



**NIRAS**



**4-Fact**

# Evaluation of the Danish energy efficiency policy

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ECEEE 2009

# Evaluation

- Independent evaluation of all Danish energy efficiency activities
  - May-December 2008
  - A step toward a major revision of the energy efficiency activities

# A Danish tradition...

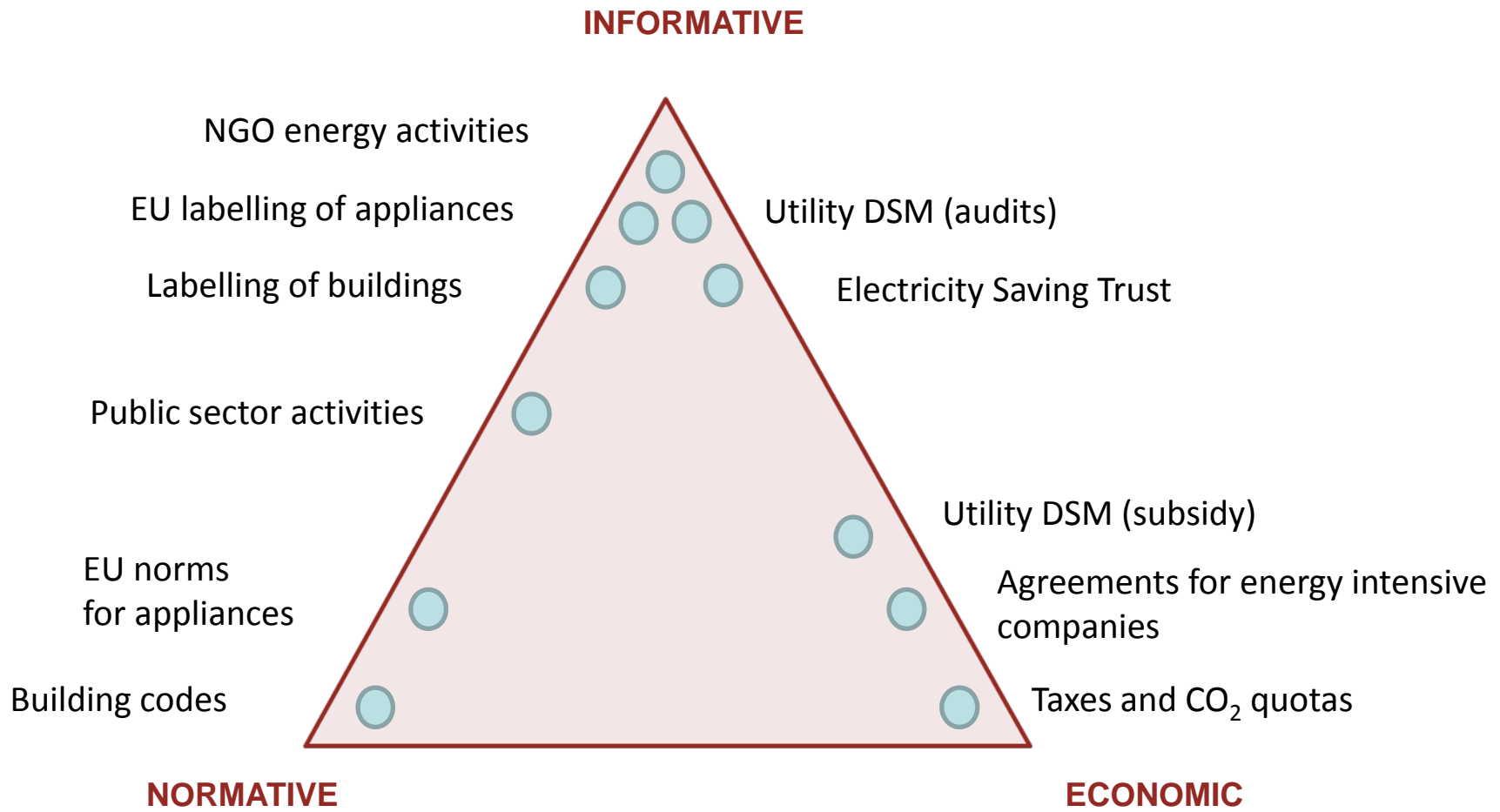
- 35 years of broad political consensus about the importance of energy efficiency
  - Continuity
  - High public acceptance
- Far from perfect
  - General focus on supply options, e.g.
    - CHP based district heating (50% of all heat)
    - Wind power (20% of electricity consumption)



Our experience:

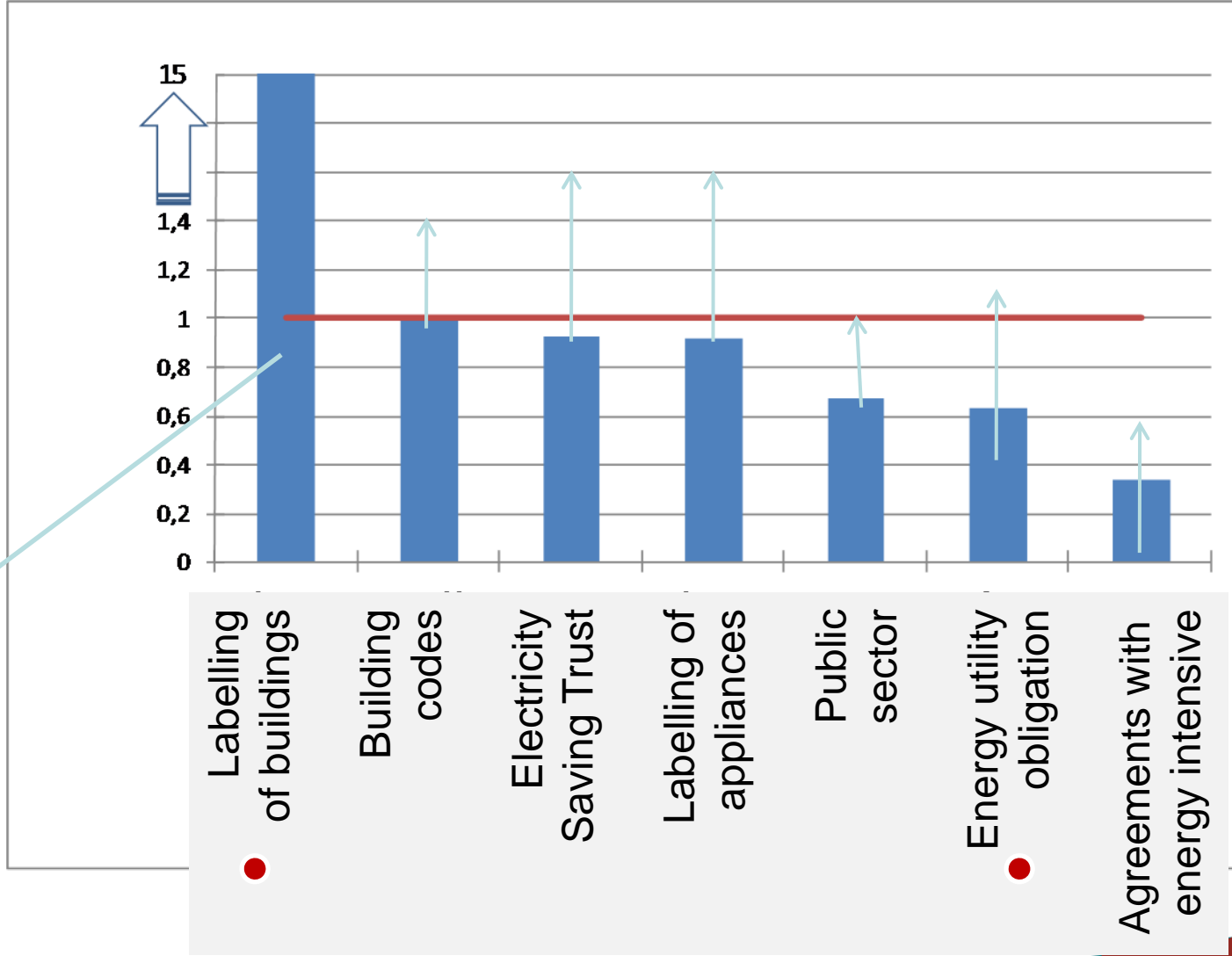
**BROAD EVALUATION OF THE  
ENTIRE ENERGY EFFICIENCY  
PORTFOLIO CAN REVEAL  
IMPORTANT ISSUES**

# Many energy efficiency instruments



# Economic evaluation

Attend Vibeke Kjærbye:  
*Does energy labelling cause energy savings?*  
Panel 3 Friday 10:00



# Nine EE activities

	Households	Public sector	Trade and industry	Energy intensive industry
CO <sub>2</sub> quotas	x	x	x	<b>X</b>
Taxes	<b>X</b>	<b>X</b>	x	x
Energy utilities obligation	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Building codes	<b>X</b>	x		
Electricity Saving Trust	<b>X</b>	<b>X</b>		
Labelling, buildings	<b>X</b>	x		
Labelling, appliances	<b>X</b>			
NGO activities	<b>X</b>			
EE in the public sector		<b>X</b>		

# Examples – with payback period of 1-2 years!

Large volume	
Six-step evaporator	56 GWh
Use of by-product hydrogen to produce steam	26 GWh
Conversion of new type of town gas	23 GWh
Partnership with chemical company	12 GWh
New natural gas steam boilers	11 GWh
Converting oil and electricity for heating to natural gas	10 GWh
Retrofitting boiler with flue gas cooler	9 GWh
Retrofitting kiln to optimise air flow	8 GWh

# Balance!

- The overall portfolio is out of balance
  - Households and public sector are over-exposed with activities (and high taxes)
  - *Recommended to increase focus on trade and industry, including energy intensive industry*

# Taxes

- High energy taxes
  - More than 100% for households and public sector
  - Less for business
- News (May 2009):
  - All energy taxes have increased by 15%
  - Taxes for business have increased even more



If energy efficiency is *really* important:

**ENERGY EFFICIENCY SHOULD  
BE PROMOTED IN ALL  
SECTORS**

**TAXES SHOULD BE USED IN  
ALL SECTORS**

# Energy company obligation

- Electricity, natural gas, district heating (and oil)
  - Grid companies
- Fixed obligation:
  - From 2006: 2.95 PJ/year (~1% per year)
  - From 2010: 5.4 PJ/year
- Freedom in execution
  - Any energy type
  - Any area (in Denmark)
  - Any type of interaction (energy audits, subsidy,...)
  - Unbureaucratic documentation

# Impact

- Survey of 105 industrial companies indicated a 50% additionality of recorded saving
- But still a fine over-all economy
- Comparing Danish obligation system to white certificate systems in UK, FR and IT:
  - It is only in Denmark that a major part of the saving comes from trade and industry

# Recommendations

- Priority factor in relation to energy company activities
  - Life time
  - Energy type/CO<sub>2</sub> quota
- Electricity Saving Trust's activity area is outdated
  - Households and public sector + electricity
- Increase activity for trade and industry (and transport)
- Better coordination and prioritisation

# End remarks

- Kirsten:
  - Other issues we have learned in the evaluation!
- Peter:
  - Any change that the recommendations will be implemented?