

# Smart Meters – Benefits for everyone?

*David Bothe, Jens Perner, Christoph Riechmann*

*Frontier Economics Ltd*

*71 High Holborn, London WC1V 6DA*

*Tel. +44 (0) 20 7031 7000*

*Fax. +44 (0) 20 7031 7001*

*[David.Bothe@frontier-economics.com](mailto:David.Bothe@frontier-economics.com)*

*Frontier Economics Ltd*

*Kranhaus Mitte, Im Zollhafen 18,*

*D-50678 Köln*

*Tel. +49 (0) 221 337 13-106*

*Fax. +49 (0) 212 337 13-130*

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## **Abstract**

Costs and benefits of smart metering roll-outs are of increasing interest, not least because the EU requires its member states to assess the economic potential for intelligent meters.

The assessment is not trivial: Costs for the installation e.g. not only depend on the chosen roll-out scenario and the assumed technology, but also local circumstances at each customer's site. Synergies through the utilization of already available communication technology, for instance, can significantly lower installation costs. Major benefits of smart metering derive from easier customer handling, improvements in demand side efficiency (lower demand) and the possibility to trigger load-shifting (and hence avoided peak capacities). The magnitudes of the latter two effects again highly depend on each customer's characteristics – e.g. total consumption and demand patterns.

The current approach in many smart meter related cost-benefit-analysis to refer to an “average” customer therefore falls short to account for this heterogeneity within the group of customers. Hence even if such analyses show a total net benefit of a complete smart meter roll-out, they typically don’t provide insight into the marginal cost-benefit balance of each customer, i.e. whether the installation of smart meters for a specific household provides a net benefit to society.

In our assessment of the economic potential of smart metering for German households we explicitly account for the heterogeneity of consumer characteristics. We demonstrate, that irrespective of the overall assessment of a complete smart meter roll-out, added-value to society typically increases, if smart meters are only installed for selected customer groups with high net benefits (e.g. households with high demand and available communication technology). Based on these findings we are discussing, which roll-out schemes (e.g. a mandated roll-out vs. a market driven approach) are best suited to maximize social welfare.