenhouse gas emissions in Sri Lanka compared to a business-as-usual scenario.

Further, the electricity produced by the project will displace electricity produced by fossil fuel power plants on the grid, leading to lower overall emissions of SO_x and NO_x from the grid as a whole.

Social dimension

The project activity will also have other social benefits, as it will boost employment opportunities and as also increase income of local people. The Company encourages local residents to upgrade their skills by attending vocational training courses and assist them to pursue such skill advancing initiatives.

At the request of the local stakeholders the Company constructed a bridge and a proper access road over the River Kuru Ganga connecting the two villages called Advikanda and Paladeniya. In the past, the residents were using a small foot bridge which connects the two villages. The proposed bridge and the connecting road system will be a huge benefit to residents of two villages. With the completion of the proposed bridge, the Lorries can travel to the Paladeniya village and the local farmers now need not waste their time carrying goods over their heads and shoulders.

In addition, the general public at large including the local residents and communities where the project is implemented will be indirectly benefited by greater availability of clean electricity in the national grid which would otherwise being met through grid connected fossil fuel based power plants.

The run of the river hydro power technology is the production of power through use of the gravitational force of falling or flowing water. The technology adopted for the project activity is environmentally safe and sound technology.

Technical Specifications:

Hydrology

Catchments Area at Intake Site	:	19.5 km ²
Catchments rainfall	:	4900 mm
Design Discharge	:	6m ³ /sec (3x2.0 m ³ /sec)
Design Flood Discharge	:	170 m ³ /sec (once in 100 years)

Waterways

Total Length	:	300m
Structures	:	Channel – Boxed

Intake - (near outfall of Erathna Project)

Type of Intake	:	Side Intake
Size of Intake Opening	:	3.6 m wide and 1.5 m high with Open channel, supported on columns
Type	:	Rectangular – Box
Length	:	310 m
Size	:	3.1 m wide and 1.5 high, internally

Forebay / Sedimentation Tank

Capacity of Forebay	:	1000 m ³
Length excluding transition	:	18 m
Width	:	6 m
Depth	:	3.8 m

Penstock

Material	:	Steel Penstock
Length of Main Pipe	:	2100 m
Size of main pipe (dia/thickness)	:	1.65m @ 10 mm
		1.55m @ 12 mm
		1.45m @ 12 mm
		1.35m @ 14 mm
		1.25m @ 14mm
		0.9m @ 14 mm

Length of Branched triple Pipes	:	149 m
Size of triple pipes (dia. thickness)	:	0.9 @ 14 mm

Design Discharge	:	6 m ³ /sec
Design Net Head	:	141m

Turbine

Manufacturer	:	Gilbert Gilkes & Gordon Ltd.
Country of Origin	:	United Kingdom
Model	:	550G150
No. of Units	:	3(Three)
Mean Diameter of Runner	:	550 mm
Rated Speed	:	1000 RPM
Over speed	:	1960 rpm
Inlet Pipe Nominal Diameter	:	800 mm
Shaft Attitude	:	Horizontal
Altitude	:	302 m.a.s.l.
Turbine Power Output	:	2418 KW

Generator

Item	:	1
No. of Units	:	3
Input Power	:	2418 KW
Type	:	NIR6375A-6
Apparent Output	:	2920 KVA
Maximum Power Output	:	2336 KW
Power Factor	:	0.8
Tension	:	660 V
Frequency	:	50 Hz
Speed	:	1000 rpm
Runaway speed	:	1960 rpm

Runaway Speed Period	:	60 min every 24 hours
Protection	:	IP-23
Service	:	S1

SECTION C. Proof of project eligibility

C.1. Scale of the Project

[See Toolkit 1.2.a]

Please tick where applicable:

Project Type	Large	Small
	☐	☒
	☐	☐
	☐	☐
	☐	☐
	☐	☐

	☐
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C.2. Host Country

[See Toolkit 1.2.b]

Sri Lanka

C.3. Project Type

[See Toolkit 1.2.c and Annex C]

Please tick where applicable:

Project type	Yes	No
Does your project activity classify as a Renewable Energy project?	☒	☐
Does your project activity classify as an End-use Energy Efficiency Improvement project?	☐	☒
Does your project activity classify as waste handling and disposal project?	☐	☒

Please justify the eligibility of your project activity:

The Renewable Energy Supply category is defined as the generation and delivery of energy services (e.g. electricity) from non-fossil and non-depletable energy sources. The Project involves generation and delivery of electricity generated from run of the river hydro project, so the Project belongs to the Renewable Energy Supply category.

The type of the Project is not listed in specific guidance, Annex C of gold standard toolkit, thus there is no specific eligibility criteria for the project activity.

Pre Announcement	Yes	No
Was your project previously announced?	☒	☐
Explain your statement on pre announcement The project activity is registered with CDM on 24th August 2010. Prior Consideration for CDM has been demonstrated in the CDM PDD section B.5.		

C.4. Greenhouse gas

[See Toolkit 1.2.d]

Greenhouse Gas	
Carbon dioxide	☒
Methane	☐
Nitrous oxide	☐

C.5. Project Registration Type

[See Toolkit 1.2.f]

Project Registration Type	
Regular	☒

Pre-feasibility assessment	Retroactive projects (T.2.5.1)	Preliminary evaluation (eg: Large Hydro or palm oil-related project) (T.2.5.2)	Rejected by UNFCCC (T2.5.3)
	☒	☐	☐

If Retroactive, please indicate Start Date of project activity dd/mm/yyyy:

The Start date of the project activity is considered based on the Purchase Order that is dated 21/01/2008.

Since the project has applied for Retroactive validation under GS, thus the crediting period under the GS mechanism shall be maximum of 2 years prior to the GS registration date or date of commissioning whichever is earlier.

SECTION D. Unique project identification

D.1. GPS-coordinates of project location

[See Toolkit 1.6]

Project site is located along the river Kuru Ganga. This site can be accessed by proceeding approximately 15 km from Kuruwita along the trail road to Sri Pada through Kuruwita Division of District Ratnapura in Sri Lanka. Coordinates for the site is provided below.

Latitude	Longitude
6° 49' 56" N	80° 25' 27" E



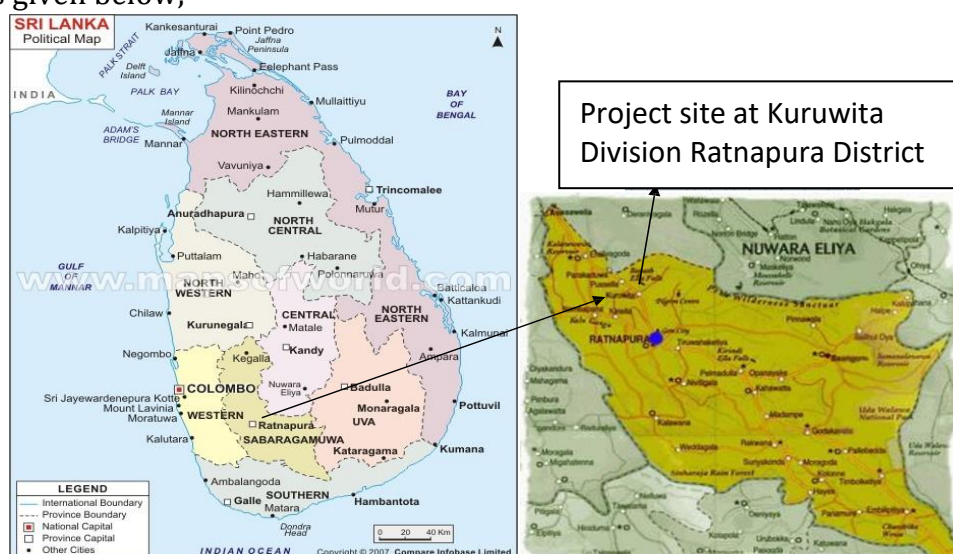
Explain given coordinates

The project area is located in the Kuruwita Division of the Ratnapura District, in Adavikanda and is in close proximity to the Adams Peak Pilgrims road through Erathna. The power house will be located about 300 meters upstream of the Erathna town. The weir site is situated close to the pilgrims trail from Erathna to Sri Pada in the village of Warnagala. The road access to the project area from Colombo is via Kuruwita (87 km. from Colombo on Route A4), to Erathna (12.2 km) and to Adavikanda (2.5 km).

D.2. Map

[See Toolkit 1.6]

The Location map is given below;



SECTION E. Outcome stakeholder consultation process

E.1. Assessment of stakeholder comments

[See Annex J]

It's not necessary for the retroactive project to take Local Stakeholder Consultation; the Stakeholder Feedback Round shall be planned at a later stage.

However, LSC process has been carried out considering CDM project activity.

Alternate Power Systems (Pvt) Ltd. invited the local stakeholders for a joint Stakeholder Meeting by way of a Press Advertisements in two national newspapers (both In English and Sinhala) and by way of direct invitation to some of the key stakeholders. A local stakeholders meeting was conducted by Alternate Power Systems (Pvt) Ltd. on 16th December, 2008. The meeting took place at the Paladeniya School, which is situated near the site where the proposed project will be carried out. The meeting was attended by around 50 local residents including local Member Parliament, various community leaders, local priests, school principal, Govt officials, employees, workers and local residents. The composition of the participants who attended was:

Category / Occupation	Number of attendees
Local villagers	18
Technology Supplier	1
Local NGO's members	4
Government Officials	3
Intellectuals working in the Local Area	11
Company Employees of APSL	13
Total	50

The Managing Director of Alternate Power Systems (Pvt) Ltd. welcomed all those present and briefed them about the proposed CDM project activity and various activities undertaken by the project developer for the socio-economic advantage of the local community / residents of the Adavikanda Village where the project is located. He highlighted the importance of the project to the national power scenario and the economy. At the end of the presentation, the Managing Director invited the participants to ask any question or raise any issues arising from the construction of the project that may be of concern to them.

The supporting for the LSC process (MoM, List of Attendees, Invitations letters and public notices) are available and submitted to DOE.

E.2. Stakeholder Feedback Round

Please describe report how the feedback round was organised, what the outcomes were and how you followed up on the feedback.

[See Toolkit 2.11]

The SFR shall be carried out and the section shall be updated at a later stage.

E. 3. Discussion on continuous input / grievance mechanism

[See Annex W]

Discuss the Continuous input / grievance mechanism expression method and details, as discussed with local stakeholders. The section shall be updated at a later stage.

All issues identified during the crediting period through any of the Methods shall have a mitigation measure in place. The identified issue should be discussed in the revised Passport and the corresponding mitigation measure should be added to sustainability monitoring plan in section G.

SECTION F. Outcome Sustainability assessment

F.1. 'Do no harm' Assessment

[See Toolkit 2.4.1 and Annex H]

Orange group has Environment, Health, Safety and Social Guidelines for Power Projects. Company will ensure compliance of agreement to be in line with statutory standards.

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
1. The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Right Abuses	The Project is not in conflict with the economic livelihood of the local community. Thus, the Project does not cause any human rights abuse and respects internationally proclaimed human rights issue. Sri Lanka has ratified the United	Low	Not required

	Nations Human Rights Rules and regulations. It ratified the same as per web link ¹ given below. The project adheres to the host country's commitment to Universal Declaration of Human Rights (UDHR) International Covenant on Economic, Social and Cultural Rights, Sri Lanka Accession 11/06/1980 ² . International Covenant on Civil and Political Rights Accession 11/06/1980 ³ .		
2. The project does not involve and is not complicit in involuntary resettlement	The Land for the project has been approved by the local Authorities. The proponent obtained NOC for establishing the plant. The project does not involve and is not complicit in involuntary resettlement in any way. The project activity does not have any major impact on land use patterns. Further, in accordance with Article 1 of the International Covenant on economic, Social and Cultural Rights the project does not complicit in involuntary resettlement.	Low	Not applicable
3. The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage	No cultural heritage is observed on the project site, thus no harm observed. The site below gives the list of cultural heritage sites in Sri Lanka by UNESCO from which it is clear that the project site does not form a cultural heritage site. Source: http://whc.unesco.org/en/statesparties/lk	Low	Not applicable
4. The project respects the employees freedom of	The proponent confirms that all the fundamental rights of the employees	Low	Not applicable

¹ http://tbinternet.ohchr.org/_layouts/TreatyBodyExternal/Treaty.aspx?CountryID=79&Lang=EN

² <http://hrlibrary.umn.edu/research/ratification-srilanka.html> and
http://tbinternet.ohchr.org/_layouts/TreatyBodyExternal/Treaty.aspx?CountryID=79&Lang=EN

³ <http://hrlibrary.umn.edu/research/ratification-srilanka.html> and
http://tbinternet.ohchr.org/_layouts/TreatyBodyExternal/Treaty.aspx?CountryID=79&Lang=EN

association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights	will be respected and there will be no restrictions on freedom of association and right to collective bargaining.		
5. The project does not involve and is not complicit in any form of forced or compulsory labour	The project developer does not complicit in any form of forced or compulsory labor. All employees offering their services on a voluntary basis and are free to quit the services at any time without a menace or penalty.	Low	Not applicable
6. The project does not employ and is not complicit in any form of child labour	The project neither employs nor intends to employ child labour.	Low	Not applicable
7. The project does not involve and is not in complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis	The project will not employ any personnel based on gender, race, religion, sexual orientation or any other basis. All interested, regardless of gender, race, religion, sexual orientation have participated in the project.	Low	Not applicable
8. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments	The proponent assures to follow all the safety measures and create healthy working conditions during construction & operation too. The project proponent respects all the acts on health and safety and will follow them. The PP has Health and Safety and Environment policy designed to ensure safe and healthy work environment for all its employees, contractors and all stakeholders.	Low	Not applicable
9. The project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principle.	The environmental impact of the proposed project was considered negligible and the Central Environment Authority granted environmental approval for the project on 17th February 2005. The Central Environment Authority studied the response to the environmental questionnaire	Low	Not applicable

	submitted by the project developer and a report for flora & fauna in the region. The project does not lead to release of any hazardous substances that pose threat to the environment. Rather it aims at reducing the air pollution that is prevalent due to use of fossil fuel power plants. The project promotes environmental protection through the use of cleaner technology.		
10. The project does not involve or complicit in significant conversion or degradation of critical natural habitats including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value or (d) recognised as protected by traditional local communities	It is confirmed that the project is not in the proximity of any critical natural heritage site on the World Heritage list. This site⁴ gives the list of cultural heritage sites in Sri Lanka by UNESCO from which it is clear that the project site does not form a cultural heritage site. The project has been developed with transparent communication with local communities.	Low	Not applicable
11. The project does not involve and is not in complicit in corruption	Indulgence in corruption is an illegal activity in the host country and the local labour compliance takes into account of the same. The project abides by the United Nations Convention Against Corruption. Sri Lanka ratified the same on 15/03/2004⁵.	Low	Not applicable
Additional relevant critical issues for my project type	Description of relevance to my project	Assessment of relevance to my project (low/medium/high)	Mitigation measure
Not identified	Not relevant	No risk	Not required

⁴ <http://whc.unesco.org/en/statesparties/lk>

⁵ <http://www.unodc.org/unodc/en/treaties/CAC/signatories.html>

F.2. Sustainable Development matrix

[See Toolkit 2.4.2 and Annex I]

Insert table as in section D3 from your Stakeholder Consultation report (Sustainable Development matrix).

The operation and Maintenance shall be carried out by the Project proponent along with contractors employed. The PP follows a Health, Safety and Environment policy applicable to all its employees, contractors and stakeholders ensuring a good working environment.

Based on above, the score mentioned below along with justification for each.

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
Gold Standard indicators of sustainable development.	If relevant copy mitigation measure from "do no harm" – table, or include mitigation measure used to neutralise a score of ‘–’	Check www.undp.or/mdg and www.mdgmonitor.org Describe how your indicator is related to local MDG goals	Defined by project developer	Negative impact: score ‘–’ in case negative impact is not fully mitigated score 0 in case impact is planned to be fully mitigated No change in impact: score 0 Positive impact: score ‘+’
Air quality	Not Required	Goal 7 – Ensure Environmental sustainability; Target 7.A - Integrate the principles of sustainable development into country policies and programmes and reverse the	Operation Phase: Project activity leads to electricity production by hydro power, which improves the air quality as compared to those by the fossil fuel dominated grid mix. As compared with emission reduction by project activity, the air pollution (which may occur due to transformers, other	+

		loss of environmental resources	electrical equipment's etc.) is less than 1% of overall emission reductions by the project activity and hence are negligible. Construction Phase: The impact during the construction phase was localized and temporary. Emissions were substantially greater than emissions from project operation activities, but still limited in volume. Site dispersion of emissions was good due to open areas allowing for early dispersions. Thus impact on local settlements was negligible owing to the considerable distance from the site. As compared to baseline scenario, which is fossil fuel dominated grid connected electricity, the project activity reduces air pollution of baseline fossil fuel power plants equivalent of electricity generated by project activity. Thus the Overall impact due to the project shall be positive.	
Water quality and quantity	Not Required	MDG 7: Ensure Environmental Sustainability, target C "Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic	Explanation: Thermal power plants produce considerable amount wastewater especially due to cooling. By the project activity, significant amount of wastewater discharge will be avoided. During normal construction	0

		sanitation.	period, water usage is negligible and mainly for domestic use by workers. Since the project is operational, water is only required for the domestic use for the project staff and other minor use. Minor volumes of sewage will be generated from toilet facilities at the site office. This will be disposed to septic tank, thus no significant impact is anticipated to surface or groundwater. Since the project is run of river thus there would be minimal impact on quality of water. Thus the Overall impact due to the project shall be neutral.	
Soil condition	Not Required	MDG- 7: Ensure Environment Sustainability 7.A Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources 7. B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	The project would not emit any pollutants to the soil during the construction and operation period, with no negative impact on the soil quality. The top soil excavated during construction, was stock piled and was used for plantation and road construction. During operation of a project, no appreciable adverse changes in the soils. The plant land is plain thus there was no any top soil stripping required. Also vegetation at site maintains	0

			the soil condition and there is no adverse impact. Thus the Overall impact due to the project shall be neutral.	
Other pollutants	Not Required	MDG- 7: Ensure Environment Sustainability 7. B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	Parameters: a) Noise level during operation of the project activity. b) Solid waste amount Explanation: During the operation of the project there will be no/negligible noise. However, there will be no negative impact on the settlement areas in this project due to the distance. There are no other pollutants generated from the hydro power project (renewable energy project). Thus the Overall impact due to the project shall be neutral.	0
Biodiversity	Not Required	MDG- 7: Ensure Environment Sustainability 7. B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	Through engineering measures and greening measures, the condition of ground vegetation will be gradually improved. With the implementation of Project, the greening water will be increased significantly; the biodiversity in the vicinity will be improved with the vegetation improvement. Thus the Overall impact due to the project shall be neutral.	0
Quality of employment	Necessary health and	MDG-1: Eradicate extreme poverty &	Parameter: Health and Safety and other	+

	safety measures will be taken during construction and operation phase, relevant staff will be trained to be able to work with high voltages.	hunger 1.B. Achieve full and productive employment and decent work for all, including women and young people	trainings Explanation: Project developer ensures high standard health and safety conditions for the employees and provides Health & Safety Trainings to employees as per the HSE Policy of the company. Some of the staff may get training on different kind of issues like operation and maintenance of power plant. All employees will be trained on Occupational Health and Safety issue. Thus the Overall impact due to the project shall be positive.	
Livelihood of the poor	Not Required	MDG-1: Eradication extreme poverty and hunger 1.A.Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day	Income generation by local orders with project activity will have indirect impacts to changing living standards of the local people. The impact is significant and direct thus is considered as positive.	0
Access to affordable and clean energy services	Not Required	Goal 7 – Ensure Environmental Sustainability; Target 7.A – Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	Parameter: Change in energy use Explanation: The project will help to reduce high share of dependency on Fossil Fuel. In baseline, equivalent quantity of electricity would have been generated from fossil fuel dominated grid connected power plants. Thus project activity helps to increase renewable energy	+

			contribution for grid connected power plants. Hence score of indicator is considered as positive.	
Human and institutional capacity	Not Required	MDG-1: Eradicate extreme poverty & hunger MDG Goal 2: "Achieve Universal Primary Education" MDG 3: Promote gender equality and empower women MDG 4: Reduce child mortality MDG 5: Improve maternal health MDG 6: Combat HIV/AIDS, Malaria and other major diseases	Parameter: Total number of beneficiaries of the initiatives undertaken by the project developer to enhance the human and institutional capacity of the local stakeholders. Explanations: Access to basic primary education and health are two basic factors parts to facilitate human and institutional capacity development. Various initiatives are undertaken on continuous basis by the Project Developer to contribute to these thematic areas. The above mentioned initiatives lead to several tangible as well as intangible benefits for the local community. Accordingly, the impact of the parameter to this indicator has been scored positive.	0
Quantitative employment and income generation	Not Required	Goal 1 – Eradicate extreme hunger and poverty; Target 1.B – Achieve full and productive employment and decent work for all, including women and young people	Project activity will lead to generate employment opportunities for both skilled and unskilled labors. Hence the parameter to be monitored for this indicator is the number of staff employed for the project activity. The project activity	+

			generates employment both directly and indirectly for skilled as well as local unskilled workers on contract basis. The total number of local unskilled workers ranges depending on the labour requirement on any given day.	
Access to investment	Not Required	MDG-8.D Develop a global partnership for development 8.D. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term.	There is no foreign investment envisaged for implementation or operation of the project activity at this stage. However, the project being a renewable power project leads to reduction in dependency on fossil fuels, there by leading to a reduction in purchase of fossil fuel in the country. As the impact is not quantifiable thus, it is considered that the project activity does not have a significant impact on balance of payments and investment and is considered as neutral.	0
Technology transfer and technological self-reliance		MDG 8 target F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications	In the project activity, technology shall be sourced primarily from inside the country and introduced into the region. At the same time, the project activity shall build usable and sustainable know-how in the region for the technology, where know-how was previously lacking. Hence the project presents ample opportunities of replication in other areas. However, constant monitoring of this parameter involves	0

			complexities and hence this parameter is scored neutral as a conservative approach.	
Justification choices, data source and provision of references				
Air quality	According to the projections given in B.4 part of the PDD, in the baseline situation new capacity additions will most probably be fossil fuel fired power plants. Electricity generated from the hydro power project partially substitute electricity generation from fossil fuel fired power plants that represent a large share of the Power grid generation mix. Thus, besides greenhouse gases, all other air pollutants (e.g. SO_x, NO_x), particle and VOC emissions are avoided by the project activity. Dust emergence connected to the project activity appears only for a short time during the construction phase and will be caused by digging foundations, land arrangement works and construction. Project developer has taken all precautionary actions to prevent dust emissions. Emissions during this phase will be localized and temporary. Thus impact on local settlements will be negligible owing to the considerable distance from the power project activity. Therefore, in the SDM the positive effect of the project on the air quality is scored with (+). The positive impact of power on air quality is described in Sustainability Monitoring Plan. Net electricity generation shall serve as evidence of positive impact of the project activity on this indicator and will be monitored annually.			
Water quality and quantity	In the baseline, thermal power plants discharges significant amount of waste water to the environment after usage for operational purposes like cooling. Having water treatment system in these power plants does not neutralize negative impact of waste water on environment as chemicals used for waste water treatment becomes problematic afterwards. With proposed project activity, usage and discharge of considerable amount of water will be avoided with partially substituting electricity generation from thermal power plants. Therefore, the impact of the project on this indicator is deemed to be positive. However, as a conservative approach the impacts on water quality and quantity has been considered as neutral.			
Soil condition	In the baseline, thermal power plants emits significant amount of NO_x which have negative impact to the quality of soil. The adverse effect of emissions of NO_x on soil conditions is acid rains. Acid rains can damage soil conditions badly. With proposed project activity significant amount of NO_x emission will be avoided due to substituting partially thermal power plant electricity generation. The project would not emit any pollutants to the soil during the construction and operation period, with no negative impact on the soil quality.			

	However, to be conservative impact of the project on this indicator is scored to be neutral and will not be monitored.
Other pollutants	The project activity comprises of installation of hydro project considering penstock and turbines thus noise from turbine section is considered, however it is localized apart from power plant control room which are well isolated area, therefore impact of noise from power plant on both employees and local residents is deemed to be negligible. There is no/ negligible noise pollutions occurring from the proposed project activity i.e. hydro power/ unit. Therefore, in the SDM the negligible effect of the project on the other pollutants is scored with (0) and will not be monitored.
Biodiversity	Through engineering measures and greening measures, the condition of ground vegetation will be gradually improved; No rare species has been found in the around area. With the implementation of Project, the greening water will be increased significant, the biodiversity will be improved with the vegetation improvement. Therefore, in the SDM the negligible effect of the project on biodiversity is scored with (0) and not monitored.
Quality of employment	Besides providing training to the employees, the Project will create permanent jobs for various technical services required to operate the power plant. These jobs were created require qualified and skilled staff. So staff will be trained to have higher skills and certification to perform such power generation projects, the employment and training of skilled staff has an impact on job quality. With regard to the health and safety of the staff, facilities will be provided following requirements of company HSE Policy, example, a first aid kit shall be provided at the working area; regular technical and safety trainings will be organized by the project owner periodically, emergency and safety procedures will be included in the operation manual in ensure safe working condition for the staff. As the project will provide employment so that the living standard of the employees can be improved, the indicator scores positive, since it is difficult to quantify and monitor the quality of employment except for training of staff, therefore training of staff was the chosen parameter for this indicator.
Livelihood of the poor	During the construction period, the project will provide some work opportunities to local unskilled laborers. However, the number of positions will be limited and the jobs will be short term. The Project will improve the livelihood of those hired through income. In addition, the tax paid by the Project will be used for local infrastructure construction. However, the impact is not significant and direct.

Access to affordable and clean energy services	The Project utilises clean energy to displace fossil fuel. The Project exports electricity to the regional grid, thus results in a small and positive contribution in meeting national power demand. The Project adds renewable energy based capacity in the country. In baseline, equivalent quantity of electricity would have been generated from fossil fuel dominated grid connected power plants. Thus project activity helps to increase renewable energy contribution for grid connected power plants. Thus the monitoring parameter is the amount of electricity supplied to the grid.
Human and institutional capacity	The project activity will have an overall positive contribution to the sustainable development of the region. The Project Developer has focused on projects leading to improvement of basic education, healthcare, women empowerment, improve quality of life and basic infrastructural improvement projects to facilitate human and institutional capacity development. The above mentioned initiatives lead to several tangible as well as intangible benefits for the local community. Accordingly, the impact of the parameter to this indicator has been scored positive.
Quantitative employment and income generation	Within the construction of the project, there will be created employment opportunities for workers. The project activity generates employment both directly and indirectly for skilled as well as local unskilled workers on contract basis. The total number of local unskilled workers ranges depending on the labour requirement on any given day. The Project will recruit operation and management personnel responsible for operation and maintenance of the Project during project operation period, and pay salaries and welfares and also helps to increase their income. The proposed project will create new employments. Therefore, this indicator is scored with (+) and will be monitored based on Employment records.
Access to Investment	There is no foreign investment envisaged for implementation or operation of the project activity at this stage. Thus, it is considered that the project activity does not have a significant impact on balance of payments and investment.
Technology transfer and technological self-reliance	The project developer considers the investment into and the operation of a well-known technology in the country, however the equipment has been transferred from UK. Further, some of the employees will be trained for power plant related issues. However, since these trainings are rather operation related trainings and will not lead an important know-how and technology transfer, this indicator is scored with (0) in the SDM

SECTION G. Sustainability Monitoring Plan

[See Toolkit 2.4.3 and Annex I]

Copy Table for each indicator

No		1
Indicator		Air quality
Mitigation measure		N/A as indicator scored positive.
<i>Repeat for each parameter</i>		
Chosen parameter		Indirect parameter of “Total clean and renewable electricity supplied by the Project” is measured in order to calculate the concentrations of CO ₂ , as multiplied by emission factor from the regional grid.
Current situation of parameter		Equivalent electricity supplied by grid which is generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.
Estimation of baseline situation of parameter		In the baseline, equivalent electricity supplied by grid which is generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.
Future target for parameter		19,929 MWh/yr of clean electricity produced by the Project, which replaces of fossil fuel consumption for the equivalent electricity generation and thus reduce air pollutants emissions and improve the air quality.
Way of monitoring	How	The net electricity supplied by the Project will be continuously measured by electricity meters.
	When	Continuously measured and monthly recorded
	By who	Monitored by the Project owner and cross checked measurement results with records for sold electricity.

No		2
Indicator		Quality of employment
Mitigation measure		N/A as indicator scored positive.
<i>Repeat for each parameter</i>		
Chosen parameter		Training of staff.
Current situation of parameter		Without the Project, local people have no such opportunities to be trained on the technology and the monitoring of the plant operation, and the emergency and safety procedures.

Estimation of baseline situation of parameter		Without the Project, local people have no such opportunities to be trained on the technology and the monitoring of the plant operation, and the emergency and safety procedures.
Future target for parameter		Together with the technology supplier, the Project Proponent shall organize training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures.
Way of monitoring	How	The training records for all the employees
	When	Annually
	By who	Monitored by the project owner

No		3
Indicator		Access to affordable and clean energy services
Mitigation measure		N/A as indicator scored positive.
<i>Repeat for each parameter</i>		
Chosen parameter		Change in energy use
Current situation of parameter		Equivalent electricity supplied by grid which is generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.
Estimation of baseline situation of parameter		Continuation of baseline situation
Future target for parameter		19,929 MWh/yr of clean electricity produced by the Project
Way of monitoring	How	The net electricity supplied by the Project will be continuously measured by electricity meters.
	When	Continuously measured and monthly recorded
	By who	Monitored by the Project owner and cross checked measurement results with records for sold electricity.

No		4
Indicator		Quantitative employment and income generation
Mitigation measure		Not Required
<i>Repeat for each parameter</i>		
Chosen parameter		No. of staff employed in the project activity and cumulative

		income provided to them on annual basis.
Current situation of parameter		The total number of local unskilled workers employed depends on the labour requirement on any given day. The income to all the unskilled workers are made on day to day basis.
Estimation of baseline situation of parameter		0
Future target for parameter		As per the requirements for plant operations. The project activity generates employment both directly and indirectly for skilled as well as local unskilled workers on contract basis. The total number of local unskilled workers employed depends on the labour requirement on any given day. The income to all the unskilled workers are made on day to day basis. Annual records of income paid to all the employees would be available.
Way of monitoring	How	Employee rolls, pay-slips, attendance registers, vouchers, Gate entry records etc.
	When	Annually
	By who	Project proponent

No	5
Indicator	Human and institutional capacity
Mitigation measure	Not Applicable
<i>Repeat for each parameter</i>	
Chosen parameter	Total number of beneficiaries of the initiatives undertaken by the Project Developer to enhance the human and institutional capacity of the local stakeholders.
Current situation of parameter	The Project Developer has focused on projects leading to improvement of basic education, healthcare, women empowerment, improve quality of life and basic infrastructural improvement projects to facilitate human and institutional

		capacity development.
Estimation of baseline situation of parameter		The project is a green field activity. Prior to the project there were no such CSR activities organized in the villages. Therefore, baseline situation of chosen parameter has made the current situation visible and hence the current situation is comparable to a prominent baseline situation.
Future target for parameter		Enhance the scale and reach of CSR activities so that the number of direct as well as indirect beneficiaries is maximized.
Way of monitoring	How	Photographs, cheques, donation receipts, CSR reports and other supportive documentation on reporting as provided.
	When	Annually
	By who	Project Developer in association with EPC contractor and local Entities.

Additional remarks monitoring

For details regarding the monitoring of the other parameters pertaining to the calculation of GHG emission reductions for the project activity under consideration, please refer to sections B.6.3. and B.7.2 of the CDM PDD.

SECTION H. Additionality and conservativeness



This section is only applicable if the section on additionality and/or your choice of baseline does not follow Gold Standard guidance

H.1. Additionality

[See Toolkit 2.3]

Please refer to section B.5. of the PDD.

H.2. Conservativeness

[See Toolkit 2.2]

The PP hereby wishes to clarify that the most conservative baseline scenario has been used for baseline establishment for the project, especially considering the relevant guidelines of the approved methodology AMS I.D version 13. The project is a Greenfield Hydro power generation project.

Further, the PDD applies grid emission factor as per the available Ceylon Electricity Board, the emission factor applied is 0.6766 tCO₂/MWh.

ANNEX 1 ODA declaration

[See Toolkit Annex D]

The PP hereby declares that no ODA was received for this project. Pls. refer section A.4.5 of the registered PDD. Further, a declaration for the same shall be submitted to the DOE.