Danish experience with Energy Certification of Buildings

Renato Ezban
Chief Energy Advisor
Danish Energy Agency

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Content of presentation

- Energy history of Denmark –lessons from the past
- Energy challenges
- Energy certification in Denmark

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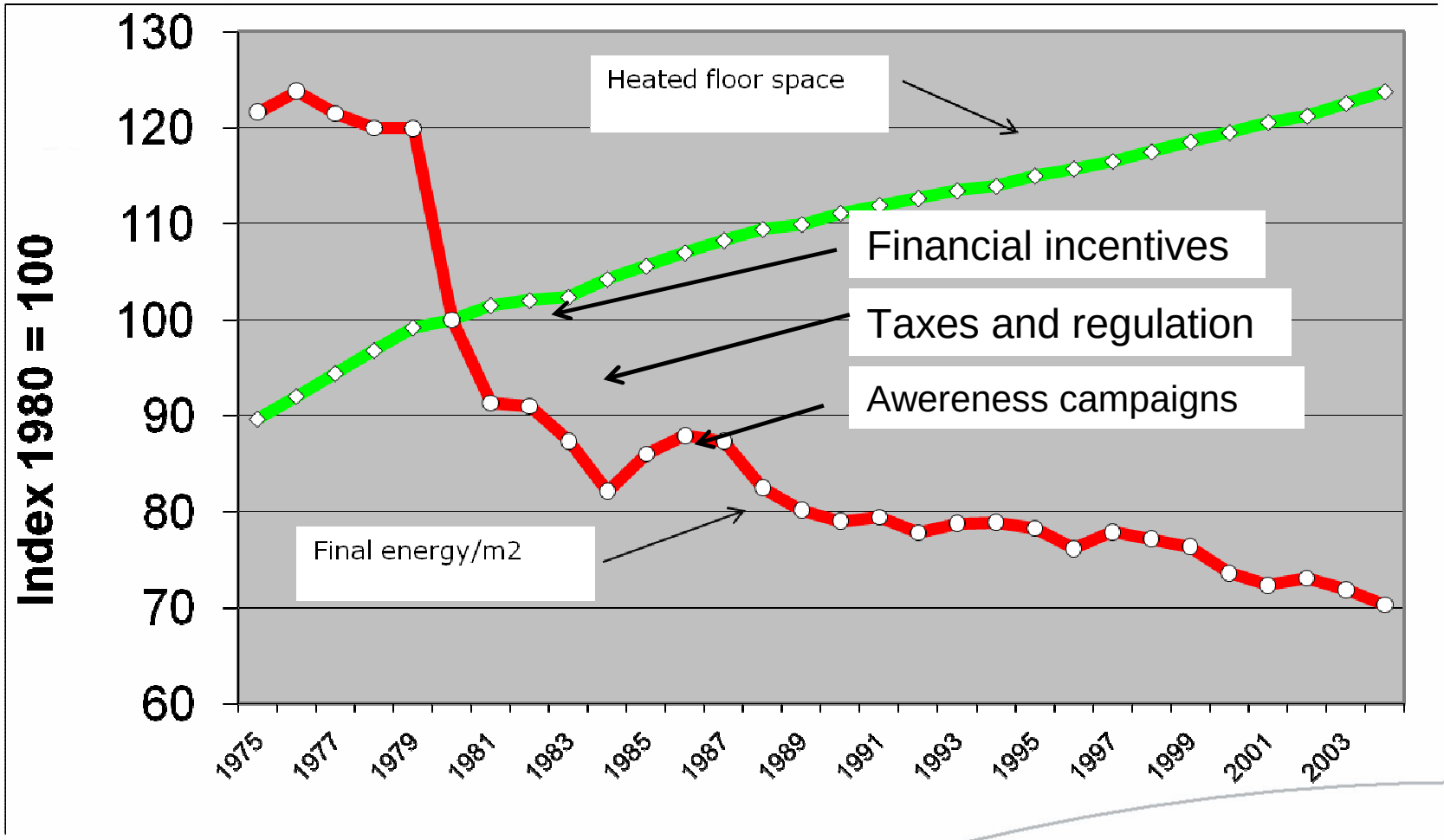
Energy history of Denmark
Final energy in residential sector



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National energy tagets

- Short/mid term
  - Gross energy consumption down with 4% in 2020 relative to 2005.
  - CO2 emmissions down with 20 % 2020
- Long term 2050+
  - Fossil-free society
- Drastic reductions in energy consumption in buildings necessary

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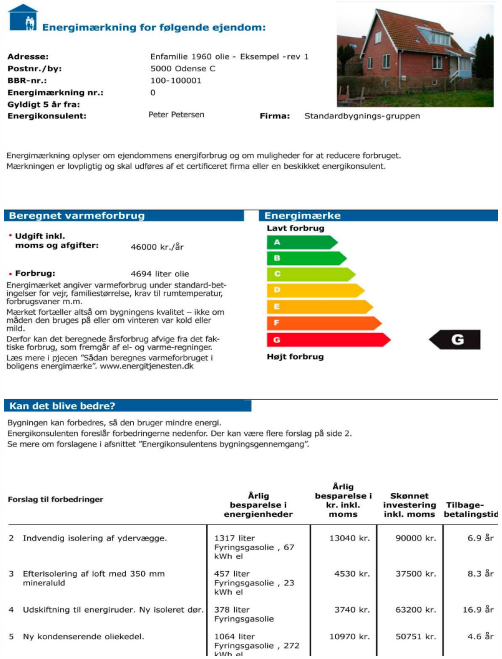
Energy certification scheme

- Certifications schemes in Denmark since 1997
- Certificate
  - Description of efficiency on A – G scale
  - Measures on how to improve efficiency. Documented by
    - Investment
    - Energy saved
    - Cost saved
    - Pay-back



Energimærkning for følgende ejendom:

Adresse: Enfamilie 1960 olie - Eksempel -rev 1
Postnr./by: 5000 Odense C
BBR-nr.: 100-100001
Energimærkning nr.: 0
Gyldigt 5 år fra:
Energikonsulent: Peter Petersen **Firma:** Standardbygnings-gruppen

Energimærkning oplyser om ejendommens energiforbrug og om muligheder for at reducere forbruget. Mærkningen er lovpligtig og skal udføres af et certificeret firma eller en beskikket energikonsulent.

Beregnet varmeforbrug

* **Udgift inkl. moms og afgifter:** 46000 kr./år

* **Forbrug:** 4694 liter olie

Energimærket angiver varmeforbrug under standard-betingelser for vejr, familiestørrelse, krav til rumtemperatur, forbrugsvaner m.m.
Mærket fortæller altså om bygningens kvalitet – ikke om måden den bruges på eller om vinteren var kold eller mild.
Derfor kan det beregnede årsforbrug afvige fra det faktiske forbrug, som fremgår af el- og varme-regninger.
Læs mere i pjecen "Sådan beregnes varmeforbruget i boligens energimærke". www.energitjenesten.dk

Energimærke

Lavt forbrug
A
B
C
D
E
F
G **G**
Højt forbrug

Kan det blive bedre?

Bygningen kan forbedres, så den bruger mindre energi.
Energikonsulenten foreslår forbedringerne nedenfor. Der kan være flere forslag på side 2.
Se mere om forslagene i afsnittet "Energikonsulentens bygningsgennemgang".

Forslag til forbedringer	Årlig besparelse i energienheder	Årlig besparelse i kr. inkl. moms	Skønnet investering inkl. moms	Tilbage-betalingstid
2 Indvendig isolering af ydervægge.	1317 liter Fyringsgasolie , 67 kWh el	13040 kr.	90000 kr.	6.9 år
3 Efterisolering af loft med 350 mm mineraluld	457 liter Fyringsgasolie , 23 kWh el	4530 kr.	37500 kr.	8.3 år
4 Udskiftning til energiruder. Ny isoleret dør.	378 liter Fyringsgasolie	3740 kr.	63200 kr.	16.9 år
5 Ny kondenserende oliekedel.	1064 liter Fyringsgasolie , 272 kWh el	10970 kr.	50751 kr.	4.6 år

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When is it necessary to certify a building.

- When you sell or rent a building.
- When you sell or rent a building unit (flat) the whole building must have certificate
- Buildings larger than 1000 m2 must have certificate renewed every 5 years.
- All buildings owned by public authority over 60 m2 need to have certificate renewed every 5 years.

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Who carries out the certifications?

- Independent experts (consultants)
- Education:
  - Technical education at the level of Bachelor of Technology (3 years theoretical education) with practical energy experience.
- Control
  - Firms who want to make certifications need be certified according to ISO 9001 based on guidelines defined by the Energy Agency.
  - Certification of firms is carried by accredited certification bodies working under the auspices of Danak (Danish member of EA = The European co-operation for Accreditation).

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Lessons

- Three main lessons
  - Certification is expensive
  - Certification does not in itself lead to significant reductions in energy consumption
  - Enforcement is necessary, only 50% complaince

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Why certification?

- What can a certificate do?
  - Raise awereness and motivation
  - Create transparency in market
  - Focus investments

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Solutions – 1.

- Certification need to be integral part of a comprehensive policy.

- Certification must be used as part of
  - Information- and awereness campaigns
  - Energy transparency initiatives
  - Financial incentive schemes
  - Green taxes
  - Etc

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Solutions -2

- Energy certificates must be the common reference for all parties involved in building renovations.
  - In Denmark buildings undergo renovation changes at regularly. Certificates must focus attention on energy efficieny gains, that can be harvested during renovation-
  - Many parties involved in renovation: consultants, building firms, financial institutes etc. All must use certificates to identify efficiency improvements

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Solutions - 3

- Reduce cost
- Improve quality in order to change attitudes towards certificates
- Enforce law on certification

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What is being done now?

- Certification is under revision to reduce cost, improve quality and improve usability
- Information- and awareness campaigns under way
- Establishments of partnerships with users, industry, consultants, financial institutions on certification and how to use it.

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New initiatives

- All certificates are made public on the internet
- Data from certificates are delivered to all users on request
- Obligation to advertise the energy class from certificate whenever building og building unit is sold or rented

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