CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-PDD)
Version 03 - in effect as of: 28 July 2006

CONTENTS

SECTION A. General description of project activity

A.1 Title of the project activity:

>>
24 MW Dummagudem Hydel project by SLS Power Corporation Limited
Version 1
10/12/2009

A.2. Description of the project activity:

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The 24 MW Dummagudem hydro project of SLS Power Corporation Limited is a grid connected run-of-river hydro power project located in Andhra Pradesh, India. The proposed project is located in the Southern Power Region and has been conceived for harnessing the power potential of left flank of the branch anicut in the Godavari River in Khammam District. This project involves the installation of six Horizontal Pit type full Kaplan turbines & generating units of 4 MW each to generate 24MW of power utilizing a rated head of 4.8m and a design discharge of 601.02m^3.

Hydropower is a clean, renewable source of energy and does not contribute to air or water pollution or the emissions of greenhouse gases. The water after powering the turbines will be discharged back into the Godavari River through a tailrace canal, located within the river course close to the left bank open channel.

The objective of the proposed project is to generate power from harnessing the water to meet the ever increasing demand for electricity in the Southern region of India. The generated power will be exported to the Southern regional grid via the sub-station at Bhadrachalam. The project is expected to export 100,300 MWh of energy per year to the grid. Hydro power plants are considered to be zero emission power sources. The project activity will displace the fossil fuel fired power generation from the grid and hence contribute to a reduction in greenhouse gases.

As determined in Section B.4, the baseline scenario relates to the export of electricity to the grid by the operation of grid connected power plants and by the addition of new generation sources. The baseline scenario is the same as the scenario existing prior to the start of the implementation of the project activity.

Contribution of the project activity to Sustainable Development

The project is a run-of-river hydroelectric plant & hence does not involve the construction of a dam, therefore the negative impacts often associated with dams such as the relocation of communities and residents as well as transfer of waterways will not occur.

Locally, the project will contribute significantly to the social and economic situation of the local residents through creation of employment opportunities during the construction of the power plant besides providing regular employment opportunities during the operation of the project.

The project activity improves the connectivity of the project area, since it will result in the construction of additional roads and other infrastructure developments by spending around INR 18 Lakhs (2% of the expected CER revenue, as per MOEF guidelines)[1] as part of the local area development assistance annually.

Contribution of the project activity to the Environment

The proposed project activity utilizes available hydro sources for power generation. The state of Andhra Pradesh is part of Southern regional grid system and power generation in the Southern Grid is dominated by fossil fuels. The project activity will not result in any greenhouse gas emissions and causes no negative impacts on the environment, both at a local as well as at a global level. The project activity does not result in degradation of any natural resources, health standards, etc. at the project area. The project will not cause any air, water, or noise pollution.

Contribution of the project activity to Technological Well Being

The project would utilize environmentally safe and sound technologies available in the hydroelectric power generation sector.

A.3. 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)	If Party wishes to be considered as a project participant
India (host)	**Private Entity:** SLS Power Corporation Limited	No
(*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party(ies) involved is required.		

The official contact for the project activity will be SLS Power Corporation Limited, contact details as listed in Annex I.

A.4. Technical description of the project activity:

A.4.1. Location of the project activity:

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A.4.1.1. Host Party(ies):

>>
India

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

>>

[1] Refer Appendix I of the PDD

Andhra Pradesh

A.4.1.3. City/Town/Community etc:

>>
Khammam District

A.4.1.4. Detail of physical location, including information allowing the unique identification of this project activity (maximum one page):

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The project is located on left flank of the branch anicut in the Godavari River. The access distance of the project site from:

State Capital, Hyderabad: 378km
District headquarter, Khammam: 160km
Nearest railhead, Kottagudem: 62km

The geographical co-ordinates of the project site are:

Longitude: 80' – 53' – 12"
Latitude: 17' – 51'- 19"

A.4.2. Category(ies) of project activity:

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

A.4.3. Technology to be employed by the project activity:

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The proposed project is a run-of-river hydro electric power plant with a design discharge of rated head of 4.8m and a design discharge of 601.02 cumecs. The hydro power plant has an installed capacity of 24 MW (6 x 4 MW each) and is capable of producing 103,400 MWh of power per year in a 90% dependable year with 95% machine availability and operating at a plant load factor of 49.18%. The catchment area at the diversion site is 307 km^2.

The salient features of the project are:

Parameter	Value
Net head	4.8m
Type of power house	Surface
Design discharge	600 Cumecs
Type of switchgear	11/132kV air insulated switchgear
Speed of turbine	111 rpm
Generation voltage	11kV
Transmission voltage	132kV
GSU transformer	20MVA 3 phase, 11/132 kV

The main components of the project are:

- A 100m wide gated weir
- An intake located at the axis of branch anicut
- One de silting basin
- A Navigation canal head race power channel
- Six (9.5 m x 10.5 m each) intake gate opening is provided for flow of water to turbines
- A surface power house to house six horizontal pit type full Kaplan units of 4MW each
- A tail race channel with a reverse slope and then with gradient up to 550 m that will discharge into the river in the direction of the river flow
- A surface switchyard 70m x 30m which shall house the generator transformer bays and an outgoing line
- 11 / 132 kV SC line from the site to Bhadrachalam to Etapaka Sub-Station (20 Kms)for evacuation of power

The turbine characteristics would be selected such that the optimum efficiency falls close to the rated output of the unit at rated head. A pumping station will be provided to supply an adequate quantity of water from the tailrace for cooling of the turbine generator bearings, generator air coolers and selected plant services.

Each synchronous generator would be horizontal shaft, salient pole type, 3 phase, 50Hz directly coupled to the turbine. It would be rated for a continuous output of 4000 kW at a power factor of 0.85 and a rated voltage of 11kV with the capability of 10% intermittent overloading.

The power from the proposed project activity has been planned to be pooled at the proposed 132kV Etapaka (Bhadrachalam) sub-station. The Bhadrachalam sub-station in turn is hooked to the grid. The line length shall be about 20kms.

In the absence of the project activity the power in the grid would have been supplied by other grid connected power plants and addition of new power plants. The baseline scenario identified in Section B.4 corresponds to this situation.

The technology to be involved will be environmentally safe and produced locally.

A.4.4 Estimated amount of emission reductions over the chosen crediting period:

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A seven year renewable crediting period has been chosen.

Year	Annual estimation of emission reductions in tonnes of CO_2e
2010	90,270
2011	90,270
2012	90,270
2013	90,270
2014	90,270
2015	90,270

2016	90,270
2017	90,270
2018	90,270
2019	90,270
Total estimated reductions (tonnes CO_2e)	902,700
Total number of crediting years	10
Annual average over the crediting period of estimated reductions (tonnes of CO_2e)	90,270

A.4.5. Public funding of the project activity:

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The project has not received any public funding or Official Development Assistance (ODA) and an undertaking from the project owner will be provided to DOE during validation.

SECTION B. Application of a baseline and monitoring methodology

B.1. Title and reference of the approved baseline and monitoring methodology applied to the project activity:

>>
Version 11 – Approved consolidated baseline and monitoring methodology ACM0002
"Consolidated baseline methodology for grid-connected electricity generation from renewable sources", EB 52

Version 2 – Tool to calculate the emission factor for an electricity system, EB 50
Version 5.2 – Tool for the demonstration and assessment of additionality, EB 39, Annex 10

B.2 Justification of the choice of the methodology and why it is applicable to the project activity:

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The project activity meets the applicability criterion mentioned in the methodology.

S.No.	Criteria	Justification
1	This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	The hydro electric power plant is a greenfield plant connected to the Southern Regional Grid and will produce power for sale to the grid, displacing fossil fuel based power generation. Thus, criterion (a) is applicable whilst (b) and (c) and (d) do not apply.
2	The project activity is the installation or modification/retrofit of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit.	The project activity involves the installation of a greenfield run-of-river hydro power plant. Thus, this criterion is applicable.
3	In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter $EG_{PJ,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference	Since the hydro electric power plant is a greenfield plant and not a capacity addition, retrofit or replacement project, this criterion does not apply to the project.

	period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	
4	In case of hydro power plants: - The project activity is implemented in an existing reservoir, with no change in the volume of reservoir. - 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/m^2. - 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/m^2.	The project activity results in new run of river reservoir and the power density is 192 W/m^2 which is greater than 4W/m^2. Thus, the project is applicable.

The methodology is not applicable under the following conditions:

S. No.	Criteria	Justification
1	Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site.	The project activity is a hydro power plant and not a fuel switch project. Hence, it is applicable under the methodology.
2	Biomass fired power plants	The project activity is a hydro power plant (and not a biomass fired power plant) and hence is applicable under the methodology.
3	Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m^2.	The project activity results in new reservoir but the power density is 192$W/m^{2,}$ which is greater than 4W/m^2. Thus, the project is applicable.

B.3. Description of the sources and gases included in the project boundary

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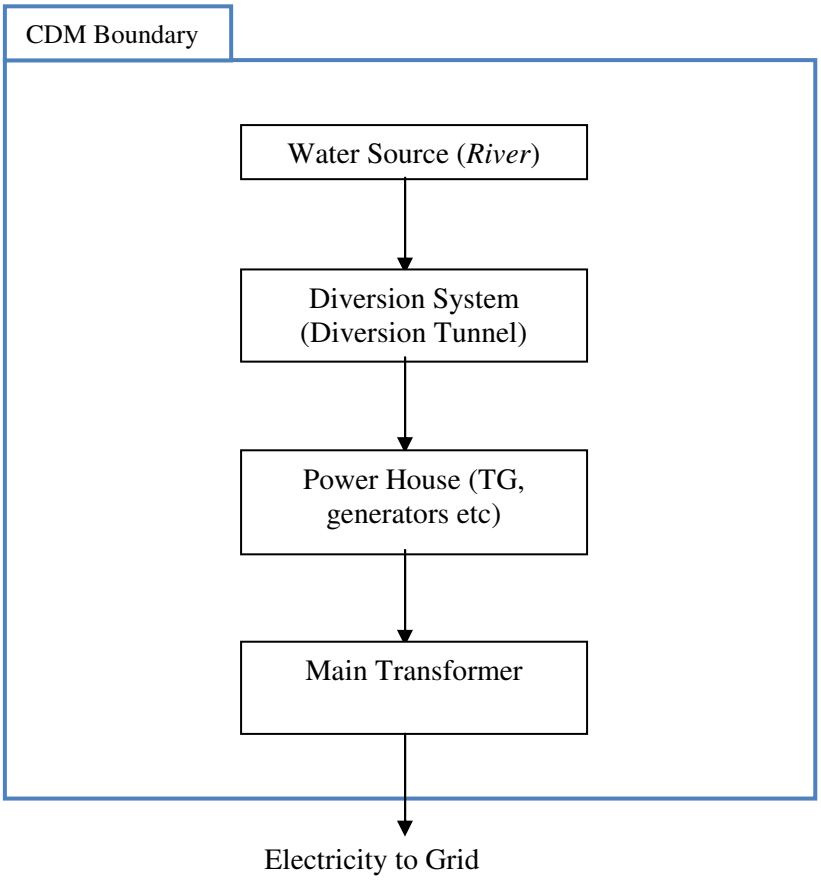
The methodology states – "*The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to.*"

In case of the project activity the project boundary thus includes the project hydro power plant and all the other power plants connected to the Southern Regional grid of India.

The electricity system is defined according to the *"Tool to calculate the emission factor for an electricity system version 2"*.

For the purpose of the project activity the relevant grid is defined by the power generating units serving the same grid as the project activity. In the case of India there are regional grids which facilitate the transfer of electricity between states and which are supplied by central sector power stations operating in the region. Andhra Pradesh is part of the Southern Region and we have therefore considered the Southern grid.

The below flow diagram physically delineates the project activity and its relevant information:



The greenhouse gases and emission sources included in or excluded from the project boundary are shown in the table below:

Source		Gas	Included?	Justification/ Explanation
BASELINE	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity.	CO2	Yes	This gas is included in the project boundary as this was produced in the baseline by the operation of fossil fuel fired power plants connected to the grid.
		CH4	No	The methodology considers this as a minor emission source and hence has been excluded for simplification.
		N2O	No	The methodology considers this as a minor emission source and hence has been excluded for simplification.
PROJECT ACTIVITY	For geothermal power plants, fugitive emissions of CH_4 and CO_2 from non condensable gases contained in geothermal steam.	CO2	No	The project activity is not a geothermal power plant and hence this is automatically excluded.
		CH4	No	The project activity is not a geothermal power plant and hence this is automatically excluded.
		N2O	No	The methodology considers this as a minor emission source and hence has been excluded for simplification.
	CO_2 emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants	CO2	No	The project activity is not a geothermal power plant or a solar thermal power plant and hence this is automatically excluded.
		CH4	No	The methodology considers this as a minor emission source and hence has been excluded for simplification.
		N2O	No	The methodology considers this as a minor emission source and hence has been excluded for simplification.
	For hydro power plants, emissions of CH_4 from the reservoir	CO2	No	The methodology considers this as a minor emission source and hence has been excluded for simplification.
		CH4	No	The project activity results in a new reservoir but since the power density is greater than $10W/m^2$ these emissions are neglected in line with the methodology.
		N2O	No	The methodology considers this as a minor emission source and hence has been excluded for simplification.

B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

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Four possible baseline scenarios of the project activity have been identified as:

1. The proposed project activity without CDM i.e. the construction of a new hydro electricity generation plant with an installed capacity of 24 MW connected to the regional grid, implemented without CDM status.

2. Continuation of the current situation i.e. electricity will continue to be generated by the existing generation mix operating in the grid.

3. Construction of a fossil fuel based power plant with the same installed capacity or the same annual power output.

4. Construction of a power plant using another renewable energy resource with the same installed capacity or the same annual power output.

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

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

Alternative 3 – The installation of a new fossil fuel based power plant is not a credible baseline as to undertake an investment on a similar scale is not feasible. Further, there are no coal linkages available to the PP in Andhra Pradesh nor is coal available at a competitive price. Also, excluding this baseline is conservative as coal would result in higher baseline emissions (due to its higher CO_2 intensity).

Alternative 4: In examining this option it is necessary to consider fuels, materials and technology available at the project site. We can therefore rule out wind, biomass, tidal or solar as no projects of similar scale have been developed in the Dummagudem village. Furthermore there is not enough exploitable wind power resource on the project site to build a wind power plant with equivalent amount of power generation i.e. 24MW. Moreover, biomass power generation of the same annual power output would require huge amounts of biomass which is in shortage in the regions where the project is located & comes at a cost. Similarly, tidal or solar implementation would be impossible in the region.

From the above analysis the regional grid (*Alternative 2*) has been taken as the baseline and baseline emissions have been calculated as per the methodology – "*I f the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:*

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

For the purpose of the project activity the relevant grid is defined by the power generating units serving the same grid as the project activity. In the case of India there are regional grids which facilitate the transfer of electricity between states and which are supplied by central sector power stations operating in the region. Andhra Pradesh is part of the Southern Region and we have therefore considered the Southern grid.

We have adopted the approach specified in the *"Tool to calculate the emission factor for an electricity system version 2"* to calculate the CO_2 emission coefficient of the regional electricity grid. The weighted average of simple operating margin and build margin has been used for calculation of the baseline. The grid emission factor has been obtained from the *"Central Electricity Authority CO_2 Baseline Database version 5"* and is fixed ex-ante at 0.9tCO_2/MWh and is calculated as shown in table below:

Parameter	tCO_2/MWh
Simple Operating Margin	0.97
Build Margin	0.82
Combined Margin	0.90

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 CDM project activity (assessment and demonstration of additionality): >>

The following section demonstrates that the project activity is not part of the baseline scenario by drawing on version 05.2 of *"Tool for the demonstration and assessment of additionality"*.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a: Define alternatives to the project activity:

The demonstration of the baseline scenarios (in section B4) incorporated the steps contained within this section and the credible baseline scenarios correspond to:

1. *The proposed project activity without CDM i.e. the construction of a new hydro electricity generation plant with an installed capacity of 24MW connected to the regional grid, implemented without CDM status.*

   Under this scenario the project will generate zero emission power and cause emission reductions by displacing equivalent power generation from fossil fuels. However, the project cannot be implemented without CER revenues due to the investment barrier, which is analyzed in detail under Step 2.

2. *Continuation of the current situation i.e. electricity will continue to be generated by the existing generation mix operating in the grid.*

   Under this alternative, the increasing demand of electricity would be met by increasing the installed capacity through the possible expansion of existing fossil fuel based power plants as well as construction of new power plants, according to the current policies and regulations. This is a realistic and credible baseline scenario.

3. *Construction of a fossil fuel based power plant with the same installed capacity or the same annual power output.*

This alternative is to construct a fossil fuel-fired power plant with equivalent annual electricity generation to the project. This is not credible given the scale of the project and also would not be conservative given that the predominant fuel used in the grid, coal, has higher CO_2 emissions per unit of power generated.

4. *Construction of a power plant using another renewable energy resource with the same installed capacity or the same annual power output.*

As pointed in Section B.4 above, only wind power, biomass power, solar & tidal plants are technically feasible among all the alternatives of grid-connected renewable energy power project. There are not enough exploitable wind power resources on the project site to build a wind power plant with equivalent amount of annual electricity generation of a 24 MW hydro power plant. Similarly, biomass based power generation requires access to biomass material, which is in limited supply in the area where the project is located & comes at a cost. This is thus not a credible baseline scenario. Similarly, tidal or solar implementation would be impossible in the region.

Sub-step 1b: Consistency with mandatory laws and regulations:

In terms of the alternatives mentioned above, all conform to local and national policies and are therefore credible.

Step 2: Investment analysis

The investment analysis has been undertaken in compliance with EB51 Annex 58 -*"Guidance on the Assessment of Investment Analysis, Version 3"*.

Sub-step 2a: Determine appropriate analysis method

Since the project activity is grid connected electricity generation, *Option III i.e. benchmark analysis* has been used to demonstrate additionality of the project.

Sub-step 2b: Option III. Apply benchmark analysis

The baseline of the project activity is the grid electricity system. This alternative doesn't require capital investment. Hence, investment comparison analysis cannot be applied and benchmark analysis is deemed the most appropriate option.

The Internal Rate of Return (IRR) is one of the known financial indicators used to demonstrate the additionality of the project. Among the five financial indicators recommended by the "Additionality Tool", IRR is one alternative. The tool permits us to select either the Project IRR (the viability of the project to service debt) or the Equity IRR (the final return on the initial equity investment) to demonstrate the additionality. Out of the two, we have chosen to analyze the Equity IRR of the project and compare it to a relevant benchmark as explained below.

Due to the fact that Equity IRR has been chosen as the financial indicator, the appropriate benchmark, as per point no 12 of the "Guidance on Assessment of Investment Analysis "(Annex 58 of EB 51) is the required/expected returns on equity.

The required/expected returns on equity have been arrived at by using the Capital Asset Pricing Model (CAP-M). The CAP –M has been calculated using the formula below:

Rate of Return on Equity Capital = Risk Free Rate + (Market Return - Risk Free Rate)* Applicable Unleveraged Beta

$K_e = R_f + B * (R_m - R_f)$

Where:

K_e = Rate of Return on Equity Capital

R_m = Market Return

R_f = Risk – Free Rate of Return

B = Applicable Unleveraged Beta

$R_m - R_f$ = Market Risk Premium

All the power generating companies listed and trading in the Bombay Stock Exchange (BSE) have been considered for computing the risk of the project type/activity. The BSE Sensex has been chosen as the proxy for market return, as it is more conservative than the BSE 500. A period of 3 years has been considered for computing the beta and monthly intervals have been used in computing the beta. The beta, so computed by regressing the stock returns over the market return has been unlevered using Hamada's equation. The Geometric Mean has been used to arrive at the risk of the project type / activity. As the asset beta has been taken into consideration, the risk computed reflects the risk faced by the project type/activity as the leverage risk has been completely removed.

The geometric mean of asset beta (B) of all the power generating companies work out to 0.77 and the market return (R_m for a period of 30 years) works out to 18.03%. The risk free rate (R_f) has been arrived at 8.13%, being the average rate earned on month-end yield to maturity of SGL transactions in the central government of India.

Based on the above the market risk premium works out to 10% and using the beta of 0.77, the required/expected return (K_e) for the project type/ activity works out to **15.77%** based on the CAP-M formula. The calculations will be provided to the DOE at the time of validation.

Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III):

The equity IRR calculations include all the revenues and costs associated with the project. The revenues include the sale of electricity from the power plant using the levelized tariff, assuming escalation as nil[2].

[2] This is as per the Power Purchase Agreement signed with Tata Power Ltd.

The major costs to be incurred are the operation and maintenance (O & M) of the equipments and the interest the project owners have to pay on the loan/working capital.

The costs and revenues have been detailed below:

Costs (in INR Lakhs)		
Description	**Value**	**Source**
Civil costs	7158.00	DPR
Hydro-Mechanical	1290.00	DPR
Electro-Mechanical equipment cost	7206.00	DPR
Power Evacuation	715.00	DPR
Other costs	425.00	DPR
Project Capital cost	**16794.00**	
Assumed IDC	1641.43	IREDA Loan documents
Project cost with IDC	**18435.43**	
Debt Equity Ratio (%)	70:30	IREDA Loan documents
Loan amount	12904.80	IREDA Loan documents
Loan Period (including Moratorium) in years	12 (9 + 3)	IREDA Loan documents
Loan Interest Rate (%)	13.15	IREDA Loan documents
Interest on Working Capital (%)	13.15	IREDA Loan documents
Fixed Operating Costs		
Annual O & M costs (INR Lakhs/MW)	12.77	DPR
O & M Escalation (%)	10.00	DPR
Lifetime of the project activity (years)	25.00	DPR
Expected Power Generation and Revenues		
Rated Capacity (kW)	24000	DPR
Operating Period (days)	365	DPR
Operating Hours	8760	-
Plant Load Factor (%)	49.18	DPR/IREDA Loan documents
Gross Power Generated (MWh)	103,400	DPR
Auxiliary Power consumption & Transmission Loss (%)	3.00	DPR
Net Power Export to grid (MWh)	100,300	DPR
Electricity sale rate (Rs/kWh)	3.50	Power Purchase Agreement (PPA)with Tata Power Ltd
Duration of PPA (years)	10	Power Purchase Agreement (PPA)with Tata Power Ltd

Escalation in sale rate (INR)	0.00	Power Purchase Agreement (PPA)with Tata Power Ltd
Subsidy from Govt. And other Official Assistance (INR Lakhs)	1168.71	MNES Subsidy
Other Assumptions		
Depreciation Rate (Company's Act) E&M (%)	2.57	Companies Act of India
Accelerated Depreciation Rate Income Tax Act (%)	80.00	Income Tax Act of India
Minimum Alternate Tax (%)	16.99	Income Tax Act of India
RESULTS		
Equity IRR without CDM Benefits (%)	**11.97**	**Calculated**

All the assumptions and costs have been taken from the Detailed Project Report/IREDA Loan documents prepared for the project activity. The equity IRR of the project activity without taking into account CER revenues is only **11.97%** for an estimated lifetime of 25 years[3].

Analyzing this rate of return without taking into account the CDM revenues, the project activity is found to be financially unattractive against the benchmark. The equity IRR (11.97%) is lower than the expected return on equity for similar projects i.e. the benchmark (15.77%) calculated above.

From these figures, it is clear that the CDM status of the investment is fundamental to the decision to invest, as the project is unviable without CER revenues. This is also clear from the fact that the loan application made to IREDA clearly incorporates the CDM revenue stream, in order to improve the expected financial returns from the project activity. The 'sensitivity analysis' carried out on the financial performance of the project activity as per sub-step 2-d below again highlights the relative importance of CER revenues.

Sub-step 2d: Sensitivity analysis

The sensitivity analysis has been done in accordance with EB 51, Annex 58 '*Guidance on the Assessment of Investment Analysis'* paragraph 16 and 17. The equity IRR of the proposed project activity is driven by the electricity tariff and the investment costs. Thus, we varied the project cost, Plant Load Factor (PLF), electricity tariff rate and the O& M cost in order to analyze the sensitivity of the project. The parameters were varied in the range of ± 10% and the corresponding impacts have been highlighted in the table below (all results are minus the revenues from CER sales):

[3] The equity IRR analysis has been undertaken for a period of 25 years in line with the "guidance on Investment Analysis".

Factor	Variation				
	-10%	-5%	0%	+5%	+10%
Project cost	14.65%	13.24%	11.97%	10.81%	9.75%
Plant Load Factor	8.21%	10.11%	11.97%	13.81%	15.65%
Electricity Tariff	10.95%	11.48%	11.97%	12.43%	12.87%
O&M Cost	12.72%	12.35%	11.97%	11.59%	11.19%
Benchmark	*15.77%*				

Thus, it is clear from the table above that the project is additional to the baseline scenario. An unrealistic 10% decrease in project costs increases the equity IRR to 14.65%, which is still below the benchmark. The project costs are only bound to increase due to inflation and rising costs/demand of input materials like metal, cement, etc.

The dependence of a hydro project on Plant Load Factor (PLF) poses a significant risk to the financial viability of the project activity. The sensitivity of the equity IRR to variations in PLF demonstrates the risk associated with the project. A 10% reduction in PLF (*estimated as 49.18% in the DPR*) lowers the equity IRR to a paltry 8.21% whilst a 10% increase brings the IRR (15.65%) close to the benchmark (15.77%), but is extremely unlikely considering the fact that PLF determination is a scientific process based on hydrology studies and discharge data available at the site for 10 years. Further, there is always a chance that the PLF will be lower than historical estimates due to climatic conditions, leading to reduced rainfall and droughts. Thus, it is clear that a 10% increase in PLF is highly unlikely to occur & this scenario can be neglected for the sensitivity analysis.

The equity IRR is also sensitive to the electricity tariff and this parameter is important in determining the primary revenues of the project activity. The PPA signed with Tata Power Ltd offers a fixed price for 10 years and hence, the variations in electricity price have been undertaken from year 11 onwards. As is clear from the table above, even with a 10% increase in tariff, the equity IRR (12.87%) still remains below the benchmark of 15.77%. There is generally no escalation of tariff in the PPA and the above table clearly shows the limited impact of adjusting the power tariff on the IRR.

Further, a variation in the O & M costs has been considered for sensitivity analysis. As the costs are going up every year due to inflation, the costs of O&M coming down is not a realistic expectation. However, we have still considered a 10% reduction in these costs for the sake of completeness. This raises the equity IRR to 12.72%, which is still way below the benchmark of 15.77%. Thus, it is clear that the equity IRR remains below the benchmark even after variations in the input parameters listed above. Thus, the sensitivity analysis confirms the additionality of the project activity.

Step 3: Barrier analysis

Investment analysis has been undertaken.

Step 4: Common practice analysis

Common practice analysis acts as a credibility check to complement the investment analysis done in Step 2. According to the *"Tool for the demonstration and assessment of additionality version 05.2"* – "*Projects are considered similar if they are in the same country/region and/or rely on a broadly similar*

technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc."

The common practice analysis is identified and discussed through the following sub-steps:

Sub-step 4a: Analyze other activities similar to the proposed project activity:

As per the latest information available on the website of the Ministry of New and Renewable Energy (MNRE)[4] , Government of India, there are a total of 57 commissioned small hydro projects (capacity under 25MW as per MNRE rules) in the state of Andhra Pradesh whereas 11 projects are under commissioning. The following table details out the hydro power stations in the state of Andhra Pradesh and divides them on the basis of their sectors and capacities:

Projects already commissioned in Andhra Pradesh

Public Sector	
Capacity less than 10 MW	14
Capacity from 11 to 20 MW	2
Capacity greater than 20 MW	1
Total	**17**
Private Sector	
Capacity less than 10 MW	40
Total	**40**

Projects under commissioning in Andhra Pradesh

Capacity less than 10 MW	11
Total	**11**

From the above tables, it is clear that only one commissioned project in Andhra Pradesh is of a comparable capacity to the project activity (i.e. greater than 20 MW) and has been implemented in the public sector (commissioned in 1982-83) & thus cannot be compared to the project activity whereas the remaining 56 projects are of a smaller scale and hence, cannot be directly compared to the project activity. Further, there are no projects of capacity greater than 10 MW under commissioning in the state. Thus, it is clear that the project activity is not common practice in the state/region at all.

In terms of CDM, four projects among these (all small-scale as per CDM rules) have been registered under the CDM with the UN Executive Board and details on these are as follows:

S. No.	Name of Power Station	Total Installed Capacity (MW)	UNFCCC Link
1	11.3 MW renewable	11.3	http://cdm.unfccc.int/Projects/DB/DNV

[4] http://mnes.nic.in/prog-smallhydro.htm

	Energy Project for a Grid System by K.M.Power (P) Limited.		-CUK1162557680.05
2	4.05 MW Grid connected Small Hydroelectric Project in Andhra Pradesh.	4.05	http://cdm.unfccc.int/Projects/DB/DNV-CUK1173863559.91
3	Lower Manair Mini Hydel Scheme at Kakatiya Canal located in Andhra Pradesh.	2.00	http://cdm.unfccc.int/Projects/DB/TUEV-SUED1171556328.66
4	1.725 MW Mini Hydel Scheme on Nagavali River, Andhra Pradesh.	1.725	http://cdm.unfccc.int/Projects/DB/DNV-CUK1200591408.09/view

As can be seen from the above table, no hydro power project has been implemented in the state in the same installed capacity/ range as the project activity without CDM benefits and hence, the proposed project activity is not a common occurrence at all and requires CDM funding in order to be implemented.

Sub-step 4b: Discuss any similar Options that are occurring

No similar power plants (in terms of scale and CDM registration) were found to be operating in the state.

DEMONSTRATION AND ASSESSMENT OF PRIOR CONSIDERATION OF THE CDM

As per Annex 46 of EB 41,

Proposed project activities with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are required to demonstrate that the CDM was seriously considered in the decision to implement the project activity. Such demonstration requires the following elements to be satisfied:

(a) The project participant must indicate awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project. Evidence to support this would include, inter alia, minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participant, to undertake the project as a CDM project activity.

The start date of the project activity is 5th October 2009, which is after 2nd August 2008. The PP has submitted its 'Prior consideration of CDM' form to the UNFCCC on 17th November 2009 and the UNFCCC Secretariat acknowledged receipt on 17th December 2009. Evidence for the same will be provided to the DOE. Thus, point (a) is not applicable to the project activity.

(b) *The project participant must indicate, by means of reliable evidence, that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation .Evidence to support this should include, inter alia, contracts with consultants for CDM/PDD/methodology services, Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds), evidence of agreements or negotiations with*

a DOE for validation services, submission of a new methodology to the CDM Executive Board, publication in newspaper, interviews with DNA, earlier correspondence on the project with the DNA or the UNFCCC secretariat;

As the PP has already submitted 'Prior Consideration of CDM' to the UNFCCC as mentioned above, point (b) is not applicable.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

>>

Baseline Emissions

The baseline emissions are calculated as per page 8 of the methodology – "*Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, calculated as follows:*

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

Where:

BE_y	*Baseline emissions in year y (tCO_2/yr).*
$EG_{PJ,y}$	*Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)*
$EF_{grid,CM,y}$	*Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system"* (tCO_2/MWh)

As mentioned in the methodology, $EG_{PJ,y}$ is calculated as follows for greenfield renewable energy power plants:

$$EG_{PJ,y} = EG_{facility,y} \quad \text{Equation 2}$$

Where:

$EG_{PJ,y}$	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year *y* (MWh/yr)
$EG_{facility,y}$	Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y* (MWh/yr)

The electricity supplied by the project activity is calculated from the following equation:

$$EG_{facility,y} = EG_{gross} - EG_{aux} \quad \text{Equation 3}$$

Where:

EG_{gross}	Gross electricity generation by the project activity in year y (MWh)
EG_{aux}	Auxiliary consumption by the project activity in year y (MWh)

Since the carbon dioxide emission factor has been fixed ex-ante at 0.9 tCO_2/MWh, equation 1 reduces to:

$$BE_y = EG_{PJ,y} * 0.9 \quad \text{Equation 4}$$

Project Emissions

The project activity results in new reservoir and as per page 6 of the methodology –

"*Hydro power plants*

For hydro power project activities that result in new reservoirs and hydro power project activities that result in the increase of existing reservoirs, project proponents shall account for project emissions, estimated as follows:

(a) If the power density (PD) of power plant is greater than 4 W/m^2 and less than or equal to 10 W/m^2:

$$PE_{HP,y} = \frac{EF_{Res} * TEG_y}{1000} \qquad \text{Equation 5}$$

Where:

$PE_{HP,y}$	*Project emissions from reservoir expressed as tCO2e/year*
EF_{Res}	*is the default emission factor for emissions from reservoirs and the default value as per EB23 is 90 Kg CO_2e /MWh.*
TEG_y	*Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (MWh).*

(b) If the power density (PD) of the power plant is greater than 10 W/m^2:

$$PE_{HP,y} = 0 \qquad \text{Equation 6}$$

The power density of the project activity is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}} \qquad \text{Equation 7}$$

Where:

PD	*Power density of the project activity, in W/m^2*
Cap_{PJ}	*Installed capacity of the hydro power plant after the implementation of the project activity (W)*
Cap_{BL}	*Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero.*
A_{PJ}	*Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m^2)*
A_{BL}	*Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m^2). For new reservoirs, this value is zero."*

Leakage

As per page 11 of the methodology – "*Project participants do not need to consider these emission sources as leakage in applying this methodology.*"

The leakage has therefore been neglected in line with the guidance.

Emission Reductions

As per page 11 of the methodology - *Emission reductions are calculated as follows:*

$$ER_y = BE_y - PE_y \qquad \text{Equation 8}$$

Where:

ER_y	*Emission reductions in year y (t CO_2e/yr)*
BE_y	*Baseline emissions in year y (t CO_2e/yr.*
PE_y	*Project emissions in year y (t CO_2/yr)*

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

(Copy this table for each data and parameter)

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:	Central Electricity Authority CO_2 Baseline Database version 5 http://cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm
Value applied:	0.90
Justification of the choice of data or description of measurement methods and procedures actually applied :	This value has been provided by the Central Electricity Authority (CEA), a government body for the Southern regional grid in India.
Any comment:	This parameter has been fixed ex-ante.

Data / Parameter:	**Cap_{PJ}**
Data unit:	W
Description:	Installed capacity of the hydro power plant after the implementation of the project activity
Source of data used:	Detailed Project Report
Value applied:	24,000,000
Justification of the choice of data or description of measurement methods and procedures actually applied :	The value has been taken from the Detailed Project Report prepared for the project activity.
Any comment:	-

Data / Parameter:	Cap_{BL}
Data unit:	W
Description:	Installed capacity of the hydro power plant before the implementation of the project activity
Source of data used:	Methodology
Value applied:	0
Justification of the choice of data or description of measurement methods and procedures actually applied :	For new hydro power plants, this value is zero.
Any comment:	-

Data / Parameter:	A_{PJ}
Data unit:	m^2
Description:	Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full
Source of data used:	Contour plans- Detailed Project Report
Value applied:	125,000
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data available in the Detailed Project Report is realistic.
Any comment:	-

Data / Parameter:	A_{BL}
Data unit:	m^2
Description:	Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full
Source of data used:	Methodology
Value applied:	0
Justification of the choice of data or description of measurement methods and procedures actually applied :	For new reservoirs, this value is zero.
Any comment:	-

B.6.3 Ex-ante calculation of emission reductions:

Baseline Emissions

As mentioned in section.B.6.1, $EG_{PJ,y}$ is calculated as follows for greenfield renewable energy power plants:

$$EG_{PJ,y} = EG_{facility,y} \qquad \text{Equation 2}$$

Where:

$EG_{PJ,y}$	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year *y* (MWh/yr)
$EG_{facility,y}$	Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y* (MWh/yr)

The electricity supplied by the project activity is calculated from the following equation:

$$EG_{facility,y} = EG_{gross} - EG_{aux} \qquad \text{Equation 3}$$

Where:

EG_{gross}	Gross electricity generation by the project activity in year y (MWh)
EG_{aux}	Auxiliary consumption by the project activity in year y (MWh)

As per the calculations made in the DPR, the 24 MW hydro power plant operates 365 days a year at a plant load factor of 49.18 % generating *103,400 MWh* of power. The auxiliaries of the power plant are expected to consume *1,551MWh* of power @ 1.5% of the gross generation. Further, transmission losses have been assumed @ 1.5% of total generation, leading to a further reduction of *1,551MWh* of exported power.

Thus, EG_{gross} = 103,400 MWh

And,

EG_{aux} = 1,551 + 1,551 MWh
= 3,102 MWh

$$EG_{facility,y} = EG_{gross} - EG_{aux}$$
= 100,300 MWh

Since the carbon dioxide emission factor has been fixed ex-ante at 0.9 tCO_2/MWh, equation 1 reduces to:

$$BE_y = EG_{PJ,y} * 0.9 \qquad \text{Equation 4}$$

Thus,

BE_y = 90,270 t CO_2e/yr

Project Emissions

The project activity results in new reservoir and as per page 6 of the methodology –

"*Hydro power plants*

For hydro power project activities that result in new reservoirs and hydro power project activities that result in the increase of existing reservoirs, project proponents shall account for project emissions, estimated as follows:

(a) If the power density (PD) of power plant is greater than 4 W/m^2 and less than or equal to 10 W/m^2:

$$PE_{HP,y} = \frac{EF_{Res} * TEG_y}{1000} \qquad \text{Equation 5}$$

Where:

$PE_{HP,y}$	*Project emissions from reservoir expressed as tCO2e/year*
EF_{Res}	*is the default emission factor for emissions from reservoirs, and the default value as per EB23 is 90 Kg CO_2e /MWh.*
TEG_y	*Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (MWh).*

(b) If the power density (PD) of the power plant is greater than 10 W/m^2:

$$PE_{HP,y} = 0 \qquad \text{Equation 6}$$

The power density of the project activity is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}} \qquad \text{Equation 7}$$

Where:

PD	*Power density of the project activity, in W/m^2*
Cap_{PJ}	*Installed capacity of the hydro power plant after the implementation of the project activity (W)*
Cap_{BL}	*Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero.*
A_{PJ}	*Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m^2)*
A_{BL}	*Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m^2). For new reservoirs, this value is zero."*

Thus,

PD = (24,000,000 – 0)/ (125,000 – 0)
= 192 W/m^2

The reservoir area created by the diversion barrage is 125,000 m^2, which gives a power density of 192 W/ m^2. Since this is greater than 10 W/ m^2, the project emissions are zero.

$$PE_{HP,y} = 0$$

Leakage

As per page 11 of the methodology – *"Project participants do not need to consider these emission sources as leakage in applying this methodology.*"

The leakage has therefore been neglected in line with the guidance.

Emission Reductions

As per page 11 of the methodology - *Emission reductions are calculated as follows:*

$$ER_y = BE_y - PE_y \qquad \text{Equation 8}$$

Where:
ER_y *Emission reductions in year y (t CO_2e/yr)*
BE_y *Baseline emissions in year y (t CO_2e/yr)*
PE_y *Project emissions in year y (t CO_2/yr)*
Thus,

$$ER_y = BE_y - PE_y$$
= 90,270 – 0
ER_y = 90,270 t CO_2e/yr

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

>>

Year	Estimation of project activity emissions (tonnes of CO_2e)	Estimation of baseline emissions (tonnes of CO_2e)	Estimation of leakage (tonnes of CO_2e)	Estimation of overall emission reductions (tonnes of CO_2e)
2010	0	90,270	0	90,270
2011	0	90,270	0	90,270
2012	0	90,270	0	90,270
2013	0	90,270	0	90,270
2014	0	90,270	0	90,270
2015	0	90,270	0	90,270
2016	0	90,270	0	90,270

2017	0	90,270	0	90,270
2018	0	90,270	0	90,270
2019	0	90,270	0	90,270
Total tonnes of CO_2e	**0**	**902,700**	**0**	**902,700**

B.7 Application of the monitoring methodology and description of the monitoring plan:

B.7.1 Data and parameters monitored:

Data / Parameter:	**EG_{gross}**
Data unit:	MWh
Description:	Gross electricity generation by the project activity in year y
Source of data to be used:	Energy meter readings from plant records
Value of data applied for the purpose of calculating expected emission reductions in section B.5	103,400
Description of measurement methods and procedures to be applied:	A logbook will be maintained on site to record hourly readings from the energy meter. The readings will be taken by the shift supervisor. This hourly data will be signed off at the end of every 8 hour shift by the engineer in charge of the shift and again at the end of each day by the power plant manager.
QA/QC procedures to be applied:	The generation energy meter will be calibrated annually.
Any comment:	All data will be kept for a minimum of 2 years following issuance of certified emission reductions or the end of the crediting period, whichever is later.

Data / Parameter:	**EG_{aux}**
Data unit:	MWh
Description:	Auxiliary consumption by the project activity in year y
Source of data to be used:	Plant records
Value of data applied for the purpose of calculating expected emission reductions in section B.5	3,102
Description of measurement methods and procedures to be applied:	A logbook will be maintained on site to record hourly readings from the auxiliary meter. The readings will be taken by the shift supervisor. This hourly data will be signed off at the end of every 8 hour shift by the engineer in charge of the shift and again at the end of each day by the power plant manager.
QA/QC procedures to be applied:	The auxiliary meter will be calibrated annually.
Any comment:	All data will be kept for a minimum of 2 years following issuance of certified

	emission reductions or the end of the crediting period, whichever is later.

B.7.2 Description of the monitoring plan:

>>

In accordance with the methodology all the data collected during the crediting period will be archived electronically and kept for at least two years after the end of crediting period. 100% of the data will be monitored and the meters owned by project owners will be calibrated at regular intervals to ensure low uncertainty in the monitored data.

Monitoring shall consist of metering the gross generation and auxiliary consumption of electricity in the project activity. An internal audit will be carried out every year at the power plant to ensure parameters are being monitored in accordance with the project PDD.

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

The suppliers of the equipments will train the staff in- charge during erection, to operate and maintain the equipments efficiently. Apart from this, the equipment supplier will provide complete manuals and documentation providing details for the maintenance schedule and the required activities associated with the project.

The monitored data will be reported by the PP to Ecolutions (the CDM consultant) on a monthly basis for the calculation and estimation of emission reductions. This data will be checked against initial estimates and a summary report will be provided quarterly by Ecolutions. If the project is not performing as expected or if there are any negative impacts on the volume of emission reductions obtained, on the basis of the monthly data being monitored, a report will be sent to the PP outlining where the project is deviating in its generation of emission reductions and the immediate measures which need to be undertaken to maintain the expected generation of emission reductions from the operation of this project.

For each verification period Ecolutions will prepare a monitoring report that will be submitted to a DOE for verification, however visits to the site may be undertaken by Ecolutions during the first year of operation to check that the procedures and monitoring plan are being followed. All data will be kept for a minimum of 2 years following issuance of certified emission reductions or the end of the crediting period, whichever is later, and the storage of this data will be the responsibility of the project developers.

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

>>

Date of completion of baseline study and monitoring methodology: 10/12/2009
Ecolutions Carbon India Private Limited, CDM consultant
J C Reddy, SLS Power Corporation Limited., contact details as listed in Annex I

SECTION C. Duration of the project activity / crediting period

C.1 Duration of the project activity:

C.1.1. Starting date of the project activity:

>>
05/10/2009 – this was the date on which an order for civil works was placed by SLS Power Corporation Limited to Sri Lakshmi Constructions Ltd.

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

>>
25y-00m

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

A fixed crediting period has been chosen

C.2.1. Renewable crediting period

Not Applicable

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

>>
Not Applicable

C.2.1.2. Length of the first crediting period:

>>
Not Applicable

C.2.2. Fixed crediting period:

Chosen crediting period

C.2.2.1. Starting date:

>>
30/06/2010 or the date of registration with the CDM Board, whichever is later

C.2.2.2. Length:

>>
10 years 00 months

SECTION D. Environmental impacts

>>

D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts:

>>

The project is a run-of-river type hydro power project, therefore environmental impacts typically associated with hydro power plants such as construction of dams, inundation of large areas and change in waterways do not occur. All the guidelines provided by the Ministry of Environment and Forests will be followed during the construction and operation of the project.

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

>>

The environmental impacts are not considered significant. After the completion of the construction of the project, the project will be put into operation only after inspection and acceptance of Andhra Pradesh State Pollution Control Board (AP SPCB), obtained through a 'Consent to Establish/Operate'.

SECTION E. Stakeholders' comments

>>

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

>>

The CDM stakeholder's consultation was undertaken on 28th December 2009 at the site of the hydro project. A notice was placed in the local Telugu newspaper, the Andhra Jyothi on 22nd December 2009 and comments were invited. A total of 30 people attended the meeting. The representatives of SLS Power Corporation Limited and Ecolutions were also present, in order to discuss the CDM benefits accrued from this project[5].

The Andhra Pradesh State Pollution Control Board had also invited the people in the surrounding areas of the project activity for a public hearing on 25th December 2007 and asked them to raise their concerns and suggestions with respect to the project activity. The public hearing was conducted in the presence of officials from AP SPCB and the local panchayat. The project owners explained to those present the purpose of the project activity and answered queries relating to the implementation of the project. The employment benefits accruing from the project were discussed, as well as its eligibility for carbon credits under the Kyoto Protocol.

The Government of Andhra Pradesh state had made it mandatory for all hydroelectric projects proposed in the region to undertake a public consultation before the start of the implementation of work. The project data must be made publicly available by the project owners in national and local dailies and invite comments for a period of 60 days. Based on the comments received during the public consultation period and the feedback from the project participants on how the public comments are addressed, the Government of Andhra Pradesh decides whether to sanction the project.

[5] Evidence for the meeting will be provided to the DOE during validation.

The project activity has also obtained a No Objection Certificate (NOC) from the Gram Panchayat of the local village on 26th October 2009.

The Non-Conventional Energy Development Corporation of Andhra Pradesh (NEDCAP), the policy implementation body in respect of renewable energy projects in Andhra Pradesh has also reviewed the project documentation and awarded clearance to the project on 30th September 2009. The project has also obtained clearance from the Irrigation & CAD (PW: Reforms) Department for utilizing the water resources in the Andhra Pradesh state on 17th August 2009.

A national stakeholder review will be carried out through the approval from Ministry of Environment and Forests, the Designated National Authority of India.

E.2. Summary of the comments received:

>>
No comments have been received on the project activity as yet.

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

>>
Since no comments were received, no action has been taken.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	SLS Power Corporation Limited
Street/P.O.Box:	121/1 12th Cross, 2nd Stage, West Of Chord Road
Building:	Mahalakshmi Puraram, (Near G D NAIDU HALL)
City:	Bangalore
State/Region:	Karnataka
Postfix/ZIP:	560086
Country:	India
Telephone:	+91-08 23195162/63
FAX:	+91-08 23195164
E-Mail:	slspowercorporation@gmail.com
URL:	-
Represented by:	-
Title:	Joint Managing Director
Salutation:	Mr.
Last Name:	Reddy
Middle Name:	Chandra
First Name:	Jagdish
Department:	-
Mobile:	-
Direct FAX:	-
Direct tel:	+91-08 23195162/63
Personal E-Mail:	slspowercorporation@gmail.com

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

The project has not received or applied for any public funding.

Annex 3

BASELINE INFORMATION

Please refer section B.4.

Annex 4

MONITORING INFORMATION

Please refer Section B.7.

Appendix I

SUSTAINABLE DEVELOPMENT PLAN

The following are the activities will be undertaken by the company:

Sr.No.	PARTICULARS	Estimated cost. INR Lakhs
1	Laying of Roads	3.00
2	Construction of Temple	7.00
3	Providing employment opportunities for the local residents in our project and also indirectly through our suppliers and contractors.	
4	Providing drinking water facility in the area.	5.00
5	Providing Street Light facility	1.00
6	Providing the education support to the financially backward children	1.00
7	Solar Street Lighting	1.00
	Total	**18.00**

NOTE: The annual budget for such sustainable development would be around 2% of the CER Revenues obtained.

- - - - -