

Bridge over troubled water – Spanning the energy-efficiency gap

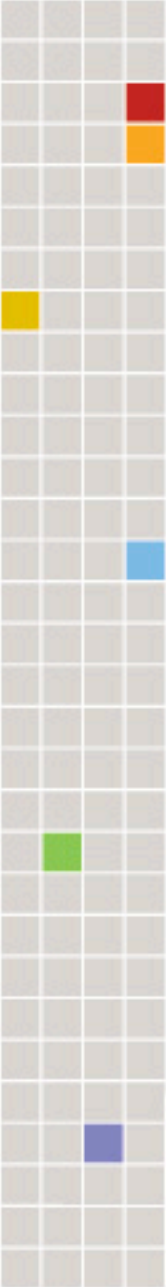
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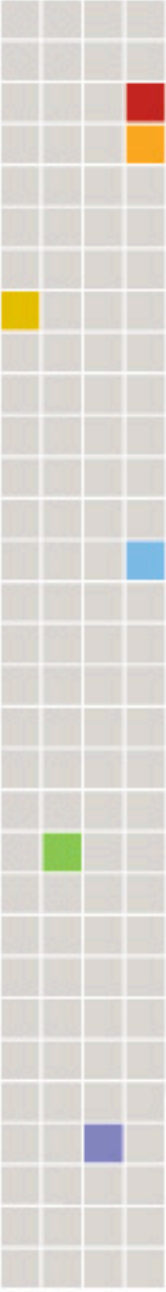
<http://www.youtube.com/watch?v=GYKJuDxYr3I>



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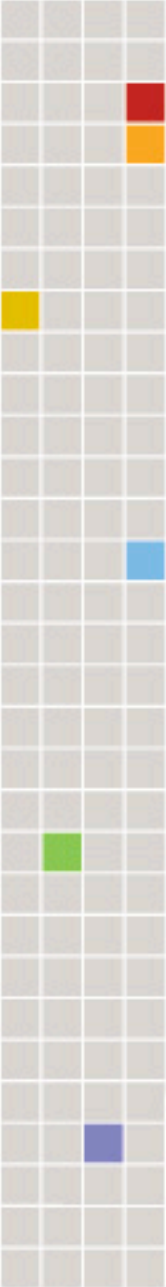
The Swedish Inquiry on the EU Energy Services Directive (2006/32/EU) carefully studied the following questions:

- What size is the cost-efficient energy-efficiency potential?
- What characteristics does it have?
- Which measures are cost efficient?
- What part of the cost-efficient measures is likely to be realised?



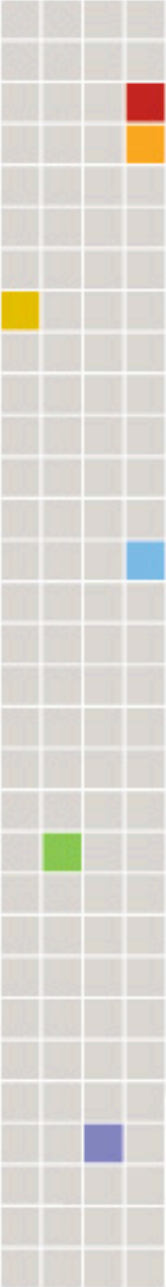
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- Commonly engineers and economists give different answers to these questions
- To bring us closer to a common opinion the inquiry put together a working group including both engineers and economists



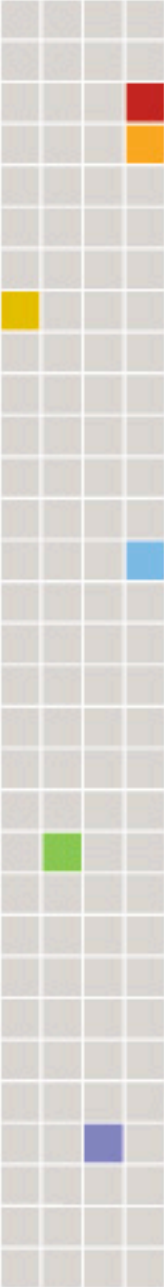
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- The working group sought to quantify
 - the cost-efficient potential
 - the energy-efficiency gap and
 - different factors affecting the gap
- Concrete calculations were carried out, both socio-economical and business/private economical



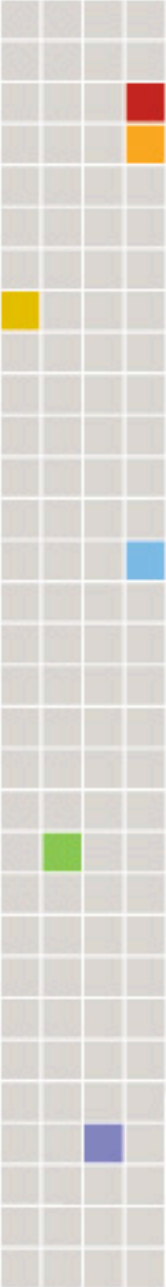
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- The working group focused on the building sector
- Calculations were based on
 - CBA
 - national energy statistics
 - net present values
 - standard intervals for planned maintenance and refurbishment
 - costs included investments, material, labour, transaction costs (time to find, time to decide, loss of comfort...)
 - benefits included reduced operational and maintenance costs; decreased environmental costs etc



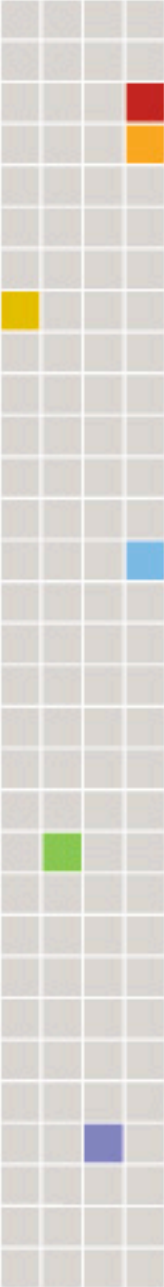
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- Almost all e-eff measures are connected with some kind of costs seldom are put in monetary terms
- The study put major effort into quantifying such costs
- These costs are often equal in socio-economical and decision maker calculations



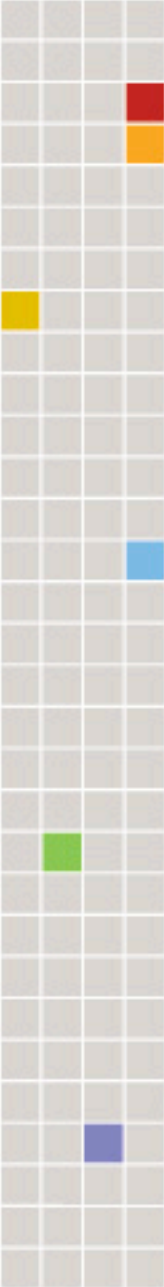
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- 4 % real discount interest rate + Sensitivity analysis
- Energy costs: variable part of energy cost
- Energy cost forecasts + sensitivity analysis
- External effects included, sensitivity analysis on how to value these costs



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- Total building (residential + non-residential) energy end use **135 TWh/year**
- Cost-efficient potential by 2016: 25 % or **34 TWh/year** + conversion from el. to district heating, heat pumps etc
- A major part of the cost-efficient potential consists of no or low-cost measures



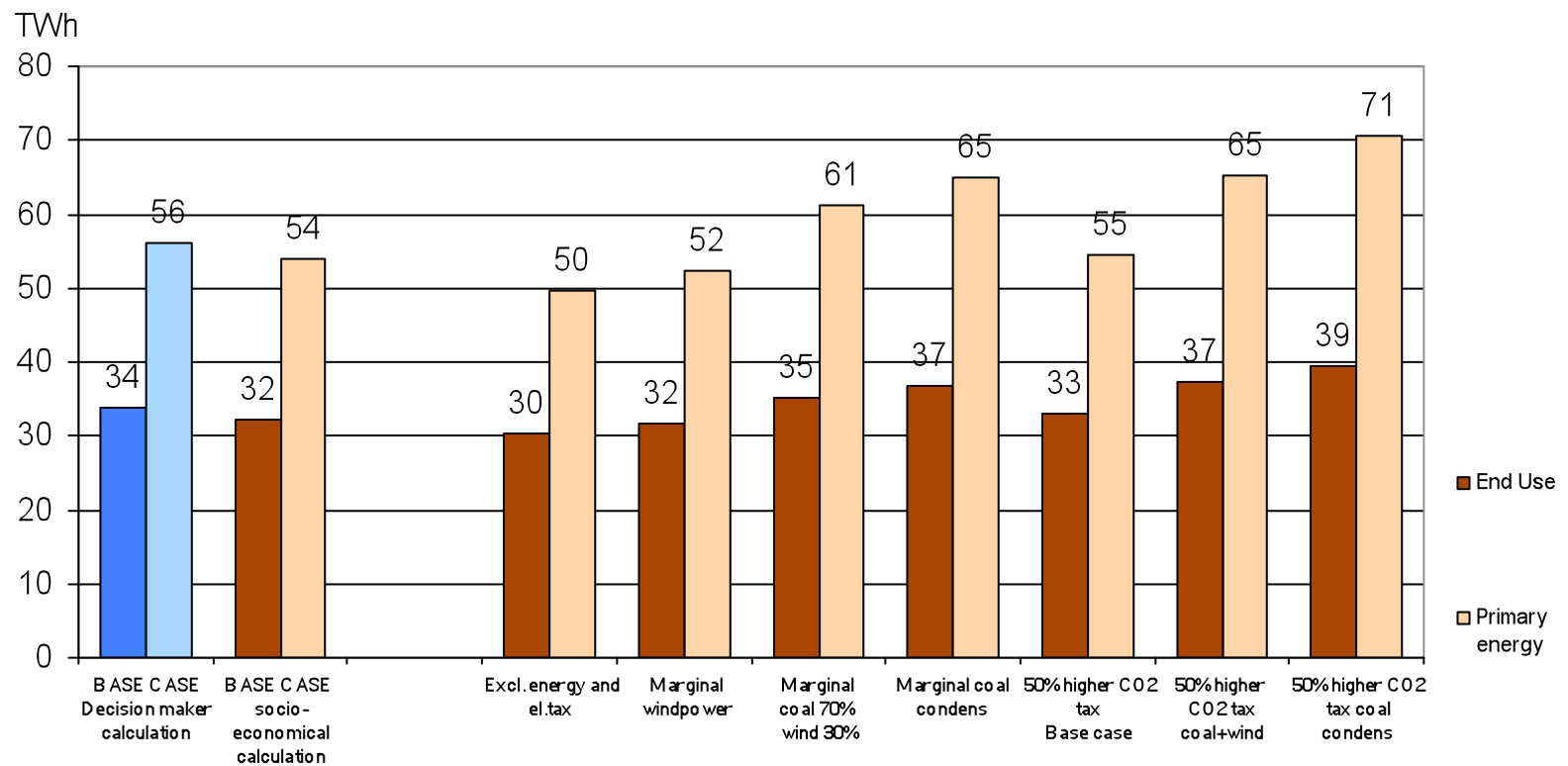
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What part is estimated to be realised by 2016?

- Merely 15 % of retrofit possibilities => 5 TWh/year
- 3 TWh/year due to individual household decisions (e.g. new appliances)
- Makes a total of 8 TWh
- Conclusion: The energy-efficiency gap is substantial!

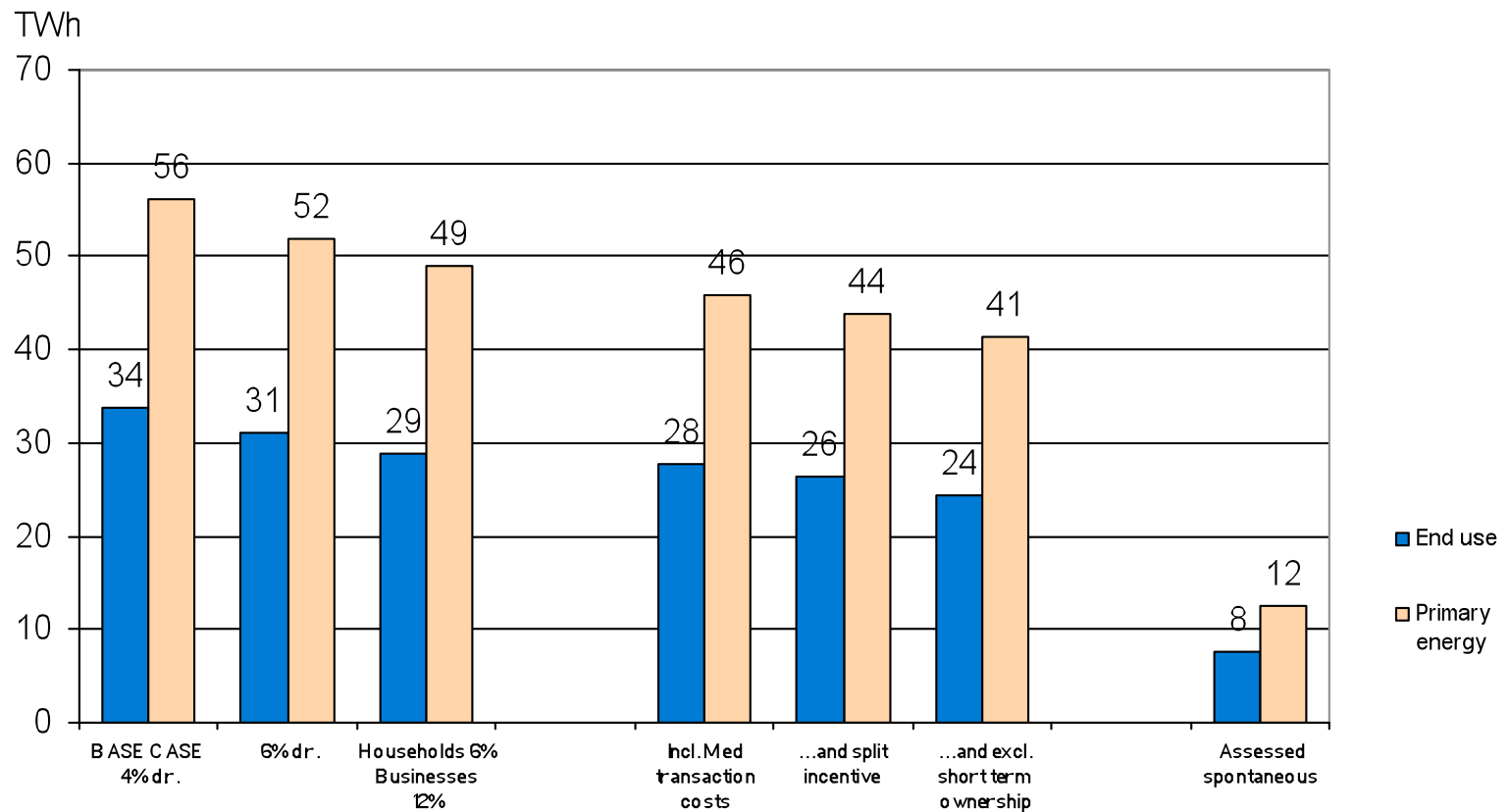
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■ Quantified cost-efficient potential



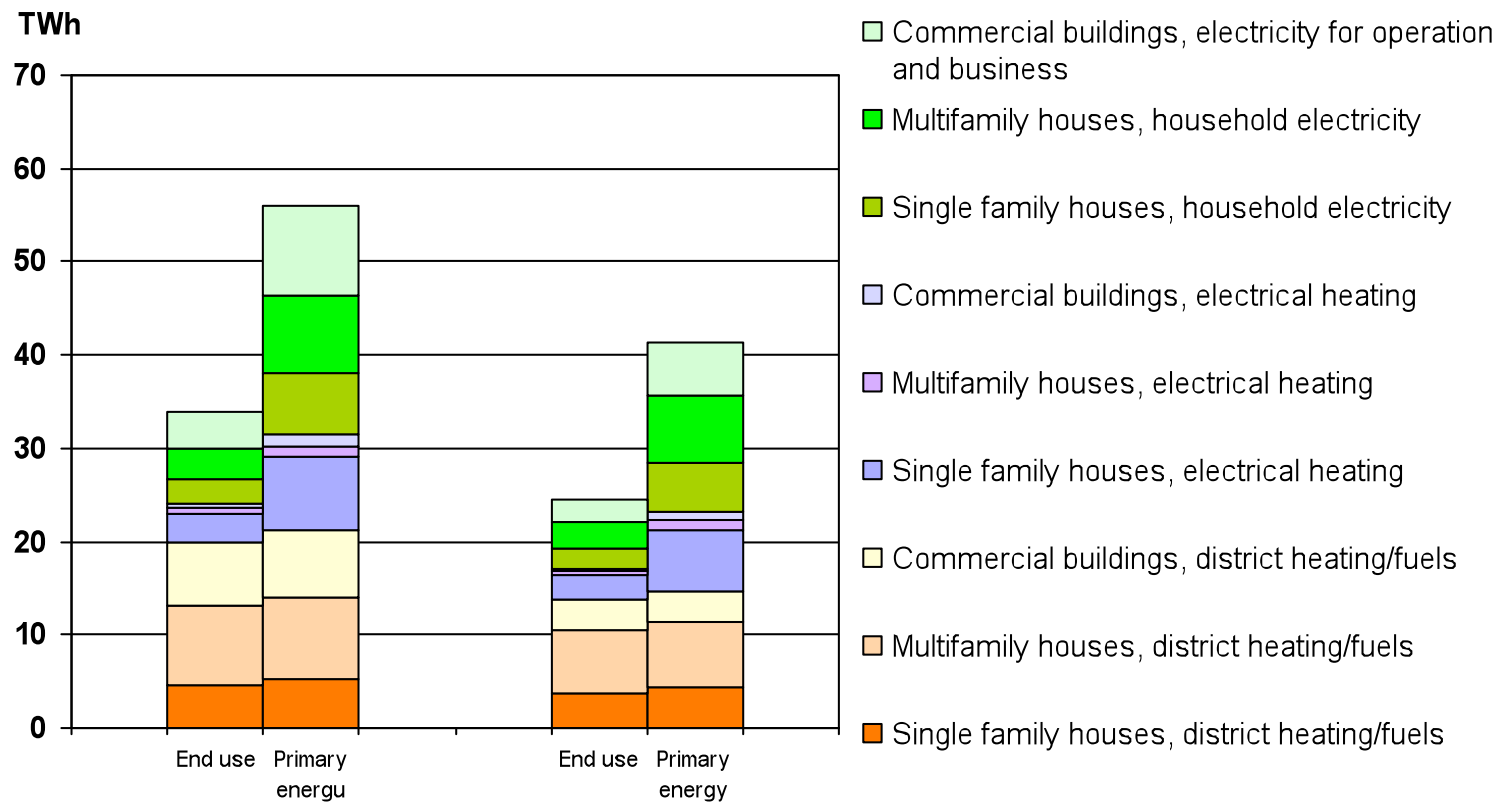
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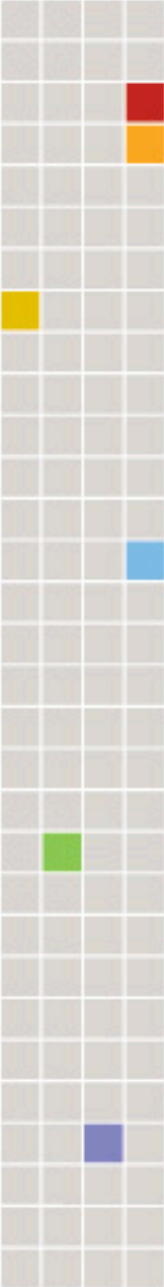
■ The energy-efficiency gap



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- Two of the calculated energy-efficiency potential cases, division between building categories





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Conclusions:

- There's a huge cost-efficient potential
- Some e-eff gap factors were possible to quantify
- Financial aspects do not alone explain market behaviour
- Cost-efficient measures often need support “to make it happen”
- It is socio-economical beneficial to support cost-efficient measures
- Transaction costs & split incentive problems can be often be cost-efficiently lowered by e.g. information measures
- Further policy measures are needed to span a larger part of the e-eff gap!

**Bridge over troubled water –
We managed to span parts of the gap**

Thanks for your attention!

Questions?

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