



The Economics of the Renovation of Buildings: a view from ecee

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At World Sustainable Energy Days, March 2010

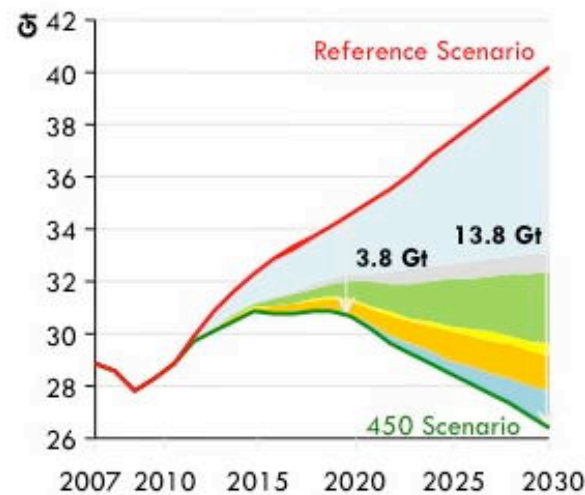


Focus on energy efficiency

- Energy efficiency seen as possibly the most cost-effective way of reducing GHG emissions
- Yet so much attention paid to other areas which are more costly and will produce lower results
- Do people feel that energy efficiency *just happens?*
- The next slide shows the importance of energy efficiency

Energy efficiency has big role

World abatement of energy related CO₂ emissions in the 450 Scenario



	Share of abatement %	
	2020	2030
Efficiency	65	57
End-use	59	52
Power plants	6	5
Renewables	18	20
Biofuels	1	3
Nuclear	13	10
CCS	3	10

IEA World Energy Outlook 2009



Energy efficiency has big role

- Energy efficiency measures account for two-thirds of the 3.8 GT of abatement in 2020, with renewable energy contributing about 20 %

Why focus on existing buildings?

- Buildings now account for about 40 % of current energy consumption and about 36 % of CO₂ emissions
- Current rate of new construction is quite low and unlikely to change significantly
- Emphasis has to be on existing buildings where rate of renovation is now about 1.2 to 1.4 % per year
- Unfortunately most of those renovations are sub-optimal
- Sub-optimal renovations “lock in” large savings potential
- Rate of renovation can also increase with proper financing and awareness

Why 2009 was so important

- Political agreement between the European Parliament, the Council and the Commission in November for the recast proposal
- Extensive work by EP in the spring gave process considerable visibility
- There was pressure to have an agreement before COP 15 in Copenhagen
- Expected EE Action Plan but it ended up being delayed. Yet, the leaked draft had significant focus on buildings
- Lisbon Treaty finally approved

What the recast of the EPBD says about major renovations

- There is no specific target to be set for the renovation of existing buildings, but Member States shall follow the leading example of the public sector by developing policies and take measures such as targets in order to stimulate the transformation of buildings that are refurbished into very low energy buildings, and inform the Commission thereof in their national plans
- The 1000 m² threshold for major renovation has been deleted and this will take effect when the national regulations have been implemented and applied, probably at the beginning of 2014.

What the recast of the EPBD says about major renovations – 2

- Minimum requirements for components are introduced for all replacements and renovations, although for major renovations, the holistic calculation methodology is the preferred method with performance calculations based on component requirements allowed as a complement, or alternatively
- A harmonised calculation methodology to push-up MS minimum energy performance requirements towards a cost-optimal level is set out in the Directive in a definition and an annex, and will also be refined in a comitology process

eceee report used during approval process of recast

- What report prepared for eceee by Ecofys concluded:
 - Life-cycle costing based on net present values, the report states, provides a sound basis for the development of a common methodology for calculating cost-optimal levels of renovation.
 - “taking sustainability seriously, a space heat consumption between 25 and 40 kWh/sq.m. should be aimed at” in renovation. This represents savings of between 80 and 90 per cent.
 - Individual measures can have impact but their level easily risks being sub-optimal if not analysed correctly.

eceee report used during approval process of recast – 2

- What the report concluded:
 - a basket of measures taken at the same time (often referred to as “deep” renovation), can be analysed with a similar approach, allowing for the measures to be compared to each other to reach an optimal, financially attractive package.
 - In the example presented in the report, savings of 58 per cent can be achieved at a cost less than the assumed energy price, thus making it of interest to the individual investor. However, savings of 82 per cent can be achieved through government support.

eceee report used during approval process of recast – 3

- What the report concluded:
 - there are many co-benefits that can make investments beneficial from a societal viewpoint. These include: reduced energy imports, impact on global climate change, higher quality energy services (including health benefits) and lower risk in terms of increased poverty during periods of escalating energy prices. These societal considerations often justify government support.
 - This means that the costing methodology that is developed for the recast Directive is extremely important to the overall impact of the Directive. There can be sub-optimal energy and CO² emissions reductions without cost-optimal investment in technologies.

What is needed for existing buildings

- Targets and strengthened monitoring by governments
- Focus on “deep” renovations – factor four renovations or better
- Financing package to motivate consumers; absolutely essential for deep renovations
- Well trained work force
- Strong compliance systems

Why is it not happening?

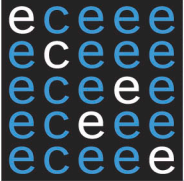
- MS unwilling to have mandatory targets
 - Largely because target would put burden of providing the incremental financing
- Commission is reluctant
- Little leadership pushing for targets
- To date, there has been too high priority a on new buildings

What is being said about “financing” major renovations

- European Parliament came out strongly in favour of financing elements embedded in recast Directive
- Commission and Council realise something must be done and many discussions underway to see what options are available
 - These would include better use of EU structural funds
- Will European Commission give this a high priority in upcoming Energy Efficiency Action Plan

Can “financing” be mobilised

- Structural funds?
- ESCOs?
- Commercial banks?
- KfW model?
- Government subsidies?



It's not the cost of deep renovation

It's the cost of no deep renovation



**For continuing discussion on this,
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