

Eceee Industrial Summer Study 2014

CAS in Energy Management an innovative continuing education program as a tool to market transformation

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Outline

- Background
- Objectives
- Key features
- Conclusion: a market transformation tool

Background

Energy management

- Has demonstrated its positive effects on energy performance but energy management level in many organizations' is low.
- Most existing programs in energy management or energy technologies focus on the technical aspects and neglect the organizational and human aspects

Background

Organizational barriers to energy efficiency

- Investments in energy efficiency are not perceived as strategic by companies.
- Energy is not visible in managerial terms.
- Powerful managers are interested in core business subjects.

Background

Human barriers to energy efficiency

- People in charge of energy in organizations (and in the consultancies advising them) lack the skills and language of dominant business functions: strategy, finance, production, marketing and communication.
- They can't master all aspects of energy use (electricity, thermal energy, cold production, etc.)
- They often don't know how to frame and present energy-efficiency projects in convincing ways

In June 2012, the new **Certificate of Advanced Studies (CAS) in Energy Management** is formally approved by University of Geneva rectorate.

First edition starts in January 2013.

- 15 ECTS (European Credits Transfer System)
- 25 candidates max. each year
- Targets: people working in the field of energy, (employees of user companies or consultants); adults wishing to convert their professional experience to be able to work in the field.
- University level education and/or professional experience
- 6 modules – 170 hours teaching – 450 hours in total (homework)

Partnerships and collaborations:

- Geneva Cantonal Office of Energy (OCEN)
- Swiss Federal Office of Energy (SFOE) – SwissEnergie
- Services Industriels de Genève (SIG)
- Canton of Vaud
- Heig-Vd
- Sia
- Several companies and organizations



Objectives

The program has 3 major aims:

- To teach its candidates how to implement an energy management system in organizations (with or without an ISO 50001 certification).
- To produce professionals with strong marketing capabilities, able to more successfully sell energy-efficiency projects to organizations.
- To create a professional standard



Key features

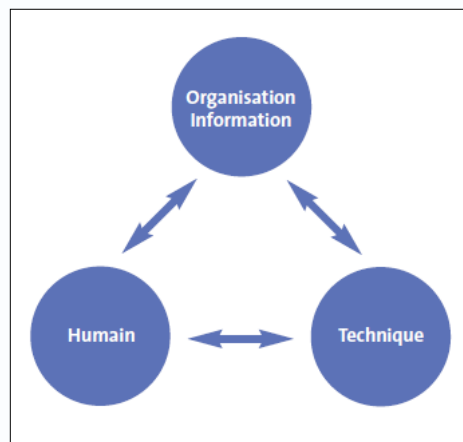
6 modules

- **Module 1.** Energy and management: basic notions and issues at stake
- **Module 2.** Managing projects and driving change
- **Module 3.** Assessing energy performance and defining an action plan
- **Module 4.** Strategic and financial approaches of energy-efficiency projects
- **Module 5.** “Learning by doing”
- **Module 6.** End of studies work

Key features

1. Integrating organizational, human and technical aspects of energy management

Energy management: the process of organizational, technical or human actions enabling organizations to use energy in a more efficient way and to reduce energy consumption in a profitable way



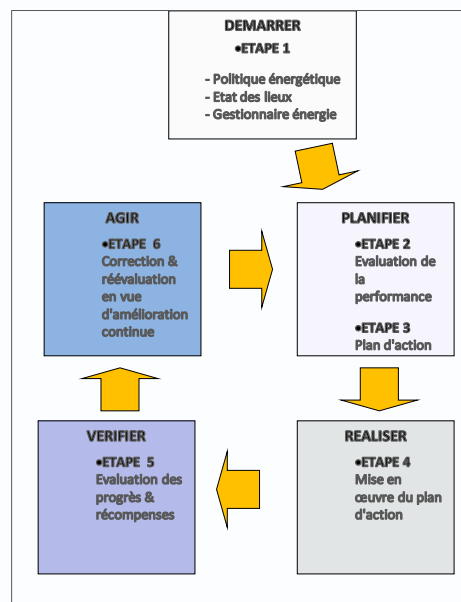
Key features

2. Teaching how to influence individual and organizational behavior and decision-making

- 2 days on change management and negotiation to be able to take into account, in action and communication plans, people and their particular mind-sets and cognitive filters
- 1 day on the “myths and realities of organizational decision-making” to better understand how organizations make decisions

3. Teaching how to implement an energy-management system in an organization...

...leading or not to an ISO 50001 certification.



Key features

4. Teaching a conceptual framework to include non-energy benefits in energy-performance projects and investment calculations

- A conceptual tool to analyze an organization's business model and how energy-efficiency can contribute to its key factors of success.
- A conceptual tool to analyze and describe the non-energy benefits of energy efficiency (Value-Costs-Risks framework). High strategicity can often be found in the NEB of energy-efficiency measures

Key features

5. Teaching the basics of corporate finance and of investment financial evaluations methods

- What is an investment ?
- How to evaluate an investment flows
- How to include NEB in the financial evaluations
- Financial evaluation methods (pay-back – VAN – IRR)

Key features

6. Using a new pedagogical tool to help the candidates to integrate and apply the methods and concepts taught: the serious game

- A software simulation of a management project.
- The simulation integrates theoretical courses, participative workshops, and role plays.
- In **ManagEnergy serious game**, players are appointed energy manager of an organization that has decided to implement a comprehensive energy management system and considers applying for an ISO 50001 certification.

<http://www.albasim.com/en/solutions/managenergy/overview-managenergy>

Conclusion

Lessons learned

- 20 diploma given out of 21 for the first edition
- Most candidates had indeed a technical training and professional experience (16/21)
- Diversity is a richness !
- Teamwork is stimulating and positive
- 22 candidates in the 2014 edition, plus 4 people following in total 7 modules individually.
- 4 unemployed participants (4/6 in 2013 and 2014) found a job

Conclusion

The future

- Evolving from a CAS (Certificate of Advanced Studies to a DAS (Diploma of Advanced Studies)?
- A Swiss continuing education network in energy management and technologies (ET&M)
- A network of friends and alumni

<http://www.unige.ch/formcont/managementenergie.html>

Conclusion

A triple approach is needed to positively influence firm's energy-efficiency investment decision-making :

- **Customized** : to take into account firms diversity
- **Strategic**: make it strategic
- **Systemic**: to develop energy-efficiency culture at organization level

The certificate of advanced studies in energy management of University of Geneva is an practical answer to human and organizational barriers to energy efficiency and a tool to transform energy-efficiency markets.

Conclusion

CAS in energy management : a human adventure ☺ !

