

## TOOL: WEB-BASED ENERGY QUIZ

### Abstract

The free of charge S3C quiz comprises an interactive quiz module that conveys knowledge about energy efficiency and energy related topics in a playful manner. This allows utilities to present themselves to their customers as a responsible supplier and learn more about their customers' energy behaviour. The quiz module comes in 4 languages (English, German, French and Italian). It can be easily embedded by utilities on their service portals and web sites via an iFrame. The tool can be adapted to the look-alike of the utility's website. The utility can add extra questions thus enabling specific engagement with its customers. At the end of a year, utilities can receive an aggregated information on the users' performance and behaviour.

### When to use?

Utilities can use the free of charge and easy to install quiz tool to attract customers to their website. The quiz will increase the users' awareness for energy efficient behaviours as well as inform them about interesting technologies and improvements in the energy transition processes worldwide.

While personal data of users will not be collected and a single user's performance will not be available to the utility, utilities receive aggregated performance information from their players. Based on that they may decide to improve their public relations and information activities for specific topics.

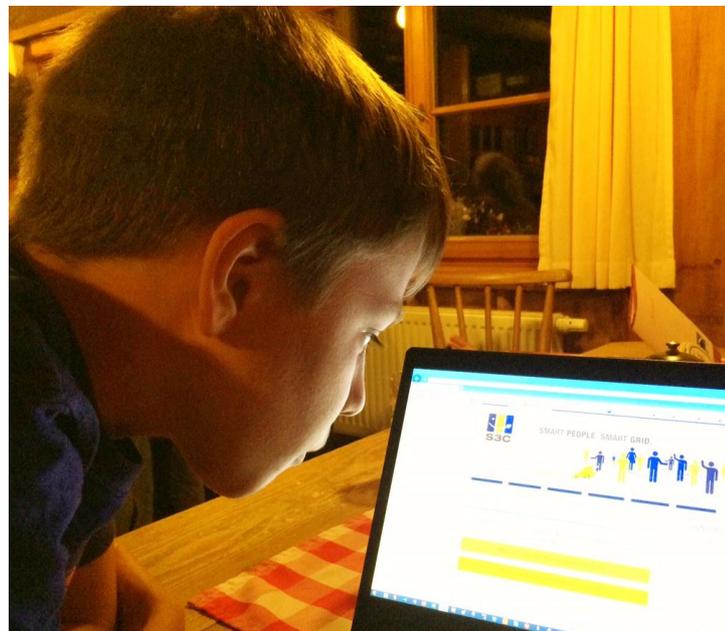


Figure 1: A quiz player

## What is it?

Individual users can complete a set of 5 quiz questions each week. Each quiz question comes with three answer options and after giving an answer the correct option is highlighted. After each quiz set, the user receives an evaluation of his latest quiz performance (e.g. 3/5 questions answered correctly), the users overall performance (e.g. 67% correct answers) and a social comparison (e.g. other users: 72% correct answers). Prior to answering quiz questions for the first time on a device, the user is asked to complete a quick survey, which allows the user to compare his energy behaviour with other users of the quiz.

New quiz questions are released each Monday. Until the new quiz is published, the user will see the latest quiz questions. Collected user data will be provided to the individual participating utilities in anonymised and aggregated fashion on a statistics page associated with the smart energy quiz subdomain.

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*How can you get the computer to consume less energy?*

By surfing the internet only after 6pm.

By using a CRT display.

By switching on the energy saving mode.

Report a problem with this question 

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**Figure 2: Screenshot of an example question of the quiz**

The quiz offers the following features:

### **Product features**

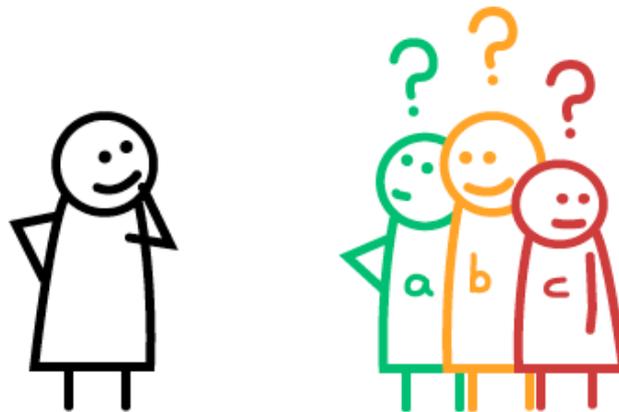
- Embeddable quiz module via iFrame
- Module, allowing collection and comparison of local users' energy behaviour
- Cookie based identification of individual users and their progress

- Personal- and social comparative feedback after quiz set completion
- Multilingual: quiz module available in English, German, French, and Italian
- Design adaptations: colours and font-style

#### **Service features:**

- Hosting and maintenance of the application by BEN Energy (www.ben-energy.com)
- Free activation of the quiz module for each participating utility
- Total of 520 Quiz questions on energy topics with three answer options each.
- Provision of one set of five quiz questions each week over two years
- The service is provided up to 5 years, dependent on demand
- Access to usage statistics for each participating utility
- Upon request, optional integration of localized quiz content provided by the respective utility (service charge applies).

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Before starting the quiz, quickly introduce yourself and get to know your competitors.

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Figure 2: Screenshot of the quiz' welcome graphics

To get an insight into the quiz and to see how it works please have a look on our version on the toolkit website:

- [http://www.smartgrid-engagement-toolkit.eu/exploring/incentives-rewards/smart-energy-quiz/.](http://www.smartgrid-engagement-toolkit.eu/exploring/incentives-rewards/smart-energy-quiz/)

In this test version you can run through the intro survey and a set of 25 quiz questions. While in the production environment a user would need to wait a week in order to get the next set of 5 questions, you can just reload the page and continue to even more quiz questions. Since the browser remembers your last state by storing cookies you can retest by opening a new private or incognito window or deleting the cookies related to the S3C quiz.

## What do you need to do?

### Workflow to receive a unique version of the quiz

The onboarding of a utility or other institution to allow for embedding the smart energy quiz is quite simple and follows the process in the diagram below:

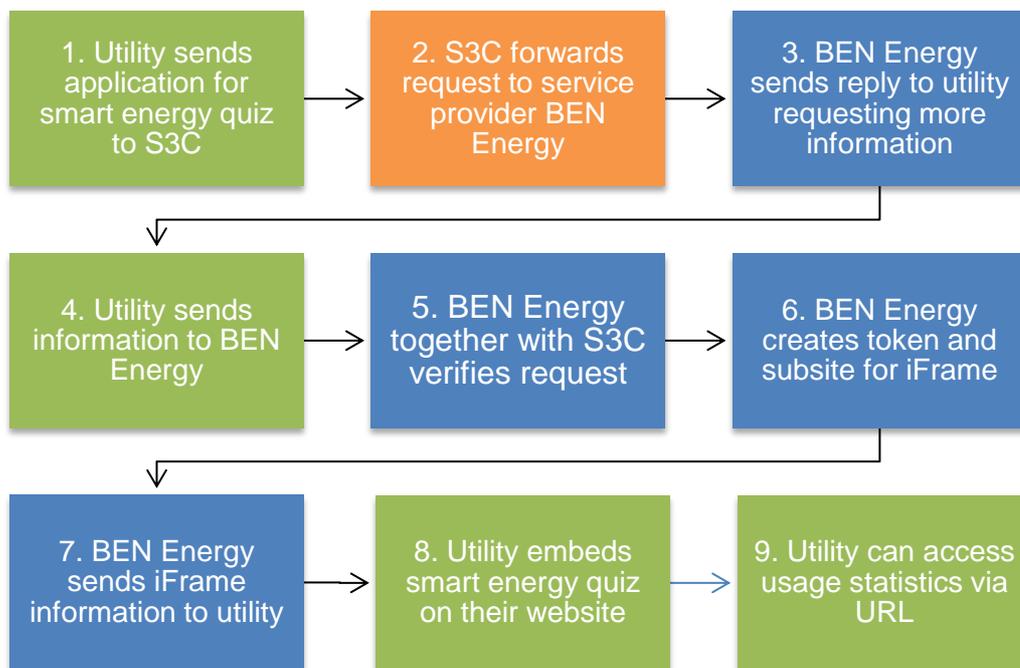


Figure 3: Workflow to receive a unique version of the quiz

1. The utility (or another institution) writes an email to [quiz@s3c-project.eu](mailto:quiz@s3c-project.eu) and applies for using the smart energy quiz.
2. The e-mail will be forwarded from S3C to BEN Energy, a customer engagement company specialized in the energy sector who is cooperating with the S3C consortium to setup and maintain this quiz tool.
3. BEN Energy replies to the applying utility and requests further information. The applicant can send up to 10 own questions which will be included in the specific version of the quiz.
4. The utility sends the required information directly to BEN Energy.
5. BEN Energy together with S3C checks the eligibility of the applying institution.

6. Once the utility has been verified, BEN Energy creates an individual token and subsite.
7. BEN Energy sends the personalized iFrame (with the token and subsite address) to the utility. The iFrame URL will contain a subdomain (first part of the URL) that is unique to the utility and allows for the utility to have its own custom quiz questions as well as usage statistics specific to that utility.
8. The utility embeds the quiz using the provided HTML Snippet to integrate the quiz in their website. The utility can customize the quiz using parameters to fit their corporate design (see customizing the iFrame).
9. The Utility can access aggregated usage statistics by visiting a URL provided by BEN Energy.

### Embedding the smart energy quiz in an iFrame

Once you received your personal HTML Snippet the smart energy quiz can be easily embedded on any website by anyone with basic skills in HTML. This is an example snippet similar to the one you will receive after applying for the quiz.

```
<iframe src="https://xyztoken.s3c.ben-energy.com/en/base"
width="640px" height="800px" scrolling="no" sandbox="allow-same-
origin allow-scripts allow-forms allow-top-navigation"></iframe>
```

#### Important notes for computer experts:

- *Due to its responsive design, the smart energy quiz automatically adjusts to any width. As the content may vary in length – also depending on the width of the iFrame and potential adjustments of font size – it is strongly recommended to give at least 800px in height to the iFrame (at a width of 640px in the default state) to ensure the visibility of interactive elements.*
- *The quiz uses cookies for keeping track of the users progress. Browsers handle this cookie as “third party cookie”. Some users might not allow third party cookies to be installed, which results in the quiz not being displayed. Therefore, it is recommended to include a small message on the page on which the iFrame is embedded, that informs the user about the third party cookies and how to enable them. If the user deletes this cookie in his browser, his/her quiz progress will be lost.*
- *The sandbox attribute is necessary to make the quiz work for users with Safari browsers.*

### Customizing the Quiz

Each participating utility can customise the appearance of the iFrame to fit the style of their website. Use the parameters from the table below to make changes to the appearance of the smart energy quiz:

**Table 1: Explanation of the variables to customize the quiz for the website**

| Parameter               | Explanation  | Default value                |
|-------------------------|--|------------------------------|
| <b>Basic styling</b>    |  |                              |
| ButtonBGColor           | Background color of primary action buttons / Text color of secondary action buttons                | #2CC4F4                      |
| ButtonTextColor         | Text color of primary action buttons   | #FFFFFF                      |
| FontFamilyText          | Font family of text  | Helvetica, Arial, sans-serif |
| FontSizeText            | Font size of text  | 20px                         |
| <b>Advanced styling</b> |  |                              |
| LineHeightText          | Line height of text  | 1.4 * FontSizeText (in px)   |
| FontWeightText          | Font weight of text  | normal                       |
| FontFamilyHeading       | Font family of headings  | same as FontFamilyText       |
| FontSizeHeading         | Font size of headings  | 1.3 * FontSizeText           |
| LineHeightHeading       | Line height of headings  | 1.4 * FontSizeHeading        |
| FontWeightPraiseResult  | Font weight of headings  | normal                       |
| FontFamilyPraiseResult  | Font family of the quiz result (correctly answered questions out of total questions for that quiz) | same as FontFamilyText       |
| FontSizePraiseResult    | Font size of the quiz result (correctly answered questions out of total questions for that quiz)   | 3.5 * FontSizeText           |
| LineHeightPraiseResult  | Line height of the quiz result (correctly answered questions out of total questions for that quiz) | 1.4 * FontSizePraiseResult   |
| FontWeightPraiseResult  | Font weight of the quiz result (correctly answered questions out of total questions for that quiz) | normal                       |

The individual variables are added to the source URL starting with “?” and concatenated by “&” as highlighted in the example.

```
<iframe
src="https://xyztoken.s3c.ben-energy.com/en/base/?ButtonBGColor=%2
3FF0000&ButtonTextColor=%23FFFFFF&FontFamilyText=Verdana,sans-seri
f&FontSizeText=16px" width="640" height="800" scrolling="no"
sandbox="allow-same-origin allow-scripts allow-forms allow-top-
navigation"></iframe>
```

### Important notes

- *The hash character (#) cannot be used in the URL and thus must be replaced with the according ASCII format %23*
- *If you are using a non-standard web font, please contact BEN Energy and provide the according license.*

### Setting the language

The quiz comes in four languages: German, English, French and Italian. The default language is German. To change the language, adjust the according parameter in the URL as shown in the example.

```
<iframe src="https://xyztoken.s3c.ben-energy.com/en/base"
width="xyz" height="xyz" scrolling="no" sandbox="allow-same-origin
allow-scripts allow-forms allow-top-navigation"></iframe>
```

Use the following variables for setting the language:

German (default) = de  
 English = en  
 French = fr  
 Italian = it

### Analysing quiz usage

Each participating utility can monitor the usage of the quiz on their website. The statistics provide each utility with information about:

1. *Total number of users:* serves as an indicator for the popularity of the quiz.
2. *New users per day:* allows monitoring effects of campaigns and seasonal trends.
3. *Answered quiz questions:* shows activity of users and long-term engagement.
4. *Correctly answered quiz questions:* serves as an indicator for the energy-proficiency of users.
5. *Top 25 wrong answered questions:* points to topics that users are not yet familiar with.

To access the usage-statistics of your smart energy quiz, enter the following URL with your individual subdomain:

```
https://xyztoken.s3c.ben-energy.com/en/statistic
```

## Data Privacy

Only anonymous user data is collected and stored. All data is kept on servers in Switzerland.

## Contacts

To request a specific URL / token for your application and for further questions please contact:

[quiz@s3c-project.eu](mailto:quiz@s3c-project.eu)

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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).