

FINANCIAL ANALYSIS

A. Introduction and Methodology

1. This financial analysis has been undertaken in accordance with Asian Development Bank (ADB) guidelines for financial management and analysis of projects.¹

2. **Energy service company business model.** The energy service company business model implies that each subproject is inherently viable. The revenue is an annuity, computed as the sum of two annuities, assuming 80% debt at the notional cost of debt of 8%, and 20% equity at a return of 14% on equity plus income tax. Every subproject is financially viable by design, as the annuity is set to recover the full cost of debt, plus a return on equity including the income tax. Other costs, such as taxes, duties, and operation and maintenance (O&M) charges would be billed and recovered periodically at actuals.² Payment is secured by way of escrow accounts, state government guarantee, and/or letters of credit.

3. The discounted cash-flow analysis conducted in real terms to calculate the financial internal rate of return (FIRR) for three sample subprojects: (i) a smart meter subproject involving installation of 1.6 million smart meters in Uttar Pradesh; (ii) an e-mobility subproject involving the lease of 10,000 electric vehicles (e-vehicles) to various customers; and (iii) installation of distributed solar photovoltaic systems with an aggregate capacity of 200 megawatts in Maharashtra indicated that all the subprojects are viable.³ While for the smart meter and e-vehicle subprojects the timeframe over which Energy Efficiency Services Limited (EESL) structures repayments from customers was adopted as the analysis period, in the case of the solar photovoltaic subproject, a Power Purchase Agreement (PPA) period of 25 years was considered. A simplified analysis was conducted assuming no reflow of funds (the most conservative assumption that generates minimum estimates of FIRR).⁴ Subproject FIRRs are indicative of the overall project FIRR, since all subprojects will follow similar business models and pricing mechanisms. As the FIRR exceeds the weighted average cost of capital (WACC) in all three sample subprojects, all three subprojects are financially viable.

B. Weighted Average Cost of Capital

4. **Overall weighted average cost of capital.** The WACC for the overall investment was calculated in post-tax real terms. For the e-vehicle subproject, a debt–equity ratio of 80:20 was assumed, in line with EESL calculations. The base rate for the ordinary capital resources loan was estimated assuming a 10-year fixed swap rate of 2.04%, a contractual spread of 0.5%, and a government guarantee fee of 1.2%. The cost of domestic debt for EESL was estimated at 8% based on EESL’s most recent market borrowings. EESL includes a return on equity charge of about 14% when calculating annuities payable to EESL by its customers. This is considered a reasonable proxy for EESL’s true cost of equity. ADB’s domestic and international inflation estimates were adopted. The estimated WACC for the overall investment is 2.2% (Table 1).⁵

¹ ADB. 2005. *Financial Management and Analysis of Projects*. Manila.

² EESL recovers O&M charges, including insurance, on a pass-through basis based on incurred costs, capped at 2–4% of project cost. Any differential between this and actual O&M costs would accrue to EESL.

³ Financial information based on detailed project reports

⁴ There is an apparent mismatch between ADB’s loan, which is for 20 years, and subproject tenors of about 6-8 years, exposing EESL to foreign currency exchange fluctuations. However, analysis indicates that the project would generate an even higher FIRR if subsequent reflows are considered.

⁵ The cost of capital for each sample subproject could vary because their capital structures differ; however, as per the relevant loan agreement covenant, EESL needs to maintain an overall debt–equity ratio of 80:20.

Table 1: Overall Estimated Weighted Average Cost of Capital (%)

Details	ADB Loan	EESL ₹ Debt	EESL ₹ Equity	Total
Financing plan (\$)	500.00	300.00	200.00	1,000.00
Weighting	50.0%	30.0%	20.0%	100.0%
Nominal cost	3.7%	8.0%	14.0%	
Tax rate	34.6%	34.6%	0.0%	
Tax adjusted nominal cost	2.4%	5.2%	14.0%	
Inflation rate	1.5%	5.0%	5.0%	
Real post tax cost	0.9%	0.2%	8.6%	
Weighted component of WACC	0.5%	0.1%	1.7%	2.2%

EESL = Energy Efficiency Services Limited, WACC = weighted average cost of capital.

Source: Asian Development Bank estimates.

5. **Solar photovoltaic subproject.** For the solar photovoltaic subproject, the financing assumption is based on 100% financing debt including Clean Technology Fund financing. The estimated WACC for this subproject is 0.5% (Table 2).

Table 2: Estimated Weighted Average Cost of Capital, Solar Photovoltaic Subproject

Details	ADB Loan	CTF Loan - Soft	EESL ₹ Debt	Total
Financing plan (\$ million)	61.4	46.0	26.8	134.2
Weighting	46%	34%	20%	100%
Nominal cost	3.7%	1.6%	8.0%	
Tax rate	34.6%	34.6%	34.6%	
Tax adjusted nominal cost	2.4%	1.1%	5.2%	
Inflation rate	1.5%	1.5%	5.0%	
Real post tax cost	0.9%	(0.4%)	0.2%	
Weighted component of WACC	0.4%	0.0%	0.0%	0.5%

() = negative, CTF = Clean Technology Fund, EESL = Energy Efficiency Services Limited, WACC = weighted average cost of capital.

Source: Asian Development Bank estimates.

C. Financial Internal Rate of Return Calculations

6. **Sample smart metering subproject.** EESL signed a memorandum of understanding in 2018 with Uttar Pradesh Power Corporation Limited (UPPCL) to install about 4 million smart meters along with associated systems in selected towns of Uttar Pradesh. Annuity was structured to allow UPPCL to return EESL's capital and costs over an 8-year period based on assessed improved operational efficiency, reduced expenses, etc. The standalone FIRR of this sample subproject is estimated at 2.7%, as shown in Table 3. This exceeds the investment WACC of 2.2% and hence is financially viable.

Table 3: Financial Internal Rate of Return, Smart Metering Subproject
(₹ million)

Year	Revenue	Costs			Net Cash Flow	De-escalation factor @5%	Discounted cash flow
		Capital	O&M	Tax			
0		5,696.35			(5,696.35)	1.00000	(5,696.35)
1	1,594.22		424.22	107.29	1,062.71	0.952381	1,012.11
2	1,594.22		424.22	150.86	1,019.14	0.907029	924.39
3	1,594.22		424.22	187.90	982.10	0.863838	848.37
4	1,594.22		424.22	219.39	950.61	0.822702	782.07
5	1,594.22		424.22	246.15	923.85	0.783526	723.86
6	1,594.22		543.72	228.27	822.23	0.746215	613.56
7	1,594.22		543.72	247.60	802.90	0.710681	570.61
8	1,594.22		543.72	(263.71)	1,314.21	0.676839	889.51
FIRR							2.7%

FIRR = financial internal rate of return, O&M = operation and maintenance.

Source: project preparatory technical assistance consultant's estimates.

7. **Sample e-vehicle subproject.** EESL has designed the e-vehicle program to scale up e-vehicles in India and proposes to introduce several schemes under which e-vehicles would be leased to corporates. As per the business plan of EESL, 40% of e-vehicles would be on wet lease (providing end-to-end fleet management services, including a driver, to the end customer), 40% would be on dry lease (including charger and basic services), and the remaining 20% would be on dry lease (lease of e-vehicle only). The lease period will be 6 years, after which the vehicles would be returned to EESL. A residual value of 8.5% of the cost of the car is assumed for the purpose of the financial analysis. The standalone FIRR of this sample subproject is estimated at 3.2%, as shown in Table 4. This exceeds the overall investment WACC of 2.2%.

Table 4: Financial Internal Rate of Return, E-Vehicle Subproject
(₹ million)

Year	Revenue	Costs			Net Cash Flow	De-escalation factor @5%	Discounted Cash Flow
		Capital	O&M	Tax			
1		10,895			10,895	1.0000	10,895
2	3,480		1,624	83	1,773	0.9524	1,689
3	3,780		1,665	257	1,859	0.9070	1,686
4	4,110		1,708	427	1,975	0.8638	1,706
5	4,473		1,754	598	2,122	0.8227	1,746
6	4,872		1,802	771	2,299	0.7835	1,802
7	6,298		1,776	(431)	4,954	0.7462	3,696
FIRR							3.23%

FIRR = financial internal rate of return, O&M = operation and maintenance.

Source: project preparatory technical assistance consultant's estimates.

8. **Sample solar photovoltaic subproject.** EESL is implementing a distributed solar photovoltaic subproject for 200 megawatts in Maharashtra. It is utilizing available space in various

substations of Maharashtra State Electricity Distribution Company (MSEDL). The total cost of the subproject is ₹8.241 billion. MSEDL has agreed to pay a levelized tariff of ₹3 per kilowatt hour of power supplied by EESL for a period of 25 years. The standalone FIRR of this sample subproject is estimated at 1.1% (Table 5), exceeding the WACC of 0.5%.

Table 5: Financial Internal Rate of Return, Sample Solar Photovoltaic Subproject
(₹ million)

Year ^a	Revenue	Costs			Net Cash Flow	De-escalation factor @5%	Discounted Cash Flow
		Capital	O&M	Tax			
0		8,241			-8,241	1	(8,241)
1	920		124	(865)	1,661	0.9524	1,582
2	911		125	(413)	1,198	0.9070	1,087
3	901		127	(143)	917	0.8638	792
4	892		129	18	746	0.8227	613
5	884		131	113	640	0.7835	501
10	840		141	230	469	0.6139	288
15	799		152	223	424	0.4810	204
20	760		164	206	390	0.3769	147
25	723		177	189	357	0.2953	105
						FIRR	1.1%

FIRR = financial internal rate of return, O&M = operation and maintenance.

^a Selected years shown for brevity.

Source: Asian Development Bank estimates.

D. EESL Financial Performance and Projections

9. **Analysis of past performance.** EESL's revenue grew from ₹12.2 billion in FY2017 to ₹19.3 billion in FY2019, an annual compound average growth rate of 26%. Operating profit increased from ₹2 billion to ₹7 billion and net profit increased from ₹519 million to ₹951 million during the same period. EESL's business models for energy-efficiency projects ensure a satisfactory return on capital. EESL's total assets increased from ₹25.8 billion in FY2016 to ₹68.2 billion in FY2019. EESL's total shareholder funds increased from ₹5.6 billion to ₹8.4 billion and its long-term borrowings increased from ₹8.3 billion to ₹28 billion during the same period. EESL had a cash and bank balance of ₹7.6 billion as of the end of FY2019. EESL's long term debt–equity ratio was 3.3:1 and its current ratio at 1.3:1 as of 31 March 2019.

10. **Financial projections.** Financial projections have been prepared for FY2020–FY2027, as summarized in Table 6, based on EESL's business plan. Apart from its existing businesses of municipal street lighting, building projects, and solar power, EESL expects substantial growth in its new businesses including smart meters, e-vehicles, and trigeneration projects. These projections indicate that EESL's revenues are expected to grow from ₹19 billion in FY2019 to ₹137 billion in FY2027, an annual compound average growth rate of 28%. Profit after tax is expected to increase from ₹951 million in FY2019 to ₹5.5 billion in FY2027. Although the debt–equity ratio is expected to be well within the requirement of 4:1, the current ratio is expected to be stressed in the future. As EESL's business model (for street lights, e-vehicles, etc.) is based on substantial capital investments, the sustainability of the same depends on its ability to raise capital continuously. EESL is aware of this risk and consciously balances it with other businesses such as consulting, trading, and project management contracts.

Table 6: Summary of Financial Statements ^a

Summary of Financials	Energy Efficiency Services Limited										₹ million
	Actuals			Projections							
PROFIT & LOSS ACCOUNT	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Revenue	12,271	14,107	19,357	27,637	40,121	54,662	71,959	92,851	1,07,143	1,22,220	1,37,111
Operating & Administrative Expenditure	10,285	10,828	12,341	19,149	23,655	28,301	33,036	38,321	42,625	47,335	52,361
EBIDTA	1,986	3,279	7,016	8,488	16,466	26,361	38,923	54,529	64,518	74,885	84,749
Depreciation	554	1,334	3,402	4,235	9,019	14,483	22,526	31,361	39,654	49,255	58,508
Interest	616	1,331	1,902	2,924	4,755	7,038	9,897	13,473	14,692	15,938	17,747
Tax	298	220	760	465	941	1,692	2,271	3,388	3,554	3,387	2,969
Profit After Tax	519	394	951	865	1,751	3,149	4,229	6,307	6,617	6,305	5,527
BALANCE SHEET											
ASSETS											
Total Non-Current Assets	10,783	23,766	33,996	64,295	1,05,985	1,58,203	2,22,329	2,86,134	3,38,975	3,80,807	4,11,997
Total Current Assets	14,983	23,708	34,218	28,122	33,124	40,869	50,533	62,179	70,292	78,826	87,457
TOTAL ASSETS	25,766	47,475	68,214	92,417	1,39,109	1,99,072	2,72,863	3,48,313	4,09,267	4,59,632	4,99,454
EQUITY & LIABILITIES											
Equity (including Reserves)	5,553	6,444	8,400	13,280	20,811	30,861	43,480	58,051	71,596	83,329	92,931
Total Non-Current Liabilities	8,809	18,466	33,315	52,324	85,013	1,27,001	1,79,130	2,32,154	2,76,078	3,12,033	3,40,583
Total Current Liabilities	11,403	22,565	26,500	26,813	33,286	41,210	50,252	58,108	61,592	64,271	65,940
TOTAL EQUITY & LIABILITIES	25,766	47,475	68,214	92,417	1,39,109	1,99,072	2,72,863	3,48,313	4,09,267	4,59,632	4,99,454
FINANCIAL RATIOS											
Debt to Equity Ratio	1.5	2.7	3.3	3.3	3.4	3.4	3.5	3.4	3.3	3.2	3.1
Current Ratio	1.3	1.1	1.3	1.0	1.0	1.0	1.0	1.1	1.1	1.2	1.3

a Selective details shown for brevity.

b Long-term debt divided by equity including reserves.

c Current assets divided by current liabilities.