

Case Study S3C

ToU Italy

S3C related keywords:

- Real time feedback
- End user's active participation
- Smart appliances

“ToU tariffs can induce end users to be more efficient in their daily energy use at home”



The overall goal of the project is to evaluate the impact of the mandatory ToU tariff on the Italian residential end users; to this aim, R.S.E. started monitoring the project which has involved a group of about 28,000 household users, statistically representative of the Italian population subject to the universal supply regime, and has been acquiring their electricity consumption data on a monthly frequency, for a three-and-half year period. The ToU tariff consists of two groups of hours:

- peak-hours: F1 time slot, which includes hours between 8 am and 7 pm during working days, in which the price is higher than an hypothetical flat tariff;
- off-peak hours: F2 and F3 time slots, which comprise the remaining hours not included in the F1 time slot, in which the price is lower than an hypothetical flat tariff.

What sets this project apart from other Smart Grid projects?

The introduction of the Time-of-Use tariff for residential customers in Italy is a significant event: in fact, 20 million families have shifted from a time-undifferentiated tariff to variable electricity prices during the day. This represents an unprecedented occasion to analyze the changes of customers' behaviour in response to time variable electricity prices. The huge amount of people involved makes the project interesting with respect to other pilots implementing time dependent tariffs.

What happened?

The project has clearly shown how Italian residential end users are capable of shifting their energy consumption in order to adapt to time-dependent electricity costs; in fact, even if the amount of energy consumption that was shifted from peak hours to off-peak hours in the period following the introduction of the mandatory ToU tariff was limited (about 1%), the change in the behaviour of the end users is not negligible, because about 60% of them moved their consumption from peak to off-peak hours, according to the price signal provided by the ToU tariff.

There are two main reasons which have prevented a larger participation from the residential end users:

- consumption allocation during off-peak hours was high even before the introduction of the ToU tariff, thus reducing the amount of consumption which was shiftable in principle;

- the price signal conveyed to the customers had a limited effect due to the tiny price difference between peak and off-peak hours.

Further information / Contact

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