



# **Development of a 2nd generation energy certificate scheme - Danish experience**

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# 2<sup>nd</sup> generation certificate scheme - the EPBD implementation

- Danish Act to implement EPBD medio 2005
- New labelling scheme based on asset rating from start 2006

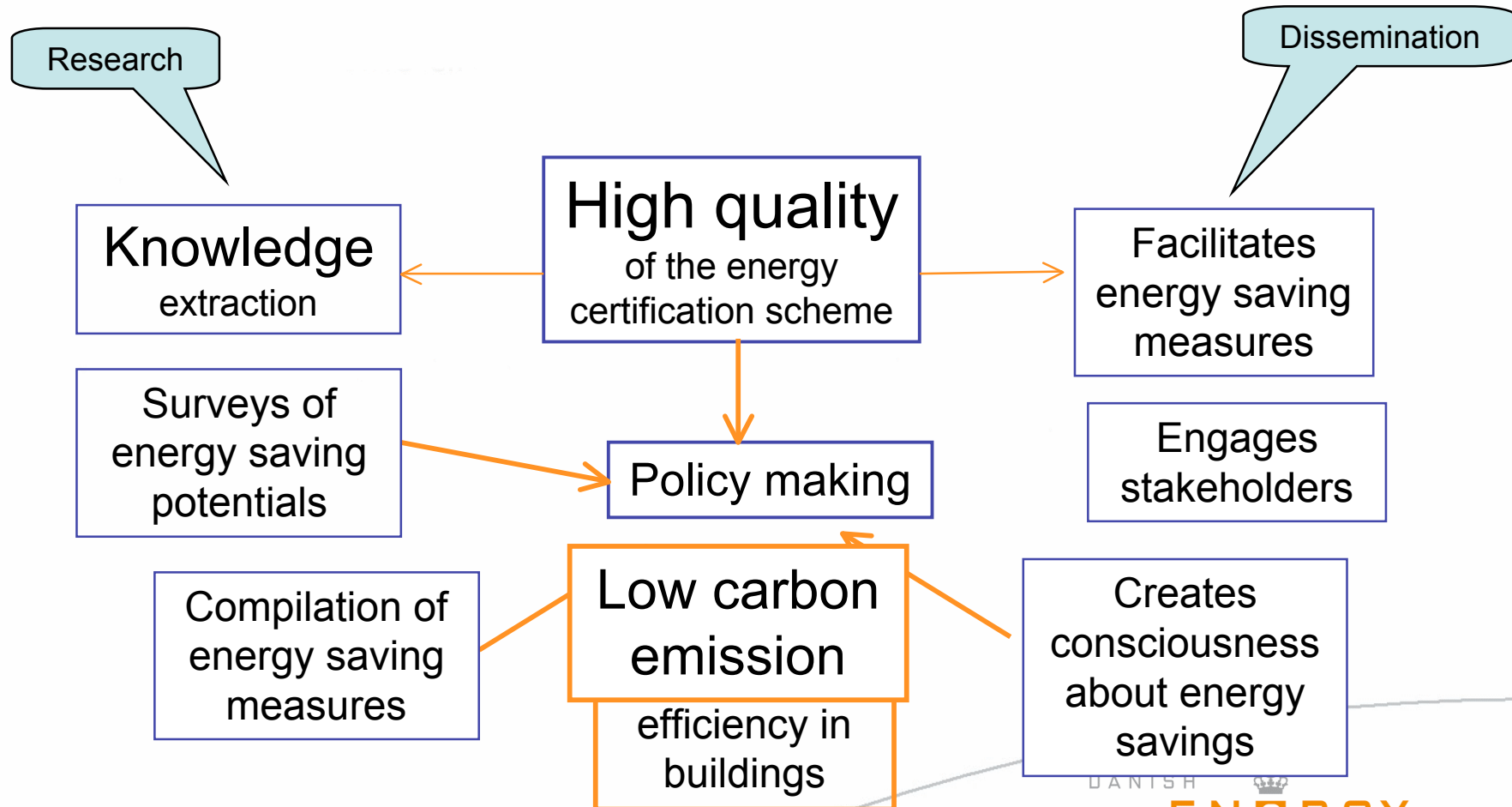
## **Presentation**

- Principles
- Practical implementation

## Principles

# Energy certification of buildings

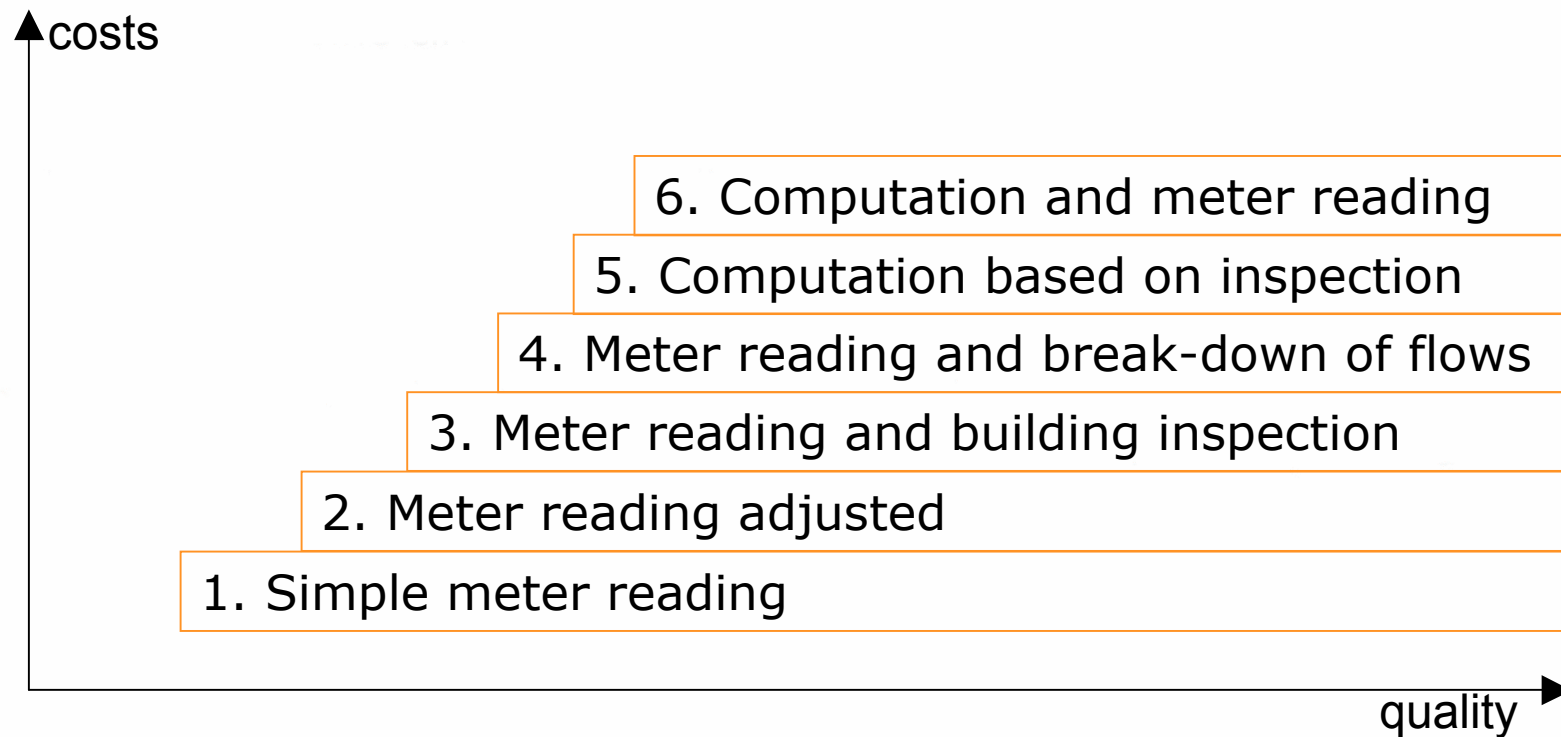
A search for high quality



Principles

# Energy certification of buildings

## Six stairs of advance

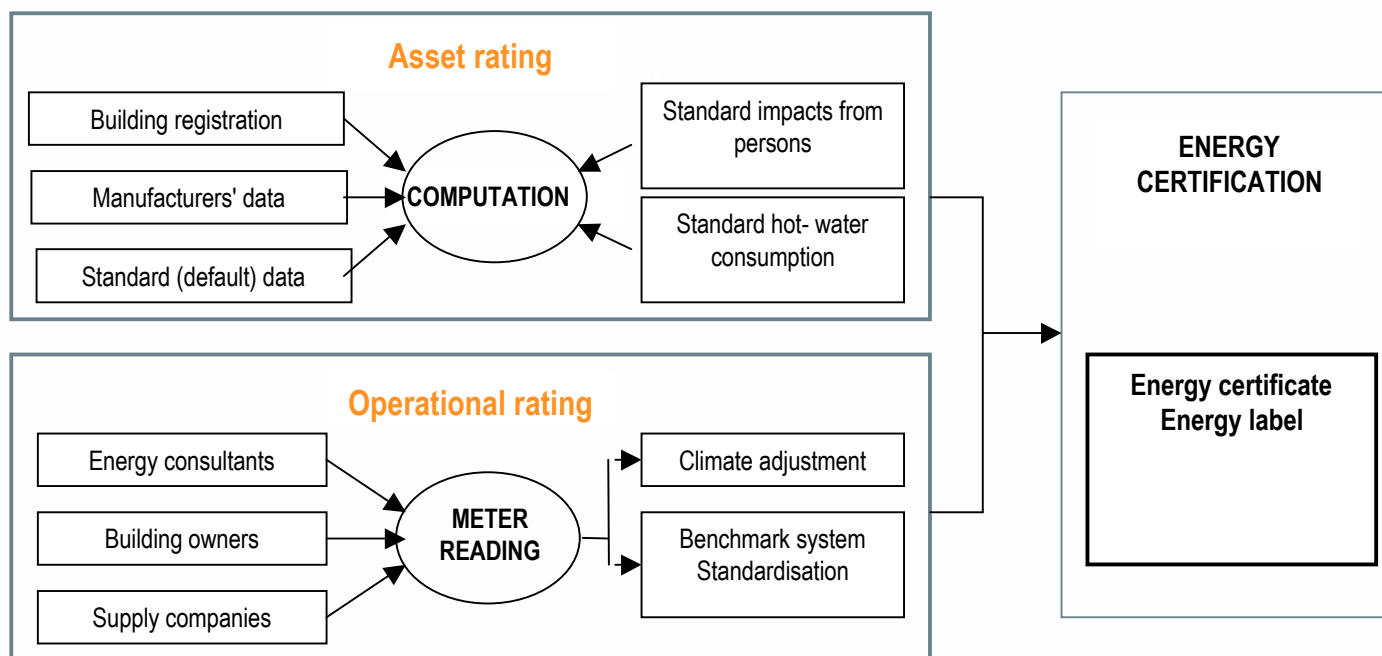




## Principles

# Energy certification of buildings

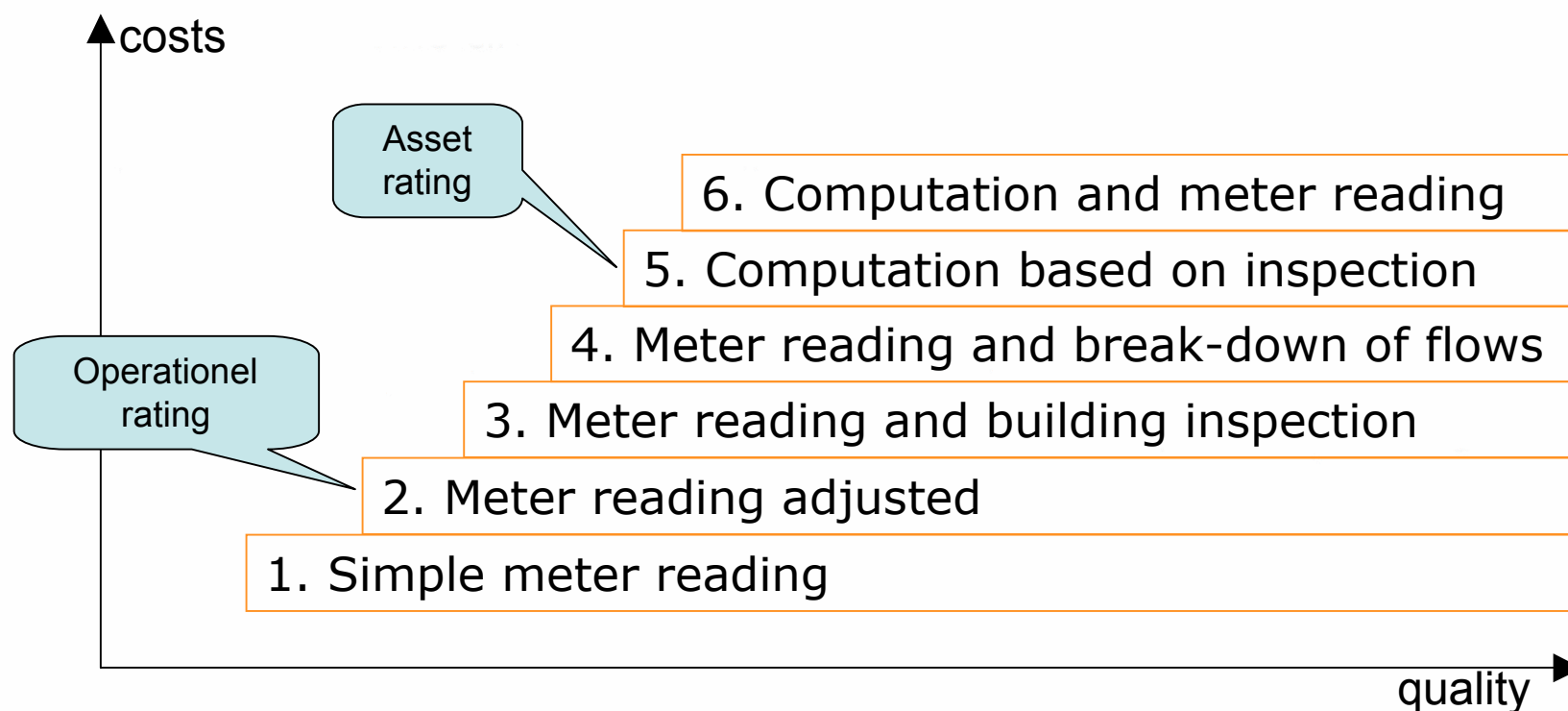
## Two principles of rating



## Principles

# Energy certification of buildings

## Six stairs of advance



Principles

# Energy certification of buildings

Refinement of building knowledge



- Authority of the energy certification
- Design of forms and procedures
- Performance of computer programs
- Education programmes
- Handbook for energy consultants
- Top-down and bottom- up control of data

# Implementation – starting point

- Danish experience since 1997:
  - Single family houses – asset rating
  - Large public and private buildings – operational rating
- 400.000 labelling reports
- 50 percent of all large buildings





# Implementation tasks

- Legislation - executive orders
- Appointment of secretariat and auditor
- Education and appointment of consultants
- Development of instructions - handbook
- Development of software systems

# Which buildings and when?

- Residential buildings and public buildings
- Buildings within trade and private service
- When a building is sold or rented out
- Regularly (every 5 years) for
  - buildings  $> 1,000 \text{ m}^2$
  - all public buildings

# Energy consultants & quality assurance

- Personally appointed energy consultants
- 800 consultants registered
- Quality assurance at all levels
  - At the secretariat
  - Technical auditing
  - Final decisions at the DEA



# The energy labelling report



- Obtained label and energy consumption
- Suggestions for feasible energy saving measures
- Suggestions for other energy saving measures
- Information on the building

## Status – spring 2007

- The scheme is running
- 25,000 de
- Hundreds of



**BUT**

# Status – spring 2007

- The scheme is running
- 25,000 detached houses labelled
- Hundreds of large buildings labelled
- Too few large buildings labelled
- Only around 400 consultants active
- Stakeholders not satisfied

# What do the consultants and users say?

“Time consuming!”

“Costs too high!”

“Software faulty!”

“What’s QA all about?”

# What do the consultants and users say?

"Time consuming!"

"I'd rather buy the curtains!"

"Costs too high!"

"Too extensive/expensive"

"Software faulty!"

"No consultants available"

"What's QA all about?"



# DEA response?

- Increased information effort
- Educational measures
- Time study
- Involvement of stakeholders

Alteration of executive orders,  
central tools and documents

# Current activities

- Increased fee
- New handbook
- New tools
- Improvement of software
- New quality management scheme

Aim:  
Improved quality and acceptance

# Conclusions

- High ambitions - difficult to obtain
- Registration vs. energy saving suggestions

