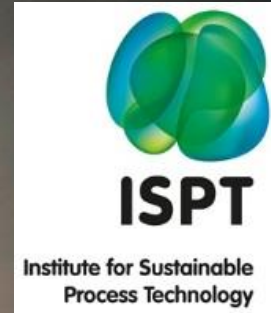


Analysis of the decision making process of energy efficient investments in the process industry



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ASAP tool

How can energy efficiency (EE) become a more prominent aspect in decision making about investments in process technology?

- Simple tool, learned in one day
- Five criteria, total score 0-10:
 - Impact energy saving (internally)
 - Availability EE options (market)
 - Profitability (financially)
 - Organisational feasibility
 - Previous experience
- Focus on internal decision making and buyer-supplier relation
- Energy-intensive setting: process industry

Research Approach

- Green by Choice, Green by design
 - Conscious choice to pay attention to energy efficiency
 - Suppliers present their most energy efficient option to clients
- Review of existing literature
- Case studies on recent capital expenditures
- Behavioural, organizational and supply chain management perspectives
- Intended result: A **simple** guide or tool for the **higher management** to identify projects in which energy efficiency could be an important criterion
 - Rationalize and structure decision making
 - Start talking about energy efficiency right at the start of a capital investment (ASAP)
 - Involve multiple business functions

Key results from case studies

- Sustainable businesses equal EE to cost reduction
 - Multiple benefits that coincide with EE
 - Competitional and reputational advantage

If you calculate smart enough, if you push hard enough, if you know the right people, you can get through almost every extra investment for energy efficiency

- Suppliers are very hesitant to present their most efficient option
 - Buyer is assumed to care more about purchase price than total cost of ownership

ASAP: Aligning Sustainability impact Assessment of Purchasing decisions

- Is this a project or investment to which EE could be an important criterion?
- If so, are internal conditions beneficial to the project or are additional measures needed?

Criterion	0 points	1 point	2 points
Impact energy saving (internally)	Low	Average	High
Availability EE options (market)	Hardly	Fair	Good
Profitability (financially)	Low	Average	High
Organisational feasibility	Low	Average	High
Previous experience	Not/-	Neutral	Good/+

First responses to ASAP

Other possible uses?

- Portfolio analysis
- Technical specifications
- Communication to purchase department
- Evaluation and CSR reporting
- KPIs and reward system for sustainability
- Addition/analogy to quality, health, safety

Next steps?

- New proposal to focus on supplier side
- Testing ASAP in practice: Will higher management use this? How?

Motivation of approach

- Energy efficiency barriers literature
 - Cagno et al, 2012, Dealing with barriers to industrial energy efficiency: an innovative taxonomy .
 - Sorrell et al, 2011, Barriers to industrial energy efficiency: A literature review.
- Decision-making literature
 - Kahneman, 2011, Before you make that BIG decision.
 - Apgar, 1953, A proposal for a new method of evaluation of the newborn infant.
- Behavioural supply management literature
 - Carter et al, 2014, Behavioral supply management: a taxonomy of judgment and decision-making biases.
 - Kaufman et al, 2014, Rational and intuitive decision-making in sourcing teams: Effects on decision outcomes
- Other frameworks and tools
 - SPIRE-4 projects STYLE, MEASURE and SAMT
 - CDSB Framework for reporting environmental information & natural capital: *Advancing and aligning disclosure of environmental information in mainstream reports for reporting environmental information & natural capital* (2015).

Case studies

Which factors in the (social) environment of managers, employees and teams influence the importance of energy efficiency (EE) as criterion in capital investment decisions, but at demand side and supply side?

Company	Sector	Investment type	M€	Equipment
A (SME)	Food	Greenfield	1,3	Cooling
B (MNC)	Food	Greenfield	8,5	Evaporator
C (MNC)	Food	Existing	1,2	Conveyor
D (MNC)	Textile	Greenfield	3,0	Precoating