

## Distributed Renewable resources Exploitation in electric grids through Advanced heterarchical Management

	<b>Cost Benefit Analysis of households energy boxes deployment in Europe: impact of the spot prices</b>		
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### ABSTRACT:

*The present paper presents a study willing to assess the profitability of replacing a conventional thermostat by a Smart Thermostat – also called Energy Boxes – in electrically heated households. It assumes that such replacement is a prerequisite for a dweller to take the entire advantage of a subscription at Real Time Price (RTP) tariffs. A deterministic model has analyzed the Day-ahead Nord Pool Spot data available from 2001 to end of 2014 for Denmark, Norway, Finland, Sweden, Estonia, Latvia and Lithuania. It computes these data with hourly outside temperature series of one unique weather station (Malmö) into a theoretical household. The model enables to get load profiles and annual energy bill. The dweller welfare modification is finally shortly analyzed and a payback analysis is provided based on simulated bills and a benchmark of the Smart Thermostat available on the market. The main outcome of the study is that the profitability for the end-user of RTP adoption is highly dependent of the national power market context.*