
ESCO MODELS IN INDIA



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TOPICS

What is an ESCO



What is an EPC



Models for ESCO Performance Contracts



Shared Savings vs Guaranteed Savings



Types of Financing Schemes



WHAT IS AN ESCO

- ESCOs develop, implement and provide or arrange financing for upfront EE investments for its clients. Repayments from savings allow clients to compensate ESCO's ongoing savings monitoring, Measurement & Verification (M&V) costs and assumption of risk through EPC or Third-Party Financing.
- An Energy Service Company initiates:
 - The identification
 - The study
 - The conception
 - The financing
 - The implementation
 - The follow-up

... of the energy savings measures using a contractual engagement between the ESCO and the client (Discom/ User) through an Energy Performance Contract (EPC)

WHAT IS AN EPC

Energy Performance Contracting (EPC) can be defined as ‘a form of ‘creative financing’ for capital improvement which allows the funding of energy efficiency upgrades from cost reductions. Performance guarantees are given by the ESCO in terms of the level of energy service or the level of cost and/or energy savings. The savings are then split between the ESCO and the client who could potentially reinvest this into more improvements.

- It is a contract
- Financing of projects from energy savings
- Permits the realisation of projects for which Rupees may not otherwise be available
- Mobilises private capital
- Ensures that savings will be realised in a certain time frame

ALSO KNOWN AS:

- Third party financing
- Sustainable mechanism
- Savings financing
- Innovative financing

MODELS FOR ESCO PERFORMANCE CONTRACTS (1/2)

- **Shared Savings:** Under this model, the ESCO finances the project either through its own funds or by borrowing from a third party. The ESCO takes on the performance risk of the project. The cost savings are divided between the ESCO and customer at a prearranged percentage for an agreed length of time.
- **Guaranteed Savings:** In this case, the customer finances the design and installation of the project by borrowing funds from a third party such as a bank or through leasing the equipment. The ESCO has no contractual arrangement with the bank but does assume the project risk and guarantees the energy savings made. If the savings do not reach agreed minimums the ESCO covers the difference; if they are exceeded then the customer agrees to share the savings with the ESCO.
- **Lease Rental Model:** The supplier installs the equipment and may maintain it. The lease payments are financed by verified savings and the ownership is generally transferred at the end of a lease period. The client (lessee) makes payments of principal and interest; the frequency of payments depends on the contract. The stream of income from the cost savings covers the lease payment.

MODELS FOR ESCO PERFORMANCE CONTRACTS (2/2)

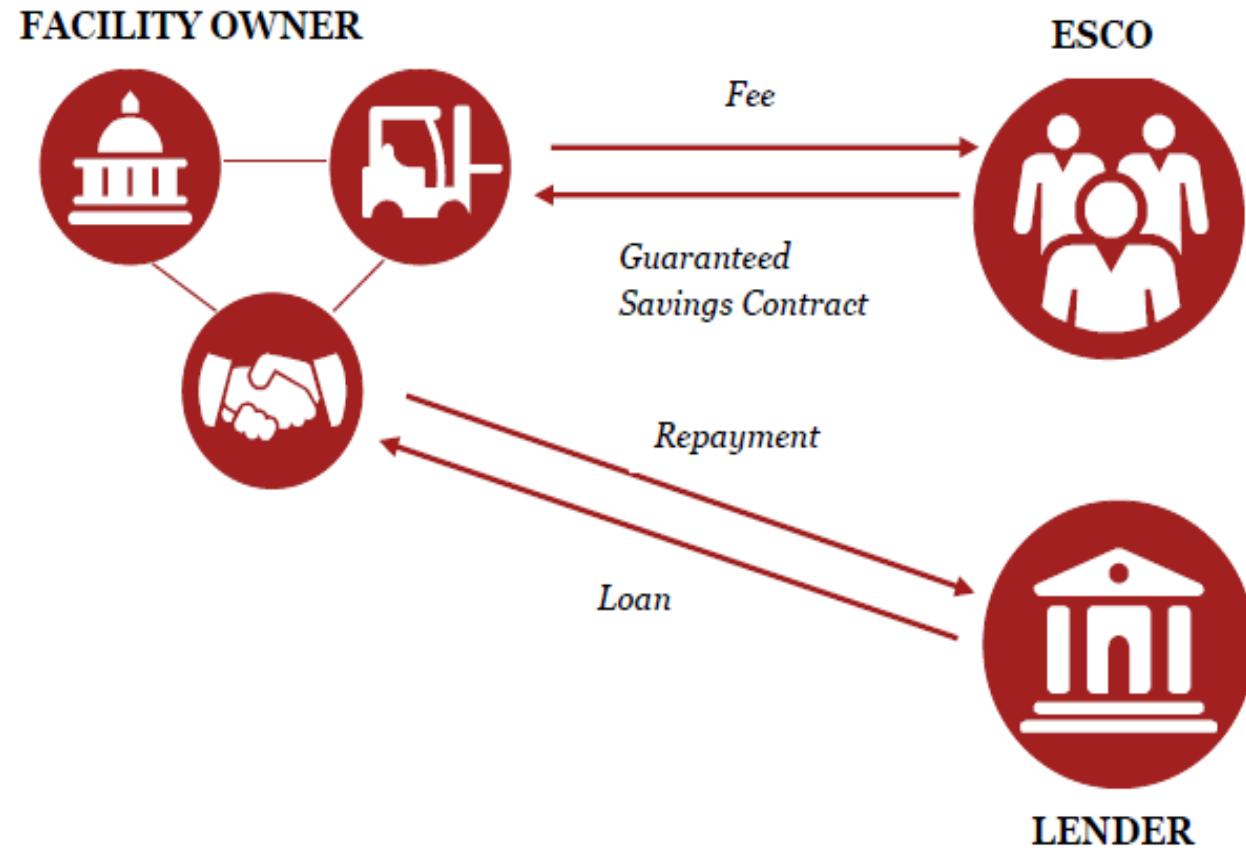
- **BOOT Model:** A BOOT (Build-Own-Operate-Transfer) model may involve an ESCO designing, building, financing, owning and operating the equipment for a defined period of time and then transferring this ownership over to the client. This model resembles a special purpose enterprise created for a particular project. Clients enter into long term supply contracts with the BOOT operator and are charged according to the service delivered. The service charge includes capital and operating cost recovery and project profit. BOOT models are becoming an increasingly popular means of ESCO business in India.
- **BOO Model:** A new public-private partnership (PPP) project model for ESCO business named BOO (build, own, operate) has been emerging in which a private organization builds, owns and operates the energy efficiency of a facility. The government doesn't provide direct funding in this model, but it may offer other financial incentives such as tax-exempt status.

Contract Type ¹³	Whose Balance Sheet	Who takes performance Risk	Project Specific Financing
Guarantee Savings	Client	ESCO	Yes
Shared Savings	ESCO	ESCO	No
Lease Rental	Client	ESCO	Yes
BOOT Model	ESCO	ESCO	Yes

SHARED SAVINGS VS GUARANTEED SAVINGS

Guaranteed Savings Model

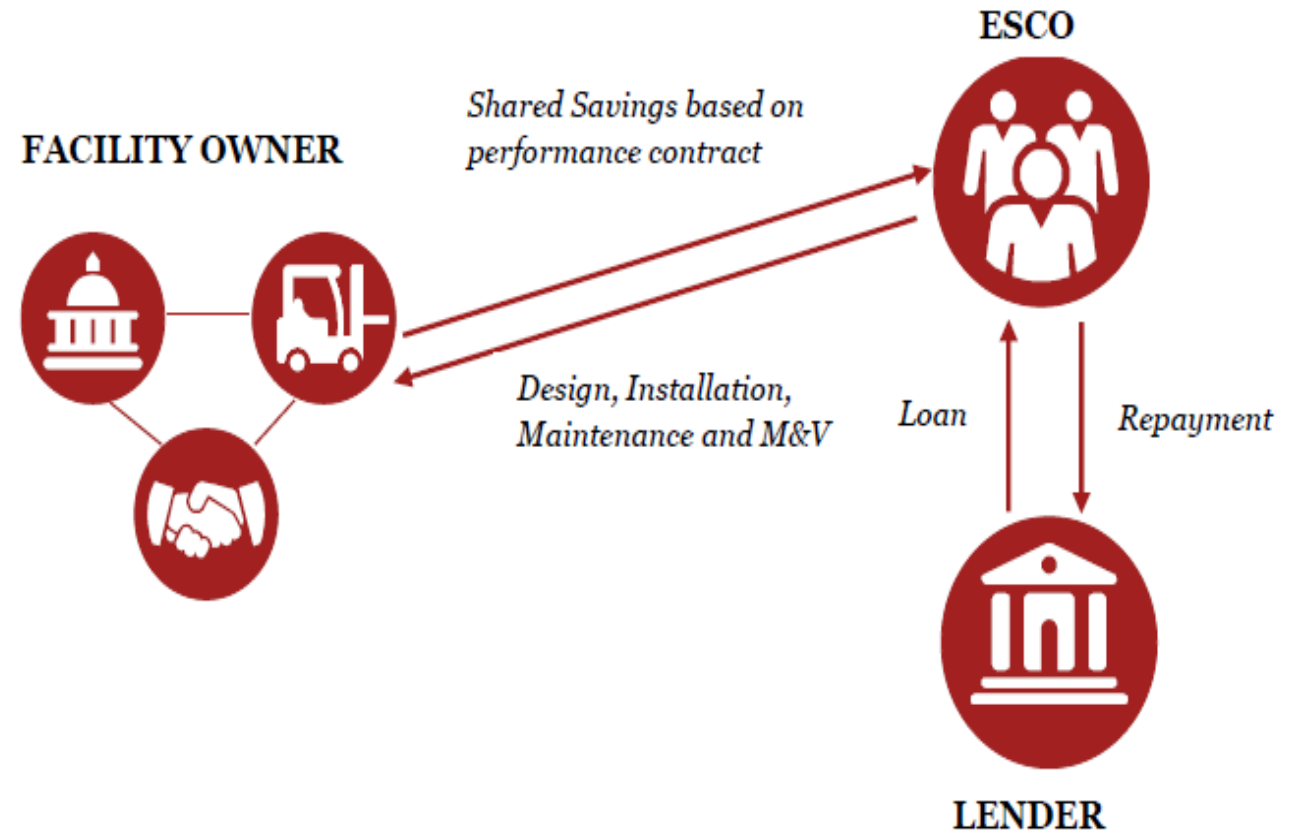
In a guaranteed savings EPC, the client essentially applies for a loan, finances the project and makes periodic debt service payments to a financial institution. The ESCO bears no direct contractual obligation to repay the lender, only the energy end-user assumes this obligation. The ESCO's guarantee is not a guarantee of payment to the lender but rather a guarantee of savings performance to the energy end-user that is usually equal to its repayments to the lender. When the actual energy savings are less than the guaranteed level, the ESCO would compensate such shortfall to the client. *Thus ESCO takes over the entire performance risk of the Energy Efficiency project.*



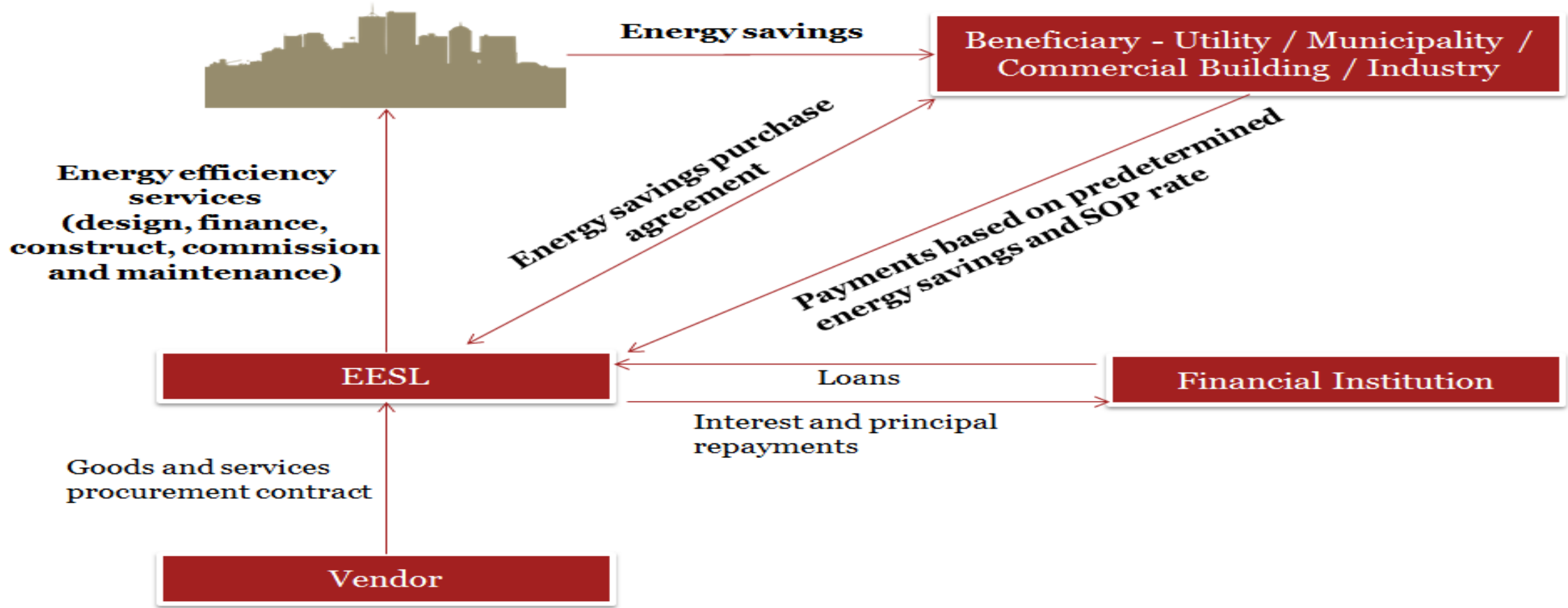
SHARED SAVINGS VS GUARANTEED SAVINGS

Shared Savings Model

In a shared-savings EPC, the ESCO finances the total upfront capital cost of the project and is totally responsible for repaying the lender. The client pays the ESCO a percentage (or it can be a fixed amount) of its achieved savings from the project, large enough for the ESCO to repay the project investment (both equity and debt), cover M&V costs and any other associated costs. The energy-end user assumes no direct contractual obligation to repay the lender, only the ESCO has this obligation. In a Shared Savings Model, the ESCO assumes partial performance risk and entire credit risk..



FINANCING SCHEME – STANDARD OFFER PRICING (SOP)



SOP – STREET LIGHTING PROJECT (1/4)

Major parameters for street lighting project

Input Sheet

- Project details
- Capital expenditure
- Financial parameters
- Operational detail
- Generic details
 - Tariff
 - Depreciation
 - Tax rates

Working Sheet

- Revenue Schedule
- Debt and Equity Schedule
- Profit and Loss Statement
- Cash Flow Statement
- Balance Sheet
- Financial Feasibility

SOP – STREET LIGHTING PROJECT (2/4)

Input Sheet

Project Specific details

- Project Duration
- Luminaries detail
- Operating hours
- Estimated savings

Capital Expenditure

- Cost of LED
- Cost of CCMS
- PDC
- PMC

Operation Details

- AMC
- M&V Cost
- Deration
- ROE

Other Parameters

- Tariff
- Inflation
- Tax Rate
- Depreciation

SOP – STREET LIGHTING PROJECT (3/4)

Working Sheet

Debt Schedule

Projection of the debt repayment as per the terms of agreement including,

- Principle Repayment
- Interest payment

Equity Schedule

Projection of the equity to be withdrawn from the project including the ROE expected during the project inception phase

Revenue Schedule

Estimation of the total revenue on monthly/yearly basis considering following parameters

- Debt Repayment
- Equity Schedule
- AMC & M&V Cost

SOP – STREET LIGHTING PROJECT (4/4)

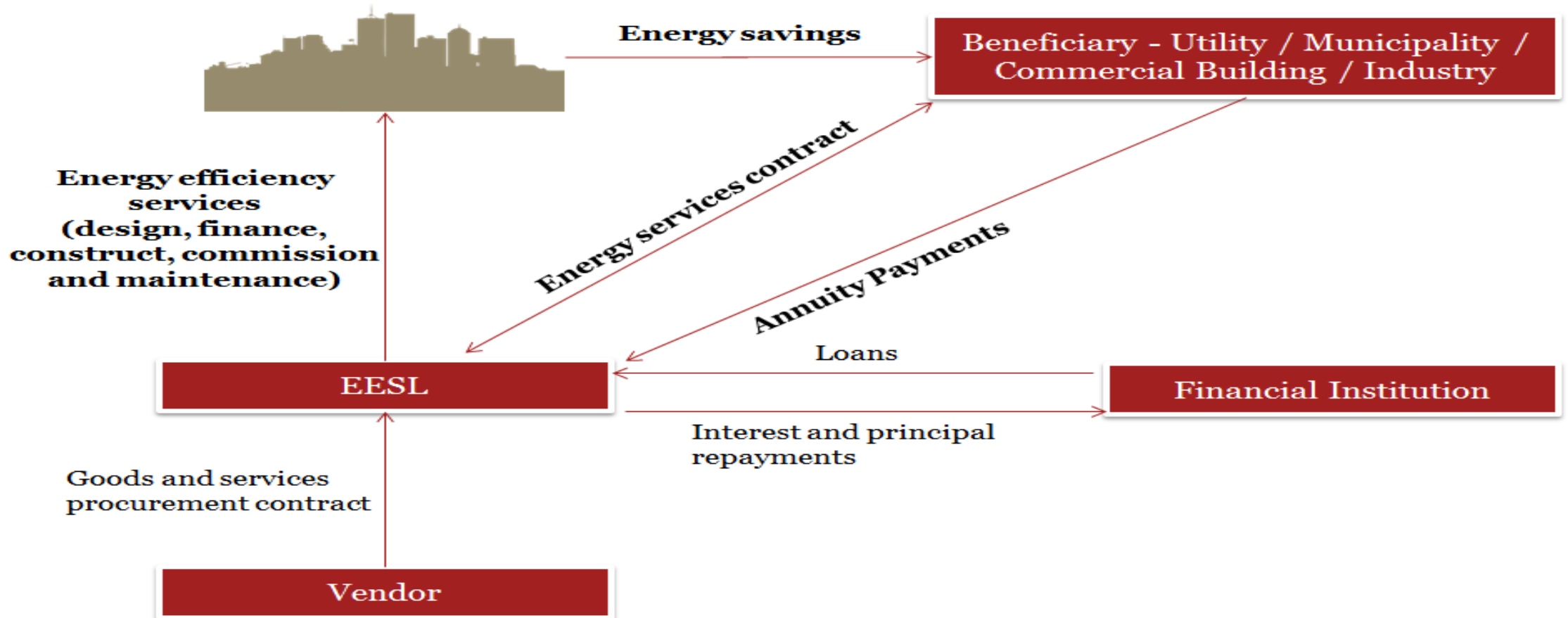
Financial Feasibility study

- SOP calculation
- Profit and Loss Statement
- Balance Sheet
- Cash Flow statement
- Estimation of project cash flows
- Financial Parameters calculation
 - NPV
 - Project IRR
 - Equity IRR

Financial Feasibility Output

Parameter	Value
Financing Scheme	Standard offer program
SOP (INR/ kWh)	
Equity IRR	
Project IRR	
Project NPV	

FINANCING SCHEME – ON BILL FINANCING (OBF)



OBF – DELP PROJECT (1/4)

Major parameters for DELP project

Input Sheet

- Project Details
- Capital Expenditure
- Financial Parameter
- Operational Detail
- Generic Details
 - Tariff
 - Tax rates

Working Sheet

- Revenue Schedule
- Debt and Equity Schedule
- Profit and Loss Statement
- Cash Flow Statement
- Balance Sheet
- Financial Feasibility

OBF - DELP PROJECT (2/4)

Input Sheet

Project Specific details

- On Bill recovery duration
- Distribution duration

Financing inputs

- Proportion of Debt
- Cost of Debt
- Debt tenor

Capital Expenditure

- Cost of Bulb
- Support service cost
- PDC
- PMC
- Proportion of consumer paying upfront

Operation Details

- AMC
- M&V Cost

Other Parameters

- Tariff
- Corporate tax Rate
- Sales Tax

OBF – DELP PROJECT (3/4)

Working Sheet

Debt Schedule

The Capex requirement of OBF project is to finance the working capital. Debt schedule will detail the repayment of the Debt borrowed to finance the inventory of the project

Equity Schedule

In OBF projects, EESL has fixed ROE. The annuity payment for fixed ROE on equity infused in the project is estimated in this schedule

Annuity Calculation

OBF projects works on the recovery of bulb cost from consumers as well as recovery of the cost of debt and ROE. Annuity calculation projects the monthly payment which discoms or ULBs are required to make to EESL for their energy efficient measure.

OBF – DELP PROJECT (4/4)

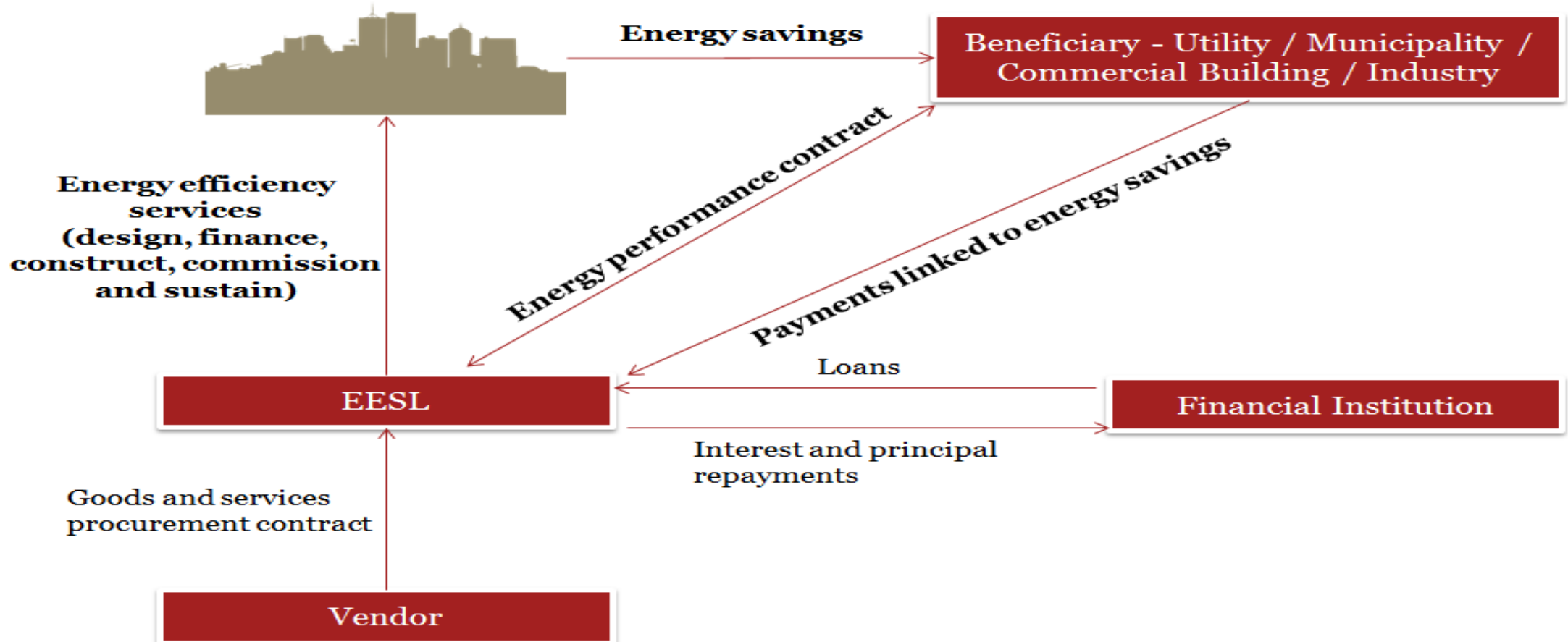
Financial Feasibility study

- Annuity calculation
- Profit and Loss Statement
- Balance Sheet
- Cash Flow statement
- Estimation of project cash flows
- Financial Parameters calculation
 - NPV
 - Project IRR
 - Equity IRR

Financial Feasibility Output

Parameter	Value
Financing Scheme	On Bill Financing
Recovery (INR/ Month)	
Equity IRR	
Project IRR	
Project NPV	

FINANCING SCHEME – SHARED SAVING FINANCING



SHARED SAVINGS – MUDSM PROJECT (1/4)

Major parameters for MuDSM project

Input Sheet

- Project Details
- Capital Expenditure
- Financial Parameter
- Operational Detail
- Generic Details
 - Tariff
 - Depreciation
 - Tax rates

Working Sheet

- Revenue Build-up
- Cost Sheet
- Depreciation Schedule
- Debt and Equity Schedule
- Profit and Loss Statement
- Cash Flow Statement
- Balance Sheet
- Financial Feasibility

SHARED SAVINGS – MUDSM PROJECT (2/4)

Input Sheet

Project Specific details

- Project Duration
- Details of existing system
- New system details
- Estimated savings

Financing inputs

- Proportion of Debt
- Cost of Debt
- Debt tenor

Capital Expenditure

- Cost of equipment
- PDC
- PMC
- Installation duration

Operation Details

- AMC
- M&V Cost
- Operating hours
- Energy savings
- Share of Savings

Other Parameters

- Tariff
- Inflation
- Tax Rate
- Depreciation

SHARED SAVINGS – MUDSM PROJECT (3/4)

Calculation Sheet

Revenue Buildup

In this sheet the revenue is projected based on estimated savings to be generated in the project.

Depreciation Schedule

Every projects has limited life span and the equipment installed (i.e. assets) are depreciated over the project life. This sheet projects the value of depreciation for the installed equipment

Cost Schedule

Cost schedule sheet caters to both Capex and Opex cost. It projects the O&M cost to be incurred during the project life as well as the requirement of initial investment based on input sheet

Debt Equity Schedule

Projection of the debt repayment as per the terms of agreement including following components

- Principle Repayment
- Interest payment

SHARED SAVINGS – MUDSM PROJECT (4/4)

Financial Feasibility study

- Profit and Loss Statement
- Balance Sheet
- Cash Flow statement
- Estimation of project cash flows
- Financial Parameters calculation
 - NPV
 - Project IRR
 - Equity IRR
 - Payback period

Financial Feasibility Output

Parameter	Value
Financing Scheme	Shared savings
Sharing proportion	
Equity IRR	
Project IRR	
Project NPV	
Payback period	

End of Training Module

THANK YOU