



Energy Efficiency Communication

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Energy efficiency of the EU economy is steadily increasing; and economic growth is being decoupled from energy consumption



Source: Energy efficiency Communication 2014 - COM(2014) 520

Energy efficiency progress can be observed across all sectors:



Between 1995 and 2010 the average consumption of new cars in the EU decreased by 27%



New dwellings built today consume on average 40% less than dwellings built 20 years ago



The share of refrigerators meeting the highest energy efficiency labelling classes (A and above) increased from less than 5% in 1995 to more than 90% 15 years later



EU industry improved its energy intensity by almost 19% between 2001 and 2011, compared with 9% in the US

Energy Efficiency Communication 2014 – key questions addressed in the Impact Assessment

- Are we on track for 2020? If not, what should we do about it?

Based on an analysis of Member State actions and additional forecasts, the Commission now estimates that **the EU will achieve energy savings of around 18-19% in 2020.**

- What is the optimal level of ambition for energy efficiency in 2030?
What should be the approach to achieve it?

Target proposed: 30% savings by 2030 (vs. 2007 reference) ensures broadly that the **current level of energy efficiency policy ambition is continued** (reducing consumption at a little over 17 Mtoe per year).

Impact Assessment - Methodology

Framework conditions

- PRIMES 2013 Reference
- GHG 40%; split ETS/non-ETS maintained
- RES 27%

Policy options (scenarios analysed)

- Stepwise increase of EE policy ambition: 27%, 28%, 29%, 30%, 35% and 40% savings in 2030 (vs 2007 PRIMES)
- No changes in policy mix (based on current); just intensity

Impacts assessed

- Energy system and security of supply
- Economic impacts (system costs, investment expenditure, energy prices, GDP, employment)
- Competitiveness and affordability
- Environmental impacts (CO₂, pollutants, health)

Impact Assessment – Elements that imply assumptions on behaviours of consumers

- Simulation and assessment of **households preferences and decision making** regarding energy-efficient technologies (both under business as usual and under policy scenarios)
- **Modelling the impact of Energy Efficiency measures** (EED, EBPD, Ecodesign and Labelling), in terms of reduced discount rates
- Indication on the **optimal level of policy intervention**

Behavioural discount rate

When people are given specific choices (would you like 10 € today, or rather 20€ in 2 years?), or their consumption and investments decision are observed, it's possible to extract their implicit discount rate.

Impact Assessment – Discount rates

Discount rates (in real terms)	Standard discount rates of PRIMES	Modified discount rates due to EED	
		2015	2020 - 2050
Power generation	9%	9%	9%
Industry	12%	12%	12%
Tertiary	12%	11%	10%
Public transport	8%	8%	8%
Trucks and inland navigation	12%	12%	12%
Private cars	17.5%	17.5%	17.5%
Households	17.5%	14.75%	12%

Source: Primes, Energy efficiency Communication Impact Assessment - SWD(2014) 55
http://ec.europa.eu/energy/efficiency/events/doc/2014_eec_ia_ia_adopted_part2.pdf

Impact assessment – Limitations in modelling economic behaviour

- Energy modelling tools only to a limited extent take into account and represent **decentralised microeconomic decision-making** frameworks;
- Energy-economic modelling are focused on technological change and on the economic dimension of energy supply and use, with much less attention on **behavioural drivers and barriers**
- For private households, in the literature, there is **great uncertainty about the amount of such discount rates** and robust empirical evidence is lacking (typically examined through surveys)

Key research needs in this area

Better understanding of households, industries and SMEs decision-making and their representation in models

- Disaggregation of households' consumers in clusters
- Modelling of non-financial market barriers
- Modelling of different/improved EE policies and financing schemes in different countries

More robust empirical estimates of behavioural Discount Rates

- Differentiated DR for costumer groups/cluster
- Assessment of the the impact of policies on time discounting and risk preferences

Thank you!



<http://ec.europa.eu/energy/efficiency/>

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