

STANDARDS/MANUALS/ GUIDELINES FOR SMALL HYDRO DEVELOPMENT

1.6

General Works –

Economic & Financial Analysis and Tariff Determination

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Lead Organization:

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AHEC-IITR, "1.6 General – Economic & Financial Analysis and Tariff Determination", standard/manual/guideline with support from Ministry of New and Renewable Energy, Roorkee, Nov 2012.

PREAMBLE

There are series of standards, guidelines and manuals on electrical, electromechanical aspects of moving machines and hydro power from Bureau of Indian Standards (BIS), Rural Electrification Corporation Ltd (REC), Central Electricity Authority (CEA), Central Board of Irrigation & Power (CBIP), International Electromechanical Commission (IEC), International Electrical and Electronics Engineers (IEEE), American Society of Mechanical Engineers (ASME) and others. Most of these have been developed keeping in view the large water resources/ hydropower projects. Use of the standards/guidelines/manuals is voluntary at the moment. Small scale hydropower projects are to be developed in a cost effective manner with quality and reliability. Therefore a need to develop and make available the standards and guidelines specifically developed for small scale projects was felt.

Alternate Hydro Energy Centre, Indian Institute of Technology, Roorkee initiated an exercise of developing series of standards/guidelines/manuals specifically for small scale hydropower projects with the sponsorship of Ministry of New and Renewable Energy, Government of India in 2006. The available relevant standards / guidelines / manuals were revisited to adapt suitably for small scale hydro projects. These have been prepared by the experts in respective fields. Wide consultations were held with all stake holders covering government agencies, government and private developers, equipment manufacturers, consultants, financial institutions, regulators and others through web, mail and meetings. After taking into consideration the comments received and discussions held with the lead experts, the series of standards/guidelines/manuals are prepared and presented in this publication.

The experts have drawn some text and figures from existing standards, manuals, publications and reports. Attempts have been made to give suitable reference and credit. However, the possibility of some omission due to oversight cannot be ruled out. These can be incorporated in our subsequent editions.

This series of standards / manuals / guidelines are the first edition. We request users to send their views / comments on the contents and utilization to enable us to review for further upgradation.

Standards/ Manuals/Guidelines series for Small Hydropower Development

General	
1.1	Small hydropower definitions and glossary of terms, list and scope of different Indian and international standards/guidelines/manuals
1.2 Part I	Planning of the projects on existing dams, Barrages, Weirs
1.2 Part II	Planning of the Projects on Canal falls and Lock Structures.
1.2 Part III	Planning of the Run-of-River Projects
1.3	Project hydrology and installed capacity
1.4	Reports preparation: reconnaissance, pre-feasibility, feasibility, detailed project report, as built report
1.5	Project cost estimation
1.6	Economic & Financial Analysis and Tariff Determination
1.7	Model Contract for Execution and Supplies of Civil and E&M Works
1.8	Project Management of Small Hydroelectric Projects
1.9	Environment Impact Assessment
1.10	Performance evaluation of Small Hydro Power plants
1.11	Renovation, modernization and uprating
1.12	Site Investigations
Civil works	
2.1	Layouts of SHP projects
2.2	Hydraulic design
2.3	Structural design
2.4	Maintenance of civil works (including hydro-mechanical)
2.5	Technical specifications for Hydro Mechanical Works
<i>Electro Mechanical works</i>	
3.1	Selection of Turbine and Governing System
3.2	Selection of Generators and Excitation Systems
3.3	Design of Switchyard and Selection of Equipment, Main SLD and Layout
3.4	Monitoring, control, protection and automation
3.5	Design of Auxiliary Systems and Selection of Equipments
3.6	Technical Specifications for Procurement of Generating Equipment
3.7	Technical Specifications for Procurement of Auxiliaries
3.8	Technical Specifications for Procurement and Installation of Switchyard Equipment
3.9	Technical Specifications for monitoring, control and protection
3.10	Power Evacuation and Inter connection with Grid
3.11	operation and maintenance of power plant
3.12	Erection Testing and Commissioning

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ECONOMIC & FINANCIAL ANALYSIS AND TARRIF DETERMINATION

1.0 SCOPE OF WORK

This guideline includes details on financial terms and financial analysis to determine generation cost of electricity and tariff for small hydro power projects.

2.0 INTRODUCTION

Prior to the year 1991, small hydro power projects in India were developed in government sector only as government departments were the licensee to generate, transmit and distribute electrical energy. Besides, in case of government owned projects all the investments to establish the project were made available/ invested by the government as grant in aid and no repayment of capital was required. The concern was to evaluate economic viability of the project. From the year 1991 onwards, power generation was opened to private as well as government developers. Since power generation has become commercial sector and repayment of investments is of prime concern, therefore financial analysis to evaluate the scheme for commercial viability of the project has gained importance.

Economic analysis is a quantitative evaluation of the economic feasibility of the project and gives a comparison between the benefits and costs of the projects over the life time of the project.

Financial analysis is a quantitative assessment of the ability of the project to repay the investment on a self-liquidating basis. Hence a project to be financially feasible, the anticipated revenue receipts over the life time of the project should be more than the project disbursements.

In both economic and financial analysis, recurring annual costs and revenues are of primary concern. However, some other costs and benefits like say recreational benefit available to the population because of the impoundment which may not yield revenue to the project is considered in the economic analysis but not in the financial analysis.

Financial analysis is different from economic analysis in many ways. In financial analysis net returns are considered to the equity capital while in case of economic analysis, net returns are to the society. In financial analysis prices are considered as market or administered prices and subsidies are considered as source of revenue. In economic analysis, prices are considered as shadow prices and subsidies are considered as society benefits. In financial analysis loans are considered as increased capital resources and interest or repayments are considered as financial cost. In economic analysis loan and interest or repayment are considered as transfer payment. Discount rate on future receipt/ expenditure is considered in both the cases for evaluation of the project.

3.0 REFERENCES

- | | | |
|----|------------------------|---|
| R1 | CEA, New Delhi
2012 | Guidelines For Formulation of Detailed Project Reports for Hydro Electric Schemes, their Acceptance And Examination For Concurrence |
| R2 | CERC, 2009 | Notification no. L-7/186(201)/2009-Central Electricity Regulatory Commission, September |

R3 CERC, 2012 Terms and Conditions for Tariff determination from Renewable Energy Sources- Central Electricity Regulatory Commission Regulations, February

4.0 FINANCIAL TERMS AND PARAMETERS

4.1 Capital Cost

The capital cost of the project is the total installation cost including direct cost of all project components (such as civil works, electro-mechanical equipment and other direct cost), indirect costs, land, establishment, financing cost, local area development charges, interest during construction etc. required to commission the project. It also includes the capitalized initial spares.

4.2 Financing Arrangements and Means of Financing

Timely availability of finances is a pre-requisite for completing a project within a prescribed time schedule. The finances could be arranged by the developer from various financial institutions based on his legal eligibility and credit worthiness. The financial institution would like to examine the proposal from view point of loan repayment capability, management capability etc. Financial institutions have different procedures and norms for extending loan facility and these could be obtained from them. Each State Government/Nodal Agencies have prescribed norms for making equity participation varying from 20% to 30% of the project cost. The means of finance is arrived at from the followings:-

- (i) Contribution of promoters
- (ii) Equity of developers
- (iii) Loans from different financial institutions.
- (iv) Grant in aid /subsidy from the Government

4.2.1 Phasing of expenditure

The project cost shall be spread over the construction period depending upon the payment terms with the executing agencies / suppliers. The following distribution of cost may be taken.

S. No.	Construction Period (Years)	Phasing of Expenditure (%) in different years			
		Year 1	Year 2	Year 3	Year 4
1.	1	100			
2.	2	40	60		
3.	3	25	35	40	
4.	4	20	25	25	30

4.2.2 Interest during construction

Interest during construction (IDC) need to be computed based on withdrawal schedule of loan as per phasing of expenditure on prevailing interest rate.

4.3 Fiscal Incentives for Small Hydro

To promote SHP sector, Central and State Governments provide fiscal incentives on following accounts. These keep on changing with time. These incentives need to be taken into account in the financial analysis.

- (i) Rebate on income tax
- (ii) Soft Term loans from financial institutions
- (iii) Concessional customs duty on import of equipment
- (iv) Exemption from excise duty on turbines and other generating equipment
- (v) Capital subsidy
- (vi) Clean Development Mechanism (DM) benefits
- (vii) Renewable Energy Certificate (REC) benefits
- (viii) Sharing of merchant trading

4.4 Debt Equity Ratio

It is the ratio of debt (loan) to the equity put in by the developer. In SHP projects it is been considered as 70:30 based on the financing norms of leading financial institutions. For the debt equity ratio other than 70: 30 and equity invested in foreign currency following shall be considered.

- (i) If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.
- (ii) If the equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.
- (iii) The equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

4.5 Working Capital

Working Capital is the amount required for day to day running of the project after commissioning. The working capital requirement shall be computed in accordance with the followings.

- (i) Operation & maintenance expenses for one month
- (ii) Receivables equivalent to 2 (two) months of energy charges
- (iii) Maintenance spare @ 15% of operation & maintenance expenses

4.6 Discount Factor

Discount factor signifies the time value of money and is the cost to the capital investment. Discount factor is also the opportunity cost of the capital. The Government fixes the discount rates either by law or by notifications for the projects being funded by them. For investments by private sector, the usual practice of fixing discount rates is based on post tax weighted average cost of capital. For an example, considering debt equity ratio as 70:30, interest rate 13%, rate of return on equity (ROE) 20%, and tax rate 30%, the discount factor comes out to 10.57%

5.0 FINANCIAL ANALYSIS

Financial analysis need to be carried out to evaluate various layouts based on installation cost, generation cost; benefits cost (B-C) ratio, net present value (NPV) and internal rate of return (IRR) on the basis of following criteria:

- (i) Installation cost is minimum
- (ii) Generation cost is minimum

- (iii) B-C ratio is maximum
- (iv) NPV is maximum
- (v) IRR is maximum

5.1 Installation Cost

It is the cost in Rs. / kW determined by dividing the project cost from the installed capacity of the project.

5.2 Unit Generation Cost

It is determined based on annual cost divided by annual salable energy generation. Annual cost for generation of electrical energy comprises operation and maintenance (O&M), insurance cost, depreciation of works & equipment, interest on the capital borrowed and interest on working capital.

5.2.1 Energy available for sale

From the generated energy, following deductions are made to arrive at energy available for sale.

- (i) **Auxiliary consumption** – The energy consumed by auxiliary equipment of the power generating station and transformer losses within the generating station are considered as auxiliary consumption. This may be taken as 1% of gross energy generated at generator terminal.
- (ii) **Plant availability** – During the operation there may be some forced outage due to emergency shut downs and unplanned maintenance etc. On account of forced outage 5% of gross energy generated at generator terminal may be considered for deduction.
- (iii) **Water royalty** – State government charges water royalty in the form of free power to the state. The water royalty may be nil for the plant upto 5 MW capacity and 12% of the gross energy generated at generator terminal may be considered for deduction for the plant having capacity 5 MW or more. However this is to be taken as per prevailing practice of the area.

5.2.2 Sale price of electricity

The sale price of electricity generated is the price fixed with the state utility under power purchase agreement for a fixed duration. In the absence of any power purchase agreement, the levallised tariff may be taken as sale price.

5.3 Benefit-Cost Ratio (BCR)

The benefit-cost (B-C) ratio is the ratio of the present value of future cash flows (benefits) to the present value of the capital and subsequent recurring costs over the useful life of the project.

$$\text{Benefit-cost ratio (B-C ratio)} = \frac{\text{Present value of benefits}}{\text{Present value of expenditure}}$$

The ratio is computed by considering the actual revenue and the actual expenses consisting of O&M, depreciation and interest charges. If the ratio is found greater than one, the project is considered viable.

5.3.1 Present value of benefits

The present value is determined at the time of first expenditure of the future stream of benefits based on a fixed value of discount rate.

The present value (PV) of a future cash flows is computed by using the formula given below:

$$PV = \sum_{i=1}^n \left[\frac{CF_i}{(1+d)^i} \right]$$

Where,

- PV is present value
- CF_i is Cash flow in year i starting with initial investment
- d is discount rate
- n is number of years of the schemes / projects (useful life of the project)

5.4 Net Present Value (NPV)

Net present value (NPV) is calculated as the difference of present value of benefits and present value of expenditure. NPV can be computed for various layouts under different types of schemes considered for analysis. The difference between the revenue and the expenses, discounted at a pre-determined rate is the net present value (NPV) of the investment. The computation is done over the life of the project. NPV should be positive for a financially viable project.

5.5 Internal Rate of Return (IRR)

For a project to be financially viable, the anticipated project receipts must exceed the project disbursements, funds must be available, and the project must be able to service the debt.

Internal rate of return (IRR) is the discount rate at which present value of benefits becomes equal to the present value of expenditure. IRR is to be determined for useful life of the project after the plant is put into operation. If the internal rate of return is more than the interest rate (or cost of funding) for the project, the project is considered financially feasible.

6.0 FINANCIAL EVALUATION

The financial evaluation is carried out to assess the financial viability/ soundness of the project from the point of view of developers and financial institutions. For evaluation of a project, the following aspects are of significant importance:-

- (i) Capital investment
- (ii) Construction period and phasing of expenditure

- (iii) Useful Life of the project
- (iv) Financial package i.e. amount of debt/ equity, interest rate, moratorium period, repayment period and repayment schedule, return on equity
- (v) Amount and timing of cash flows.
- (vi) Government charges/incentives such as royalty, lease, banking and wheeling charges, tax concessions, grant, subsidies, are also taken into account.

The financial package should be as per the concerned state / central Government / regulatory commission norms. The following approaches for determining the financial viability are considered:

- Pay Back Period Method
- Net Present Value
- Internal Rate of Return Method
- Debt Service coverage ratio (DSCR) Method

The First represent approximate method for assessing financial worth of a project. The latter two, based on discounted cash flow method, provide a more objective basis for evaluating financial soundness of a project over its life. These methods take account of both magnitude and timing of expected cash flows in each period of a project life and hence considered preferred methods for financial evaluation.

DSCR is computed by calculating the ratio of gross cash flows (Gross Revenue – O&M expenses including insurance – interest on working capital – income tax) and debt servicing expenses (interest on loan and term loan installment).

Payback period determines the number of years required for the capital to be recovered by the net revenues accruing from the project. The net revenue is computed after deducting the annual working expenses from the constant value money capital. Annual surplus/deficit is then computed by deducting interest from the net revenue. The sum of charge which is the sum of capital and annual surplus or deficit gives the number of years required for the capital to be recovered. This method does not take into account the value of money at different time.

The financial institutions consider IRR and DSCR as the preferred financial parameters for evaluation of the financial viability of the project.

7.0 TARIFF DETERMINATION

The project specific tariff for useful life of project is determined considering fixed annual cost and variable cost (where fuel component is there). The tariff is decided by State Electricity Regulatory Commission for the projects within particular state and by Central Electricity Regulatory Commission for interstate projects and projects developed by Central Public Sector undertakings.

7.1 Useful Life

In Small Hydro Plant useful life is considered as 35 years.

7.2 Tariff Period

The tariff period is the period for which tariff is determined for sale of power based on prescribed norms by Government/ Regulatory authorities. Tariff period may be same as the useful life of the project or lesser. Here tariff period is considered same as the useful life of the project i.e., thirty five (35) years.

7.3 Tariff Design

The generic tariff shall be determined on levelled basis for the Tariff Period, considering the year of commissioning of the project as base year for fixed cost component. For the purpose of levelled tariff computation, the discount factor equivalent to weighted average cost of capital shall be considered. Levellisation shall be carried out for the useful life of the project and Tariff shall be specified for the period equivalent to tariff period (in case it is different from the useful life.)

7.4 Tariff Structure

The tariff for small hydro projects shall consist of the following fixed cost components:

- (i) Return on equity;
- (ii) Interest on loan capital;
- (iii) Depreciation;
- (iv) Interest on working capital;
- (v) Operation and maintenance expenses including insurance;

7.4.1 Return on equity

The value base for the equity shall be 30% of the capital cost or actual equity, whichever is less. The normative return on equity may be taken as 20 % per annum for first 10 years and 24% per annum thereafter.

7.4.2 Interest on loan

7.4.2.1 Interest rate

- (i) The loans arrived at in the manner indicated above shall be considered as gross normative loan for calculation for interest on loan. The normative loan outstanding as on April 1st of every year shall be worked out by deducting the cumulative repayment up to March 31st of previous year from the gross normative loan.
- (ii) In case any moratorium period is availed of by the generating company, depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.

For the purpose of computation of tariff, the normative interest rate shall be considered as prevailing OR average State Bank of India (SBI) base rate prevalent during the first six months of previous year plus 300 basis points

7.4.2.2 Loan tenure

Loan tenure or repayment period may be considered 12 years in addition to the moratorium period. However, this period may vary for different financial institutions.

7.4.2.3 Moratorium period

Moratorium Period is the holiday/ deferment period on repayment of principal as well as interest on borrowed capital which would be equal to the construction period.

7.4.3 Interest on working capital

Rate of interest on working capital to be computed as prevailing or shall be equal to the average State Bank of India (SBI) base rate prevalent during the first six months of previous year plus 300 basis points.

The interest on working capital shall be calculated on normative basis notwithstanding that the licensee or the generating company has not taken working capital loan from any outside agency.

7.4.4 Depreciation

The project cost shall be the Historical Cost of the asset. Provided that land is not a depreciable asset and its cost shall be excluded from the capital cost while computing the historical cost of the asset.

- (i) The Salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the Capital Cost of the assets.
- (ii) Depreciation per annum shall be based on 'Differential Depreciation Approach over loan tenure and period beyond loan tenure over useful life computed on 'Straight Line Method'. The depreciation rate for the first 10 years of the Tariff Period shall be 5.83% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 11th year onwards.

Depreciation shall be chargeable from the first year of commercial operation. Provided that in case of commercial operation of the asset for part of the year, depreciation shall be charged on *pro rata* basis

7.4.5 Operation and maintenance expenses

Operation and maintenance (O&M) expenses shall comprise operational cost including employee expenses, oil and lubricants, repair and maintenance (R&M), and other administrative & general expenses. O&M expenses may be taken @ 3.5% of the project cost per annum and escalated at the rate of 5.72 % per annum.

7.4.6 CDM benefits

The proceeds of carbon credit from approved CDM project shall be used in tariff calculation in the following manner.

100% of the gross proceeds on account of CDM benefit to be retained by the project developer in the first year after the date of commercial operation of the power station. In the second year, 10% of CDM benefits shall be taken in to account for tariff calculation which shall be progressively increased by 10% every year till it reaches 50%. The balance CDM benefit proceeds to be retained by the project developer.

7.4.7 Taxes and duties

The tariff determined as per provisions described in this guideline shall be exclusive of taxes and duties as may be levied by the concerned government. Any tax on generation shall be allowed as pass through on actual incurred basis subject to production of documentary evidence by the generating company.

100 percent income tax shall be exempted for a continuous block of 10 years in the first 15 years of operations. However the provisions of MAT shall be applicable.

8.0 SAMPLE CALCULATIONS FOR FINANCIAL ANALYSIS AND TARIFF DETERMINATION

The detailed computations for financial analysis and tariff determination has been carried out and included herewith as an example. This analysis shall include the followings in the detailed project report. Various assumptions have been made based on above guidelines. However, electricity generation is concurrent subject and the guidelines of concerned central/state government/regulatory commission shall be prevailing. The statutory taxes and duties shall also be as prevailing.

- (i) Basic Parameters (assumptions)
- (ii) Cost of Project & Means of Finance
- (iii) Computation of IDC
- (iv) Computation of levellised tariff
- (v) Profit & Loss Statement
- (vi) Cash Flow Statement
- (vii) Working Capital Requirement
- (viii) Depreciation
- (ix) Term Loan
- (x) Income Tax
- (xi) Internal Rate of Return
- (xii) Debt Service Coverage Ratio

Example for Financial Analysis and Tariff Calculation

Table 1 : Basic Parameters (Assumptions)

Capacity		(in MW)	2
PLF			60%
Units Generated		(lacs)	105.1
Less: Plant availability Loss			5%
Less: Aux. Consumption			1%
Less: Water royalty			0%
Units available for sale		(lacs)	98.79
Sale Price		(levelised tariff for 35 years)	2.82
Useful Life		(Years)	35
Terrif Period		(Years)	35
Debt Equity Ratio			
Debt		(ratio)	70
Equity		(ratio)	30
MORATORIUM PERIOD		(years)	2
Construction Period		(Years)	2
Repayment Quarterly		(No. of installments)	48
Repayment Quarterly		(Rs in lacs)	15.86
Subsidy received(in 2nd year after commencement of generation)		(Rs in lacs)	230
Interest Rate on Loan (Working Capital)			14.0%
IDC			13.0%
Term Loan			13.0%
Return on Equity		(for first 10 years)	20.00%
		(From 11 th year onwards)	24.00%
OTHER EXPENSES			
Depreciation			
Depreciation for first 10 years	SLM Method		5.83%
Depreciation for remaining period	SLM Method		1.27%
Depreciation as per Income Tax Act.	WDV Method	(Building)	10.00%
		(Plant & Machinery)	15.00%
Depreciation as per Companies Act.	SLM Method	(Building)	3.34%
		(Plant & Machinery)	5.28%
Operating & Maintenance Expenses		(% of cost of project)	3.50%
Annual escalation of O & M cost			5.72%
CDM BENEFIT		(Rs.in lacs)	50.00
Income tax as per normal provisions			32.45%
Income tax under MAT			20.01%
Tax Holiday for continuous block of 10 yrs during first 15 yrs and thereafter normal corporate rates of taxes			
Discounting Factor			10.57%

Table 2 : Abstract of Project Cost & Means of Finance

S. No.	Particulars	Cost (Rs. in lacs)
	Land	50
	Civil Work	600
	Equipment	500
	Other Cost	150
	TOTAL COST	1300
COST OF PROJECT		
	Project Cost	1300.00
	IDC	115.97
	TOTAL	1415.97
MEANS OF FINANCE		
	Equity	424.79
	Debt	991.18
	TOTAL	1415.97

Rs 1 Lac= Rs 100,000 (0.1 Million)

Table 3 : Computation of IDC

(Rs. in Lacs)

Debt	70%						991.18		
Equity	30%						424.79		
							1415.97		
Interest During Construction (IDC)									
Quarter		1	2	3	4	5	6	7	8
Phasing of Debt		10.00%	10.00%	10.00%	10.00%	15.00%	15.00%	15.00%	15.00%
Debt		99.12	99.12	99.12	99.12	148.68	148.68	148.68	148.68
Opening debt		0	99.12	198.24	297.35	396.47	545.15	693.82	842.50
Closing Debt		99.12	198.24	297.35	396.47	545.15	693.82	842.50	991.18
Average Debt		49.56	148.68	247.79	346.91	470.81	619.49	768.16	916.84
Interest During Construction		1.61	4.83	8.05	11.27	15.30	20.13	24.97	29.80
Total IDC									115.97

Table 4 : Generation Cost and Tariff

(Rs. in Lacs)

YEAR			1	2	3	4	5	6	7	8	9	10
Units Generated		units.	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79
FIXED COST												
O & M Expenses		Rs. In lacs	49.56	52.39	55.39	58.56	61.91	65.45	69.19	73.15	77.34	81.76
Depreciation		Rs. In lacs	79.64	79.64	79.64	79.64	79.64	79.64	79.64	79.64	79.64	79.64
Interest on term Loan		Rs. In lacs	124.73	90.32	78.34	70.09	61.85	53.60	45.35	37.11	28.86	20.62
Interest on Working Capital Loan		Rs. In lacs	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69
Return on Equity		Rs. In lacs	84.96	84.96	84.96	84.96	84.96	84.96	84.96	84.96	84.96	84.96
CDM Benefit		Rs. In lacs	0.00	-5.00	-10.00	-15.00	-20.00	-25.00	-25.00	-25.00	-25.00	-25.00
Total Cost		Rs. In lacs	344.57	308.00	294.01	283.93	274.04	264.33	259.83	255.54	251.48	247.66
Cost p.u			3.49	3.12	2.98	2.87	2.77	2.68	2.63	2.59	2.55	2.51
Discount Factor(B)	10.57%	1.1057	0.90	0.82	0.74	0.67	0.61	0.55	0.49	0.45	0.40	0.37
(I)												
C= (A*B)			3.15	2.55	2.20	1.92	1.68	1.46	1.30	1.16	1.03	0.92
(II)												
Levelised Teriff for 35 Yrs			2.82									
Generation Cost (Without CDM with Subsidy)			2.63	2.31	2.22	2.17	2.12	2.07	2.02	1.98	1.94	1.90
Generation Cost (With CDM with Subsidy)			2.63	2.26	2.12	2.01	1.91	1.82	1.77	1.73	1.69	1.65

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79
86.44	91.38	96.61	102.13	107.97	114.15	120.68	127.58	134.88	142.60	150.75	159.38	168.49	178.13	188.32
17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32
12.37	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69
101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
223.76	220.46	221.56	227.09	232.93	239.11	245.64	252.54	259.84	267.55	275.71	284.33	293.45	303.09	313.28
2.26	2.23	2.24	2.30	2.36	2.42	2.49	2.56	2.63	2.71	2.79	2.88	2.97	3.07	3.17
0.33	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15	0.13	0.12	0.11	0.10	0.09	0.08
		6.90												
0.75	0.67	0.61	0.56	0.52	0.48	0.45	0.42	0.39	0.36	0.34	0.32	0.29	0.28	0.26
		19.40												
1.23	1.20	1.21	1.27	1.33	1.39	1.45	1.52	1.60	1.68	1.76	1.85	1.94	2.04	2.14
1.23	1.20	1.21	1.27	1.33	1.39	1.45	1.52	1.60	1.68	1.76	1.85	1.94	2.04	2.14

26	27	28	29	30	31	32	33	34	35
98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79	98.79
199.09	210.48	222.52	235.25	248.70	262.93	277.97	293.87	310.68	328.45
17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32	17.32
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69
101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95	101.95
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
324.05	335.44	347.48	360.20	373.66	387.89	402.93	418.82	435.63	453.40
3.28	3.40	3.52	3.65	3.78	3.93	4.08	4.24	4.41	4.59
0.07	0.07	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03
									9.18
0.24	0.23	0.21	0.20	0.19	0.17	0.16	0.15	0.14	0.14
									25.91
2.25	2.36	2.49	2.61	2.75	2.89	3.05	3.21	3.38	3.56
2.25	2.36	2.49	2.61	2.75	2.89	3.05	3.21	3.38	3.56

Table 5 : Statement of Profitability

(Rs. in Lacs)

YEAR	1	2	3	4	5	6	7	8	9	10
Annual Revenue	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86
CO2 Revenue	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
TOTAL INCOME	328.86	328.86	328.86	328.86	328.86	328.86	328.86	328.86	328.86	328.86
FIXED COST										
O & M Expenses	49.56	52.39	55.39	58.56	61.91	65.45	69.19	73.15	77.34	81.76
Depreciation	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32
Interest on term Loan	124.73	90.32	78.34	70.09	61.85	53.60	45.35	37.11	28.86	20.62
Interest on Working Capital Loan	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69
TOTAL COST	235.30	203.73	194.74	189.66	184.77	180.06	175.56	171.27	167.21	163.39
Profit before Tax	93.56	125.13	134.12	139.20	144.09	148.80	153.30	157.59	161.65	165.47
Less: Tax	18.72	25.04	26.83	27.85	28.83	29.77	30.67	31.53	32.34	33.11
Profit After Tax (PAT)	74.84	100.10	107.29	111.35	115.26	119.03	122.63	126.06	129.31	132.37

11	12	13	14	15	16	17	18	19	20	21	22	23	24
278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86
-	-	-	-	-	-	-	-	-	-	-	-	-	-
278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86
86.44	91.38	96.61	102.13	107.97	114.15	120.68	127.58	134.88	142.60	150.75	159.38	168.49	178.13
55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69
147.45	152.39	157.62	163.14	168.99	175.16	181.69	188.59	195.89	203.61	211.76	220.39	229.50	239.14
131.41	126.47	121.24	115.72	109.87	103.70	97.17	90.27	82.97	75.25	67.10	58.47	49.36	39.72
26.29	25.30	24.26	23.15	21.98	20.75	19.44	18.06	15.66	15.06	13.42	11.70	8.53	27.77
105.12	101.17	96.98	92.56	87.89	82.95	77.73	72.21	67.30	60.20	53.67	46.77	40.83	11.95

25	26	27	28	29	30	31	32	33	34	35
278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86
-	-	-	-	-	-	-	-	-	-	-
278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86
188.32	199.09	210.48	222.52	235.25	248.70	262.93	277.97	293.87	310.68	328.45
38.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69
232.21	204.78	216.17	228.21	240.93	254.39	268.62	283.65	299.55	316.36	334.13
46.65	74.08	62.69	50.65	37.93	24.47	10.24	-4.79	-20.69	-37.50	-55.27
24.80	21.60	18.17	14.50	10.58	6.40	2.05	-0.96	-4.14	-7.50	-11.06
21.85	52.48	44.52	36.16	27.35	18.07	8.20	-3.84	-16.55	-30.00	-44.22

Table 6 : Cash Flow

(Rs in lacs)

YEAR	Pre operation period	1	2	3	4	5	6	7	8	9
SOURCES OF FUNDS										
Profit as per Profit & Loss Statement		93.56	125.13	134.12	139.20	144.09	148.80	153.30	157.59	161.65
Add: Non Cash expenses										
Depreciation		55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32
CASH PROFIT		148.88	180.46	189.44	194.52	199.42	204.12	208.63	212.91	216.98
Equity	425	17.41								
Term Loan	991									
Subsidy			230.00							
Working Capital Loan		40.63								
TOTAL	1415.97	206.92	410.46	189.44	194.52	199.42	204.12	208.63	212.91	216.98
APPLICATION OF FUNDS										
Assets	1415.97									
Increase in working capital		58.04	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98
Repayment of Term Loan		63.43	293.43	63.43	63.43	63.43	63.43	63.43	63.43	63.43
Income Tax		18.72	25.04	26.83	27.85	28.83	29.77	30.67	31.53	32.34
TOTAL	1415.97	140.19	319.13	90.97	92.02	93.04	94.03	94.98	95.89	96.75
O/P Cash Balance	0	0.00	66.73	158.06	256.54	359.04	465.41	575.51	689.16	806.19
Net Cash Inflow	0.00	66.73	91.33	98.48	102.50	106.38	110.09	113.65	117.03	120.22
Closing Balance	0.00	66.73	158.06	256.54	359.04	465.41	575.51	689.16	806.19	926.41

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
165.47	131.41	126.47	121.24	115.72	109.87	103.70	97.17	90.27	82.97	75.25	67.10	58.47	49.36	39.72
55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32
220.80	186.74	181.79	176.57	171.04	165.20	159.02	152.49	145.59	138.29	130.58	122.42	113.80	104.68	95.04
220.80	186.74	181.79	176.57	171.04	165.20	159.02	152.49	145.59	138.29	130.58	122.42	113.80	104.68	95.04
1.03	1.09	1.15	1.22	1.29	1.36	1.44	1.52	1.61	1.70	1.80	1.90	2.01	2.13	2.25
63.43	0.00	0.00	0.00											
33.11	26.29	25.30	24.26	23.15	21.98	20.75	19.44	18.06	15.66	15.06	13.42	11.70	8.53	27.77
97.57	27.38	26.46	25.48	24.44	23.35	22.19	20.96	19.67	17.37	16.86	15.33	13.71	10.66	30.02
926.41	1049.64	1208.99	1364.32	1515.41	1662.01	1803.86	1940.69	2072.22	2198.14	2319.06	2432.78	2539.88	2639.96	2733.98
123.23	159.35	155.34	151.09	146.60	141.85	136.83	131.53	125.92	120.92	113.72	107.09	100.09	94.02	65.03
1049.64	1208.99	1364.32	1515.41	1662.01	1803.86	1940.69	2072.22	2198.14	2319.06	2432.78	2539.88	2639.96	2733.98	2799.01

275	26	27	28	29	30	31	32	33	34	35
46.65	74.08	62.69	50.65	37.93	24.47	10.24	-4.79	-20.69	-37.50	-55.27
38.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
84.85	74.08	62.69	50.65	37.93	24.47	10.24	-4.79	-20.69	-37.50	-55.27
84.85	74.08	62.69	50.65	37.93	24.47	10.24	-4.79	-20.69	-37.50	-55.27
2.38	2.51	2.66	2.81	2.97	3.14	3.32	3.51	3.71	3.92	4.15
24.80	21.60	18.17	14.50	10.58	6.40	2.05	-0.96	-4.14	-7.50	-11.06
27.17	24.11	20.83	17.31	13.55	9.54	5.37	2.55	-0.43	-3.58	-6.91
2799.01	2856.69	2906.66	2948.52	2981.87	3006.25	3021.18	3026.06	3018.71	2998.45	2964.53
57.68	49.97	41.87	33.35	24.38	14.93	4.88	-7.34	-20.26	-33.92	-48.36
2856.69	2906.66	2948.52	2981.87	3006.25	3021.18	3026.06	3018.71	2998.45	2964.53	2916.17

(Rs. in lacs)

Internal Rate of Return												
Year				1	2	3	4	5	6	7	8	9
Table - 8.11												
PAT				74.84	100.10	107.29	111.35	115.26	119.03	122.63	126.06	129.31
Add: Subsidy					230.00							
Add: Depreciation				55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32
Add: Interest on term loan				124.73	90.32	78.34	70.09	61.85	53.60	45.35	37.11	28.86
Terminal Value				254.89	475.74	240.95	236.76	232.43	227.95	223.31	218.49	213.49
IRR												
CASH FLOW												
IRR	15.76%											

10	11	12	13	14	15	16	17	18	19	20	21	22	23
132.37	105.12	101.17	96.98	92.56	87.89	82.95	77.73	72.21	67.30	60.20	53.67	46.77	40.83
55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32
20.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
208.31	160.44	156.49	152.31	147.89	143.21	138.27	133.05	127.53	122.63	115.52	109.00	102.10	96.15
10	11	12	13	14	15	16	17	18	19	20	21	22	23
208.31	160.44	156.49	152.31	147.89	143.21	138.27	133.05	127.53	122.63	115.52	109.00	102.10	96.15

24	25	26	27	28	29	30	31	32	33	34	35
11.95	21.85	52.48	44.52	36.16	27.35	18.07	8.20	-3.84	-16.55	-30.00	-44.22
55.32	38.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
67.28	60.06	52.48	44.52	36.16	27.35	18.07	8.20	-3.84	-16.55	-30.00	-44.22
24	25	26	27	28	29	30	31	32	33	34	35
67.28	60.06	52.48	44.52	36.16	27.35	18.07	8.20	(3.84)	(16.55)	(30.00)	(44.22)

Table 7 : Working Capital Requirement

(Rs. in lacs)

		1							
Operating & maintenance Charges	Months	1							
Maintenance Expenses	%	15%	of O & M Expenses						
Receivables for Energy	Months	2							
Year		1	2	3	4	5	6	7	8
Sales	Rs. In Lacs	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86
Operating & maintenance Charges	Rs. In Lacs	49.56	52.39	55.39	58.56	61.91	65.45	69.19	73.15
Working Capital Requirement									
Receivables for Energy	Rs. In Lacs	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48
Maintenance Expenses	Rs. In Lacs	7.4338	7.86	8.31	8.78	9.29	9.82	10.38	10.97
Operating & maintenance Charges	Rs. In Lacs	4.13	4.37	4.62	4.88	5.16	5.45	5.77	6.10
TOTAL WORKING CAPITAL REQUIREMENT	Rs. In Lacs	58.04	58.70	59.40	60.14	60.92	61.75	62.62	63.55
Increase in Working Capital Requirement	Rs. In Lacs	58.04	0.66	0.70	0.74	0.78	0.83	0.87	0.92

9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86
77.34	81.76	86.44	91.38	96.61	102.13	107.97	114.15	120.68	127.58	134.88	142.60	150.75	159.38	168.49
46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48
11.60	12.26	12.97	13.71	14.49	15.32	16.20	17.12	18.10	19.14	20.23	21.39	22.61	23.91	25.27
6.44	6.81	7.20	7.61	8.05	8.51	9.00	9.51	10.06	10.63	11.24	11.88	12.56	13.28	14.04
64.52	65.55	66.65	67.80	69.02	70.31	71.67	73.11	74.64	76.25	77.95	79.75	81.65	83.66	85.79
0.98	1.03	1.09	1.15	1.22	1.29	1.36	1.44	1.52	1.61	1.70	1.80	1.90	2.01	2.13

24	25	26	27	28	29	30	31	32	33	34	35
278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86	278.86
178.13	188.32	199.09	210.48	222.52	235.25	248.70	262.93	277.97	293.87	310.68	328.45
46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48
26.72	28.25	29.86	31.57	33.38	35.29	37.31	39.44	41.70	44.08	46.60	49.27
14.84	15.69	16.59	17.54	18.54	19.60	20.73	21.91	23.16	24.49	25.89	27.37
88.04	90.42	92.93	95.59	98.40	101.37	104.51	107.83	111.34	115.05	118.97	123.11
2.25	2.38	2.51	2.66	2.81	2.97	3.14	3.32	3.51	3.71	3.92	4.15

Table 8 : Depreciation**(Rs. in lacs)**

Items	Cost					
Land	50					
Building	865.97					
Machinery	500					
ASSETS	1415.97					
DEPRECIATION		(As per SLM Method)				
Depreciation during first 10 yrs		5.83%		79.64		
Depreciation thereafter		1.27%		17.32		
Dep. As per companies Act.		(As per SLM Method)				
Rate of Depreciation		Building	3.34%		Plant & Machinery	5.28%
Building				28.92		
Plant & Machinery				26.40		
Amount of Depreciation				55.32		

Table 9 : Depreciation as Per Income Tax Act

Rate of Depreciation		Building	10%		Plant & machinery	15%				
Year	1	2	3	4	5	6	7	8	9	10
O/P Value										
Building	865.97	779.37	701.43	631.29	568.16	511.35	460.21	414.19	372.77	335.49
Plant & Machinery	500.00	425.00	361.25	307.06	261.00	221.85	188.57	160.29	136.25	115.81
Depreciation										
Building	86.60	77.94	70.14	63.13	56.82	51.13	46.02	41.42	37.28	33.55
Plant & Machinery	75.00	63.75	54.19	46.06	39.15	33.28	28.29	24.04	20.44	17.37
TOTAL	161.60	141.69	124.33	109.19	95.97	84.41	74.31	65.46	57.71	50.92
Closing Balance										
Building	779.37	701.43	631.29	568.16	511.35	460.21	414.19	372.77	335.49	301.94
Plant & Machinery	425.00	361.25	307.06	261.00	221.85	188.57	160.29	136.25	115.81	98.44
TOTAL	1204.37	1062.68	938.35	829.16	733.20	648.79	574.48	509.02	451.30	400.38
Depreciation as Per Income Tax Act					(WDV Method)					
Year	11	12	13	14	15	16	17	18	19	20
O/P Value										
Building	301.94	271.75	244.57	220.12	198.11	178.30	160.47	144.42	129.98	116.98
Plant & Machinery	98.44	83.67	71.12	60.45	51.38	43.68	37.13	31.56	26.82	22.80
Depreciation										
Building	30.19	27.17	24.46	22.01	19.81	17.83	16.05	14.44	13.00	11.70
Plant & Machinery	14.77	12.55	10.67	9.07	7.71	6.55	5.57	4.73	4.02	3.42
TOTAL	44.96	14.62	13.79	12.94	12.10	11.28	10.48	9.71	8.97	8.28
Closing Balance										
Building	271.75	244.57	220.12	198.11	178.30	160.47	144.42	129.98	116.98	105.28
Plant & Machinery	83.67	71.12	60.45	51.38	43.68	37.13	31.56	26.82	22.80	19.38
TOTAL	355.42	315.70	280.57	249.49	221.97	197.59	175.98	156.80	139.78	124.66

Year	21	22	23	24	25	26	27	28	29	30
O/P Value										
Building	105.28	94.75	85.28	76.75	69.08	62.17	55.95	50.36	45.32	40.79
Plant & Machinery	19.38	16.47	14.00	11.90	10.12	8.60	7.31	6.21	5.28	4.49
Depreciation										
Building	10.53	9.48	8.53	7.68	6.91	6.22	5.60	5.04	4.53	4.08
Plant & Machinery	2.91	2.47	2.10	1.79	1.52	1.29	1.10	0.93	0.79	0.67
TOTAL	13.44	11.95	10.63	9.46	8.42	7.51	6.69	5.97	5.32	4.75
Closing Balance										
Building	94.75	85.28	76.75	69.08	62.17	55.95	50.36	45.32	40.79	36.71
Plant & Machinery	16.47	14.00	11.90	10.12	8.60	7.31	6.21	5.28	4.49	3.82
TOTAL	111.23	99.28	88.65	79.19	70.77	63.26	56.57	50.60	45.28	40.52
Year	31	32	33	34	35					
O/P Value										
Building	36.71	33.04	29.73	26.76	24.09					
Plant & Machinery	3.82	3.24	2.76	2.34	1.99					
Depreciation										
Building	3.67	3.30	2.97	2.68	2.41					
Plant & Machinery	0.57	0.49	0.41	0.35	0.30					
TOTAL	4.24	3.79	3.39	3.03	2.71					
Closing Balance										
Building	33.04	29.73	26.76	24.09	21.68					
Plant & Machinery	3.24	2.76	2.34	1.99	1.69					
TOTAL	36.28	32.49	29.10	26.08	23.37					

Table 10 : Term Loan Repayment Schedule Post Construction Period

Year	Quarter/ Installment	Loan at the beginning of the quarter	Principal repayment during the quarter	Balance Loan at the end of the Quarter	Av. Loan during the quarter	Interest during the quarter	Annual Interest Payment	Annual Principal repayment
1	1	991.18	15.86	975.32	983.25	31.96	124.73	63.43
	2	975.32	15.86	959.46	967.39	31.44		
	3	959.46	15.86	943.60	951.53	30.92		
	4	943.60	15.86	927.75	935.67	30.41		
2	5	927.75	15.86	911.89			90.32	293.43
	Subsidy		230.00	681.89	804.82	26.16		
	6	681.89	15.86	666.03	673.96	21.90		
	7	666.03	15.86	650.17	658.10	21.39		
	8	650.17	15.86	634.31	642.24	20.87		
3	9	634.31	15.86	618.46	626.39	20.36	78.34	63.43
	10	618.46	15.86	602.60	610.53	19.84		
	11	602.60	15.86	586.74	594.67	19.33		
	12	586.74	15.86	570.88	578.81	18.81		
4	13	570.88	15.86	555.03	562.95	18.30	70.09	63.43
	14	555.03	15.86	539.17	547.10	17.78		
	15	539.17	15.86	523.31	531.24	17.27		
	16	523.31	15.86	507.45	515.38	16.75		
5	17	507.45	15.86	491.59	499.52	16.23	61.85	63.43
	18	491.59	15.86	475.74	483.66	15.72		
	19	475.74	15.86	459.88	467.81	15.20		
	20	459.88	15.86	444.02	451.95	14.69		
6	21	444.02	15.86	428.16	436.09	14.17	53.60	63.43
	22	428.16	15.86	412.30	420.23	13.66		
	23	412.30	15.86	396.45	404.38	13.14		
	24	396.45	15.86	380.59	388.52	12.63		
7	25	380.59	15.86	364.73	372.66	12.11	45.35	63.43
	26	364.73	15.86	348.87	356.80	11.60		
	27	348.87	15.86	333.02	340.94	11.08		
	28	333.02	15.86	317.16	325.09	10.57		
8	29	317.16	15.86	301.30	309.23	10.05	37.11	63.43
	30	301.30	15.86	285.44	293.37	9.53		
	31	285.44	15.86	269.58	277.51	9.02		
	32	269.58	15.86	253.73	261.65	8.50		
9	33	253.73	15.86	237.87	245.80	7.99	28.86	63.43
	34	237.87	15.86	222.01	229.94	7.47		
	35	222.01	15.86	206.15	214.08	6.96		
	36	206.15	15.86	190.29	198.22	6.44		

Year	Quarter/ Installment	Loan at the beginning of the quarter	Principal repayment during the quarter	Balance Loan at the end of the Quarter	Av. Loan during the quarter	Interest during the quarter	Annual Interest Payment	Annual Principal repayment
10	37	190.29	15.86	174.44	182.37	5.93	20.62	63.43
	38	174.44	15.86	158.58	166.51	5.41		
	39	158.58	15.86	142.72	150.65	4.90		
	40	142.72	15.86	126.86	134.79	4.38		
11	41	126.86	15.86	111.01	118.93	3.87	12.37	63.43
	42	111.01	15.86	95.15	103.08	3.35		
	43	95.15	15.86	79.29	87.22	2.83		
	44	79.29	15.86	63.43	71.36	2.32		
12	45	63.43	15.86	47.57	55.50	1.80	4.12	63.43
	46	47.57	15.86	31.72	39.64	1.29		
	47	31.72	15.86	15.86	23.79	0.77		
	48	15.86	15.86	0.00	7.93	0.26		

Table 11 : Calculation of Income Tax

(Rs. in lacs)

YEAR	1	2	3	4	5	6	7	8	9
Book Profit	93.56	125.13	134.12	139.20	144.09	148.80	153.30	157.59	161.65
Add: Depreciation as per books	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32
Less: Depreciation as per I.T Act	161.60	141.69	124.33	109.19	95.97	84.41	74.31	65.46	57.71
Taxable Profit	-12.71	38.77	65.11	85.33	103.45	119.71	134.32	147.45	159.26
Loss carried forward	-12.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Profit set off against P/Y losses									
Taxable Profit	0.00	38.77	65.11	85.33	103.45	119.71	134.32	147.45	159.26
Normal Income Tax Rates	32.45%	32.45%	32.45%	32.45%	32.45%	0.00%	0.00%	0.00%	0.00%
Income Tax under the normal provisions	0.00	12.58	21.13	27.69	33.56	0.00	0.00	0.00	0.00
Book Profit for the purpose of MAT	93.56	125.13	134.12	139.20	144.09	148.80	153.30	157.59	161.65
Tax rate as per MAT	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%
Tax as per MAT	18.72	25.04	26.83	27.85	28.83	29.77	30.67	31.53	32.34
Income tax payable	18.72	25.04	26.83	27.85	33.56	29.77	30.67	31.53	32.34
MAT CREDIT AVAILABLE	18.72	25.04	26.83	27.85	0.00	29.77	30.67	31.53	32.34
MAT Credit availed				0.00	4.73				
MAT Credit lapsed									13.98
Income tax payable after availing Mat Credit	18.72	25.04	26.83	27.85	28.83	29.77	30.67	31.53	32.34

10	11	12	13	14	15	16	17	18	19	20	21	22	23
165.47	131.41	126.47	121.24	115.72	109.87	103.70	97.17	90.27	82.97	75.25	67.10	58.47	49.36
55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32
50.92	44.96	14.62	13.79	12.94	12.10	11.28	10.48	9.71	8.97	8.28	13.44	11.95	10.63
169.88	141.78	167.17	162.78	158.10	153.09	147.74	142.01	135.88	129.32	122.30	108.98	101.85	94.05
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
169.88	141.78	167.17	162.78	158.10	153.09	147.74	142.01	135.88	129.32	122.30	108.98	101.85	94.05
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	32.45%	32.45%	32.45%	32.45%	32.45%	32.45%	32.45%	32.45%
0.00	0.00	0.00	0.00	0.00	0.00	47.94	46.08	44.09	41.96	39.68	35.36	33.05	30.52
165.47	131.41	126.47	121.24	115.72	109.87	103.70	97.17	90.27	82.97	75.25	67.10	58.47	49.36
20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%
33.11	26.29	25.30	24.26	23.15	21.98	20.75	19.44	18.06	16.60	15.06	13.42	11.70	9.88
33.11	26.29	25.30	24.26	23.15	21.98	47.94	46.08	44.09	41.96	39.68	35.36	33.05	30.52
33.11	26.29	25.30	24.26	23.15	21.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						27.19	26.64	26.03	26.29	24.62	21.94	21.35	21.98
25.04	26.83	27.85	0.00	29.77	30.67	4.34	5.71	7.08	0.00	0.68	2.32	1.81	0.00
33.11	26.29	25.30	24.26	23.15	21.98	20.75	19.44	18.06	15.66	15.06	13.42	11.70	8.53

24	25	26	27	28	29	30	31	32	33	34	35
39.72	46.65	74.08	62.69	50.65	37.93	24.47	10.24	-4.79	-20.69	-37.50	-55.27
55.32	38.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.46	8.42	7.51	6.69	5.97	5.32	4.75	4.24	3.79	3.39	3.03	2.71
85.58	76.43	66.58	56.00	44.69	32.60	19.72	6.00	-8.58	-24.08	-40.53	-57.98
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-8.58	-24.08	-40.53	-57.98
85.58	76.43	66.58	56.00	44.69	32.60	19.72	6.00	-8.58	-24.08	-40.53	-57.98
32.45%	32.45%	32.45%	32.45%	32.45%	32.45%	32.45%	32.45%	32.45%	32.45%	32.45%	32.45%
27.77	24.80	21.60	18.17	14.50	10.58	6.40	1.95	-2.79	-7.81	-13.15	-18.81
39.72	46.65	74.08	62.69	50.65	37.93	24.47	10.24	-4.79	-20.69	-37.50	-55.27
20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%
7.95	9.33	14.82	12.54	10.13	7.59	4.90	2.05	-0.96	-4.14	-7.50	-11.06
27.77	24.80	21.60	18.17	14.50	10.58	6.40	2.05	-0.96	-4.14	-7.50	-11.06
0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05	-0.96	-4.14	-7.50	-11.06
27.77	24.80	21.60	18.17	14.50	10.58	6.40	2.05	-0.96	-4.14	-7.50	-11.06

Table 12 : Debt Service Coverage Ratio (DCSR)

YEAR	1	2	3	4	5	6	7	8	9	10
PAT	74.84	100.10	107.29	111.35	115.26	119.03	122.63	126.06	129.31	132.37
Interest	124.73	90.32	78.34	70.09	61.85	53.60	45.35	37.11	28.86	20.62
Depreciation	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32	55.32
TOTAL	254.89	245.74	240.95	236.76	232.43	227.95	223.31	218.49	213.49	208.31
Interest	124.73	90.32	78.34	70.09	61.85	53.60	45.35	37.11	28.86	20.62
Principle repayment	63.43	63.43	63.43	63.43	63.43	63.43	63.43	63.43	63.43	63.43
TOTAL	188.16	153.75	141.77	133.52	125.28	117.03	108.78	100.54	92.29	84.05
DSCR	1.35	1.60	1.70	1.77	1.86	1.95	2.05	2.17	2.31	2.48
Av. Debt service coverage ratio		1.92								