

GUIDELINE: CHOOSING AND COMBINING MONETARY AND NON-MONETARY INCENTIVES

Abstract

This guideline contains guidance and practical advice for RD&D project designers as well as for innovation managers and product developers in utilities. Incentives for changing energy behaviour constitute one of the broadest issues related to transition to a smart energy system. This guideline offers a (non-exhaustive) overview of theoretical backgrounds, differentiating characteristics of different types of incentives and hints for their implementation during different project stages. This guideline is particularly content-rich and connected to two other guidelines listing monetary incentives and non-monetary incentives in more detail.

What is it?

This guideline seeks to shed light on potential incentives that can be used to enthuse people for their new options arising from smart grids and smart energy technology in general. It will also address the currently known implications of different incentive options. However, when it comes to non-monetary incentives or combinations of monetary and non-monetary incentives to motivate smart energy behaviour, research and especially demonstration are still in their infancy. In fact, this guideline seeks to address the gaps in research as inspiration or warning of potential stumbling stones for future rollouts and tests as well.

More detailed information on different types of incentives can be found in the two sub-guidelines [Choosing from different types of monetary incentives](#) and [Which non-monetary incentives are at your disposal?](#)

In this guideline, you will learn about:

- incentives relate to [different types of motivation](#),
- differences in motivating [mechanical and cognitive changes in people](#),
- different stages of projects or product launches [requiring different incentives](#),
- the strong relevance and need for incentives due to [lack of awareness](#),
- the [value propositions](#) incentives hold for consumers,
- the [cost drivers](#) of incentive schemes for projects and utilities,
- an ideal typical step-by-step description for [defining an incentive scheme](#),
- some [Do's and Don'ts](#) to consider while developing an incentive scheme.

An incentive is introduced to motivate a certain group or individual (e.g. employees of firm, customers of a utility or the participant test sample in a smart grids trial) to change their behaviour in a way that is intended by the party posing the incentive. Many different types of incentives can be designed along different dimensions such as monetary or non-monetary, positive and negative as well as intrinsic or extrinsic motivations of the user.

- **Creating positive motivation:** Incentivize a target group or individual to achieve a new positive way by establishing a new behavioural pattern.
- **Creating negative motivation:** Incentivize a target group or individual to give up an old habit.
- **Creating intrinsic motivation:** Facilitate a social or personal standard in a target group or individual that will persuade them to want to achieve a shift in behaviour to comply with their own standards, beliefs etc.
- **Creating extrinsic motivation:** Press a target group or individual to strive for towards a behavioural change by imposing negative or positive sanctions on them.

While monetary as well as non-monetary incentives can be used to appeal to the target group's positive and/or negative motivation, **monetary incentives** like cash or free equipment rather appeal to extrinsic motivations and **non-monetary incentives** like feedback information including social comparison can facilitate an appeal to intrinsic motivations, more about this in our guideline [Motivating consumers with social comparison and competition](#). It is important to note that a monetary incentive need not necessarily take the form of a cash award or a reduction of electricity bills. Gift items, rebates on merchandise or energy equipment or free equipment can be considered monetary incentives as well. Non-monetary incentives and monetary incentive can also be combined in one scheme (e.g. bonus point/payback scheme, as discussed in the S3C guideline [Bonus & malus – Changing behaviour with rewards and penalties](#)).

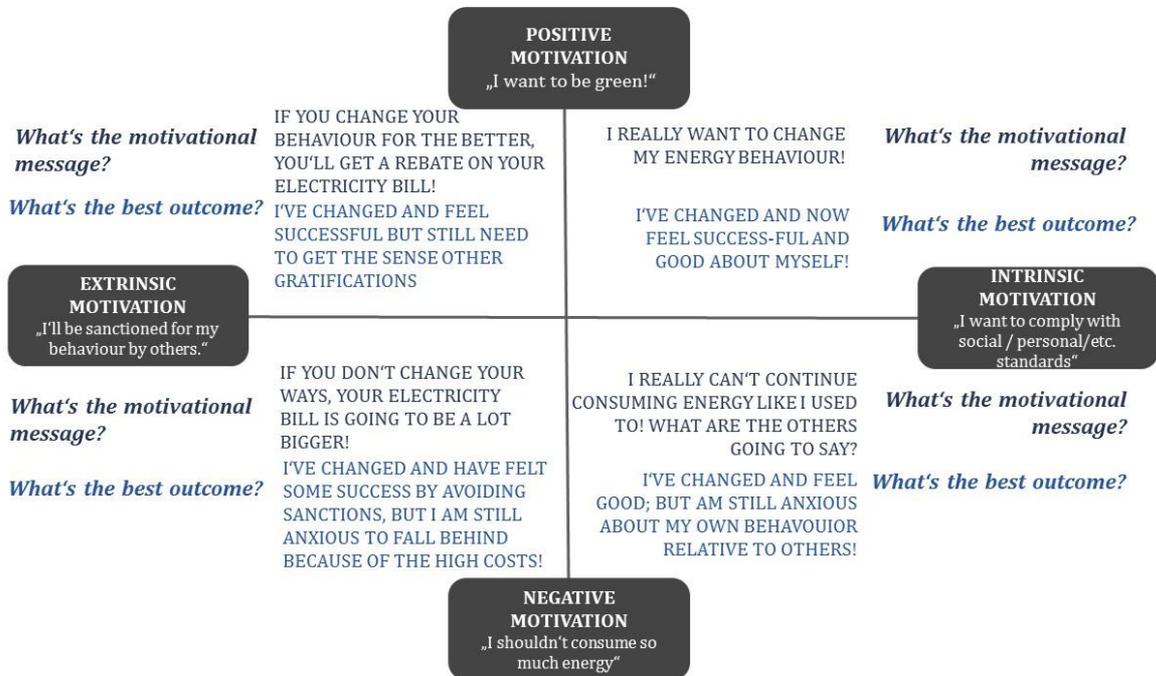


Figure 1: Motivations for changing energy behaviour, source: S3C consortium based on Trivedi 2013 and Busch 2015

The S3C research suggests that it is beneficial to create a combination of incentives that appeal to extrinsic and intrinsic motivations as well as to refrain from creating too strong negative extrinsic incentives, i.e. maluses or negative sanction. Also, creating positive motivation should be favoured above negative motivation to avoid putting too much pressure on customers (See “best outcomes” in Figure 1).

Social and behavioural science experiments and studies have demonstrated for decades that strong extrinsic motivation, in form of cash bonuses and maluses only lead to better results under very narrowly defined circumstances. If only mechanical (practical), not so much cognitive work is required of people and a very clear goal is set for them, extrinsic motivation can work very well. However, as soon as cognitive efforts, i.e. a change in the mind-set, in routines etc., are required, most people perform better when being addressed with their intrinsic motivations such as being perceived as a role model in a community, an autonomous decision maker etc.. Researchers have developed the hypothesis that in these cases, the clear (financial) extrinsic incentives actually narrow down people’s minds instead of opening them up to the new possibilities and options they have, i.e. extrinsic incentives can lead to a crowding out of intrinsic motivations for forming a new habit (Gneezy, Meier, Rey-Biel 2011).

When to use?

Motivating passive energy users to become active consumers is one of the key challenges related to the introduction of smart grids. Whether it is to encourage energy-efficient behaviour or for households or SMEs to consider shifting loads and related behaviours and routines, incentives are needed during different phases of a project or innovation process.

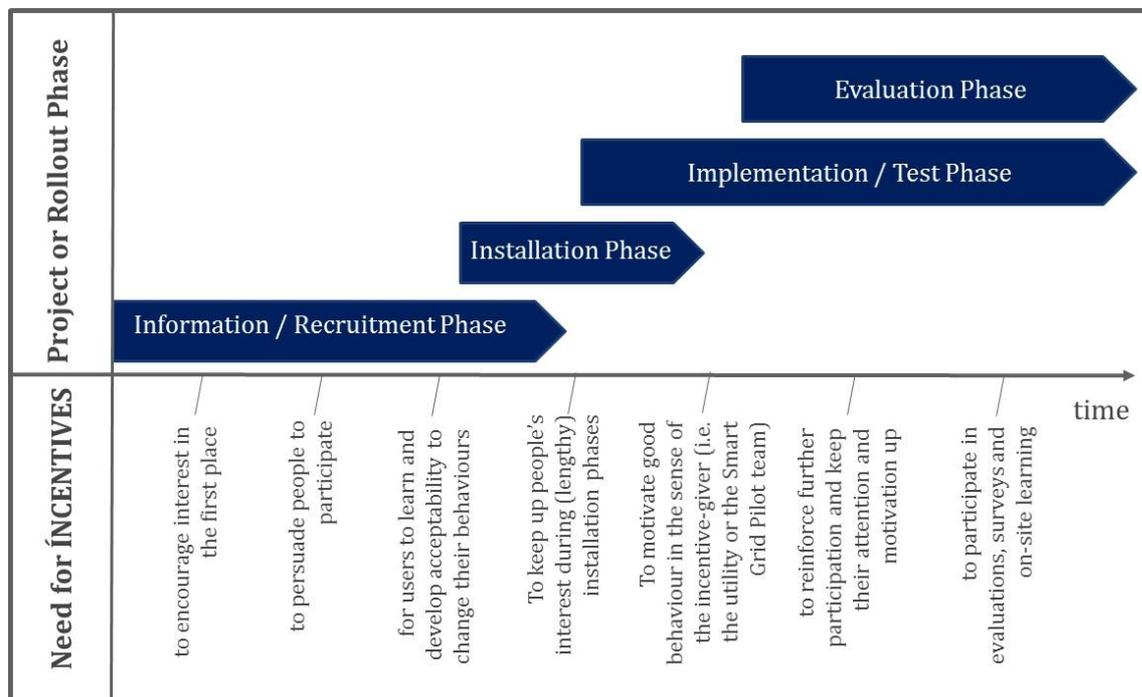


Figure 2: Different needs for incentives in different project phases, source: the S3C consortium

For each need or phase, different options or combinations of incentives are possible. In the sub-guidelines “Which non-monetary incentives are at your disposal?” and “Which monetary-incentives are at your disposal”, the different options are presented according to the project phase they can be applied in, their potential value for people and potential costs for project designers in demonstration projects or utilities. This set of guidelines is useful in the design phase of a project or during the design process for introduction of an innovative service or product. However, incentives as ad-hoc measures can become necessary unforeseen throughout a project or innovation life cycle, e.g. to maintain consumers interest in a trial or rollout during a lengthy or difficult installation phase. The sections Do’s and don’ts and What do you need to do to set up a successful incentive scheme? offer more practical support and implementation advice for you on how to .

Why are incentives even necessary to enthuse people about smart grids?

Many attitudinal surveys conducted about end-user attitudes apparently suggest a great interest in the new technology and a high willingness to adopt behaviour. Difficult recruitment campaigns, lower than anticipated numbers of participants in demonstration projects, public concerns about IT-security and privacy as well as often lower than hoped for results for efficiency and flexibility suggest a difference between attitudes towards smart grids and actual behaviour and decisions made.

After all, the shift in technology implies either a permanent behavioural change for consumers or forces them into the situation in which several household decisions are deferred to an externally controlled automated energy management-system. In fact, people are obliged to a behaviour change that many of them do not anticipate when answering surveys. Marketing an average innovative product or a customer loyalty system is something completely different since it adds or improves the already existing lifestyles and routines of people. Marketing a behaviour change to generally risk-averse customers in a low interest field like energy, in which people are not even aware of their pre-existing routines' relevance, is highly complex.

It is difficult to resolve this issue by simple appeals only, i.e. by appealing to social norms or giving specific information, since the users involved have to put in a lot of continuous effort to change their behavioural patterns and the attention and understanding for the topic energy is very limited. Incentives appealing to intrinsic motivations can be used to create a first interest and awareness, the point, at which the consumer is willing to commit to change in the first place. Furthermore, since users have to form new habits, appeals to intrinsic motivations can help to stimulate new consciousness about energy behaviour in general.



However, one has to keep in mind that the effects of habits and routines related to electricity consumption are very unconscious. Instead of making decision about consuming energy people, people decide to cook, wash or switch off their lights. Electricity so far has been a simple commodity always available to consumers in Europe. In fact, becoming more efficient and/or flexible in consumption requires to make the effects of everyday decisions conscious for long period of time. This can result in a feeling of “constant curtailment” for the consumers. While the formation of new habits is possible, it is very difficult. In order for the

consumer to not feel overly obliged, something has to be offered in return. People have to receive tangible incentives to become conformant to new energy realities and rewarded for their positive actions. Here, monetary incentives are of high importance.

Which value can incentives hold for consumers? Which ones are they interested in?

Incentive research has established several values that are important for customers' evaluation of a monetary incentive. In fact, the motivation of the Smart Consumer¹ and the Smart Customer² as defined by the S3C project can be further described and differentiated according to these value propositions. Some of the most important value drivers will be described in this part of the guideline. Later they will be attributed to different types of monetary incentives that can be chosen for a Smart Energy project, rollout or similar endeavours. Furthermore, all incentives will be related to whether they appeal to S3C's definition of the Smart Consumer, Smart Customer and Smart Citizen³ in general.

Most of the non-monetary incentives described in the sub-guideline relate to intrinsic motivation. The value they hold for a person is the build-up of intrinsic motivation, increasing, ensuring and re-building it at times.

However, extrinsic motivation based on monetary incentives can be categorised further according to different types of value proposition.

The value propositions explained below are:

- 1: Memory value
- 2: Trophy value
- 3: Flexibility
- 4: Immediateness

¹ The smart consumer represents the most passive role and end-user could take up in future smart grid functioning. This end-user 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. Motivation Statement: "I want to reduce my energy consumption to save money".

² The smart customer takes up a more active role in future smart grid functioning. This end-user follows "I-centred" needs and motivations, e.g. conformity, image, popularity or financial success. Motivation Statement: "I want to become a prosumer – consume as well as produce energy or provide energy services".

³ 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. "I want to help ensure the quality of supply and support environmental preservation and my community."

Value Proposition	Memory Value
Central question	<i>How long does the incentive last or stays present in the mind of the user keeping up their motivation?</i>
Related to what kind of motivation	Extrinsic and intrinsic
Explanation	Receiving Smart Energy equipment like PV-panels on your roof or winning a holiday voucher because you did best in a trial that you participated in, is a completely different gratification than just receiving cash and saving money on the electricity bill. These rewards or incentives are present in people's everyday-life or constantly remembered. They attach and build up a (usually) positive narrative about choosing to become active about energy in people's minds.

Value Proposition	Trophy Value
Central question	<i>Can the incentive be shown to others and used to boost the self – image?</i>
Related to what kind of motivation	Extrinsic and intrinsic
Explanation	You receive merchandise, energy equipment or other items for a lower price or for free as a bonus gratification for “good behaviour” or participation, but it stays with you and can actually be shown to peers in social comparison. The item can be a permanent reminder of good work or decision and thus unlock new motivation.

Value Proposition	Flexibility
Central question	How flexible is the incentive? Does it ever change? Can I decide what type of reward I receive or how I spend it?
Related to what kind of motivation	Extrinsic
Explanation	When it comes to flexibility, cash or Through the design of a “cafeteria” incentive system, in which people can choose from a variety of options

Value Proposition	Immediateness
Central question	Are the rewards immediate and directly at the disposal of the consumer?
Related to what kind of motivation	Extrinsic
Explanation	It has become clear in the S3C research that incentives have to have an immediate character for the consumers. In recent years, “Nudge Theory” and several energy related trials based on its insights, have demonstrated that people are by no means rational actors when it comes to energy saving or behavioural change decisions. Consumers are often demotivated by a long-term building up of rewards, e.g. saving 120€/year by accumulating savings of 10€ every month. Surveys and experiments have shown that consumers rather opt for and feel more motivated by the reward once in the full amount. This point in time can be taken up by the marketing and communication teams to build around a good strategy around the milestone.

Constraining factors for incentive givers/designers

Of course an incentive scheme made up different monetary and non-monetary options for consumers to choose from to offer different value propositions would be ideal for any utility or RD&D project. However, options are strongly constrained by many influencing factors. Three crucial though not exhaustive factors, costs, flexibility and regulation, will be elaborated in the following.

Influencing Factor	Costliness
Central question	<i>How big is the budget available for the incentive scheme?</i>
Explanation	Depending on the budget available for the introduction of the incentive scheme, more or less options are possible. Most types of incentives are available in different cost ranges. Especially non-monetary incentives can come at very low costs with standardised monthly information mailings with feedback or very high costs with personalised options, accompanying marketing campaigns etc. The same holds true for monetary incentives. To afford for a range of rebates and gifts, cooperation with (local) firms and businesses can alleviate some of the cost pressure. More information on this and other forms of regional cooperation can be found in the guideline How to identify regional stakeholders .

Influencing Factor	Flexibility
Central question	<i>Can I change my incentive scheme over the course of time and offer new options to my consumers?</i>
Explanation	<p>In general, a bottom-up, self-funded project or the rollout of a new product or service by a utility have more flexibility at their disposal in choosing incentives and changing them over the course of time than a funded RD&D project. However, bottom-up projects and funded RD&D projects share the risk that depending on the contracts closed with consumers, incentive schemes have to be continued even if they do not result in the expected impacts.</p> <p>RD&D projects are usually on tight schedule, have to submit clear descriptions of their work and have to evaluate the results in static circumstances, if they want to attribute the results to certain conditions. In fact, flexibility in incentive schemes is very limited for them rendering it even more crucial to get the design phase right in the first place and to map out different scenarios and consequences.</p>

Influencing Factor	Contracts and Regulation
Central question	<i>How constrained are my options by legal obligations through contracts and regulatory constraints (data, privacy, standard load profile-based billing etc.)?</i>
Explanation	<p>Information about legal and regulatory requirements for the actual or test implementation of new product and service is mandatory during the design phase. If the product connected to the incentive falls under the regulated part of the energy markets, constraints might exist regarding billing procedures or the types of tariffs that are allowed to be implemented. Many new incentives (especially in the feedback, non-monetary incentive area) require the approval of the scheme by national or regional data security officials. Furthermore, pre-existing contracts with customers have to be checked and extended or adjusted due to new products. This can lead to delays in the implementation, if the efforts around these issues are not sufficiently planned and included in the schedule.</p> <p>If the introduction of a new tariff or incentive scheme is impossible under current regulatory frameworks, at least RD&D project still have the option to simulate the new products and services with e.g. points systems or extra contracts. See also our guideline Testing tariff schemes in a pilot context.</p>

Which monetary incentives are at disposal?

Monetary incentives can be divided into three categories. They can:

- constitute of a simple cash award,
- they can be applied to the electricity bill (through bonus, malus or rebates), or
- take the form of gifts (merchandise, energy equipment, etc.).

Each of the categories can rank differently regarding the aforementioned value propositions. To learn more about your different options, how they relate to value propositions, constraining factors, their relevance for different types of customers and different project phases and concrete designs, please read the sub-guideline [Choosing from different types of monetary incentives](#).

Which non-monetary incentives are at your disposal?

Non-monetary incentive cover a whole array of possibilities in different fields. While they are already frequently used to leverage the best performance of employees in personnel management, their possibilities to encourage smart energy behavior are only tested to a little degree.

However, first studies and experiences suggest different options to make use of non-monetary-incentives. Some studies and trials indicate that they are especially useful to overcome the first inattentiveness of consumers before they are willing to join a rollout or a demonstration project. The appeal to social norms can help to get over the first barriers, leading to interest and an information process. That was particularly used by the BENEnergy platform OSCAR (see best practice example in the sub-guideline [Choosing from different types of non-monetary incentives](#)) and in the approach used by one of the biggest market players in energy customer engagement, OPower.

Other pilots analysed and surveyed by S3C suggest a different approach of using non-monetary incentives building on the psychological insights that everyday decisions are often made on the basis of people wanting to do the right thing (whether that be sticking to low price periods or to environmentally friendly periods). In fact, social comparisons, goal setting and other options can be used throughout a project or rollout to induce the intended behavior.

To learn more about specific non-monetary incentives, their relevance for different types of customers and different project phases, as well as concrete designs and how non-monetary incentives increase customer motivation, please read the sub-guideline [Choosing from different types of non-monetary incentives](#).

The value propositions described above can be used to differentiate the effects of monetary-incentives, but only fit to describe the non-monetary incentives to a certain extent. Non-monetary incentives are often created through other channels such as feedback, gamification, goal setting and more. This is elaborated upon in the guidelines [How to make energy visible through feedback](#), [Gamification – making energy fun](#), [Bonus & malus – changing behaviour with rewards and penalties](#), [Motivating consumers with social comparison and competition](#), and [How personal goals can motivate behavioural change](#). In the sub-guidelines, value propositions for consumers and implementation tips for product and project designers are elaborated further. These guidelines complement the more general information in this guideline and the sub-guideline that offers more insights on non-monetary incentives in general.

What do you need to do to set up a successful incentive scheme?

- 1) Learn about the specific target group of your incentive scheme! Be aware of the aforementioned attitude-behaviour gap! Before you start off designing the incentive scheme, a good sense of what the specific consumers of a utility or within a field trial region want is needed, see our guideline [Learning about target groups](#). Studies of your customers could reveal good access points for your incentives. You should also try to find out about the level of knowledge and interest in the topics smart grids and Smart Energy.
- 2) Decide on the budget for your incentive programme! Monetary incentive should somehow reflect system costs. Excessive monetary incentives that do not relate to market realities cannot be implemented by utilities. Exception: If you want to calculate price elasticity of your customers and the project can afford the extra-money spent. The implementation of non-monetary incentives can range from a few thousand Euros to a very large budget depending on how many interventions, in which forms for how many people are being developed. Be clear on how much budget is available for the implementation of non-monetary incentives before you start.
- 3) Find internal and external partners! Internal partners can be your marketing division or financial framework. If you work with your marketing department or in collaboration with a larger marketing agency, you can use the [value propositions](#) to check, if their approach and offer are in line with the motivation you are trying to stimulate and the values you want to offer to your customers. For more on possible partners, see the S3C guideline [How to identify regional stakeholders](#).
- 4) If a pilot project: Develop a plan for scaling up and replicating your incentive program. It is important to formulate parameters by which you estimate the costs of your incentive regime and how to relate them to later actions performed by your target customers.
- 5) Think about the goal your project / new product / service is supposed to fulfil: Do you need long term engagement and want to change overall behaviour?

Would you like to avoid load peaks during summer time only with a new notification system? How much is the customer behaviour worth for your project and company?

- 6) Keep in mind the different phases of project or the rollout of a new product or service. One incentive scheme does not fit all. Think about different combinations for different points in time!

Do's and don'ts

- **Don't underestimate the relevance of monetary incentives, but also don't overestimate it.**
 - The smart grids projects analysed by S3C revealed that monetary incentives are still the major incentives for users to take part in a rollout or trial.
 - But non-monetary incentives appealing to attitudes, beliefs and the ability to have fun with the new technology can increase interest and participation beyond the possibilities of monetary incentives.
 - Furthermore, the actual impact of the financial incentives is limited and often not sufficient for consumers to keep up newly learned behaviour changes. Due to the current market design in most European countries, only a limited price spread can be offered to customers. Often, the financial benefits per months range below 10€/month on average.
 - Monetary incentives can have a reverse effect for the behaviour of some users: While they are intended to navigate consumers away from high pricing zones, they can cause a counteractive effect as well. Since they put a price on behaving against the integration of renewables or system stability, they also relieve a guilty conscience.
- **Don't restrict yourself to just one incentive model.** If you have the resources available, you should consider including a variety of e.g. gift and rebate options from which consumers can choose. They can develop a sense of ownership and the chances that your incentive scheme includes something that will nudge the consumers the way you intend to is higher!
- **Keep your incentive schemes transparent.** Even mixtures of different types of incentives are promising, electricity is one of the most important basic. The pricing has to remain transparent and understandable for people. Especially consumer unions urge projects and utilities to not overburden consumers and making new service and products offers seem better they are
- **The incentive or the combination of incentives that you will choose are strongly connected to other decisions you want to make.** The decision of whether you will use a feedback channel and which feedback channel it is going to be is closely linked to the decision, which types of informative or social normative non-monetary incentives you want to set. Depending on the

type of billing structure or tariff, you will be using, you should decide on a reasonable amount of incentives. The more you ask of your customers, the more you have to offer in exchange!

- **Create a narrative!** You can join the efforts in developing an incentives scheme with your marketing planning. To create an individual user experiences, you can create stories that explain the incentives people are exposed to and relate them to everyday routines. The guideline HYPERLINK Telling Stories offers ideas on how to create and communicate stories surrounding your project.
- **Publicize your results and get in contact with other researchers and practitioners in the area.** Testing new incentive schemes and matching them with tariff and billing structures is still in its infancy. Replicability and scaling up of successful solutions is difficult. Finding solutions to these issues is one of the key challenges to overcome on the way to finding business cases and commercializing end-user related products.

Further reading

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This guideline was developed in the S3C project, and is freely available from 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.