

FINANCIAL ANALYSIS

A. Introduction and Methodology

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

2. The Demand-Side Energy Efficiency Investment Project will finance high-priority areas under the energy service company (ESCO) business of the Energy Efficiency Services Limited (EESL). The investment program supported by the proposed loan will be used to implement energy efficiency projects relating to (i) more efficient light-emitting diodes (LED) municipal street lighting in Rajasthan, Maharashtra, Goa, and Telangana; (ii) more efficient household appliances in Rajasthan, Maharashtra, Andhra Pradesh, and Uttar Pradesh; and (iii) more energy-efficient agriculture water pumps in Rajasthan, Andhra Pradesh, and Karnataka.² Under the ESCO business model, EESL implements projects and is typically paid back over time from the resulting energy savings, thereby addressing the barrier imposed by the high upfront costs of energy efficiency projects to the long-term beneficiaries.

3. The ESCO 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 10%, and 20% equity at a return of 14%–18% 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, like taxes, duties, and operations and maintenance (O&M) charges would be billed and recovered periodically based on actual incurred costs.³ Payment is secured by way of escrow accounts, state government guarantees, and/or letters of credit.

4. To demonstrate this, a discounted cash flow analysis was conducted in real terms to calculate the financial internal rate of return (FIRR) for the three sample subprojects: (i) a streetlight replacement project for 29 urban local bodies (ULBs) in Rajasthan, (ii) replacement of 100,000 inefficient agricultural water pumps with modern efficient pumps in Rajasthan, and (iii) a program to replace five million conventional light bulbs with efficient LED bulbs in Maharashtra.⁴ For each subproject, the timeframe over which EESL structures repayments from customers was adopted as the analysis period. A simplified analysis was conducted assuming no reflow of funds (the most conservative assumption that generates minimum estimates of FIRR).⁵

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

² These projects have been selected based on implementation readiness, including initial assessments of energy efficiency savings potential, stakeholder consultations, and advanced discussions on contract parameters with the relevant municipalities and distribution utilities. Additional states might be included during implementation.

³ 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.

⁴ Financial information based on Detailed Project Reports.

⁵ There is an apparent mismatch between ADB's loan, which is over 20 years, and subproject tenor, which averages 5 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, even with the expected depreciation of the Indian rupee against the US dollar, primarily because EESL uses a nominal debt cost of 10% in its annuity calculations, which is significantly higher than the nominal local currency equivalent cost of ADB's loan. Given EESL's growth plans and its burgeoning requirement for capital to support these plans, it is unlikely that EESL will not reflow loan proceeds back into its core business, and, in this context, the reflow of funds (with modified consumer repayment terms, if necessary, to reflect interest rate and currency movements) would be monitored by ADB during the project period. The energy-efficient products offered by EESL may change over time as markets mature and as other energy services company enter the market, and loan funds may therefore reflow into different product lines. In the meantime, the establishment of a risk framework and team will allow EESL to make the most

Subproject FIRR is indicative of the overall project FIRR, since all subprojects will follow a similar business model and pricing mechanism.

B. Weighted Average Cost of Capital

5. The weighted average cost of capital (WACC) for the investment program was calculated in post-tax real terms. The base rate for the ordinary capital resources loan was estimated assuming a 10-year fixed swap rate of 1.83%, a contractual spread of 0.50%, and a government guarantee fee of 1.20%. The cost of domestic debt for EESL was estimated at 10% based on market borrowings by firms having similar risk profiles and credit ratings as EESL. EESL includes a return on equity charge of approximately 15% when calculating annuities payable to EESL by its customers, and this is considered a reasonable proxy for EESL's true cost of equity. ADB's domestic and international inflation estimates were adopted. As shown in Table 1, the estimated WACC for the investment program is 2.2%.⁶

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

Details	ADB Loan	Domestic Loan	Equity	Total
Weighting	50.0	30.0	20.0	100.0
Nominal cost	3.5	10.0	15.0	0.0
Tax rate	34.6	34.6	0.0	0.0
Tax adjusted nominal cost	2.3	6.5	15.0	0.0
Inflation rate	1.5	5.5	5.5	0.0
Real post tax cost	0.8	1.0	9.0	0.0
Weighted cost	0.4	0.3	1.6	2.5

Source: Asian Development Bank estimates.

C. Financial Internal Rate of Return Calculations

6. **Sample street light replacement subproject.** EESL signed a Memorandum of Understanding (MOU) in 2015 to install about 67,000 LED streetlights along with associated control and switching systems in all 29 ULBs in Rajasthan for Rs459 million.⁷ Annuity was structured to allow the ULBs to return EESL's capital and costs over a 7-year period based on the assessed energy savings expected. At the end of the project period, EESL will transfer the project assets to the ULBs without any additional payment.

7. The standalone FIRR of this sample subproject is estimated at 2.7%, as shown in Table 2. This exceeds the investment program WACC of 2.5%.

Table 2: FIRR Calculation for Sample Street Lighting Replacement Subproject
(Rs million)

Year	Revenue	Costs			Net
		Capital	O&M	Tax ^a	Cash Flow
0		459.50			(459.50)
1	116.78		19.07	11.21	86.50
2	111.60		18.98	13.84	78.78
3	106.68		18.89	15.71	72.08
4	102.01		18.80	16.97	66.24
5	97.58		18.71	17.77	61.10

prudent decisions to reduce asset liability mismatches and exposure to foreign exchange and interest rate risk over time.

⁶ The cost of capital for each of the sample subprojects would vary slightly from the investment program WACC due to different capital structures; however, 2.2% can be considered as indicative.

⁷ Exchange rate at \$1 = Rs62 as of January 2015.

Year	Revenue	Costs			Net Cash Flow
		Capital	O&M	Tax ^a	
6	93.38		18.62	18.20	56.56
7	89.40		18.53	(16.71)	87.57
FIRR					2.7%

() = negative , FIRR = financial internal rate of return, O&M = operations and maintenance.

^a The tax refund shown in the final year of the cash flow arises from assets on Energy Efficiency Services Limited's balance sheet being written to zero at the end of the contract period.

Source: Asian Development Bank estimates.

8. **Sample agricultural pump replacement subproject.** EESL plans to execute an MOU in Rajasthan to install 100,000 agricultural pump sets in private tube wells across the state for Rs4,320 million. Tripartite agreements between EESL, the incumbent electricity distributors (DISCOMs), and farmers are being negotiated to determine the sharing of energy savings between counterparties. Because electricity supply to farmers is heavily subsidized, the majority of the financial benefit of more efficient water pumping falls to DISCOMs; therefore, it is DISCOMs that pay EESL an annuity to return EESL's capital and costs over a 7-year period. At the end of the project period, EESL will transfer the project assets to the farmer without any additional payment.

9. The standalone FIRR of this sample subproject is estimated at 3.7%, as shown in Table 3. This exceeds the investment program WACC of 2.1%.

Table 3: FIRR Calculation for Sample Agricultural Pump Replacement Subproject
(Rs million)

Year	Revenue	Costs			Net Cash Flow
		Capital	O&M	Tax ^a	
0		4,320.00			(4,320.00)
1	1,158.62		79.85	160.78	917.99
2	1,098.21		75.69	182.62	839.91
3	1,040.96		71.74	197.45	771.77
4	986.69		68.00	206.78	711.91
5	935.25		64.45	211.81	658.99
6	774.63		61.09	174.79	538.75
7	186.10		57.91	(343.28)	471.47
FIRR					3.7%

() = negative , FIRR = financial internal rate of return, O&M = operations and maintenance.

^a The tax refund shown in the final year of the cash flow arises from assets on Energy Efficiency Services Limited's balance sheet being written to zero at the end of the contract period.

Source: Asian Development Bank estimates.

10. **Sample efficient household appliance subproject.** In 2015, EESL signed an MOU with the Maharashtra State Electricity Distribution Company (MSEDL) to distribute a total of 38.6 million LED bulbs to domestic consumers. Of this, five million LED bulbs are to be paid for by consumers on an installment basis with payments spread over a 10-month period. The total cost of the five million bulbs to be recovered through installments is Rs325.52 million. The repayment structure assumes a notional capital structure of 80% debt and 20% equity and notional cost of funds. The jurisdictional regulatory authority has approved the repayment scheme. MSEDL takes responsibility for collecting the installments from customers through electricity bills and remits funds to EESL. Security for payments takes the same form as outlined in paras. 7 and 8 for other sample subprojects.

11. The standalone FIRR of this sample subproject is estimated at 3.6%, as shown in Table 4. This exceeds the investment program WACC of 2.1%.

Table 4: FIRR Calculation for Sample Domestic Light Replacement Subproject
(Rs million)^a

Month	Revenue	Cost		Net Cash Flow
		Capital	Tax	
0		325.52		(325.52)
1	34.45		0.00	34.45
2	34.30		0.00	34.30
3	34.14		0.00	34.14
9	33.22		0.00	33.22
10	33.06		0.00	33.06
11	0.00		6.78	(6.78)
			FIRR	3.6%

() = negative , FIRR = financial internal rate of return.

^a Selected years shown for brevity.

Source: Asian Development Bank estimates.

D. Risk Analysis

12. In general, EESL is not exposed to typical project risks associated with cost overruns, as it recovers actual rather than expected capital costs through the annuity payments that it receives from customers. However, it is exposed to credit risk, and it has incorporated mitigation measures into its agreements with counterparties (the use of escrow accounts, state government guarantees, and letters of credit. EESL is also exposed to interest rate mismatch risks and will have exposure to exchange rate risks under the proposed ADB loan; EESL is developing a framework to mitigate this risk. EESL's current approach to project asset insurance is inadequate, and an assurance has been sought by ADB to ensure more appropriate insurance cover is put in place to reduce this risk.

E. Energy Efficiency Services Limited Financial Performance and Projections

13. Incorporated in 2009, EESL's operating revenue grew from just Rs15 million in FY 2010–FY2011 to Rs168 million in FY2013–FY2014, Rs625 million in FY2014–FY2015, and Rs7,088 million in FY2015–FY2016 (based on provisional accounts), an annual compound average growth rate of 242% over these years. Net profit has shown similarly impressive growth during the same period, from Rs34 million in FY2010–FY2011 to Rs267 million in FY2015–FY2016. These rapid growth rates reflect the company's commendable progress over the period from start-up to providing consulting advice to implementing energy efficiency projects on behalf of its clients.

14. EESL's business models for energy efficiency project implementation ensure a satisfactory return on capital (notwithstanding residual counterparty and asset risk.)⁸ For FY2015–FY2016, EESL achieved an EBIDTA margin of 15% (of gross revenue), a net profit margin at 4%, interest coverage ratio (earnings before interest and taxes divided by interest expenses) of 4.24, and return on equity at 7%. EESL's debt:equity ratio is currently around 60:40, as the company has just commenced borrowing to fund its projects in FY2015, prior to which it was debt free.⁹

⁸ Even after provisioning for moderate-to-high levels of bad debts and assets losses, EESL's financial performance is forecast to be robust. Further comfort is provided by the ability of EESL to explicitly include provision for bad debts and asset losses into its future contracts, thereby transferring this risk to project counterparties.

⁹ Because EESL is a hybrid of an energy services company (which would be expected to have modest debt:equity of no more than 60:40 based on a sample of publicly traded energy services companies in the United States) and a credit or financial services company (which would be expected to have many times more debt than equity), there are few if any relevant debt:equity benchmarks for the company.

15. Indicative financial projections have been prepared for FY2016–FY2017 to FY2022–FY2023, as summarized in Table 5, reflecting the projections contained in EESL's business plan (which cover the period through to FY2020).¹⁰ These projections indicate that EESL's revenues are expected to grow from Rs7.1 billion in FY2015–FY2016 to Rs420 billion in FY2022–FY2023, a compound average growth rate of 79%. Net profit is forecast to increase from Rs267 million in FY2015–FY2016 to around Rs26 billion over the period, a growth rate of 81% per annum. Because of EESL's assumed rapid scale-up of project activities, shareholders' funds are forecast to grow from Rs4.1 billion in FY2015–FY2016 to Rs386 billion by the end of the period, with long-term debt forecast to grow from Rs6.1 billion to Rs1,250 billion. Consequently, the debt equity ratio is expected to increase from 60:40 in FY2015–FY2016 to 79:21 in FY2022–FY2023. However, debt service coverage is forecast to be adequate for the period.

Table 5: Summary of EESL's Financial Projections and Performance^{a,b}
(Rs million)

Item	FY	2014	2015	2016	2017	2018	2019	2020	2023
		Audited		Prov			Forecast		
Project Revenue		168	625	7,089	25,314	77,617	154,907	227,544	419,628
Operating expenses		131	388	5,722	16,203	48,956	82,699	95,818	176,704
Gross margin		37	238	1,367	9,112	28,662	72,208	131,726	242,925
Financing costs		0	5	124	2,360	7,978	22,423	46,200	107,621
Depreciation & amortization		2	2	60	569	4,162	13,771	37,036	68,387
Net profit before tax		48	136	403	2,062	6,040	11,492	15,426	25,925
Principal repayments		0	0	0	354	2,234	7,021	20,485	44,333
Capital expenditure		71	1,503	5,138	34,180	85,147	244,791	368,350	328,467
Operating cash flow		123	639	(1,288)	4,740	3,039	42,811	90,270	227,289
Net cash flow		55	2	1,415	3,358	13,776	33,295	50,865	65,273
Current assets		1,179	1,636	8,762	16,678	58,411	121,208	208,256	413,473
Fixed assets		48	1,517	6,086	37,262	108,638	316,393	616,357	1,335,739
Current liabilities		208	1,148	4,610	8,279	31,934	57,008	86,891	113,291
Long-term debt		0	878	6,113	33,111	99,241	288,488	563,308	1,250,234
Trade creditors		34	784	1,081	2,700	8,159	13,783	15,970	29,451
Total shareholders' funds		1,046	1,103	4,101	12,685	36,011	92,240	174,549	385,822
Return on equity		1%	8%	7%	11%	11%	8%	6%	4%
Debt-service coverage ratio ^c		n/a	n/a	(10.4)	1.8	0.3	1.5	1.4	1.5
Current ratio ^d		5.7	1.4	1.9	2.0	1.8	2.1	2.4	3.6
Debt : equity ratio ^e		0:100	50:50	63:37	75:25	76:24	78:22	78:22	79:21

(.) = negative, EESL = Energy Efficiency Services Limited, FY = Fiscal Year, n/a = not available, Prov = provisional.

^a Selected years shown for brevity.

^b Historical performance and projections reflect EESL's account treatment of project assets and revenue derived from them.

^c Net cash flow from operations divided by debt service obligations (including all principal payments and tax-shielded interest and lease payments falling due within the year).

^d Current assets divided by current liabilities.

^e Long-term debt divided by equity net of accumulated profits and/or losses.

Source: Asian Development Bank estimates.

¹⁰ Full details of projections are included in the Financial Management Assessment.