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1.1 MW Manggani Mini Hydroelectric Project, West Sumatera, Indonesia

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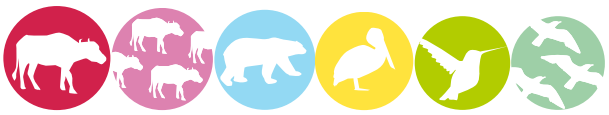

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SECTION A. Project Title

[See Toolkit 1.6]

1.1 MW Manggani Mini Hydroelectric Project, West Sumatra, Indonesia (CPA) as part of the **Sustainable Small Hydropower Programme of Activities (PoA) in Indonesia**

SECTION B. Project description

[See Toolkit 1.6]

Start date of construction: January 2008

The SSC-CPA involves the re-construction of a run-of-river hydropower plant that was built by the Dutch in 1937 and then abandoned in 1942. The SSC-CPA is located near Batang Rambutan River in the village of Puar Datar, West Sumatra, Indonesia. The SSC-CPA's installed capacity and estimated annual gross power generation is 1.168 MW[1] and 7000[2] MWh, respectively.

The proposed project activity

The project's purpose is to supply renewable electricity to the Sumatra grid via the Power Purchase Agreement (PPA) signed with PT. PLN (Persero), the Indonesian State-owned Electricity Company of the West Sumatra Region (referred herein as PLN). The net electricity generated from this project - annual estimated volume is 7000 MWh - will be supplied to the national grid via a 20 kV single line.

The 1.1 MW Manggani Mini Hydroelectric Project (referred herein as the SSC-CPA Manggani or the project) is being proposed by PT. Pelita Prima Nusantara (referred herein as the project implementer) and will generate renewable power, which will displace electricity otherwise supplied by fossil fuel fired power plants. Thus, GHG emission reductions can be achieved via this SSC-CPA.

[1] The installed capacity referred to is as agreed in the Power Purchase Agreement (PPA) between the project implementer and PLN.

[2] The electricity generation assumption referred to is the financial projection as part of the loan proposal to the local bank (Bank Mega) with a load factor 68.4%.

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Sustainable Development Benefits of the Project

According to the sustainable development criteria for CDM projects as defined by the Indonesian DNA[3], the project will directly contribute to sustainable development in Indonesia in several ways, which are listed below:

- During re-construction, the SSC-CPA Manggani generated considerable employment opportunities for the local population, which generated income for local households.
- The activity includes the provision of staff training to improve their technical skills. Various kinds of mechanical work requirements generates employment on a regular and permanent basis for the local people and this increases local expertise and experiences in the rural region.
- The generated electricity is fed into regional grids through the local grid, thereby improving the grid stability and availability of electricity to local consumers (villagers and sub-urban inhabitants). It is likely that grid reliability is increased and that new opportunities for industries and economic activities are provided.
- The SSC-CPA Manggani utilizes hydropower to generate electricity, which would otherwise have been generated through fuel- (most likely fossil-fuel-) based power plants. Therefore it is contributing to a reduction in specific emissions (emissions of pollutant/unit of energy generated), including GHG emissions.
- Being a renewable energy source, run-of-river hydro energy used to generate electricity contributes to resource conservation.
- The SSC-CPA Manggani is the rehabilitation of an old power plant, hence it has no noteworthy negative impact on the surrounding environment.

The Project is implemented purely on a voluntary basis: there is no regulation in Indonesia that requires implementation of such a project.

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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
	☐	☐
	☐	☑
	☐	☐
	☐	☐
	☐	☐

	☐

C.2. Host Country

[See Toolkit 1.2.b]

Indonesia

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C.3. Project Type

[See Toolkit 1.2.c and Toolkit 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?	☐	☑

Please justify the eligibility of your project activity:

The SSC-CPA is an electricity generation project using run-of-river technology, without dam construction, which has an installed capacity of 1.168 MW. With reference to GS Annex C, the SSC-CPA is eligible for Gold Standard registration as further elaborated below:

1. The SSC-CPA has an installed capacity of 1.168 MW, which is less than 20 MWe that is the threshold value for any hydro project as per Table C-1 under Annex C of the Gold Standard toolkit: Guidance on Project Type Eligibility. As per eligibility criteria stated in the PoADD of Sustainable Small Hydropower Programme of Activities (PoA) in Indonesia, each SSC-CPA must also have an installed capacity of less than 15 MW, thus each SSC-CPA will be under the 20 MWe threshold as mentioned in Table C-1 under Annex C of the Gold Standard toolkit.
2. As a run-of-river hydro project, the SSC-CPA did not require the construction of a dam. The project uses the river water flow to generate electricity by turning its water turbine, and it ensures enough residual water flow for the local communities and the fauna and flora to live in the area. In addition to this, the SSC-CPA is a rehabilitation of a 1942-abandoned power plant, which means that no substantial land clearing was needed, nor other activities that could have caused environmental damage. In order to ensure the environment is properly preserved and managed, the Project Proponents (PPs) conducted the Environmental Management and Monitoring Plan (EMMP)* before the rehabilitation started. In support of the EMMP, the PPs will prepare a yearly report for the local the government as per EMMP requirements.

   * For information: at the date of registration of the proposed SSC-PoA, the rules governing Environmental Impact Assessments were laid out in the Ministry of Environment Decree No. 11 issued in 2006. The decree specifies that hydropower projects must conduct an Environmental Impact Assessment if they meet any of the following criteria:

   1. Dam height ≥ 15 m
   2. Flooded area ≥ 200 m^2
   3. Installed capacity ≥ 50 MW

   Hydropower projects that do not exceed any of the above limits would only have to develop an Environmental Management and Monitoring Plan (EMMP)

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Special guidance for hydro projects		
Management domain	Basic requirements	Comments
	Minimum Flow Goal is a dynamic flow regime, which qualitatively simulates the natural hydrological regime	As the SSC-CPA is a run-of-river project, there is a minimum flow goal that is required to sustain the natural hydrological regime. In the Environmental Management and Monitoring Plan (EMMP) of the SSC-CPA it is mentioned that the hydropower plant will keep the minimum flow rate in order to sustain the natural living condition of animals and plants in, and along, the river.
	Minimum flow which guarantees habitat quality and prevents critical oxygen and chemical concentrations	As per the EMMP, the minimum flow is carefully managed in order to sustain the living condition of animals and plants. This means that the oxygen and chemical concentrations are met to sustain the livelihood of local fauna and flora.
	No disconnection of lateral rivers	The SSC-CPA is built at the Batang Rambutan river, therefore there are no disconnections along the river. The SSC-CPA is using the run-of-river technology, which does not divide and affect the river continuation.
	Minimum water depth for fish migration during critical periods	As per project design and findings of the EMMP, the SSC-CPA will meet minimum water depth, as it will only utilize river flow

		rate without changing the water quantity in the river.
	Lateral and vertical connectivity (flood plains and groundwater) shall not be substantially disturbed	The SSC-CPA does not disturb any groundwater absorption and flood plains, as it will only utilize river flow rate without changing the water volume in the river.
	Provides sufficient transport capacity for sediments	The EMMP expects the project to provide sufficient transport capacity for sediments, as it will only utilize river flow rate without changing the water quantity in the river.
	Landscape compartments shall not be destroyed	The SSC-CPA does not affect the landscape in the area because it will use the old building and infrastructure.
	Flood plain ecosystems shall not be endangered	The SSC-CPA does not endanger flood plain ecosystems because it will use the old building and infrastructure.
	Conservation of locally adapted species and ecosystems	The SSC-CPA will not affect any conservation of locally adapted species and ecosystems because it will use the old building and infrastructure.
Hydropeaking	Rate of change of water level should not impair fish and benthic populations	The rate of change of the water level will not be affected because the SSC-CPA is leaving sufficient water to sustain living conditions of fauna and flora.
	Reduction in water level should not lead to drying of the water course	As per EMMP, there will not be any reduction of water level as the SSC-CPA is only using the river water flow.

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	Protective measures if flood plain ecosystems are impaired	The SSC-CPA does not affect the flood plain ecosystems, as it will use old buildings and infrastructures.
	No isolation of fish and benthic organisms when water level decreases	Findings of the EMMP conclude that there will be no reduction in the water level, as the SSC-CPA is only using the river water flow. Therefore no isolation of fish and benthic organisms will occur.
	No impairment of spawning habitat for fish	The SSC-CPA will not affect fish habitats, as there will not be a reduction of the river water level.
Reservoir management	Are there feasible alternatives to reservoir flushing?	No reservoir has been constructed.
	Changes in reservoir levels should not impair lateral ecosystems (flood plains, rivers, shores, …)	No reservoir has been constructed.
	Connectivity with lateral rivers should not be impaired	No reservoir has been constructed.
	Sediment accumulation areas should be used as valuable habitats, where feasible.	No reservoir has been constructed.
	Special protection of flood plain ecosystems if they are impaired	No reservoir has been constructed.
Sediment management	Sediments have to pass through the power plant.	The sediments will be able to pass through the power plant together with the river water flow.
	No erosion and no accumulation in the river bed below storage dams and water intakes because of a deficit in sediments.	No reservoir has been constructed.
	Sediments transport should	The sediments transport

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	sustain morphological structures, which are typical for the river.	will be able to sustain morphological structures because the river water flow will be kept optimum to transfer sediments.
	No accumulation of sediments below dams	No reservoir has been constructed.
	Riverine habitats have to be established	As the river water flow is kept optimum, the riverine habitats will not be endangered and will sustain the animals and plants living condition.
Power plant design	Free fish migration upwards and downwards (as far as technologically feasible)	Fish migration continues as is, as the minimum river water flow is sustained, which has been demonstrated in the EMMP.
	Protection of animals against injury and death stemming from power plant operations (turbines, canals, water intakes, …)	Protection of the animals against injury and death is ensured by the installation of a screen at the water intake point.
Social impacts	Cultural landscapes	No cultural landscapes are affected by the SSC-CPA development, since no additional construction is taking place.
	Human heritage (including protection of special ethnic groups)	Human heritage is not affected by the SSC-CPA development.
	Preservation of lifestyles	Lifestyle will be preserved, since the SSC-CPA development will not impede local people to maintain and conduct themselves, their culture and religion.
	Empowerment of local stakeholders in the decision-making process (about mitigation and compensation of social	Local stakeholders' opinions will be taken into account. The local stakeholders, through the local community leaders,

	impacts)	are able to give their opinions to help mitigate, and if required ensure compensation, against social impacts.
	Resettlement of local population under similar or better living conditions (than prior to the project)	There is no resettlement of local population as the SSC-CPA is about 17 km away from the nearest village.
	Build additional social infrastructure, sufficient to cope with population increase (due to migration induced by the project)	The SSC-CPA will result in minor migration, as most of the workers will be appropriately trained people from local villages.
	Water quality and fishing losses affecting downstream riverside population	As per the EMMP, the water quality will not be affected, as the SSC-CPA development will only utilize river water flow and will not affect the water quality as a whole.

Pre Announcement	Yes	No
Was your project previously announced?	☐	☑

Explain your statement on pre announcement

The SSC-CPA was not previously announced, the chronological list of events is presented below:

Date	Events
7th February 2004	The project implementer signed an agreement with the Chief/s of the indigenous people who owned the land (Agreement with Ninik and Mamak of Puar Datar Village, Limapuluhkota Regency, West Sumatra Province).
14th June 2004	The project implementer received a recommendation letter from the Regent of Limapuluhkota Regency, whom allowed the project implementer to re-construct/rehabilitate the Manggani mini hydro power plant and to sign a PPA with PLN.
28th July 2005	The project implementer received a letter of approval for the EMMP (UKL/UPL) for Manggani mini hydro power plant re-construction from the Regent Secretary of Limapuluhkota Regency.

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January 2006	The project implementer prepared the Feasibility Study Report.
26th June 2007	The project implementer made a clear declaration that the Manggani mini hydro power plant re-construction will not be feasible without CDM revenue. Thus, the project implementer assigned its director to search for CDM buyer/consultant/project developers that could help them in securing CDM revenue.
28th June 2007	The project implementer signed a PPA with PLN.
2nd July 2007	The project implementer signed a contract for civil work with PT. Spark Coal Energy. The contract stated that the project implementer should pay the first payment after heavy equipment mobilization into the project site and start of civil work had occurred. The signed contract is basically to fulfill bank requirements without any financial obligation.
11th July 2007	The project implementer signed a contract for the transmission line work with PT. Kunango Jantan. The contract stated that the project implementer should pay the down payment 2 weeks from contract signature or upon receipt of a written notice from the project implementer to the contractor. The signed contract is basically to fulfill bank requirements without any financial obligation.
27th July 2007	The project implementer signed a contract with technology provider, Golden Marudai International Ltd. The contract stated that the shipment should be effected within 275 days after receipt of the down payment and Letter of Credit (L/C) confirming the project implementer's bank and support. In addition to this, the delivery should be postponed accordingly, should the payment be delayed. The signed contract is basically to fulfill bank requirements without any financial obligation.
September 2007	The project implementer sent a revised proposal to Bank Mega, in which the CDM revenue was considered as other additional income.
5th November 2007	The project implementer sent a letter to Mr. Ario Senoadji, the Vice President of Renewable Energy at PT. PLN (Persero) to notify them of their intention to seek CDM.
22nd November 2007	The project implementer signed a loan agreement with Bank Mega, which is considered as the project financial closure and the CDM project start date.
Beginning of 2008	The project implementer has communicated considerably with CDM project developers/consultants and discussed the CDM registration possibility.
January 2008	Civil work started.
25th April 2008	The project implementer signed a contract for EPC work with PT. Tiara Indotim.
12th June 2008	The project implementer received the temporary clearance for electricity generation from Directorate General of Electricity and

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	Energy Utilization/DGEEU (Indonesian: Direktorat Jenderal Listrik dan Pemanfaatan Energi/DJLPE).
June 2008	The project implementer was approached by South Pole CAM Ltd. with the proposal to include the Manggani mini hydropower plant as part of the Sustainable Small Hydropower PoA in Indonesia. The Manggani will be the official first proposed SSC-CPA for the proposed SSC-PoA.
July 2008	Work commenced on the transmission lines.
September 2008	The first draft of the ERPA was sent to the project implementer by South Pole CAM Ltd.
October 2008	The project implementer signed an ERPA with South Pole CAM Ltd.
October 2009	The installation of the hydro turbine and the generator commenced.
28 December 2009	The planned commissioning date for the project.
January 2010	Commercial operation of the project is planned.

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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)
	☑	☐	☐

Start Date of Construction : January 2008

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SECTION D. Unique project identification

D.1. GPS-coordinates of project location

[See Toolkit 1.6]

	Coordinates
Latitude	0 °0'2'' S
Longitude	100°16'5'' E

Explain given coordinates

N/A (the coordinates are sufficient to identify the CPA's site)

D.2. Map

[See Toolkit 1.6]

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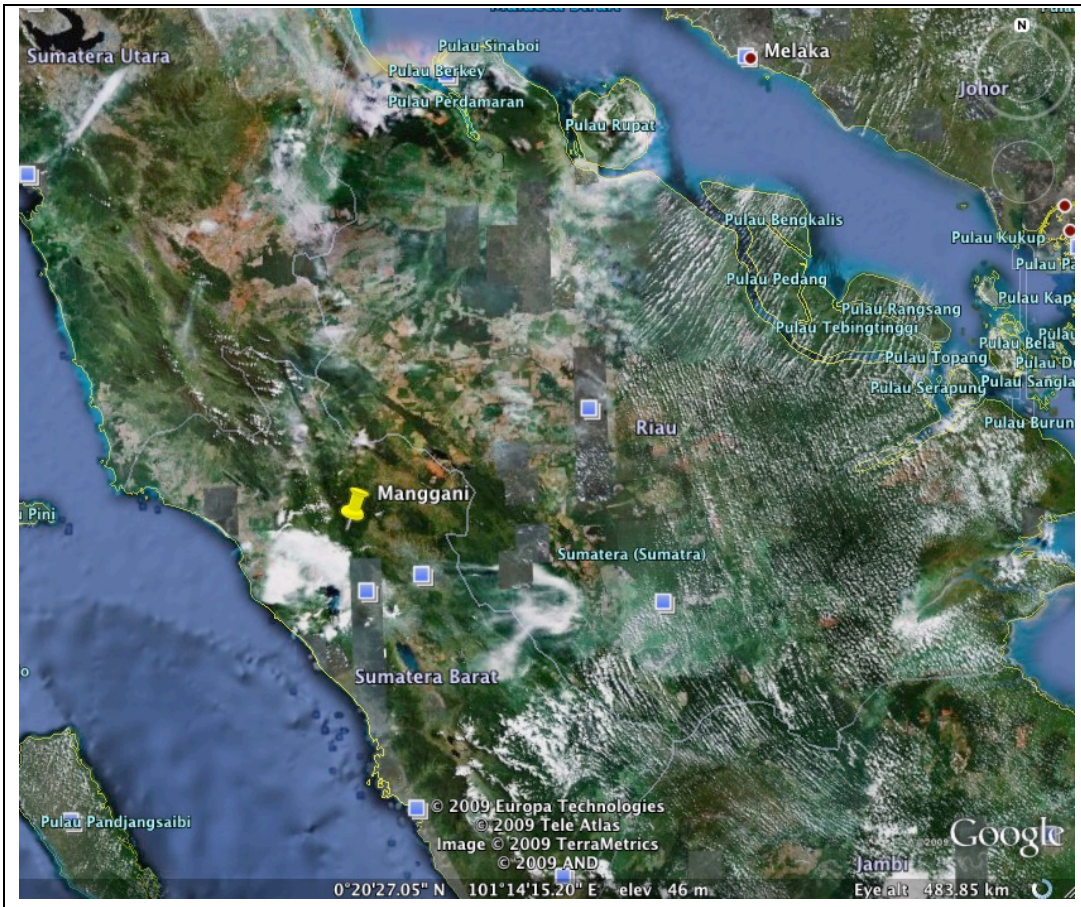

SECTION E.	Outcome stakeholder consultation process

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E.1. Assessment of stakeholder comments

[See Toolkit Annex J]

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 in the framework of a normal CDM stakeholder Consultation. This consultation took place on July 6, 2009. The following stakeholders were invited:

- Local people impacted by the project or official representatives (A)
- Local policy makers and representatives of local authorities (B)
- An official representative of the DNA or DFP of the host country (C)
- Local NGO working on topics relevant to the project (D)
- Relevant international NGOs supporting the GS (E)

The minutes of the discussion are available in Section D3 of the PDD. 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.

E.2. Stakeholder Feedback Round

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

[See Toolkit 2.11]
To be filled in once the Stakeholder Feedback Round is over. This passport is for the purpose of a pre-feasibility assessment only.

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SECTION F. Outcome Sustainability assessment

F.1. 'Do no harm' Assessment

[See Toolkit 2.4.1 and Toolkit Annex H]

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 Rights abuses.	A preliminary consultation has resulted in positive feedback from local villagers and tribes. No cultural property is endangered by the project.	No risk	n/a
2) The project does not involve and is not complicit in involuntary resettlement.	This is not relevant for this SSC-CPA, as it has been decided to rehabilitate an existing station. As a consequence, there was no extension of the constructed area and no resettlement is/was needed.	No risk	n/a
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 enclosed in the project boundary and therefore is not endangered by the project.	No risk	n/a
4) The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and	If the employees wish, they have the freedom of association and their rights to collective bargaining are not	No risk	n/a

rights.	restricted. There is also a national union of workers (in bahasa: Serikat Pekerja Seluruh Indonesia).		
5) The project does not involve and is not complicit in any form of forced or compulsory labour.	No forced or compulsory labour is involved in the project. All employees voluntarily entered into official working contracts. In addition, Indonesia has ratified the International Labour Conventions on the elimination of forced labour (No. 105).	No risk	n/a
6) The project does not employ and is not complicit in any form of child labour	No children are hired or forced to work for the project. Furthermore, Indonesia has ratified the International Labour Conventions on the elimination of child labour (No. 138).	No risk	n/a
7) The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.	No employment policies have been designed that would result in favouring certain people based on race, colour, gender, religion, sexual orientation, political opinion, etc. Indonesia has also ratified the International Labour Conventions on the elimination of discrimination in employment (No. 111).	No risk	n/a

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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.	A hydro project in general does not expose workers to unsafe or unhealthy work environments in terms of toxins or chemicals. In addition the project follows national safety rules under Indonesian Law No. 1 year 1970 that covers work safety.	No risk	n/a
9) The project takes a precautionary approach in regard to environmental challenges and is not complicit in practice contrary to the precautionary principle.	The project is a renewable energy project. The hydro plant is built on an existing station. Therefore no risk is seen for this safeguarding principle. In addition, Indonesia is Party to the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the Convention on Wetlands (Ramsar Convention). It is also a Party to the Convention on the Conservation of Migratory Species of Wild Animals (CMS) agreements.	No risk	n/a
10) The project does not involve and is not complicit in significant conversion or degradation of critical	There is no relevance to the SSC-CPA as the project is not a greenfield project but	No risk (anymore)	n/a

natural habitats.	rehabilitates an existing site. A temporary road was cleared in the forest to allow for trucks carrying heavy equipment, but the road has already been returned to its initial state.		
11) The project does not involve and is not complicit in corruption	Corruption is illegal in Indonesia under the Indonesian Law No. 31 year 1999 that covers corruption eradication. All permits that are required legally have been attained following applicable laws and regulations. At the same time, there is a formal agreement with the local stakeholders that they will get some revenue from selling the electricity. This financial assistance, provided by the project implementer, will be managed by the local community leaders. The villagers also have visibility of this.	Low risk	n/a
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**
No additional critical issues were identified for this project	n/a	n/a	n/a

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F.2. Sustainable Development matrix

[See Toolkit 2.4.2 and Toolkit Annex I]

Insert table in section C3 from your Stakeholder Consultation report (Sustainable Development matrix).

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			**Air pollutants (dust concentration TSPM):** The project will not have any negative impact on the air quality. This indicator is therefore neutral.	0
Water quality and quantity			**Water quantity (m^3):** The overall quantity of water remains equal when compared to the baseline scenario. This indicator is thus	0

			scored as '0'.	
Soil condition			**Pollutants to be released to the soil:** There will not be any significant change to the soil condition before or after the project activity. This indicator will be scored as neutral.	0
Other pollutants			**Other pollutants (noise level):** There is no change to the noise level before or after the project activity.	0
Biodiversity			**Threatened plants and animals:** There is no significant change to the livelihood of plants or animals before or after the project activity. Aquatic life is not affected when compared to the baseline scenario. The indicator is thus scored neutrally.	0
Quality of employment			**Certificates**: The project activity will provide new skills, permanent jobs, and better implementation of safety and health conditions in operating the new technology by providing Standard Operating Procedures and regular training. Therefore, the project activity increases the quality of employment.	+
Livelihood of the poor			**Poverty alleviation:** The project will improve the livelihood of those hired, and thus have a positive impact on	0

			their economic well-being. Most workers will be coming from the nearest village and will receive appropriate on the job training. However, the project will not greatly affect the whole region. Therefore the indicator is thus scored neutral.	
Access to affordable and clean energy services			**Reliability of services**: The electricity generated in the plant is fed into the regional grids through the local grid. This leads to a high probability of improving the grid stability and availability of electricity to consumers, including local consumers (villagers and sub-urban inhabitants). In addition, the project activity leads to diversification of the regional energy supply, which is dominated by conventional fuel based generating units. However, as the project will only contribute 1 MW to the grid the indicator is scored neutral.	0
Human and institutional capacity			**Education and skills, gender equality:** The project will improve the human and institutional capacity, but will not have a substantial impact on local communities since the improvement is limited to the	0

			employees working with the project activity. In consequence, this indicator has neutral impact.	
Quantitative employment and income generation			**Number of jobs created:** The project activity will hire about 15 local people who will become operators and supervisors and who will undergo proper training. The project will thus provide jobs and income.	+
Balance of payments and investment			**Foreign currency savings from fossil fuel import:** The project activity leads to an energy cost reduction by replacing fossil fuels for the generation of electricity. In addition, the project generates cost savings from the costs of the fossil fuels. The project will not have an impact on net foreign currency savings related to fossil fuel import since most of the fossil fuel used in the baseline is from the country of origin – thus the neutral score.	0
Technology transfer and technological self-reliance			**Training/workshops for employees:** The project implementer, together with South Pole and the technology provider, will organise workshops for the staff on topics such as the technology used in the project activity, monitoring of the operation and	+

			CDM. Capacity building will be organised for new staff.	

Justification choices, data source and provision of references	
Air quality	Environmental Management and Monitoring Plan of Manggani mini hydropower plant, Feasibility Study Report (FSR)
Water quality and quantity	Environmental Management and Monitoring Plan of Manggani mini hydropower plant, Feasibility Study Report (FSR)
Soil condition	Environmental Management and Monitoring Plan of Manggani mini hydropower plant, Feasibility Study Report (FSR)
Other pollutants	Environmental Management and Monitoring Plan of Manggani mini hydropower plant, Feasibility Study Report (FSR)
Biodiversity	Environmental Management and Monitoring Plan of Manggani mini hydropower plant, Feasibility Study Report (FSR)
Quality of employment	Attendance list of training, training material and documentation
Livelihood of the poor	List of workers from local village
Access to affordable and clean energy services	Environmental Management and Monitoring Plan of Manggani mini hydropower plant, Feasibility Study Report (FSR)
Human and institutional capacity	List of workers from local village, Environmental Management and Monitoring Plan of Manggani mini hydropower plant
Quantitative employment and income generation	List of workers from local village, contract employment
Balance of payments and investment	Feasibility Study Report, Environmental Management and Monitoring Plan of Manggani mini hydropower plant
Technology transfer and technological self-reliance	Attendance list of trainings, training material, documentation

SECTION G. Sustainability Monitoring Plan

[See Toolkit 2.4.3 and Toolkit Annex I]

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No		1
Indicator		Quality of employment
Mitigation measure		n/a
Repeat for each parameter		
Chosen parameter		Certificates
Current situation of parameter		People in rural areas are not very familiar with health and safety in relation to their places of work.
Estimation of baseline situation of parameter		(Same as above)
Future target for parameter		Generating awareness of health and safety. New staff will be trained.
Way of monitoring	How	Regular training certificates
	When	Once per verification period
	By who	Project proponent ; DOE

No		2
Indicator		Quantitative employment and income generation
Mitigation measure		N/a
Repeat for each parameter		
Chosen parameter		Number of jobs created
Current situation of parameter		0
Estimation of baseline situation of parameter		Same as above
Future target for parameter		More than 0
Way of monitoring	How	Employment contracts
	When	Once a year
	By who	Project proponent, DOE

No	3
Indicator	Technology transfer and technological self-reliance
Mitigation measure	n/a
Repeat for each parameter	
Chosen parameter	Number of workshops and training-related opportunities
Current situation of parameter	Local people (potential future staff for the plant) are mainly working as farmers. Others have to move out from the village to find jobs.
Estimation of baseline situation of parameter	Same as above.
Future target for parameter	The project aims to employ local people in the plant. This will then lead to a situation where the locals get additional

		training in order to be able to run the hydro plant and the situation where they no longer have to leave the village for jobs.
Way of monitoring	How	Training records
	When	Once per verification period
	By who	Project proponent ; DOE

Additional remarks monitoring

N/A

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]

The CPA-DD section on additionality follows Gold Standard guidance. Please refer to Section B.3 of the CPA-DD.

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H.2. Conservativeness

[See Toolkit 2.2]

The project is using the latest version of the methodology and a conservative baseline approach. Please refer to section B.5 of the CPA-DD.

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ANNEX 1 ODA declaration

[See Toolkit Annex D]

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.