



Intelligent Energy  Europe



Denmark:

Assessment of innovative systems

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Innovative systems in Denmark

- Innovative systems can be dealt with through studies of equivalence.
- Studies of equivalence will “translate” the impact of an innovative system into data, that can be readily entered into the Danish energy performance program.
- A new version of the program will typically be released when implementing new innovative systems.
- From April 2006 to January 2010, 4 versions were released.





Advantages

- System is open and flexible, making the introduction of new innovative systems easy.
- One assessment method can be used in several buildings if local authorities agree (e.g. method in FAQ on website)
- All innovative systems can be handled indirectly (through studies of equivalence).
- Little or no problems in introducing and marketing new innovative systems in Denmark.
- Cost-heavy bureaucracy could overshadow the advantages in a small country like Denmark.



Disadvantages

- No standardised legal framework exists for assessing the energy performance of innovative systems:
 - Different advisors can obtain different results.
 - Calculations may be needed for each new combination.
 - Difficult for the local authority to check compliance (i.e. may demand expert knowledge on innovative systems).
- Some systems are extremely complex and dynamic, making it difficult to quantify their effects in a simple calculation (monthly mean values):
 - Advanced double facades
 - Thermoactive components



Innovative systems - Examples

- Low complexity:
 - Wind mill
 - Electricity produced by windmill can be translated directly into electricity gained by PV-panels.
- Medium complexity:
 - Preheating of ventilation air by ground pipes
 - Influence of preheating the air can be translated (through simple calculations) into an increase in the efficiency of heat recovery.





Innovative systems - Examples

- High complexity:
 - Thermoactive building components
 - Influence of thermoactive building components can be translated (through detailed calculations/simulations) into increased efficiency of heating system, increased thermal mass, free night cooling + more?
- The higher the complexity, the more likely it is that advisors obtain different results for similar situations and compliancy checks by local authority will require expert assistance.





Innovative systems – future?

- There is an obvious and clear need for guidelines and expert knowledge, especially when it comes to complex innovative systems.
- At present we (SBI) are contemplating introducing guidelines for innovative systems on the Internet.
- However, the system needs to remain open and flexible to allow for quick adoption of new innovative systems.
- Keep present system, but add online guidelines ASAP when new innovative technologies are introduced?



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