

# ***The role of energy pricing in achieving the EU 2020 energy savings goal in the Residential Sector***

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## **Overview**

Lowering absolute energy demand in buildings is a key policy goal of the EU. This is to be achieved mainly through improvements in end use efficiency. The relevant indicative goal for 2020 is to lower Primary Energy Demand in the residential sector by 27 % relative to a business as usual scenario (EC, 2006a). There are multifaceted motivations behind this goal that include reducing dependence on fossil fuels imported from outside the EU, increasing competitiveness by reducing energy costs, mitigating the volatility associated with oil prices, stimulating employment in the construction sector, improving both indoor and outdoor air quality via enhanced ventilation and decreased emissions of combustion gasses, and mitigating climate change. The EC have introduced a package of measures aimed at achieving this goal that include the Energy Performance of Buildings Directive, EPBD, (EC, 2002), the Eco Design Directive (2009) and the Energy Services Directive (2006b). These are regulatory measures which seek to drive technical innovation and the diffusion of efficient technologies. Evaluations carried out recently estimate that the EU is on track to achieve only half of its target savings by 2020 (European Climate Foundation, 2011). The recast of the EPBD (EC, 2010a), the forthcoming Energy Efficiency Directive (EC, 2011) and the forthcoming Energy Taxation Directive (EC, 2010b) seek to address this situation.

## **Method**

This paper attempts to evaluate the complimentary role (if any) that energy prices can play in meeting the 27 % savings goal in the EU residential sector. Increasing energy prices are likely in any case due to a combination of increasing fossil fuel prices and the implementation of carbon taxes. The potentially negative effects this will have on competitiveness and fuel poverty may however mean that attempts may be made by regulators to keep price increases to a minimum. The aim of this paper is thus to explore the impact of a range of price changes on meeting the 27 % savings goal in the EU residential sector in the context of the policy measures in place, co-benefits of efficiency improvement, competitiveness, fuel poverty, climate change mitigation and increasing prices of fossil fuels. A panel data model of demand for EU 27 is employed. Energy demand for space heating and for appliances and lighting are modelled separately. Variables which control for the impact of affluence and increasing living standards are also included in the model. Different scenarios for future prices are applied to estimate energy savings to 2020.

## **Results**

Elasticity coefficients calculated provide a plausible model of historic energy demand in the EU residential sector. Scenarios for energy demand to 2020 show what proportion of the 27 % savings in the residential sector can be attributable to increased prices. The savings remaining to be fulfilled may be assumed to amount to what the forthcoming EU legislation needs to achieve. The results of the modelling can thus provide a conceptual framework for the development of fiscal and regulatory policy decisions within the overall objective of meeting future demand for energy services of the residential sector within the EU in a sustainable manner.

## **References**

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