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Accompanying document to the

PROPOSAL FOR A RECAST OF THE ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE (2002/91/EC)

IMPACT ASSESSMENT

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ANNEX V

EU buildings sector

The importance of the buildings sector in EU wealth in terms of capital, but also social, cultural and historic value and business opportunities, is enormous. The EU's 480 million citizens live in approximately 209 million households, with a total conditioned floor area of about 15 000 km^2 and work in offices with conditioned floor area of about 6 000 km^2 (or altogether a bit more than the surface area of Slovenia)[1]. Buildings constructed today will be there for the next 50 to 100 years. For example, 92% of the building stock from 2005 will still be there in 2020 and 75% in 2050. This is due to the very low demolition rates (about 0.5% p.a.) and new build construction rates (about 1.0% p.a).

Energy use in the building sector (residential and commercial) is responsible for **the lion's share – 40% – of EU total final energy consumption and of EU total CO_2 emissions – 36%, from which there is significant potential for energy savings.** The main energy use is for space and water heating and cooking. The energy consumption in these two sectors has increased over the period from 1990-2005 by about 1.0% per year[2]. The PRIMES[3] baseline scenario shows further growth in energy demand. As mentioned above, there is significant potential for energy savings.

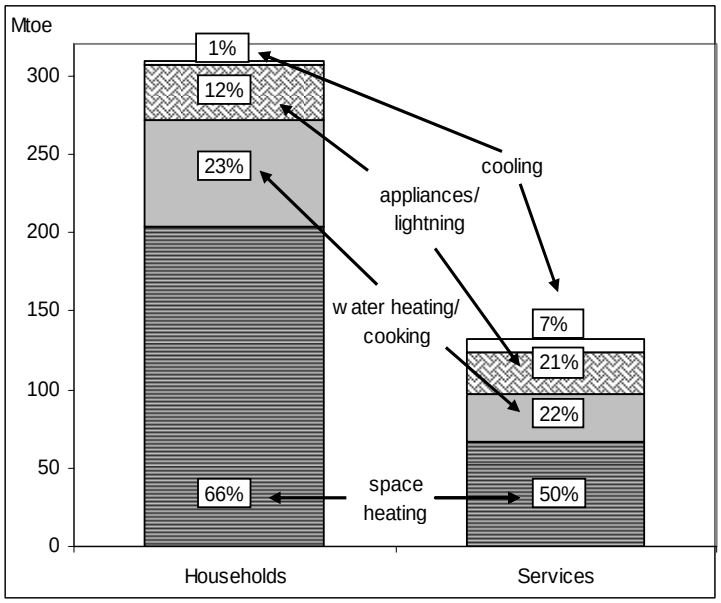


Figure 1. Final energy use in the buildings sector, Source: PRIMES, data for 2005

The measures in the buildings sector have the **lowest abatement cost for greenhouse gas reduction which in many cases are at low, and even negative levels, due to the energy use cost reductions,** as shown in Figure 2[4]. According to the last IPCC report[5], about 30% of the

[1] Ecofys study for DG TREN, 2008 (data for 2005, the data for the offices does not include those in industry and agricultural sectors)

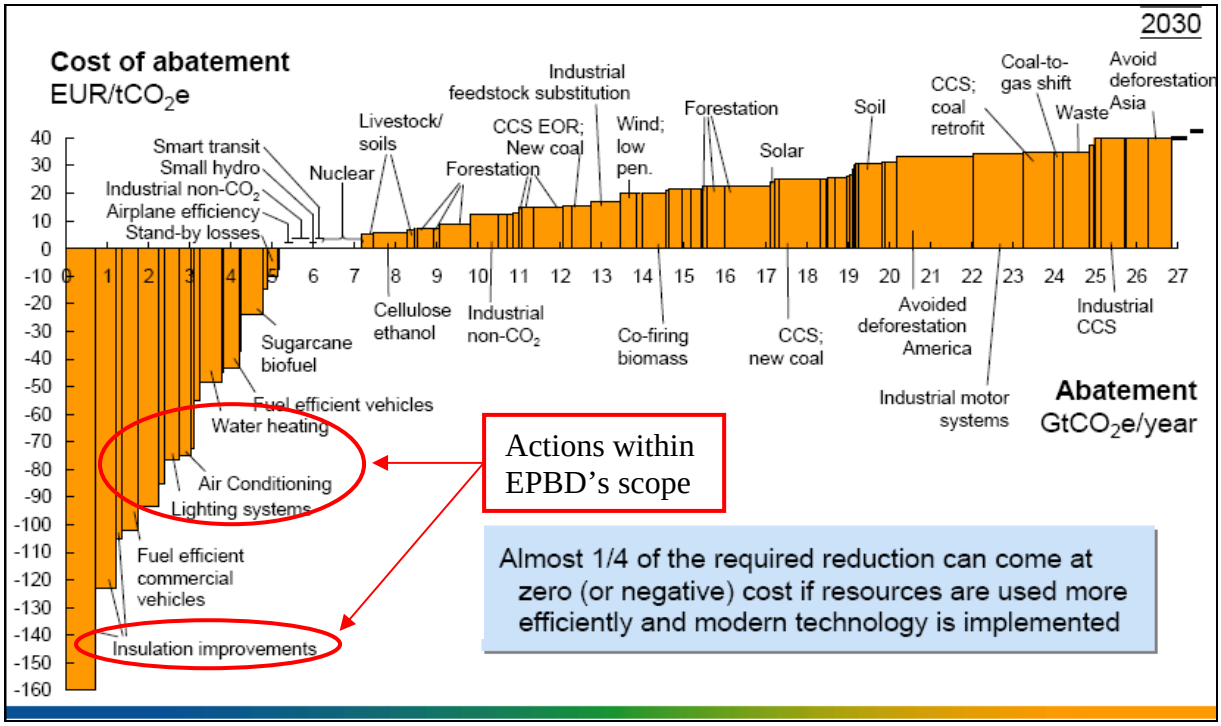
[2] Data from European Energy and Transport: Trends to 2030 – Update 2007

[3] PRIMES is an energy system model, started in 1993 and funded by the European Commission

[4] McKinsey. Kosten und Potenziale der Vermeidung von Treibhausgasemissionen in Deutschland:Eine Studie von McKinsey & Company, Inc., erstellt im Auftrag von „BDI initiativ – Wirtschaft für Klimaschutz“ 2007

projected greenhouse gas emissions worldwide in the buildings sector can be with net economic benefit by 2030. A study on costs and potentials for CO_2 abatements in Germany[6] concludes that annually 63Mt CO_2 savings can be achieved at costs below 20 EUR/t CO_2 (or at a prices lower that the spotmarket, e.g. 27 EUR/t on July 15, 2008). At the level of EU-27 this could mean 500Mt CO_2 emission reduction by 2020.

Figure 2. Abatement costs of various greenhouse gas emission reduction measures



Source: McKinsey for Vattenfall 2007, **based on 2005 energy prices**

Buildings provide shelter and protection. In addition, studies show a clear and strong link between negative health impacts and a country's thermal efficiency housing requirements[7]. On the other hand, improved thermal comfort and energy characteristics of buildings are beneficial for health as well as for labour productivity.

Activities related to buildings represent a **large share of the EU economy.** The construction, real estate, and manufacturing of construction products sectors represent about 9% of EU GDP and about 7-8% (or approximately 15 million people) of EU total employment with a annual turnover of about EUR 2 trillion[8]. Furthermore, the majority of firms engaged in construction activities and the real estate sector are SMEs, with for example, more than 88% of employment provided in construction sector being in SMEs, and 67% for the real estate sector, correspondingly. This signifies the important contribution the sector has to the EU's growth and job creation at local and regional level.

It is very likely that increased activities in the energy efficiency of buildings may create **additional social benefits**. Decreases in expenditure on energy bills will free revenues to be

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[5] IPCC report, Contribution of Working Group III to the Fourth Assessment Report, 2007

[6] Costs and Potentials for the Abatement of Grenhouse Gases in Germany (Kosten und Potenziale der Vermeidung von Treibhausgasemissionen in Deutschland), study of McKinsey & Company, Inc. for German Industry Association 'BDI initiativ – Wirtschaft für Klimaschutz', 2007

[7] Healy, Excess winter mortality in Europe: a cross country analysis identifying key risk factors, Journal of Epidemiology and Community Health 2003;57:784-789

[8] For construction and real estate sector: data are from Eurostat and for 2005. For manufacturing of construction products: data from the Impact Assessment, 2007 for the revision of the Construction Products Directive

spent on other activities and goods. It is also common that low income people live in dwellings with bad energy performance characteristics, which also means higher energy bills and a poor comfort levels. Better energy efficiency can therefore bring considerable benefits especially to these people.