

Implementation of Energy Efficiency awareness rising measures

Egyptian German Joint Committee for Renewable Energy and Energy Efficiency – JCEE

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CoBASE -

*Competition-based approaches to
save energy in Egyptian households*

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1 Introduction

The Egyptian-German Joint Committee of Renewable Energy and Energy Efficiency (JCEE) aims to amplify the cooperation in the areas of Renewable Energy (RE) and Energy Efficiency (EE) between Egypt and Germany.

The Joint Committee's overall objective is to promote environmentally sustainable economic development by securing energy supplies while improving living conditions and protecting the environment. The cooperation enables Egyptian partner institutions to develop and implement long-term strategies for renewable energy and energy efficiency.

In aiding this process, Wuppertal Institute (WI) conducted a technical assistance consultancy between July and November 2016 in order to support a criteria-based process of selecting urban districts in Egyptian cities in which energy efficiency measures should be implemented. This included both describing relevant top down criteria for the selection of urban districts and the development of a questionnaire addressed to Egyptian Energy Distribution Companies.¹

Moreover, WI was asked to conduct an international analysis of energy efficiency awareness rising measures and energy efficiency competitions to be applied in Egyptian cities.

This document is a concept paper for the latter task. In the following, five alternative approaches for Energy Competitions will be worked out, applicable for Egyptian cities and thus, practicable in the context of this project. These five different alternatives of competition-based approaches to save energy in Egyptian households (acronym: CoBASE) focus directly on the residential sector and aim at initiating promotional activities with the participation of private households.

Wuppertal Institute proposes to initiate such "Energy Saving Competitions" among a certain number of households to be defined that can e.g. be separated through the SES system set up by EgyptERA. The competitions will include an intensive education and thorough supervision of participating households or communities. During the different phases of the proposed variants, intensive public relations will be started in order to promote potentials and successes of energy efficiency measures.

¹ The drafted paper with selection criteria was submitted on July 3rd, 2016 (Title: Discussion Input 1 - Selecting Egyptian urban districts for energy efficiency strategies - Compilation of criteria), the drafted revised questionnaire was submitted on August 19th, 2016 to GIZ.

2 Design Elements of Energy Saving Competitions

2.1 Variants of energy efficiency awareness rising measures

There are several types of actions that facilitate awareness rising for energy efficiency, especially in the residential sector. This chapter gives an overview of four different ideal types. Although the “Supply Zones”-project will predominantly focus on energy efficiency competitions, other types for awareness raising are of relevance. Information campaigns, for example, can efficiently support energy efficiency competitions. “New for old” schemes, on the other hand, could be combined with competitions and financial funding schemes. All combinations have the target to motivate participants and to increase awareness.

The following categories of energy efficiency awareness rising actions are conceivable:

(1) „Energy saving competitions“

- Different participants compete on the highest energy savings and on the implementation of innovative projects in a limited time span. The winner of the competition usually receives an award.
- Platforms for information and management can be either “web” or “app” based. This form of organisation allows, for example, to record energy consumption, to show rankings, or to collect credits for achieved goals.
- A non-digital option is the use of an “energy saving booklet”. The project “Familles à énergie positive” (“Families for positive energy”) taking place in Nancy, France, for example, asks the participants to set up a small report in order to be able to retrace the progress that has been realized during the project period. (Link: <http://lorraine.familles-a-energie-positive.fr/fr/familles-a-energie-positive-c-est-quoi-5308.html>) (in French)

(2) „New for Old“

- In this category, old appliances are exchanged for new, more energy efficient ones. For some products, however, this is seen critically (for example in the context of the German car-scrap bonus in 2009 (“Abwrackprämie”).
- A classic new-for-old concept is the exchange of lighting bulbs, coupled with financial grants given to the customer. Expensive products are generally coupled with grants to lower prices for the consumer. In Egypt, experiences have already gathered with this type of activity.
- An alternative concept is, for instance, buy 3 LEDs get 1 for free.
- Examples are the “new-for-old” exchange of fridges in the city of Stuttgart, Germany: <https://stadtwerke-stuttgart.de/energieeffizienz/kuehlschranktausch/> (in German), as well as the “Appliance Recycling Program”, which is part of New Jersey’s “clean energy program”: <http://www.njcleanenergy.com/recycling>.

(3) „Financial funding to purchase energy efficient products“

- The purchase of highly efficient appliances is funded and a certain discount for the purchaser is granted at the shop.
- Alternatively, tax subsidies can be granted or funds with low interest rates.
- This option is often connected to recycling concepts. New Jersey Clean Energy offers an “Appliance Recycling Program”. Participants can receive up to \$125 by re-

cycling their old fridge and purchasing a new, energy efficient fridge. Link to project: <http://www.njcleanenergy.com/recycling>

(4) „Information Campaigns“

Some general information campaigns have already taken place in Egypt. Three information campaigns recently launched in Egyptian cities are cited hereafter:

- The Egyptian Utility and Consumer Protection Regulatory Agency has sent „**Awareness Flyers**“ along with the monthly energy bill, in order to inform the public about possible energy reduction measures.
(Link to project: <http://www.egyptera.org/en/mtboo3at.aspx>)
- **Energy Efficiency Project:** Shop assistants were asked to sell as many energy efficient products as possible. Furthermore, public consciousness in regard to energy efficiency was enhanced by establishing certain public awareness campaigns.
(Link to project: http://www.eeiggr.com/e_about%20ous.html)
- „**You’re the solution**“ with the goal to lower the energy consumption through appropriate advertisement.
(Link to project: <http://www.meedco.gov.eg/Saving.aspx> (in Arabic))

2.2 Description of possible modules: General approach

The energy efficiency awareness rising competitions proposed below will take up the variants of energy efficiency activities presented above and will be described along a similar structure of design criteria:

General Goal: What is the aim of the project? What will be its achievements?

Core Idea and Basic Design: What is the specific approach for the energy efficiency awareness rising actions?

Acquisition of Participants and Targeting: Different ways and instruments to reach a certain target group

Supporting Measures/Process Organisation: How to support the target group in saving energy during the project period?

Monitoring and Impact Assessment: How to measure the success of the project (energy savings and information campaigns)?

Advertisement and Dissemination: How to further use the project’s achievements in order to generally advertise the subject of energy efficiency, as well as further campaigns?

3 Proposals for Energy Efficiency Competitions in Egyptian Cities

In this chapter, five consistent alternatives (“modules”) will be presented, portraying how energy efficiency competitions in Egyptian cities can be designed.

Their common overall goal is to decrease the electricity consumption of previously selected and defined target groups within a certain district (i.e. private households, housing blocks). In addition, energy efficient products and appliances will be introduced to the Egyptian market. This will be supported by information campaigns underlining the advantages generated through cost savings by (implemented) energy efficiency measures. The expected impact is e.g. to turn a defined number of households into successful long-term energy savers.

The acquisition of participants can be made through different channels. For instance, participants can be addressed via an app or via notifications that are attached to the energy bills. In addition to this, community related contact measures could be applied, allowing the acquisition of participants via mosques or women associations, as well as educational institutions like universities. Supporting measures are either “app”- or “website”-based, allowing participants to measure and to track their specific energy consumption. Besides, an energy advisor, sent by the distribution companies or another institution, measures the energy consumption of the respective participants before, while and after the program. This monitoring allows an evaluation of the module’s impact. It is complemented by information given and experiences made by the participants. Using the participant’s feedback posted on Facebook or Twitter can generate this information. In addition to this, short focus interviews can be carried out that complete information on experiences and learning processes. All personal data collected is going to be treated with strict confidentiality and will never be shared with any third party.

Simultaneously with the project, advertisement and dissemination campaigns will be started, giving information about the competition’s targets. Furthermore, participants and their achievements are presented regularly in newspapers or social media. Announcements and short information sheets published in public places like cafés, markets or shops complement the acquisition of participants. The project will also be represented on social media platforms like Facebook and Twitter, allowing to interact directly with participants, as they can post their experiences. Further promotion of the project information can be achieved by using YouTube, blogs or flyers.

Regarding the **expected duration** of these five modules,

- 3 project months should be dedicated to the preparation of the competition (selection of households, planning of the design)
- (at least) 6 to 9 project months should be reserved for the running of the competition itself and
- 3 project months should be dedicated to subsequent public relations of results.

In the following section the modules proposed by the Wuppertal Institute will be explained.

Overview:

- 3.1 Supervision and Advice for Private Households (Module A)
- 3.2 Energy Saving Competitions within defined districts (Module B)
- 3.3 One-Off Premium for Inefficient Appliances (Module C)
- 3.4 Initiating Neighbourhood-Competitions (Module D)
- 3.5 Tracking Individual Energy Consumption (Module E)

3.1 Supervision and Advice for Private Households (Module A)

Module A is designed to initiate information campaigns in **selected private households**, which should increase awareness and lead to changes in behaviour concerning the efficient use of energy.

The campaign starts with the acquisition of private households in defined supply zones of selected distribution companies. The local distribution company will carry out the project implementation and monitoring of energy use. After expert advice and instruction, the selected households are called to save energy by changed behaviour. After the project period of three months, the network operator will emphasize the achieved reductions in order to motivate the households to become long-term, successful energy savers. Giving awards to the ten best performing households would also be imaginable.

Additionally, after three months, relevant technical equipment to reduce energy, like tumbler switches or lamps, will be distributed to the participants including further advice. After the distribution, the energy consumption will be measured again, for the duration of three months. The project duration of this module amounts to 2 times 3 months, thus 6 months in total.

Title	Supervision and Advice for Private Households (Module A)
<p>General Goal (Valid for all modules)</p>	<ul style="list-style-type: none"> ▪ Overall decrease of electricity consumption in defined groups within a certain district (households, housing blocks) by initiating competitions between these groups ▪ Introduction of energy efficient products to the Egyptian market ▪ Information campaigns underlining the advantages generated through cost savings by (implemented) energy efficiency measures ▪ Sub-goal: Making Egyptian households long-term, successful energy-saver.
<p>Core Idea and Basic Design</p>	<ul style="list-style-type: none"> ▪ Information Campaign, including a consultation by experts ▪ The total package will have to be provided by the distribution company. This package includes: <ul style="list-style-type: none"> ○ Behavioural advice ○ Three months later, households will be provided with relevant technical equipment, like tumbler switches or lamps. ○ The energy advisor measures the individual energy consumption for each piece of equipment.

Acquisition of Participants and Targeting	<ul style="list-style-type: none"> ▪ Directly addressing app users (SES by EgyptERA) ▪ Address possible participants via a notification attached to the energy bill ▪ Community-related access (e.g. mosque or women associations) ▪ Educational institutions like universities
Supporting Measures/ Process Organisation	<ul style="list-style-type: none"> ▪ App/Website (the participants measure the energy consumption themselves)
Monitoring and Impact Assessment	<ul style="list-style-type: none"> ▪ Monitoring: Advisor measures energy consumption (before, while and after the program) ▪ Evaluation: Based on the monitored data changes in energy consumption can be assessed <ul style="list-style-type: none"> ○ Short focus interviews can be carried out and evaluated ○ Feedback and comments of participants via social media can be analysed for the evaluation concerning learning and experiences ▪ A Facebook and Twitter account will present the project, and allows the participants to post their experiences (the social media accounts will be analysed throughout the project)
Advertisement and Dissemination	<ul style="list-style-type: none"> ▪ An Information Campaign as well as information about the competition will be popularized right from the start of the program ▪ Every X weeks, a participant of the competition will be presented in public media (e.g. in the newspaper or social media accounts) ▪ A Facebook and Twitter account will present the project, and will allow the participants to post their experiences (the social media accounts will be analysed throughout the project) ▪ Public announcements in newspapers or public places, like cafés, markets or shops ▪ Promoter in pedestrian zones/ on YouTube/ in (social media) blogs ▪ Flyer in letter boxes/ newspaper supplement
Duration	<ul style="list-style-type: none"> ▪ Preparation: 3 months ▪ Running of Campaign: 6 months (During the first three months, participating households try to save as much energy as possible. After three months, the households will receive relevant equipment to save even more energy. Then, the energy consumption will be measured again. ▪ Post-Production/ Dissemination: 6 months ▪ Total Time: 15 months
Reference Projects	<p>Energy Saving Competition, Singapore More than 2000 households in South West Community Development Council (CDC) have participated in an energy saving contest that took place for three months. The goal was to achieve 50 000 Dollar in cost-savings, which were then</p>

	<p>donated to families in need, by Singapore Power (SP) and South West CDC. The residents were encouraged to track their energy use and to save energy by means of an app. 17 housing blocks have been selected for the project. There will be competition among those blocks and among the individual households living in the different blocks. 200 volunteers will visit the participating households, explaining how to use the app, and offering energy saving tips.</p> <p>Duration: 3 months</p> <p>Link to project: http://www.todayonline.com/singapore/more-2000-households-compete-who-can-save-more-energy</p> <p>Awareness Flyers, Egypt</p> <p>The Egyptian Electric Utility and Consumer Protection Regulatory Agency sent “Awareness Publications” along with the monthly energy bill. In those flyers, one could find helpful tips helping to decrease the energy consumption. In addition to this, the text contained information allowing the client to understand his or her energy bill. Furthermore, regular “Surveys” took place in order to find out in what way the different clients agreed on the campaign, and to control whether the before-set goals have been achieved during the project period.</p> <p>Link to project: http://www.egyptera.org/en/mtboo3at.aspx</p> <p>E-Club Frankfurt</p> <p>An Energy Advisor will visit all participating households with the purpose to show different measures that should be realized in order to lower the household’s energy consumption. In the end, the most committed participants will receive a price.</p> <p>Link to project: https://www.eclub-frankfurt.de</p>
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3.2 Energy Saving Competitions within defined districts (Module B)

The approach is to start competitions between selected target groups, which should increase awareness and lead to changes in behaviour, concerning the efficient use of energy. The local distribution company will carry out the project implementation and monitoring of energy use. This includes a consultation of the target group and a behavioural advice given by experts. After the competition period of three months, the distribution company awards the ten best performing households. In addition, this module will be complemented by an information campaign.

Title	Energy Saving Competitions within defined districts (Module B)
General Goal (Valid for all modules)	<ul style="list-style-type: none"> ▪ Overall decrease of electricity consumption in defined groups within a certain district (households, housing blocks) by initiating competitions between these groups ▪ Introduction of energy efficient products to the Egyptian market ▪ Information campaigns underlining the advantages generated through cost savings by (implemented) energy efficiency measures ▪ Sub-goal: Making Egyptian households long-term, successful energy-saver
Core Idea and Basic Design	<ul style="list-style-type: none"> ▪ Competition: How can we achieve the best results through behaviour changes? ▪ Consultation by an expert, but without a later advice for an implementation of different energy efficient technologies (max. tumbler switches)
Acquisition of Participants	<ul style="list-style-type: none"> ▪ Directly addressing the app users ▪ Address possible participants via a notification attached to the energy bill

and Targeting	<ul style="list-style-type: none"> ▪ Community-related access (mosque or women associations) ▪ Educational institutions like universities
Supporting Measures/ Process Organisation	<ul style="list-style-type: none"> ▪ App/website (the participants measure the energy consumption themselves) ▪ Advisor measures the energy consumption (before, while and after the program)
Monitoring and Impact Assessment	<ul style="list-style-type: none"> ▪ Monitoring: Advisor measures the energy consumption (before, while and after the program) ▪ Evaluation: Based on the monitored data changes in energy consumption can be assessed <ul style="list-style-type: none"> ○ Short focus interviews can be carried out and evaluated ○ Feedback and comments of participants via social media can be analysed for the evaluation concerning learning and experiences ▪ A Facebook and Twitter account will present the project, and allows the participants to post their experiences (the social media accounts will be analysed throughout the project)
Advertisement and Dissemination	<ul style="list-style-type: none"> ▪ An Information Campaign as well as information about the Competition will be popularized right from the start of the program ▪ Every X weeks, a participant of the competition will be presented (e.g. in the newspaper or social media accounts) ▪ Public announcement in newspapers or in public places like cafes, markets or shops ▪ Promoter in pedestrian zones/ on YouTube/ in blogs ▪ Flyer in letter boxes/ newspaper supplement
Duration	<ul style="list-style-type: none"> ▪ Preparation: 3 months ▪ Running of Campaign: 3 months (During the first three weeks the energy consumption under “normal circumstances will be measured, during the remaining 9 weeks, the participating households will try to save more energy every week. ▪ Post-Production/ Dissemination: 9 months ▪ Total Time: 15 months
Reference Projects	<p>Wiener Energiesparmeister (Energy Saving Champion Vienna) This competition has taken place in Vienna in 2012. The electricity consumption of different households has been measured for two weeks. While the electricity consumption has been measured under “normal” circumstances in Week 1, the households had to consume at least 1 kwh less per day during Week 2. Competitions taking place in Egypt should be organised for at least three months, with before determined monthly reduction rates. Therefore, the duration of the competition should be extended in order to be suitable for application in Egyptian cities. In the Vienna Competition, participants could win city bikes or energy saving devices. Duration: 2 weeks Link to project: http://wien.orf.at/news/stories/2551390 (in German)</p> <p>Energy Competition New York Another competition, organized by the “Sustainable Kensington Windsor Terrace”, took place in New York in 2012. This “Neighbourhood- Energy- Saving Competition” presumed that people are motivated to save more energy, if they realize that their neighbours try to do so as well. Every month, the different participating households got information about their neighbour’s saving rate. In average, the different households achieved to consume 6,6% less energy. Participants could earn prizes in the two categories “Biggest Loser” and “Smallest Footprint”. Link to project: http://sustainablekwt.blogspot.de/p/energy-competition.html</p>

3.3 One-Off Premium for Inefficient Appliances (Module C)

Approach C is to increase awareness for the efficient use of energy through the exchange of old appliances, including lighting exchange. Target is to indicate appliances with high-energy consumption like fridges or air condition systems and to measure their energy use in order to demonstrate a saving potential. Participants with the oldest, highest energy consuming appliances will receive a new appliance. The local company will carry out the project implementation and the monitoring of energy use. This includes the consultation of the target group and a behavioural advice given by experts. In addition, the competition will be complemented by an information campaign.

Title	One-Off Premium for Inefficient Appliances (Module C)
General Goal (Valid for all modules)	<ul style="list-style-type: none"> ▪ Overall decrease of electricity consumption in defined groups within a district (households, housing blocks) by initiating competitions between these groups ▪ Introduction of energy efficient products to the Egyptian market ▪ Information campaigns underlining the advantages generated through cost savings by (implemented) energy efficiency measures ▪ Sub-goal: Making Egyptian households long-term, successful energy-saver
Core Idea and Basic Design	<ul style="list-style-type: none"> ▪ Search of the biggest Energy-Guzzlers (like fridges or air-conditioning systems) ▪ Measurement of achieved savings after X weeks
Acquisition of Participants and Targeting	<ul style="list-style-type: none"> ▪ Directly addressing the app users ▪ Address possible participants via a notification attached to the energy bill ▪ Community-related access (mosque or women associations) ▪ Educational Institutions like Universities
Supporting Measures/ Process Organisation	<ul style="list-style-type: none"> ▪ App/Website (the participants measure the energy consumption themselves)
Monitoring and Impact Assessment	<ul style="list-style-type: none"> ▪ Monitoring: Advisor measures the energy consumption (before, while and after the program) ▪ Evaluation: Based on the monitored data changes in energy consumption can be assessed ▪ A Facebook and Twitter account will present the project, and allows the participants to post their experiences (the social media accounts will be analysed throughout the project)
Advertisement and Dissemination	<ul style="list-style-type: none"> ▪ An Information Campaign as well as information about the Competition will be popularized right from the start of the program ▪ Every X weeks, a participant of the competition will be presented (e.g. in the newspaper or social media accounts) ▪ Promoter in pedestrian zones/ on YouTube/ in (social media) blogs ▪ Flyer in letter boxes/ newspaper supplement

Duration	<p>Preparation: 3 weeks Running of Campaign: 2 weeks Post-Production/ Dissemination: 3 weeks Total Time: 8 weeks</p>
Reference Projects	<p>Power Guzzlers (Energiefresser), Marburg (Germany) A Climate Protection Team in Marburg-Biedenkopf has looked for the oldest energy guzzler that is being used in this administrative district. Out of the 5 oldest devices, one has been drawn out and has then been replaced by a more energy efficient piece of equipment. While the winner’s old washing machine used about 450 kw/h of energy per year and about 55.000 litres of water, the new machine only needs 95 kwh of energy and 9000 litres of water per year. Therefore, the winning household will save about 1000 Euros already within the first 4 years. In addition to this, citizens are able to lend applicable measuring instruments in order to measure the specific use of water and energy of certain pieces of their household’s equipment. Link to project: http://klimaschutz.marburg-biedenkopf.de/privatperson/projekte/es-war-einmal/austauschaktionen-stromfresser-gesucht/ (in German)</p> <p>Fridge Exchange Stuttgart, Germany Stuttgart’s department of public utilities gives 50 Euros to its clients, if they agree to exchange their fridge or freezer with a more energy efficient one. Link to project: https://stadtwerke-stuttgart.de/energieeffizienz/kuehlschranktausch/ (in German)</p>

3.4 Initiating Neighbourhood-Competitions (Module D)

The approach is to start competitions between selected target groups, which should increase awareness and lead to changes in behaviour concerning the efficient use of energy. Target is to indicate a defined number of households in active housing communities or housing blocks. Within these communities approximately 30% have to participate in order to be selected for the competition. The local distribution company will carry out the project implementation and monitoring of energy use. This includes the consultation of the target groups and a behavioural advice that is given by experts. In addition to this, the competition will be complemented by an information campaign. After the competition period of three months, the distribution company awards the ten best performing housing communities that achieved the highest savings.

Title	Initiating Neighbourhood-Competitions (Module D)
General Goal (Valid for all modules)	<ul style="list-style-type: none"> ▪ Overall decrease of electricity consumption in defined groups within a certain district (households, housing blocks) by initiating competitions between these groups ▪ Introduction of energy efficient products to the Egyptian market ▪ Information campaigns underlining the advantages generated through cost savings by (implemented) energy efficiency measures ▪ Sub-goal: Making Egyptian households long-term, successful energy-saver
Core Idea and Basic Design	<ul style="list-style-type: none"> ▪ Search of the most active Egyptian housing communities ▪ 30% of each housing community have to participate ▪ Behavioural consultation by an expert at home and useful tips for saving energy

<p>Acquisition of Participants and Targeting</p>	<ul style="list-style-type: none"> ▪ Addressing the manager of different tenement blocks, the concierge or shop owners in the district ▪ Directly addressing the app users ▪ Address possible participants via a notification attached to the energy bill ▪ Community-related access (mosque or women associations) ▪ Educational Institutions like Universities
<p>Supporting Measures/ Process Organisation</p>	<ul style="list-style-type: none"> ▪ App/ Website (the participants measure the energy consumption themselves)
<p>Monitoring and Impact Assessment</p>	<ul style="list-style-type: none"> ▪ Monitoring: Advisor measures the energy consumption (before, while and after the program) ▪ Evaluation: Based on the monitored data changes in energy consumption can be assessed <ul style="list-style-type: none"> ○ Short focus interviews can be carried out and evaluated ○ Feedback and comments of participants via social media can be analysed for the evaluation concerning learning and experiences ▪ A Facebook and Twitter account will present the project, and allows the participants to post their experiences (the social media accounts will be analysed throughout the project)
<p>Advertisement and Dissemination</p>	<ul style="list-style-type: none"> ▪ An Information Campaign as well as information about the Competition will be popularized right from the start of the program ▪ Every X weeks, a participant of the competition will be presented (e.g. in the newspaper or social media accounts) ▪ Promoter in pedestrian zones/ on YouTube/ in blogs ▪ Flyer in letter boxes/ newspaper supplement
<p>Duration</p>	<p>Preparation: 3 months Running of Campaign: 3 months Post-Production/ Dissemination: 6 months Total Time: 12 months</p>
<p>Reference Projects</p>	<p>Stromspar WG 2016 (Energy Saving Residential Community), Vienna The “Power Generation” Youth Initiative from “Vienna Energy” searches for the most creative and energy committed communal residence. After 6 rounds of tasks, an expert jury awards prizes with a total value of 10.000 Euro. Link to project: http://www.powergeneration.at/stromspar-wg-2016/ (in German)</p> <p>New York Negawatt Challenges In 2015, residents of student dorms of the St. Lawrence University in New York were encouraged to lower their energy consumption in the most creative way. They were also given a so-called “green guide” including practical reduction tips. After three weeks, prizes were handed out to the most successful energy savers. Duration: 3 weeks Link to project: https://www.stlawu.edu/green/energy-competition</p>

3.5 Tracking Individual Energy Consumption (Module E)

The approach is to increase awareness of the efficient consumption of energy by using an app. The app sets different targets to participants, offering playful learning and information on saving potentials. Current energy consumption and further data may be transferred to the local distribution company, which will carry out the project implementation and monitoring of energy use. To build up a record of different technologies used in specific households is possible, which offers further consultation options and other measures. Furthermore, the success of achieved energy savings could be connected to rewards, like energy efficient appliances for example.

Title	Tracking Individual Energy Consumption (Module E)
General Goal (Valid for all modules)	<ul style="list-style-type: none"> ▪ Overall decrease of electricity consumption in defined groups within a certain district (households, housing blocks) by initiating competitions between these groups ▪ Introduction of energy efficient products to the Egyptian market ▪ Information campaigns underlining the advantages generated through cost savings by (implemented) energy efficiency measures ▪ Sub-goal: Making Egyptian households long-term, successful energy-saver
Core Idea and Basic Design	<ul style="list-style-type: none"> ▪ Playful incentive for saving energy through an app that sets different tasks to participants ▪ Measurement while installing the app and after the program period has finished ▪ Record of different technologies used in specific households.
Acquisition of Participants and Targeting	<ul style="list-style-type: none"> ▪ Directly addressing the app users ▪ Address possible participants via a notification attached to the energy bill ▪ Community-related access (mosque or women associations) ▪ Educational Institutions like Universities
Supporting Measures/ Process Organisation	<ul style="list-style-type: none"> ▪ App/ Website (the participants measure the energy consumption themselves)
Monitoring and Impact Assessment	<ul style="list-style-type: none"> ▪ Monitoring of the energy consumption (before, while and after the program) via app ▪ Evaluation: Based on the monitored data changes in energy consumption can be assessed <ul style="list-style-type: none"> ○ Feedback and comments of participants via social media can be analysed for the evaluation concerning learning and experiences ▪ A Facebook and Twitter account will present the project, and allows the participants to post their experiences (the social media accounts will be analysed throughout the project)
Advertisement and Dissemination	<ul style="list-style-type: none"> ▪ An Information Campaign as well as information about the competition will be popularized right from the start of the program ▪ Every X weeks, a participant of the competition will be presented (e.g. in the newspaper or social media accounts) ▪ Public announcement in newspapers or in public places like cafés, markets or shops ▪ Promoter in pedestrian zones/ on YouTube/ in blogs ▪ Flyer in letter boxes/ newspaper supplement

Duration	<p>Preparation: 6 months (incl. prep of app) Running of Campaign: 3 months Post-Production/ Dissemination: 6 months Total Time: 15 months</p>
Reference Projects	<p>Social Power Project: Energiewettbewerb, Switzerland From January to April 2016 a “Neighbourhood Energy Saving Competition” took place in Switzerland, organised by the Energy Supplying Company “AEM” and the Department of public utilities Winterthur. 120 households from Winterthur, and 120 households from Massagno/Capriasca, tried to save as much energy as possible within three months. By means of an app called “Social Power Game”, the app users were given different tasks leading to less consumption of energy. Furthermore, the app allowed every household to get information about its specific use of energy at any time. The participants got different points, levels, rewards and honours, which encouraged them to save more and more energy. Some tasks aimed at strengthening the solidarity and the team spirit by giving the different households a mutual goal. Other tasks targeted to create a dynamic competition between the different regions. The previously defined goal was to examine the effect of different group dynamics and its consequences on the long-term “energy-saving behaviour”. At the end of the competition period, prizes were not only given to the most successful participants, but furthermore, a big celebration for all of the participating households was organized in order to celebrate the achieved goals. Duration: 3-4 months Link to project: http://www.socialpower.ch/index.php/ein-nachbarschaftlicher-energiesparwettbewerb/ (in German)</p> <p>Pushing Green Energy Saving Contest This idea from 2011 targets to connect different people via a website or an app. This allows different participants to compete against each other, in order to lower their energy consumption. “Real World Statistics” enable the participants to read the positive effects of their energy saving measures. Different challenges or concrete orders are given via the website, in order to simplify communication between participants and to frame the competition as clearly as possible. The person, who saves the most energy, will get paid the energy facture for one month. Link to project: https://greenerideal.com/lifestyle/home-and-garden/8737-pushing-green-energy-saving-contest-will-pay-your-energy-bill-for-a-month/</p>

4 Outlook

This document presents a wide range of different approaches, all of which have their benefits. Now, the challenge is to deploy those in terms of situation and context. Therefore, the consideration of the further procedure and thorough discussion of potential alternatives is essential, in order to make the approaches appropriately applicable for Egyptian cities.