

## GUIDELINE: MOTIVATING CONSUMERS WITH SOCIAL COMPARISON AND COMPETITION

### Abstract

Social comparison is a powerful mechanism to educate and motivate customers in the energy sector by offering them persuasive information. This guidelines is written for project and product developers as well as marketing campaigners. It focuses on how to utilize these mechanisms for motivating the customer to perform desirable energy behaviour (like energy saving or load shifting). Therefore, an overview of the theoretical background, best practice examples and helpful tips will be offered.

### What is it?

The useful fact that in many societies' people define themselves based on the comparison to others can also be used within the energy sector to change people's behaviour. "Social comparison is a remarkably ubiquitous process which influences how people think about themselves, how they feel, what they are motivated to do, and how they behave" (Corcoran *et al.*, 2011, p. 134). This insight is based on many sociological and (social)psychological studies performed in the last 60 years. Humans gain information and motivation through the comparison with others. People compare their own situation to the situation of others to define themselves and to fulfil their need for an accurate self-evaluation.

The basic idea behind the concept of social comparison is that people want to know about themselves and they become aware of this "whenever they are confronted with information about how others are, what others can and cannot do, or what others have achieved and have failed to achieve, they relate this information to themselves" (Corcoran *et al.*, 2011, p. 119). People seek an informative feedback about their abilities. If they like to know something about themselves, they compare their "own characteristics, fortunes, and weaknesses to those of others" (*ibid.*).

Usually they compare themselves to similar others, because this offers them the best information for self-evaluation. Downward comparison (the comparison with a group of people that perform worse) offers the opportunity to protect or enhance self-evaluation, but self-improvement is best achieved through comparing oneself with upward standards, because "upward comparison can motivate people and can provide information on how to make progress" (Bandura, 1986, 1997). These mechanisms of people's behaviour can be used in the energy sector to motivate customers for a change of their behaviour. The following sections describe how it works and how it can be applied practically. This knowledge can e.g. help utilities to foster energy savings of their customers and to meet their energy saving obligations.

## When to use?

The influence of social comparison as described above is common knowledge. The question here is how to use it successfully within the energy sector. Based on the assumption that people are willing to change their attitudes or behaviour if similar peers already have changed, perform well or even better, social comparison can be used in various ways.

First and foremost, it is important to determine what the precise purpose of the social comparison should be. The topic and the content of the information utilized for social comparison has to be set with respect to the goals of the project. This can range from load shifting to energy efficiency or to energy or environmental education. Basically, it can be used in every situation in which sufficient information is available to draw a comparison. It can also be used in educational campaigns to set an extra motivation for self-improvement (e.g. “70% of the people take the peak consumption period into account when deciding to turn on the washing machine”).

Social comparison can for example be used for energy billing as a form of feedback, see also the S3C guideline [How to make energy visible through feedback](#). In the bill, different comparisons with the peer group of the customer can be made available, e.g. the energy consumption can be compared with the energy consumption of households of similar size within the neighbourhood, quarter, town or region. It is important to choose an adequate comparison group as it will offer the user the best grounds for self-evaluation.

### Using neighbourhood scoreboards to motivate consumers (Sydney, AU)

The Neighbourhood Scoreboard project tested the effect of public exposure to domestic energy consumption on residential end-users. The project was conducted from 2009 until 2010 by the Design Lab of the University of Sydney. Five chalkboards displaying information on the household consumption were put up in a Sydney neighbourhood. Chalkboards were chosen because they were cheaper, more environmentally sustainable and visually attractive. The boards were manually updated and offered feedback on the electricity consumption compared to the previous day, a symbolic representation for each day of the current month, a graph representation for each week and a neighbourhood ranking that was updated daily.

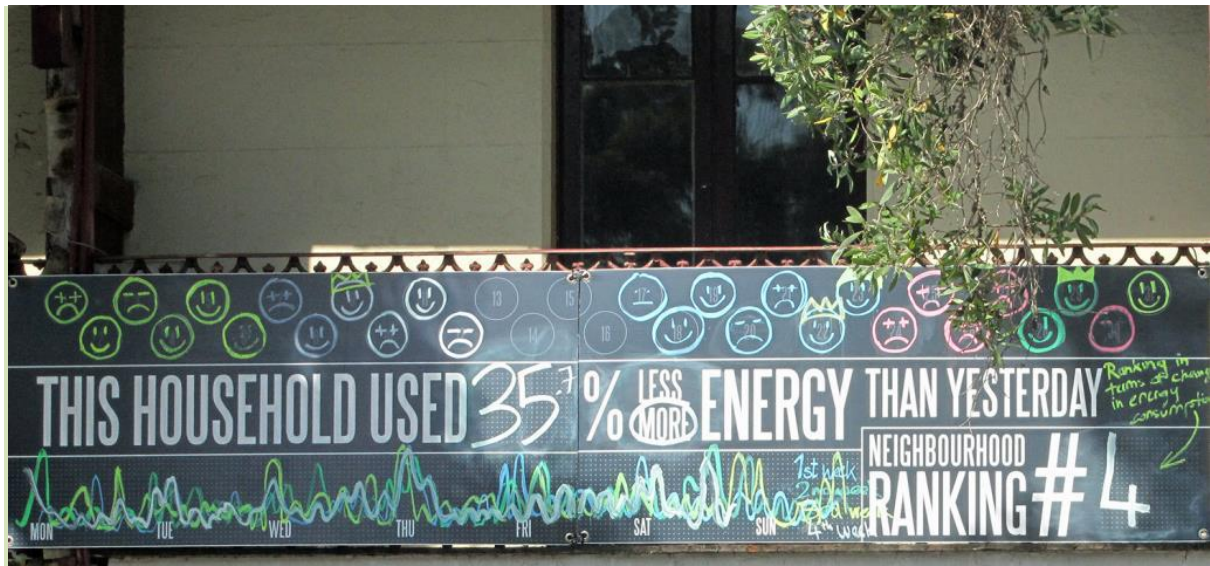


Figure 1: "Smart energy home" by Newtown graffiti is licensed under CC BY 2.0

Below, the board offered a graph visualisation of the weekly consumption pattern and the neighbourhood ranking. Above, the smiley faces represent a resume of the behaviour of the concerned household, evaluated not in comparison to the neighbourhood, but only in comparison the end-user's own previous behaviour. This section could be personalised insofar that e.g. colourful flowers could be chosen instead of smiley faces (Vande Moere *et al.*, 2011).

Website: [www.neighbourhoodscoreboards.com](http://www.neighbourhoodscoreboards.com)

## What do you need to do?

### **Concretize your field of application**

The first point on the way to your social comparison campaign is to be very clear about your specific aim and goals. Are you reaching for energy efficiency or would you like to increase load shifting, etc.? This decision is strongly connected to the architecture of your campaign. If you are clear about this you should have a first look on similar projects that used a social comparison approach to reach their goals. The best practice examples in this guideline can be a good starting point for your investigations.

### **Do you have sufficient data?**

The basis of social comparison is the data you have. If you don't have any data you can't compare. Based on the defined goal of your campaign you should find the best fitting parameters and indicators that display the progress of your goal best. Goals for your campaign can be amount of reduced kilowatt-hours, shifted kilowatt-hours or saved kg of CO<sub>2</sub>. In case of load shifting or energy efficiency, smart meters can

gather your data. But some projects have shown that it is possible to motivate customers without smart meters to enter their data manually on a website. In order to have a baseline to compare the current data to, to see how much improvement the customer has made in their behaviour, please have a look at [How to create a consumption baseline](#).

### **OSCAR's energy saving world (OSCAR, CH)**

OSCAR's energy saving world is an energy portal that sensitises private customers for their energy consumption and motivates them for energy savings. In the OSCAR project private customers of a utility (BKW Energie AG) enter their meter readings on a weekly basis manually into an online portal. The goal of the project is to educate participants about energy saving possibilities and to increase consumption awareness.

The participants enter their meter data manually. Additional data about the size of the household, the number and kind of electricity consumer devices and others is asked by some questions. Based on this information an algorithm calculates the energy efficiency of the household and rates it on a scale (A to G, a scale that is already known from energy efficiency labels). The participations receive information about their average consumption, compared to other households in their neighbourhood. They receive information like "Did you know that you consumed in the last year XY kWh more/less than an average household within your neighbourhood".

An algorithm decides which data the participant receives and to whom the participant will be compared to. This is done for example to avoid an increasing energy consumption for participants who are already below the median. The numbers that were used to illustrate monetary savings were chosen as big as possible: instead of displaying the savings for one week the savings for the whole year were accumulated. Even the information about energy saving advices were chosen based on the information about participants. The information for those customized information and incentives are mainly based on data-mining processes. To generate this data the user data were analysed and grouped for neighbourhoods, streets, communities, postal codes, and cities.

To further motivate the participants they receive points for saving energy, entering meter data, taking part in quizzes, etc. The received points are used to compare with other users, to get access to energy efficient products and to win prizes. The goal of the platform is to give the customer at least one positive reward per usage of the platform to keep the motivation level high. Additionally little gifts for regular users are available.

The whole campaign was a big success. Within one month the project had 10.000 registrations. Meanwhile the concept was even ported to mobile devices. The concept was adjusted for other utilities under different names, but with a similar concept.

More information: <https://oscar.bkw-fmb.ch/de/>

### ***Choose the most suitable channel according to your target group and project goals***

Different communication channels can be used for social comparison. Please keep in mind that they should properly fit your target group and project goals. Elderly people e.g. might be better served with a monthly paper bill, but not in all cases. To choose the best channel you should gather information about the composition/segmentation of your customers to be able to offer different channels for different target groups. Possible communication channels are:

- Printed paper billing
- Smartphone app
- Tablet apps
- In-house displays
- Applications for PCs
- Websites
- Chalkboards
- Bulletin boards.

More information about communication channels can be found in the guideline on feedback [How to make energy visible through feedback](#). A very innovative multimedia approach is the use of animated videos for the transportation of customized information. One example for this approach can be found here: [www.idomoo.com](http://www.idomoo.com).

### ***Reduce complexity***

For many users a kWh is something very abstract. Therefore, it can be useful to use other measuring and comparison units. For example you can use the monetary value of the consumed energy, CO<sub>2</sub> (which is also very abstract), you can calculate the kilometres a car would be able to drive with the amount of energy saved or used or you can relate it to saved trees (other comparable measuring units that relate to the current living situation of your customers can be applied as well). The same holds true for presentation of your data. Pure numbers can be replaced by smart graphics, which include only as much information as needed. Diagrams, histograms or graphics should be understandable at a glance. To learn about and find examples of easy to understand figures and data presentation, you can get inspiration by websites like <http://www.informationisbeautiful.net>.

### ***Design matters***

If you want to motivate people to change their attitudes or behaviour, you should have a careful look at the design of the feedback you give them. The design should even reflect your specific target group. If your target group is strongly diverse, you can think about different designs depending on the specific customer groups. As mentioned above, the presentation of the data is very important, too. Information should be easily understandable and the right design can help your customers.

## Smart billings - the bill of the project (eTelligence, Cuxhaven; DE)

eTelligence, which was part of the German E-Energy project offered a monthly bill with elaborated information for their customers. Additional to the social comparison, the customers also received detailed feedback about their daily and monthly consumptions and costs. In the bill example below you'll find on the first page the social comparison with the average energy consumption of an average household. On the second page you'll find the daily energy consumption ("Tagesverbrauch"), the monthly energy costs in € ("Monatskosten"), the monthly energy consumption in kWh ("Monatsverbrauch") and the consumption within the different tariff zones ("Verbrauch in den Tarifzonen").

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Max Mustermann  
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**EWE Hotline: 0800 - 393 8746**  
Sie erreichen uns von Mo - Fr zwischen 07:00 und 20:00 Uhr  
und sonntags zwischen 08:00 und 14:00 Uhr.

Ihre Vertragsnummer: 1020 3040 5060  
Ihre Kundennummer: 1234 5678

29. September 2011

### Your energy consumption

Ihre Verbrauchsinformation für August 2011

Guten Tag Herr Mustermann,  
hiermit informieren wir Sie über Ihren Stromverbrauch im August 2011. Zusätzliche Erläuterungen zu Ihrer Verbrauchsbewertung finden Sie auf Ihrem persönlichen "Mein Energieportal" auf [www.etelligence.de](http://www.etelligence.de).

**Verbrauch**

Ihr Verbrauch im August 2011:  
**238,37 kWh**

Ihre Verbrauchskosten im August 2011:  
**55,23 €**

**Vergleich**

Ihr Verbrauch: **238,37 kWh**

Ähnliche Vergleichshaushalt\*: **297,20 kWh**

Auf den folgenden Seiten finden Sie weitere Analysen, Tipps und Anregungen zu Ihrem Verbrauch. Die Kosteninformationen beziehen sich auf den variablen Anteil Ihres Stromtarifs. Der Grundpreis ist in der Darstellung nicht berücksichtigt.

Freundliche Grüße  
Ihr eTelligence-Team

average energy consumption

\* mit vergleichbarer Energienutzung und Haushaltsgröße

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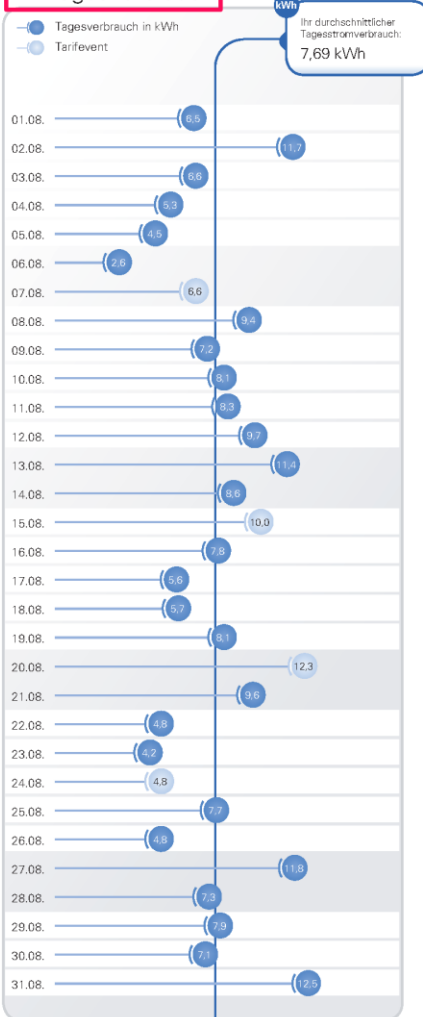
EWE Hotline:  
0800 - 393 8746

E-Mail: [info@etelligence.de](mailto:info@etelligence.de)  
Web: [www.etelligence.de](http://www.etelligence.de)

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### Ihr Stromverbrauch im August 2011

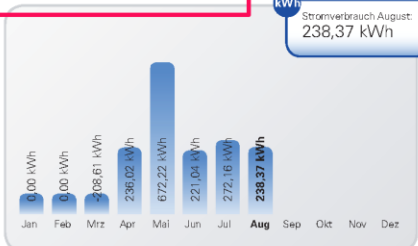
#### Ihr Tagesverbrauch



#### Ihre Monatskosten

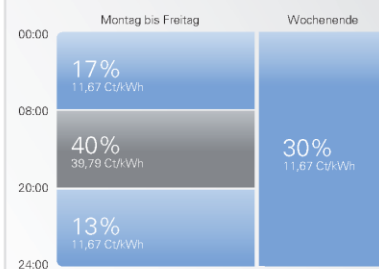


#### Ihr Monatsverbrauch



#### Ihr Verbrauch in den Tarifzonen

Hier sehen Sie die Zeitzonen Ihres Tarifs und prozentual Ihren jeweiligen Stromverbrauch.



40% Ihres Verbrauchs liegen in der Hochpreis-Zone.

Einzeltagesswerte können messmethodenbedingt abweichen. Die Gesamt-Monatswerte sind hiervon unberührt.

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Web: [www.etelligence.de](http://www.etelligence.de)

Figure 2: Energy bill used in the eTelligence project (Source: [eTelligence homepage](http://www.etelligence.de))

More information: <http://www.etelligence.de/>

### ***Social Comparison is a strong tool***

Social comparison is a very strong tool and motivator. You need to be able to handle the reactions that will come back from your customers. For example some people can become angry at their bad score within the campaign and will complain! Utilities should be prepared to those reaction and should have an adequate answer. The company BEN Energy for example designed an FAQ designated only to this topic.<sup>1</sup>

### ***Privacy matters***

You should be aware, that for many customers data security and privacy are very important issues and you should have a strong focus on this. Data should be transferred encrypted and a leakage of data has to be avoided in any case. Furthermore you should be very transparent about the usage of the collected data. For more information on this, see our guideline [Privacy and data protection](#).

### ***Don't try to make your customers feel guilty and use best practice examples***

When comparing people, you will always have winners and losers. Please avoid emphasizing the loser's failings. Most customers will drop out, if they feel guilty for their energy bill. Reward the "winners" with a smile or a thumbs up, but don't give the "losers" a too critical indication of their failing. Instead you should focus on the motivation of those participants. Don't stress them too much with their failure, but present them ideas on how to improve their score.

### ***Frequent updates are necessary***

In case you're adding social comparison to the energy bill, keep in mind that the information flow has to be continuous. The higher the frequency of bills, the higher the awareness of energy related topics. It's the same for other channels. If you have smart meters installed, you can give feedback to the customers and their comparison to their peer group almost immediately. To fulfil this requirement you should prepare a communication roadmap before the project starts.

### ***Tell success stories and present best practice examples***

Stories of success can prepare customers with good information about possible actions. Therefore, the success stories should not only show the achievements of another person, but also how they managed to get there. To learn how to use storytelling, please have a look on our story telling guideline [Engaging people through telling stories](#).

### ***Make use of role models***

Role models are a good multiplier to spread information about energy saving or load shifting. A social comparison feature can be enriched by a best practice example of

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<sup>1</sup> The OSCAR project for example created a FAQ to face those problems. The FAQ is available in French and German (<https://oscar.bkw-fmb.ch/de/faq/>). If you want to learn more about creating FAQs in general, please have a look at the guidelines on FAQs Develop FAQs to assist the support staff.



someone who acts as a role model. This can be useful for the self-improvement of the participants (upward comparison). For example, public figures can show their way how they improved their energy efficiency and act as a role model. Those public figures could be local sport stars or the mayor or any other celebrity who can act as a role model for your customers.

### Do's and don'ts

- **Combine it with a game.** A social comparison campaign can easily be combined with a competition or a game. A competition can be an extra incentive for people to change their behaviour. For more information about this topic, have a look at the S3C guideline [Gamification – making energy fun](#) and our guideline [How personal goals can motivate behavioural change](#).

### Combining individual and collective savings (the San Diego Energy Challenge, US)

The San Diego Energy Challenge (2012) was a pilot programme conducted by San Diego Gas & Electric (SDG&E) and SimpleEnergy, an IT-company specialised in energy savings, and was funded by the Department of Energy (DOE). The aim of the programme was to increase energy efficiency in households of SDG&E customers. Therefore, the (already installed) smart meters were used in a creative new way to engage customers by their energy usage data.

The San Diego Energy Challenge used the Social, Fun, and Simple™ online game platform by SimpleEnergy to encourage customers by means of a friendly competition. Eligible households were able to sign up and win prizes for themselves and for their favourite local middle school. The individual prizes ranged from electronic devices (tablets) to gift cards. The middle schools were competing for a \$15.000 grand prize (2nd prize \$5.000, 3rd prize \$3.000).

The game's objective was to save as much energy as possible. The current status and points were displayed on a website, which was the main portal for the game. This rendered the participants the chance to compare their real energy usage with friends and neighbours. The combination of individual energy savings and savings for the favourite middle school were a further incentive for many users to take part in the competition. The whole game was accompanied by useful multichannel information about energy saving potential in consumers' lives, recommendations for energy efficient devices, hints for energy behaviour and further educational programmes.

For children, there was an extra section in which they were able to play further energy learning games, which on the one hand emphasized the importance of energy savings (e.g. climate change, sustainability, environmental conservation, etc.) and on the other hand offered options and recommendations on how children can take part in saving energy. Further, there was an event at one of the middle schools with presentations about energy efficiency and electric vehicles.

More information: <http://www.sdge.com/newsroom/press-releases/2012-06-06/sdge-launches-reduce-your-use-day-rewards>

- **Make it fun.** Don't act too serious when confronting your customer with social comparison. For example you can use a mascot. That can be helpful, if it targets the emotions of the customers. Ask your marketing department or engage a company which is specialized on this type of campaign, if you are not sure about those aspects.
- **Reward positive behaviour.** If people are constantly better than their peer or comparison group, they can be rewarded to increase their motivation. The reward can for example be a simple "thank you" letter which tells them how much they saved or shifted and how much they helped the environment by doing so. Or it can be a feature about this success story which will be sent to the other participants or can be published in another medium. Also awards can be handed out to the best customers, like for example smart plugs or other energy efficient appliances. These rewards should always be published to motivate other customers, too.

### Energy challenge within offices (ECOFFICES, FR)

The objective of the project is to achieve an energy challenge within offices by inciting employees to an intelligent use of energy in a fun and interactive way. The project aims to change the mentality underlying energy consumption in the office and to induce an overall learning process through this "serious game". Office buildings are equipped with metering devices and feedback channels for the employees enabling a competition based on real-time energy usage data of the employees within the offices.

In a pilot, 400 metering devices have been installed in a building of the company CSTB. The employees then received access to their consumption histograms, but also received tips on how they could improve. The employees were grouped into three teams and together aimed to reduce their consumption to receive so-called bonus points (for e.g. always switching off the light before leaving a room) while avoiding malus points (for e.g. leaving on the air conditioning while being away). The winning team received a prize for its efforts. The average saving for the three teams was a reduction of energy consumption by one fifth.

More information:

<http://ses.jrc.ec.europa.eu/ecoffices>;

<http://2011-cibw078-w102.cstb.fr/papers/Paper-38.pdf>

- **Don't be too hard on your customers.** If you start going to the gym, the comparison with a professional sportsman will probably demotivate you. It is the same, if you use social comparison in Smart Grid projects. You shouldn't confront the participants with the best possible example, because this would

probably stress and depress them. You should concentrate on positive feedback (e.g. “you are x% better than”) for social comparison. This can, for example, be done by changing the reference group of the customer or by just showing the information without a sign like a sad smiley or a thumb down.

- **Don't stop motivation.** To avoid that people might actually increase their consumption if they see that they're using less than average, you should use flexible comparison baselines. For example, the customers can be confronted with new goals to reach, like being within the best 10%. Or you can give them another extra motivation for further savings. You should not suggest to people that more energy consumption later is acceptable, because they are using less than average now.
- **Don't ignore cultural characteristics.** Social comparison works very well in Northern Europe or the USA, but in some countries it won't work. You can find out easily, if the more individualistic approach will work in your country by using the results Hofstede's cultural dimensions theory (Hofstede/Minkov 2010). This theoretical framework for cross cultural communication groups countries by five dimension based on data from the World Values Survey. For the success of the very individualistic approach of social comparison you should have a look on the dimension “individualism vs. collectivism”. If the value for your country is far below 50 on the individualism dimension, you should adopt your social comparison approach and include more collectivistic or community oriented elements. Of course this characteristic can vary on the regional level as well. Hence, your approach has to be adjusted to your specific national or regional culture and target group, see our guideline [Learning about target groups](#).

### Further reading

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This guideline was developed in the S3C project, and is freely available from [www.smartgrid-engagement-toolkit.eu](http://www.smartgrid-engagement-toolkit.eu).

S3C paves the way for successful long-term end user engagement, by acknowledging that the "one" smart consumer does not exist and uniform solutions are not applicable when human nature is involved. Beyond acting as a passive consumer of energy, end users can take on different positions with respective responsibilities and opportunities. In order to promote cooperation between end users and the energy utility of the future, S3C addresses the end user on three roles. The *smart consumer* is mostly interested in lowering his/her energy bill, having stable or predictable energy bills over time and keeping comfort levels of energy services on an equal level. The *smart customer* takes up a more active role in future smart grid functioning, e.g. by becoming a producer of energy or a provider of energy services. The *smart citizen* values the development of smart grids as an opportunity to realise "we-centred" needs or motivations, e.g. affiliation, self-acceptance or community.

S3C (2012-2015) performed an extensive literature review and in-depth case study research on end user engagement in smart grids, resulting in the identification of best practices, success factors and pitfalls. The analysis of collected data and experiences led to the development of a new, optimised set of tools and guidelines to be used for the successful engagement of either Smart Consumers, Smart Customers or Smart Citizens. The S3C guidelines and tools aim to provide support to utilities in the design of an engagement strategy for both household consumers and SMEs. The collection of guidelines and tools describe the various aspects that should be taken into account when engaging with consumers, customers and citizens. More information about S3C, as well as all project deliverables, can be found at [www.s3c-project.eu](http://www.s3c-project.eu).