Business Models for Energy Efficiency

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Typical Challenges in Buildings

- If something cannot be measured, it cannot be managed and hence cannot be improved.

- Typically almost all commercial buildings have an average energy saving potential of 20-30%, if one were to access, monitor and control data and equipment.

- Reduction in Greenhouse Gases (Buildings contribute >40% of greenhouse gas emissions) – The annual Global Decarbonisation challenge is 3.8% per annum by 2020.

**The energy dilemma**
energy demand versus the environment

**Total building life cycle costs**
initial capital, ongoing operations and energy

**Connectivity**
too many disparate systems in the building

**Security**
as a growing concern
The Energy Challenge in Buildings

• Real estate is the 2nd largest expense on the income statement of businesses.

• Up to 50% of energy and water in buildings are often wasted.

• By 2025, buildings will be the #1 consumer of energy.

• Data center energy use is doubling every 5 years.
• Buildings are part of the energy problem
  – and part of the solution to Climate Change
What can be done

Energy use in buildings can be reduced by 20% with upto 30% reduction in related CO2 emissions...
What can be done

Energy use in buildings can be reduced by 20% with up to 30% reduction in related CO2 emissions...

... using technologies that are available today ...
As a thumbrule, $1 spent on more efficient energy use avoids $2 investment in energy supply

Source: IEA
The greenest energy
is the energy that
isn’t generated!
Energy Performance Contracting (EPC)

What is an Energy Performance Contract?

A *contractual arrangement* between a beneficiary and another entity that allows the beneficiary to *improve* the *demand-side energy efficiency* of their facilities, often with a *guarantee of results*. 
Funding for EPC is already indirectly in the budget of energy users ...... it is currently paying for wasted energy!
Energy Performance Contracting (EPC)

Who offers EPC Services?

Energy Service Companies (ESCOs)

- Large energy services firms that provide turnkey engineering, procurement, and construction solutions to implement Energy Efficiency (EE) projects.
- Typically offer performance guarantees and have own technologies.

Energy Service Providers (ESPs)

- Small and medium sized firms that offer technical and engineering services to identify and implement Energy Efficiency projects.
- ESPs are differentiated from ESCOs in that they are independent firms that are not associated with a specific technology and typically do not provide long term performance guarantees.
Energy Performance Contracting (EPC) by Energy Service Companies (ESCOs)

Benefits of EPC byESCOs

• Upgrade of buildings with modern, energy efficient equipment… with no impact on operational budgets

• Reduce building energy consumption typically by over 20% … without additional investment

• Reduce carbon emissions & meet carbon targets… at no additional cost

• Undertake major improvements… without upfront capital
Energy Performance Contracting (EPC) by Energy Service Companies (ESCOs)

Why use ESCOs?

- Transfers risk to the ESCO
  - financial and equipment performance risk
  - if savings targets are not met, the ESCO pays for it

- Buildings upgraded at no cost
  - with modern, energy efficient equipment

- Carbon emission reduction

- Proven process worldwide

- It can be totally self funded
Energy Performance Contracting (EPC) by Energy Service Companies (ESCOs)

Benefits of EPC by ESCOs

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Energy Performance Contracting (EPC) by Energy Service Providers (ESPs)

How is EPC by ESPs different from ESCOs?

• ESPs are independent firms that are not associated with a specific technology

• ESPs mostly don’t give long term performance guarantees - limited tolerance for risk exposure

• Typically, business offerings are around a specific EE measure and cover a limited geographic area.

• ESPs often act as subcontractors on ESCO-implemented projects

• Abroad, there are dedicated ESPs that focus on the residential Energy Efficiency market
In Summary

- There are emerging business models to achieve Energy Efficiencies in buildings at little or no upfront cost to energy users

- Energy Service Contracting is a proven model in other markets and offers energy users opportunities to achieve substantial savings in energy costs

- Savings in energy costs over a short period need to be adequate to cover the costs of funding these initiatives

  - A recent survey in the US revealed that more than half of the energy users interviewed would require an energy efficiency project to have a payback period of less than 3 years
Thank you

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