Strategic Fit of Energy Efficiency

Strategic and Cultural Dimensions of Investment Decisions
Outline

• Background
• Conceptual framework
  Decision-making in organisations
• Empirical Study
• Conclusion: make it strategic!
Background

• Why are profitable energy-savings investments not undertaken by profit-seeking firms?
• What are the factors explaining firms’ EE investment decisions?
Background

Neo-classical finance answer:
the investment decision is the result of a technical evaluation. Profitability is the key.

Not confirmed empirically
Outline

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  Decision-making in organisations

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Conceptual Framework

Decision-making in organisations:

• To decide means "making a choice between different projects and to translate this choice into action".  
  (Mintzberg, Raisinghani and Theoret, 1976)

• A decision must be understood as a process in context, influenced by the actors involved and by the characteristics of the decision to be made.
The investment process

External context
Environmental factors

Internal context
Organisational factors

Investment characteristics
strategic and financial factors

Actors
Individual factors
Investment decision characteristics:

- **Content/scope:** functional, replacement, capacity, diversification, etc.
- **Analytical characteristics:** stimulus, uncertainty, complexity, solutions, impact, controllability of action
- **Nature:** strategic or non-strategic
Conceptual Framework

Competitive dimension of decision-making

Interwoven streams of issues competing for resources.
Non strategic issues loose the competition.

Langley et al. (1995)
Strategy: a balance between internal resources and external factors in order to build durable competitive advantage, through resources allocation. (Johnson & Scholes, 1999)
Conceptual Framework

3 dimensions of the competitive advantage

1st hypothesis: energy for (most) firms is a non strategic issue.
2nd hypothesis: 'energy culture' is influencing the EE investment decision

A highly centralized, monopolistic and remote system …

… delivering electricity to fatalistic consumers.

Source: Alfonso Gonzalez Finat – EU DG Energy and Transport – Conference COGEN Europe Mars 2005
Electricity is

- Unconsciously regarded as readily-available and as free as the air we breathe.
- perceived as out of consumers’ control
- a symbol of the ‘ever-increasing’ way of life (Stern, 1984)

A kind of a ‘Fairy Electricity’ culture
Interacting cultural spheres of influence

(Schneider & Barsoux, 1999, 47)
"What’s a corner?"

J. Whiting in E. Schein, Organizational Culture and Leadership, 2004, p. 113
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Empirical study

Peak DSM 'NOE':

• Geneva Canton Energy Office (SCanE) & local public utility (SIG).
• Energy audit proposed F.O.C. to sites consuming more than 1GWh/yr.
• 140 sites / 100 organizations / 22%
• Empirical Study: 35 firms / 65 sites
• Data sources: energy manager & finance manager.
Empirical study results

• Possible hidden costs? Not mentioned.
• Possible hidden benefits? Not mentioned.
• Capital constraint: not the major problem.
• Cost of energy: not a decisive decision factor.
• Security of energy supply risk: not considered.
• Energy prices risk: not considered.
• Tenant/owner dilemma: 2/3 own the buildings.
Results: Strategic Dimension

- Fit with strategy = the 1st decision factor for finance managers. Financial evaluation important but not decisive.
- EE average strategic value score is low: 16/30.
- Same results in secondary & tertiary sectors.
- Huge answers differences between firms in the same industry: 10–26 /30
• **Finance managers:**
  - hindering factors to energy-efficient technologies more important
  - Uncertainty on technologies & on prices

• **Energy managers:** energy “activists” but often in strong opposition with administrative and/or commercial dpts.
Results: Energy Management

• Poor energy management 7.8 / 21 in average.
• No difference between secondary and tertiary sectors.
• Huge differences within same business sectors seem to confirm influence of corporate culture on energy management.
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**Conclusion**

**EE investment characteristics:**
Low strategic value. Low stimulus. But still unstructured and high end uncertainty.

**Decision-makers:**
Upper management not involved. Investments championed by low power managers.
Energy cost is viewed as the most important decision driver.

But: cost is a decision factor only if the energy-cost reduction measure is not [perceived as] affecting core business.

Three dimensions of the competitive advantage
Conclusion: Make it Strategic!

An unstable and vulnerable energy system …

3 interrelated problems

- Climate change
- Security of energy supply
- Indoor & Outdoor Pollution

The NYT, California Wildfires, Nov. 17, 2008
CBS News – Rome Black out sept. 2003
CRE – electricity prices Europe 01/04 – 06/05
Energy in the world in 2000
J.-P. Cueille, Institut français du Pétrole, Conference CUEPE, 08.01.2004

Catherine Cooremans – BECC 2008 – October 18, 2008
Identify and highlight the positive link between energy efficiency and core business: the strategic fit of energy efficiency.

### Financial Benefits of Green Buildings (per ft$^2$)

<table>
<thead>
<tr>
<th>Category</th>
<th>20-year NPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Value</td>
<td>$5.79</td>
</tr>
<tr>
<td>Emissions Value</td>
<td>$1.18</td>
</tr>
<tr>
<td>Water Value</td>
<td>$0.51</td>
</tr>
<tr>
<td>Waste Value (1 Year)</td>
<td>$0.03</td>
</tr>
<tr>
<td>Commissioning O&amp;M</td>
<td>$8.47</td>
</tr>
<tr>
<td>Productivity Cat. I</td>
<td>$36.89</td>
</tr>
<tr>
<td>&amp; Health value Cat. II</td>
<td>$55.33</td>
</tr>
<tr>
<td>Green Cost Premium</td>
<td>($4.00)</td>
</tr>
<tr>
<td>Total 20-year NPV I</td>
<td>$48.87</td>
</tr>
<tr>
<td>Total 20-year NPV II</td>
<td>$67.31</td>
</tr>
</tbody>
</table>

Source: Capital E Analysis
Redesigning the market barriers concept:

- **‘Base’ Barrier**
  - Information
  - Hidden costs
  - Access to capital
  - Risk, etc.

- **‘Symptom’ Barriers**

- **‘Real’ Barrier**
  - No strategic dimension

- **‘Hidden’ Barrier**
  - Cultural dimension

**Conclusion:** Make it Strategic!
Conclusion: make it strategic!

To overcome the "real" strategic barrier & "hidden" cultural barrier to REU:

• Every company is unique!
• Act on the cultural dimension: information & change management.
• Make energy visible: energy management.
• Identify & emphasize strategic importance of energy use for any company.

THANK YOU FOR YOUR ATTENTION