Emerging Business Models for Energy Efficiency in India

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Need For Energy Conservation

- Top three operating expenses in industries are Energy, Man Power, Material
- Energy audit will help to understand more about the ways energy is used in the industry
- Energy Audit help in identifying the areas where waste can occur and where scope for improvement exists.

Need For Energy Conservation

- Improvement in plant efficiency
- Identification & minimization of wastage
- Reduction in energy cost
- The economic development of country is often closely linked to its consumption of energy
- India's proven coal and oil reserves are depleting

Lets find out cost of Energy

- Energy consuming equipments have Two costs
  - Capital cost of Equipment
  - Energy cost to run the Equipment

Where one should focus to save cost?

Lets find out cost of Energy

- FTL (30 Watt Tube light)
- Cost of FTL : Rs 300
- Operating hours per year : 10 x 365 = 3650
- Energy Tariff : Rs. 10 /Unit
- Cost of Energy $= \frac{30 \times 3650 \times 10}{1000}$

  = Rs. 1095

Which is 3.65 times more than capital cost

Lets find out cost of Energy

- Chiller (300 TR)
- Chiller power consumption : 185 KW
- Cost of 300 TR Chiller : Rs 50,00,000
- Operating hours per year : 18 x 365 = 6570
- Energy Tariff : Rs. 10 /Unit
- Cost of Energy = 185 x 6570 x 10
  = Rs. 1,21,54,500

Which is 2.43 times more than capital cost

Key Factors Affecting Energy Conservation

- Conflict of investment priority between energy conservation projects and capacity expansion

- Importance given by many towards initial cost minimization, disregarding the more efficient options (which generally are more expensive)

Key Factors Affecting Energy Conservation

- Existence of limited competitive pressure to reduce cost because of the growing economy
- Shortage of capital to fund energy conservation projects
- Shortage of skilled staff and lack of information on techno-logical options.

Lets find out way Forward

Way forward for achieving significant results is through "Performance Contracting" with Energy Service Companies (ESCO)

The ESCO Concept

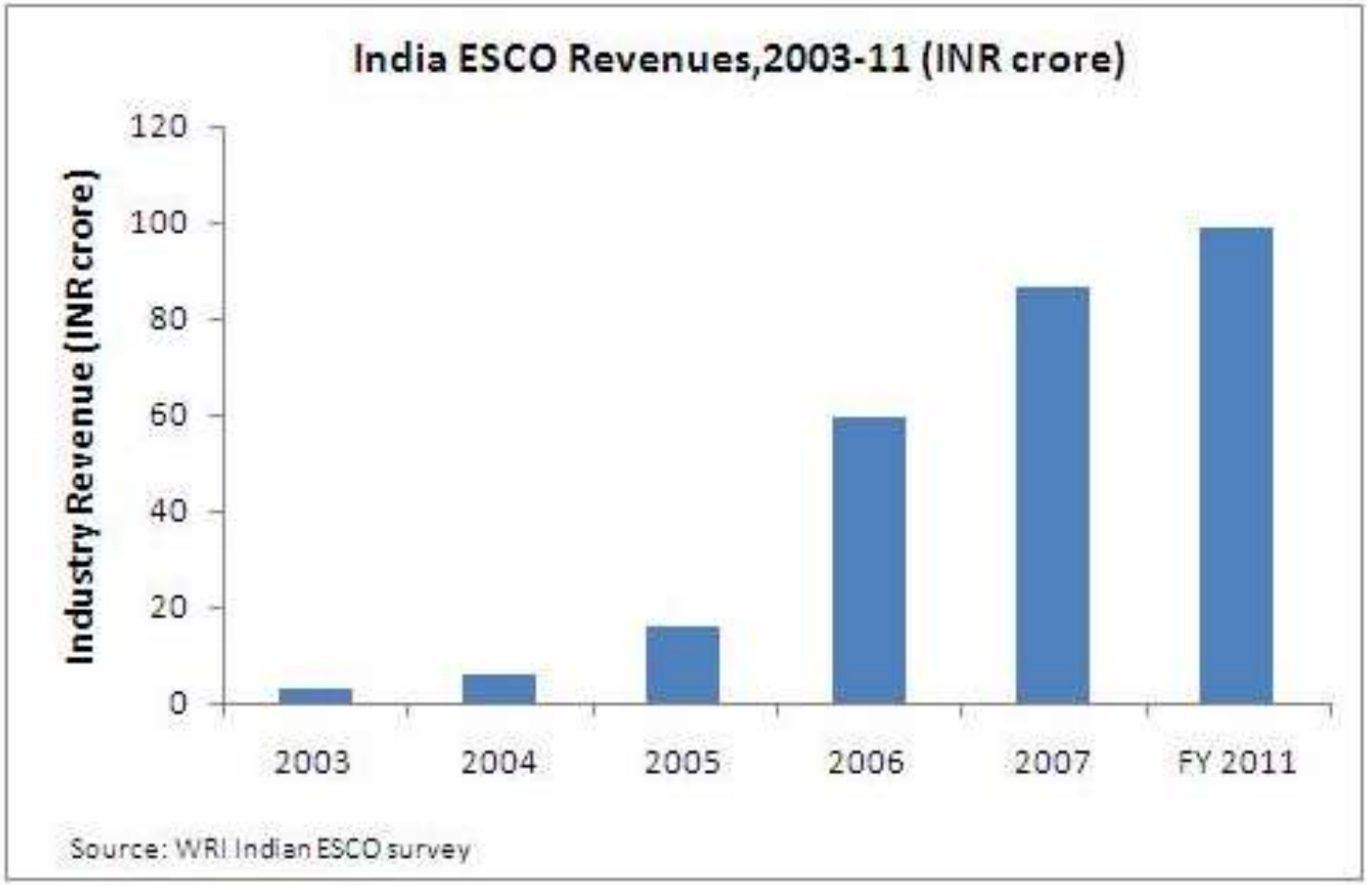
- ESCO means Energy Services Company
- The repayment towards the services of the ESCO is arranged by the company from out of the cost savings it realizes.

The ESCO Concept

ESCOs may offer services of energy performance contracting in different models such as:

1. Built Own Operate & Transfer (BOOT)
2. Built Own & Operate (BOO)
3. Turnkey Implementation
4. Lease Renting Contracts

ESCO Industry Revenue Growth In India



Why ESCO

Sr.	Particulars	Industrial unit's Internal Efforts (10)	Initiatives of Energy Efficient Equipment Vendors (10)	Recommendations of External Energy Auditors (10)	ESCO (10)
1	Energy Cost Savings without capital Investment	Yes	No	May be	Yes
2	Reduced Risk to customer	No	No	No	Yes
3	Guaranteed Minimum Savings	May be	May be	May be	Yes
4	Savings, M&V	No	No	No	Yes
5	Highest Level of Expertise for Energy cost Saving	No	No	No	Yes
6	Solutions to future Obstacles & Unknown issues	No	No	No	May be
7	Free Long Term Maintenance	No	No	No	Yes
8	Holistic Approach	No	No	Yes	Yes

Opportunities for Performance Contracting

- Reluctance in investing on utilities
- Priority for latest production equipment
- Significance of energy consumption
- Energy saving potential
- Energy Shortages and rising Prices
- Dominance of energy cost on overall production cost
- Increasing awareness
- Low priority for high investments

Challenges for Performance Contracting

- Lack of Awareness
- Access to Finance
- Selection of proper client
- Technology Bias
- Energy Savings Tracking
- Methods adopted for quantification of savings

Questions…

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