www.pwc.com

Case study- ABCD SPINTEX PVT. LIMITED Bhilwara, Rajasthan

SIDBI

.

pwc

Table of Contents

Section 1
Analysis of ABCD Spintex Pvt. Ltd. for Energy Efficiency Financing

Brief about the company- ABCD Spintex Pvt. Ltd.

Name of the unit	ABCD Spintex Pvt. Limited Bhilwara, Rajasthan, India
Line of Activity:	Textile Fabric Processing
Main Customers:	Textile spinning units of Bhilwara
Yr of Establishment:	1991
Annual Turnover:	Rs 15.37 Crores
Profit after Tax:	Rs 0.45 Crores
Investment in P&M/c:	Rs 8.09 Crores
Credit from Bank / FI	
Term Loan (o/s):	Rs 1.06 Crores
Working Capital Loan:	Rs 1.70 Crores
Growth Trend:	Increasing competition restricted growth rate in recent past

Energy Source- ABCD Spintex Pvt. Ltd.

Plant capacity	75000 Metres of fabric processing /day
Annual Energy Bill	Rs 4.3 Crores
Power	
Connected load:	700 KVA
Present tariff:	4.25 Rs / KWh
DG sets	
Capacity:	380 KVA x 2No, 180 KVA x 1 No
Generation cost:	5.49 Rs /KWh
Fuel	
Lignite	
Annual consumption:	2420 MT
Present cost:	1100 Rs /MT
Coal	
Annual consumption:	7552 MT
Present cost:	2600 Rs / MT

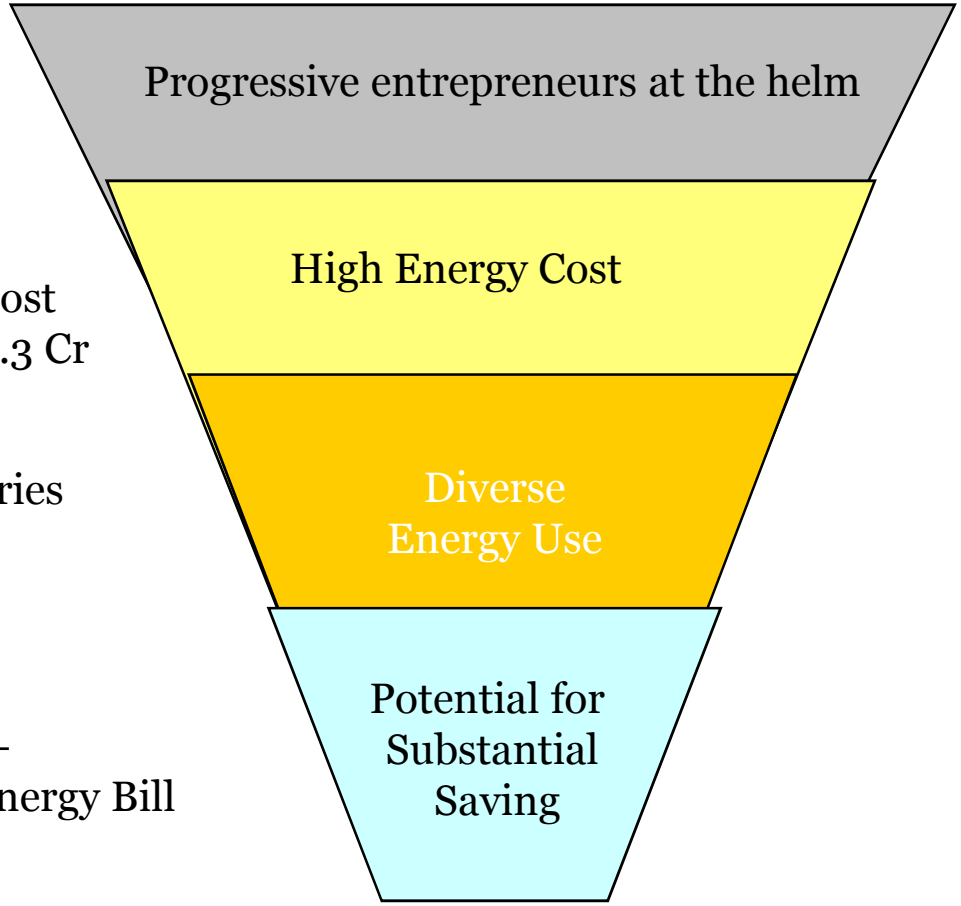
ABCD Spintex- Potential candidate for EE

ABCD Spintex – Have already got Energy Study Conducted

ABCD Spintex – Total Energy Cost (Thermal & Electrical) of Rs 4.3 Cr

Process, Utilities & Auxiliaries

Walk Through Audit – Around 15% of the total Energy Bill



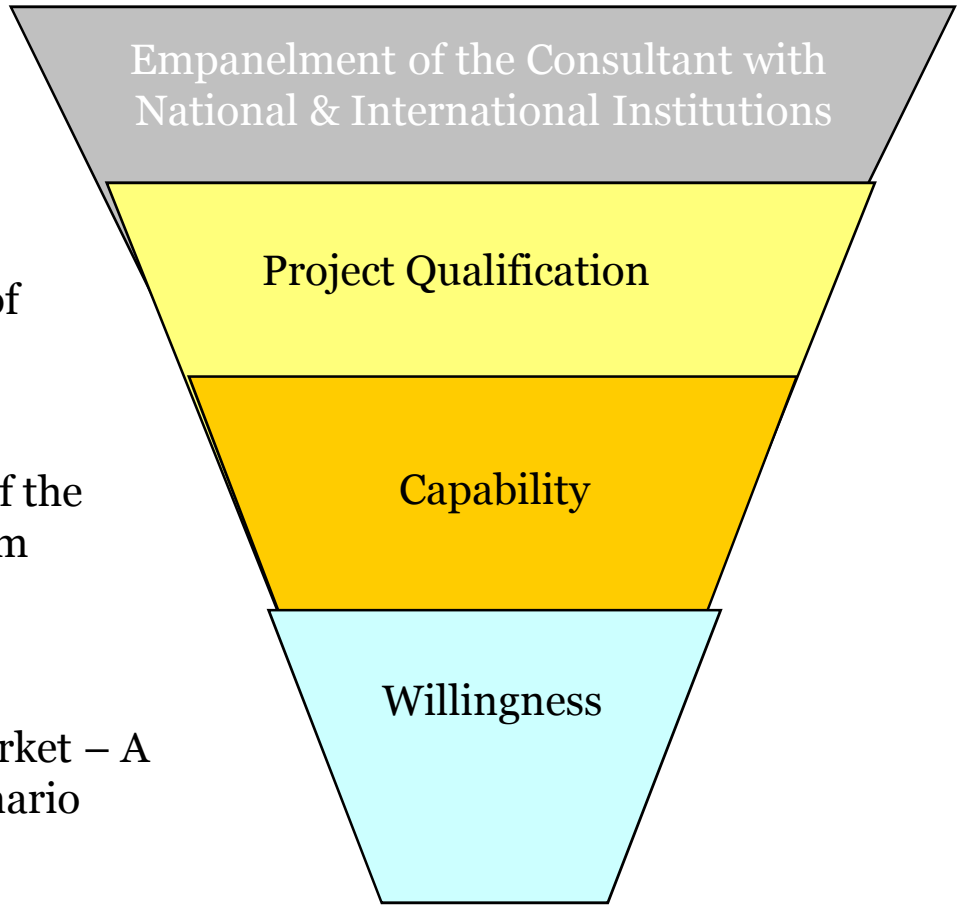
Selection of Energy Consultant

The Consultant is empanelled with PCRA, BEE, ADB etc

The consultant has a history of successful EE projects

Education and experience of the staff at the consulting firm

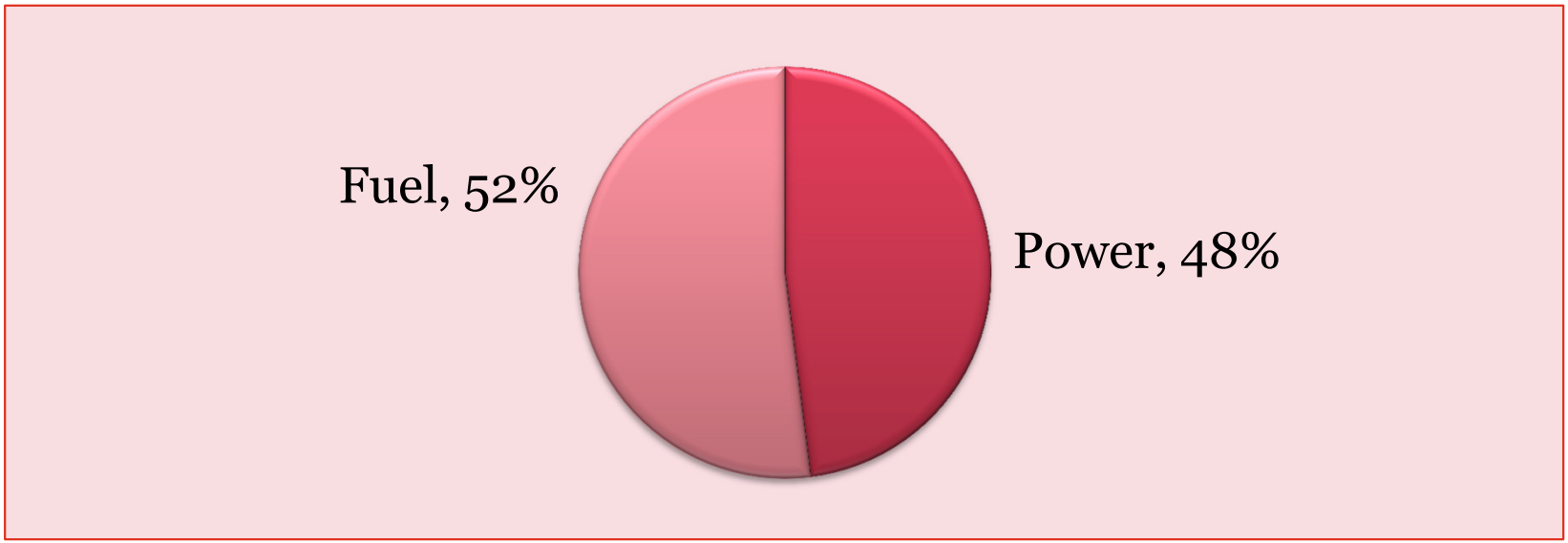
Willingness to enter SME market – A high volume low cost scenario



Section 2
Energy bills of ABCD Spintex Pvt. Ltd.

Present Annual Energy Bill

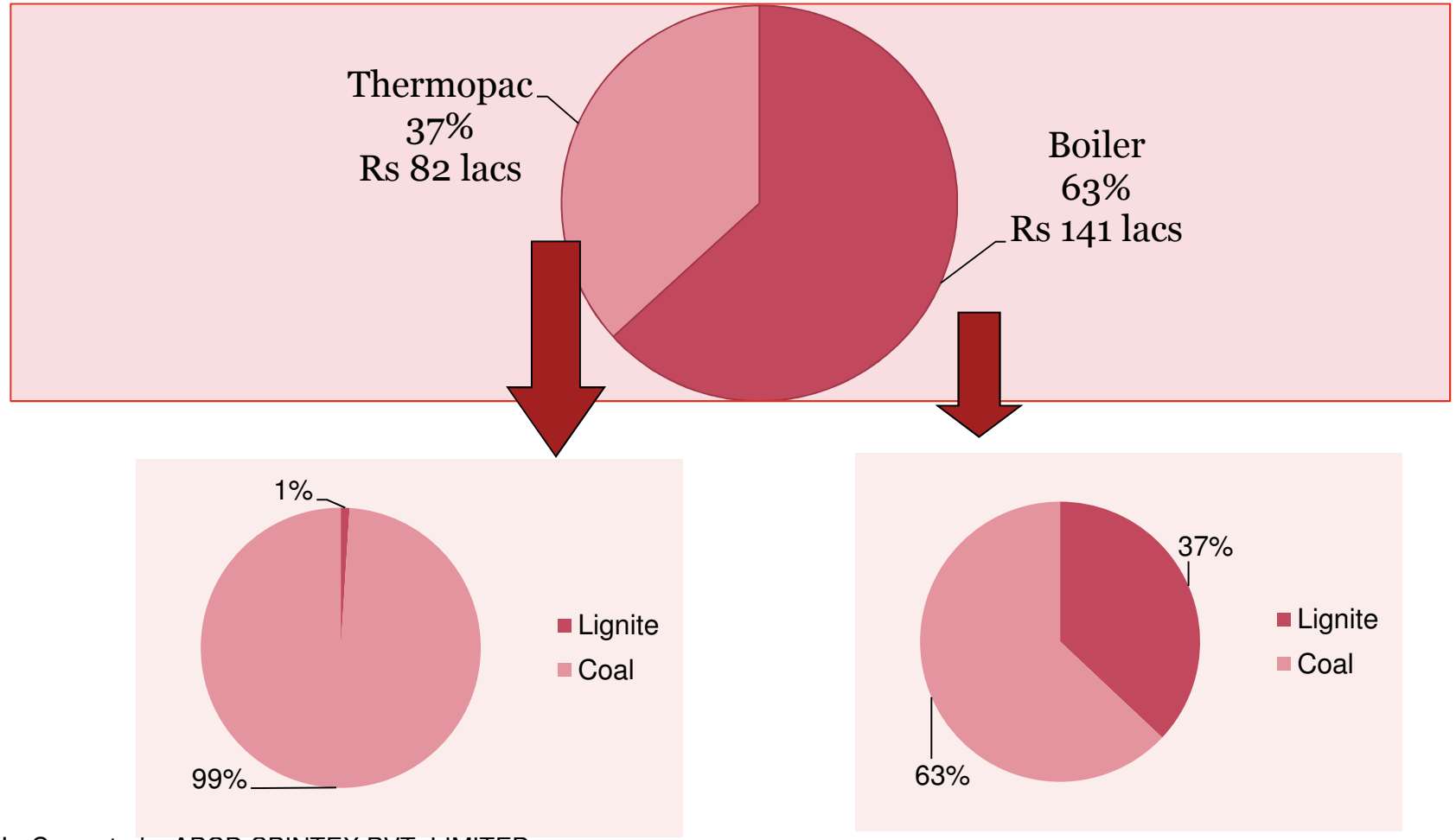
Total Annual Energy Bill : Rs 4.3 Crores



- Power – Rs 2.07 Crores
- Fuel - Rs 2.23 Crores

Present Annual Fuel End Use Bill

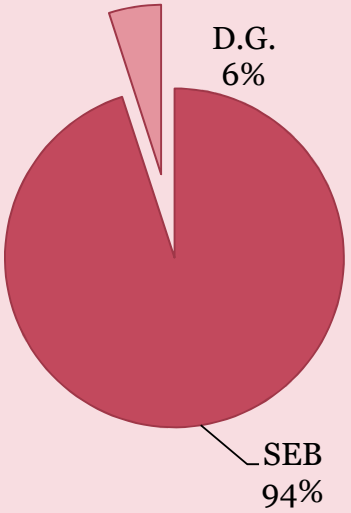
Fuel Energy Bill : Rs 2.23 Crores



Present Annual Power Bill

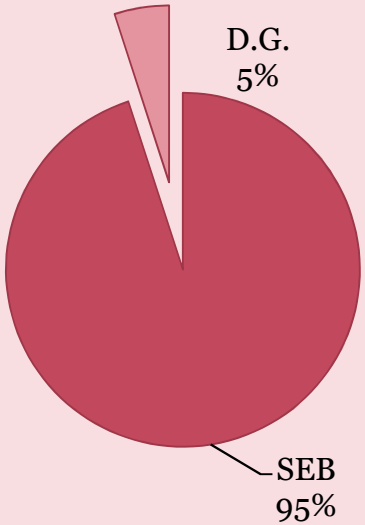
Power Energy Bill : Rs 2.07 Crores (4.73 million kWh)

Power bill distribution (in monetary terms)



SEB	- Rs 1.95 Crores
D.G	- Rs 1.2 Million

Power bill distribution (unit wise)



SEB	- 4.5 Million KWh
D.G	- 0.22 Million KWh

Section 3
Selection of Energy Consultant

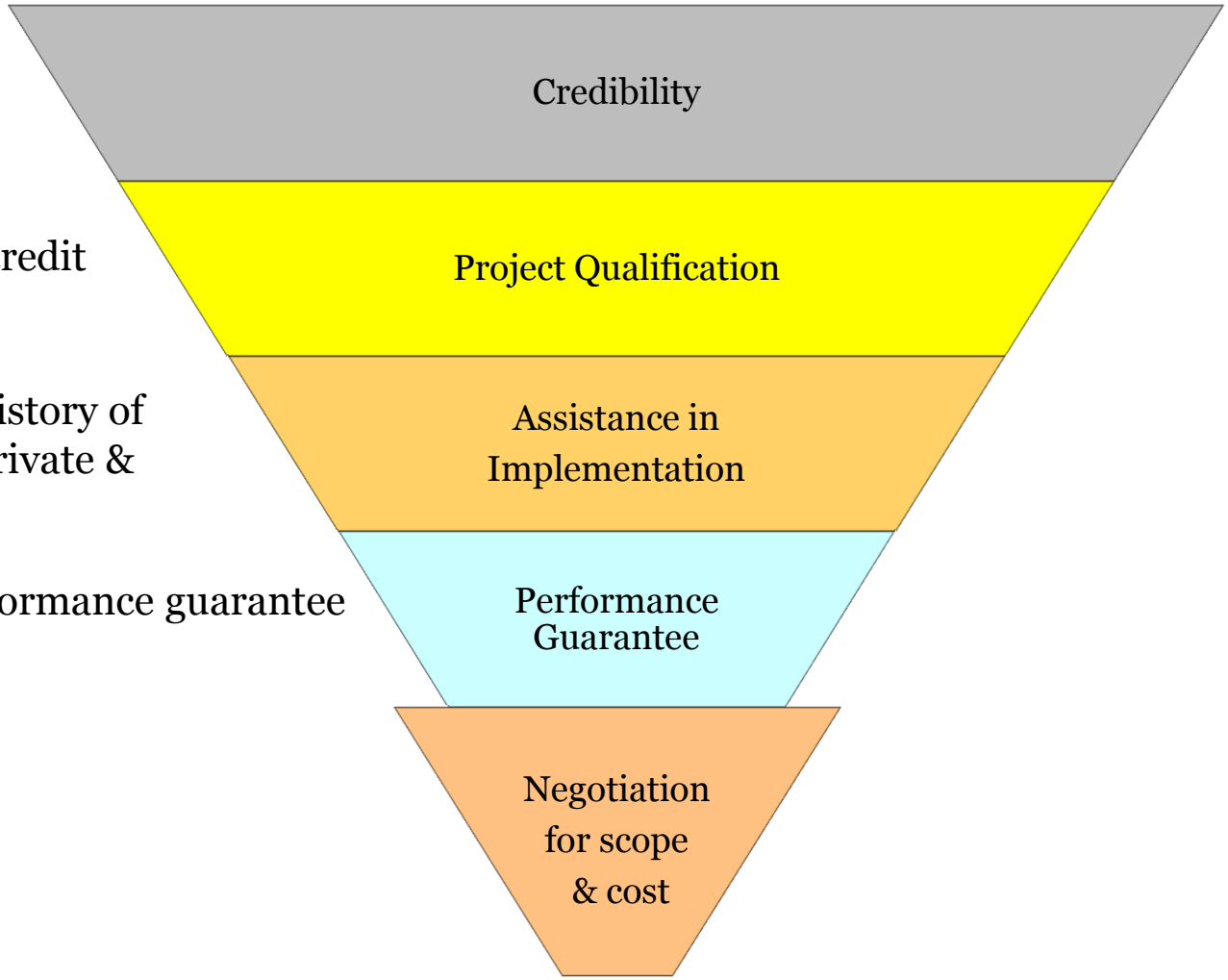
Selection of Energy Consultant- PQRS Energy Consultants

Award for Best Energy Service company

Over 65 projects to the credit of the consultant

Consultant has a very good history of project implementation in private & public sector

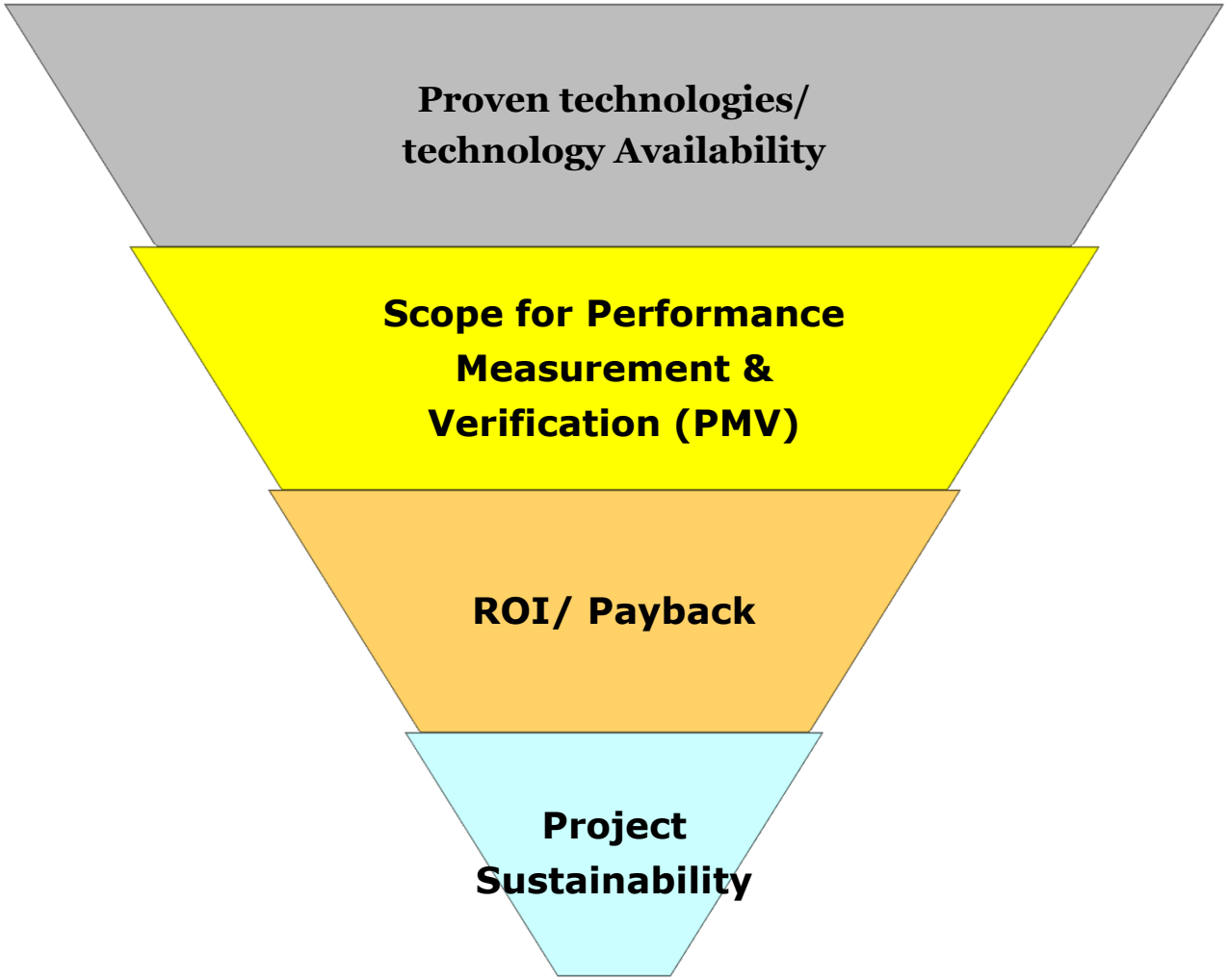
Consultant also works on performance guarantee basis



Process of Awarding the contract

- Negotiation between ABCD Spintex & PQRS Energy started.
- ABCD Spintex approached their Bankers with brief outline of the project based on Walk Through Audit.
- Though encouraged by the Bank, ABCD Spintex insisted to demonstrate a few “No Cost” / “Low Cost” measures which were complied with.
- The company awarded the contract for Energy Study to the selected consultant. The contract included participation of the Energy Auditor in discussion with the Bank, if necessary.
- The Energy Study started with full cooperation from ABCD Spintex.

Criteria for Sub-Project Selection



Section 4
EE Investments & Savings

Project Investments & Payback

EE Study Report was submitted and following projects were selected based on the criteria mentioned:

Sl. No	Title	Annual savings (Rs Lacs)	Investment (Rs Lacs)	Simple Payback (months)	Technology Availability	Scope for PMV	Sustainability (Skilled & Experienced People)
1	Boiler Efficiency	9.00	2.70	4	Established	Yes	Available
2	Boiler FD Fan	3.44	3.25	12	Established	Yes	Available
3	Boiler ID Fan	1.36	0.00	-	Established	Yes	Available
4	Jet Dying Insulation	2.65	1.00	5	Established	Yes	Available
5	Lighting	1.39	1.14	10	Established	Yes	Available
6	Thermo Pac ID Fan	1.03	1.05	12	Established	Yes	Available
7	Thermo Pac Temp. Control	6.00	2.00	4	Established	Yes	Available
	Total	24.87	11.14	5.4			

Implementation Fee :

Rs 4.6 Lacs

Project Investments & Payback (Contd.)

Co-Generation Project

Parameters	Unit	Option- 1 Petcoke - 230° C Super Heat	Option- 2 Lignite - 230° C Super Heat	Option- 3 Petcoke - 350° C Super Heat	Option- 4 Lignite - 350° C Super Heat
Load	KW	658	658	658	658
Power generated					
Gross	KW	100	100	161	161
Net	KW	90	90	145	145
Savings	**Rs lac**	**38**	**40**	**44**	**48.63**
Investment	Rs lac	35	35	38	38
ROI	%	109	114	116	128

- Above project has attractive ROI
- Proven & Well established technology is available for implementation
- Manpower to be trained for project sustenance

Implementation Fee : Rs. 15 Lacs (inclusive of Fuel Change Fee)

Summary – EE Investment & Savings

Projects	Investment	Savings
Boiler	Rs 5.95 Lac	Rs 13.80 Lac
Jet Dying	Rs 1.00 Lac	Rs 2.65 Lac
Lighting	Rs 1.14 Lac	Rs 1.39 Lac
Thermopac	Rs 3.05 Lac	Rs 7.03 Lac
Co-generation (option IV)	Rs 38.00 Lac	Rs 48.63 Lac
Implementation cost	Rs. 19.60 Lac	
Total	Rs 68.74 Lac	Rs 73.50 Lac

Simple Payback Period ~ 1 year

Section 5
Project Financing

Project Finance - Structure

With reduced margin of 10% and Concessional Interest Rate of 10.25 %

- Investment in EE projects – Rs 68.74 Lacs
- Total capital cost (including IDC) – Rs 72.06 Lacs
- Term Loan (90%) – Rs 64.86 Lacs; Equity (10%) – Rs 7.21 Lacs
- Repayment – 4.5 Yrs, Moratorium – 6 months
- Rate of Interest – 0.25% above BR (presently 10.00%)
- Debt – Equity Ratio – 9:1
- Simple Pay back – 26 months
- DSCR – 1.70
- IRR – 42%
- Security
  - First charge on EE asset
  - Second charge on all fixed assets of the company
  - Personal Guarantee of the promoter / directors

Lending norms for Project Finance:

Debt Equity Ratio – 3 : 1 (max)
Average DSCR – 1.75 (min)
Interest Rate : As per Credit Rating
(12.50% in the instant case)

Note: Margin increase improves viability; Interest increase reduce viability

Assumptions for Financing

ASSUMPTIONS					(Rs in 000)
Investment in EE Project	6874				
Total Capital Cost of EE Project (IDC)	7206		Margin for Term Loan	10%	
Pre-operative Interest on TL	332		Term Loan amount	6486	
Estimated Annual Savings	7350		Rate of Interest	10.25%	p.a.
Discount Factor	30%		Repayment Period	4.5	years
Annual Savings	5145		Project Impl. Period	6	months
Annual Growth rate of operation	0%		TL Instalment / year	1621.44	
Addl. Expenses for EE Project	1200		Depreciation Rate (WDV) - IT	80%	
% Annual Increase in Expenses	10%		Income Tax rate	35%	
% Annual increase in Energy Cost	0%				

Interest & Depreciation

Term Loan Outstandings	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Opening Balance		6486	4864	3243	1621	0	0	0
Repayment during Year		1621	1621	1621	1621	0	0	0
Closing Balance	6486	4864	3243	1621	0	0	0	0
Interest Accrued / Paid	332	582	415	249	83	0	0	0
Depreciation Schedule	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
Gross Block	0	7206	7206	7206	7206	7206	7206	7206
Depreciation	0	5765	1153	231	46	9	2	0
Net Block	7206	1441	288	58	12	2	0	0

Profitability Estimate- Viability

Profitability Estimate	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Savings from EE Project	5145.00	5145.00	5145.00	5145.00	5145.00	5145.00	5145.00
Addl. Expenses for EE Project	1200.00	1320.00	1452.00	1597.20	1756.92	1932.61	2125.87
Interest on Term Loan	582	415	249	83	0	0	0
Depreciation	5765	1153	231	46	9	2	0
Surplus before Tax	-2402	2256	3213	3419	3379	3211	3019
Income Tax	-841	790	1125	1197	1183	1124	1057
Net Surplus after Tax	-1561	1467	2089	2222	2196	2087	1962
Net Cash Accruals	4204	2620	2319	2268	2205	2089	1963
Repayment Obligation	1621	1621	1621	1621	0	0	0
DSCR	2.17	1.49	1.37	1.38			
Average DSCR	1.70						
Simple Pay back Period		2 Year	1.98	months			

Average DSCR – 1.70
Project IRR – 42%
Pay Back – 26 months

Section 6
Project Implementation and Monitoring &Verification

Project Implementation at ABCD Spintex

- Areas under Project Implementation
  - Project detailing
    - Detailed engineering of individual options of various ECMs
    - Existing comfort levels like flow, temperature, pressure etc is maintained
    - Preparing equipment specification & Bill of Quantity
  - Procurement
    - Detailed Vendor Interfacing
    - Techno Commercial Negotiation and
    - Procurement
  - Project Management
    - Project Planning and monitoring through PERT/ Bar charts
  - Erection & Commissioning
    - Quality check during construction & erection
    - Trouble shooting during commissioning
    - Tuning up parameters for optimizing power consumption

- Project Implementation
  - In house
  - Under Contract
    - Performance Contract (Self Investment)
    - Performance Contract (ESCO)
    - On Fee Basis – without Performance Contract

Issues
1. Projected Vs Actual investment
2. Projected Vs Actual Savings

Performance Measurement & Verification

- Baseline Consumption
  - Energy Consumption (both thermal & Electrical) as is

- Post Implementation
  - Energy Consumption (both thermal & Electrical) after implementation

- Savings
  - Energy Consumption (Baseline Consumption – Post Implementation)

(Comfort condition like temperature, flow, pressure, illumination etc during pre-retrofit will be maintained after the implementation)

Issues to be Addressed

- Energy Efficiency as a concept - “Promotion” vs. “Policy Guidelines”.
- SME awareness level - more focus on benefits to units!
- Differentiation between “Energy Audit” & “Energy Management Study”
- Credibility of “Energy Consultants” – Qualitative difference!
- Cost of proper “Energy Management Study” – perceived “High” by SMEs.
- Guarantee Mechanism not in vogue; loss in case of failure – borne by?
- Risk Management:
  - Unit: Who bears the cost if “Energy Management” – if the study reveals insufficient “Savings” for “Economic Viability of the Project”?
  - Commercial Bank: What happens if “actual savings” are less than projected? – How would the loans be repaid?
  - Commercial Bank: Should a “weak unit” be financed for an EE Project? How the risk is mitigated?
- IGDPR (not Energy Audit reports) should be the basis for Techno-economic appraisal. IGDPR may include “Technology verification & monitoring protocol”.

Way Forward

- ABCD Spintex
  - ✓ A Satisfied Customer
  - ✓ Enthusiastic about implementation

- The "Scope of improvement in Energy Efficiency in SMEs" is phenomenal. Usually, proposed investment is very low but SMEs need lender's encouraging support and if possible reduction in Margin and Interest rates.

- Energy Efficiency projects deserve extensive support from bi-lateral / multi – lateral agencies &/or "Policy-makers" for propagation of the concept.

Discussion Points

- How important is energy cost for the unit?
- Comments on the process adopted to identify energy efficiency opportunities
- Comments on the process adopted to select energy consultant
- Views on the identified energy saving opportunities. Whether they are realistic?
- After seeing the proposal, how banker decided on it for funding :
  - What type of precautions the banker took in their calculations
  - Were there any hidden expenses which promoter did not mention in their proposal?

Note:

Upto slide 17 is the information provided in the IGDPR

Slide 18 onwards is the analysis done by the banker

Thank You….