

DSM – from theory to practice: the Portuguese case-study

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Portugal has been striving for achieving the average economic development of the European Union (EU). The country imports 90% of its primary energy, is still increasing the energy intensity of its GDP and it has a rapidly growing electricity consumption rate. The fulfillment of Kyoto's targets is challenging.

An annual electricity saving potential of about 34%¹ has been identified solely in the residential sector. However, despite the existence of policy incentives for the promotion of DSM initiatives, the activities done so far are almost negligible. The former vertically integrated and state owned monopoly electricity company, EDP, was the promoter of most of such activities. With the on-going liberalisation of the electricity market², will the existing incentives be enough to overcome the barriers that hinder the effective development of DSM? What players can be involved and how can DSM activities be funded?

The most relevant factors that were found to affect the implementation of DSM activities are the degree of competition, customer demand, society's awareness and national and the EU legislation. The corporate flexibility and culture of EDP are also factors that strongly influence this major DSM player's ability to perceive (or not) DSM as emergent business area.

Currently all these factors contribute for increasing the barriers for the implementation of DSM. The lack of a clear definition of the role of DSM in Portuguese national policies is one of the main barriers for the action. However, the development of new policy instruments will probably not give incentives strong enough in the short and medium-term, since their enforcement is likely to be difficult. It is necessary to change governmental and society's behavior; a long-term complex process.

Therefore, it is suggested a step-by-step approach to implement DSM that considers different types of DSM activities and different promoters. In the short-term, electricity companies could be the catalysers of the implementation of DSM in Portugal, motivated by the need and possibility of finding new business opportunities and maintaining the current market shares. Other fundamental catalyser is the creation of customer demand, through the implementation of a series of activities, all of which require funding.

For this, a scheme similar to the one that was in place in UK³ is suggested for Portugal. In this scheme the money collected from the electricity consumers through the electricity tariff goes to a fund managed by the electric sector regulator. This fund supports DSM activities selected by a DSM expert entity, acting as a "consultant" to the regulator.

Two solutions to collect this fund were tested: a physical volumetric charge (\$/kWh) and a fixed charge (\$/customer). Using domestic EURELECTRIC typical consumers, and for a fund level of 5 million USD, it was found that the average price changes from 0.1% to 1.6%, depending on the consumer and adopted solution. Typically large consumers would prefer \$/customer solution, whereas small consumers would prefer the physical volumetric charge solution. It was found that a relatively light change in the average prices could substantially help funding DSM activities and thus the fulfilment of the national environmental objectives, especially Kyoto's targets.

1 Júlio, S., Cabral, P., Costa, R., Almeida, T. (1997). *Characterisation of the potential for electricity conservation in Portugal*. In ECEEE 1997 Summer Study. July 1997, Berlin: Germany.

2 All MV, HV and VHV customers can choose the supplier, representing 45% of the electricity consumption.

3 DSM scheme was recently changed, trying to increase the competition

