Social Electricity

Energy Awareness through Social Comparisons

Andreas Kamilaris, PhD Student
Dept. of Computer Science, University of Cyprus

ITU Green Standards Week
Paris, France

19th September, 2012

Problem Statement

In most European countries, including Cyprus, people receive an electricity bill once every month. It is not easy for them to perceive their electricity footprint, i.e. to understand whether their consumption is low, medium or high.

Citizens need an effective way to realize the “semantics” of their electrical consumption!

Motivation

Social Norms

“People tend to follow what other people do and adapt their behaviour and practices according to the stimuli received by their friends, relatives and neighbours”.

“Social norms can motivate people to question their attitude, if they discover it is not ”normal”.

“Social influence is an important factor that motivates people to change their lifestyles”.

“People are willing and capable to adapt their behaviour to energy-saving lifestyles if given the necessary feedback, support, and incentives”.

General Idea

Energy Awareness through Social Comparisons

- Social comparisons may enable people to perceive the amounts of their consumed electrical energy, by comparing it with their social and local environment!

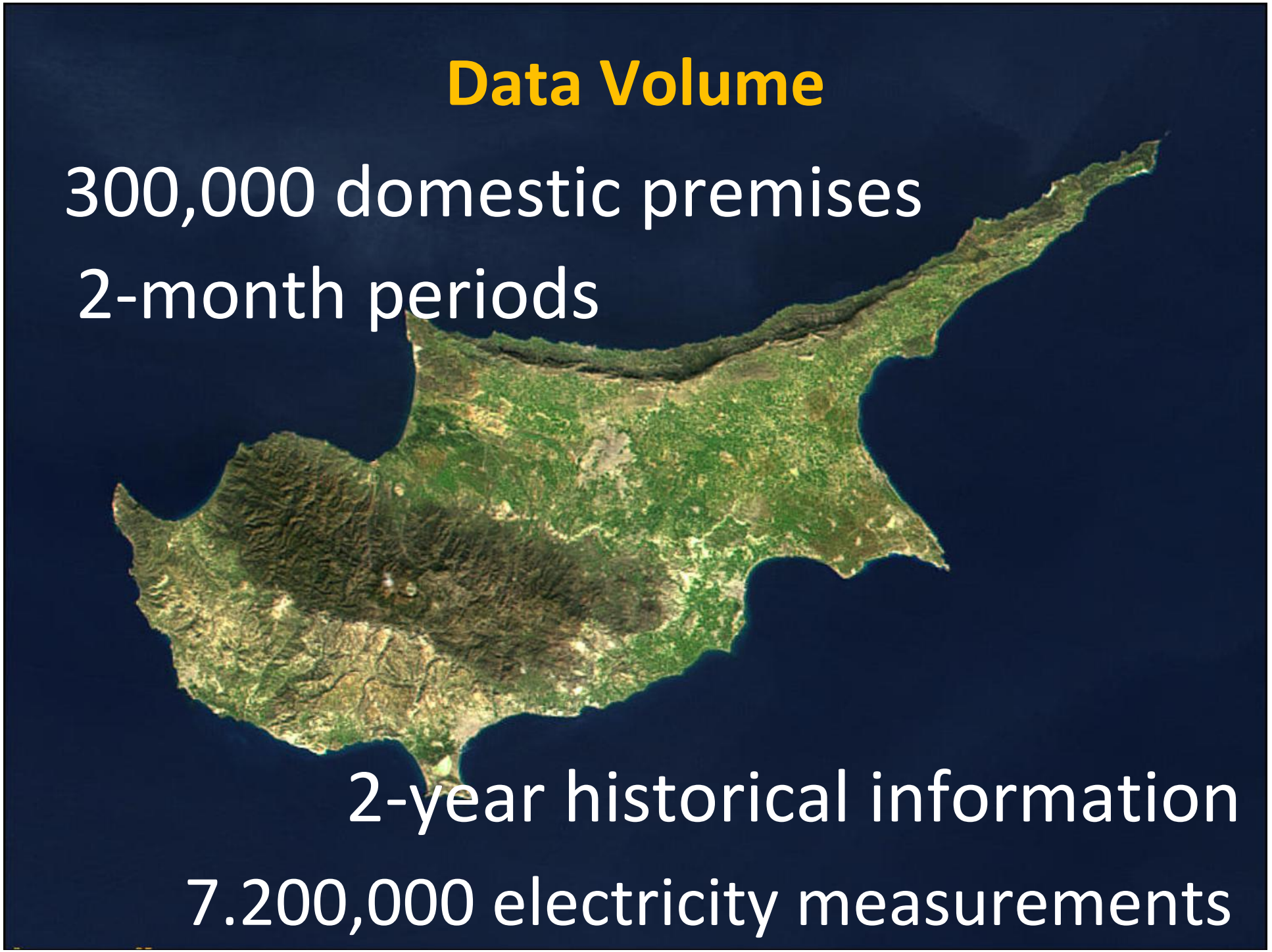
- Online social networking sites constitute promising platforms to locate people and discover their social networks.

Social Electricity

Social Electricity Facebook application helps Cypriot citizens to understand their consumed energy, through comparisons with their own neighbourhood and their online friends!

- Electricity data is real and accurate, provided by the Electricity Authority of Cyprus.
- Electrical information is aggregated in neighbourhood level (PO code, street).

Data Volume



300,000 domestic premises

2-month periods

2-year historical information

7.200,000 electricity measurements

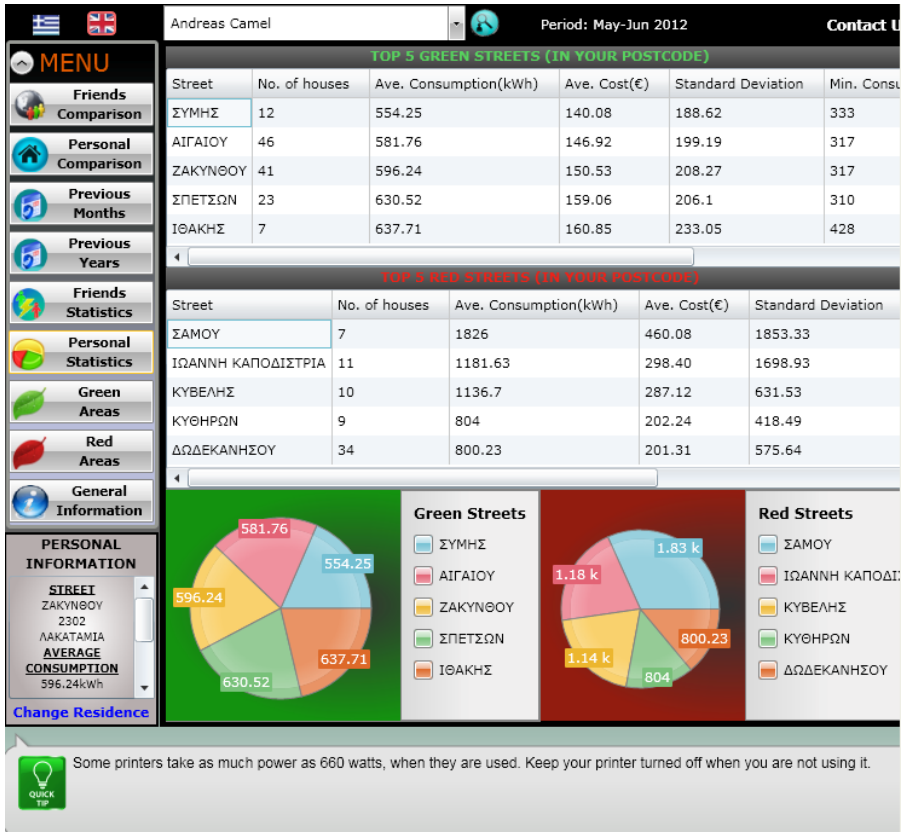
Functionalities I

Personal Comparisons: Compare your own electricity footprint with the average amount of electricity consumed at your neighbourhood, village/town or the whole of Cyprus.

Functionalities II

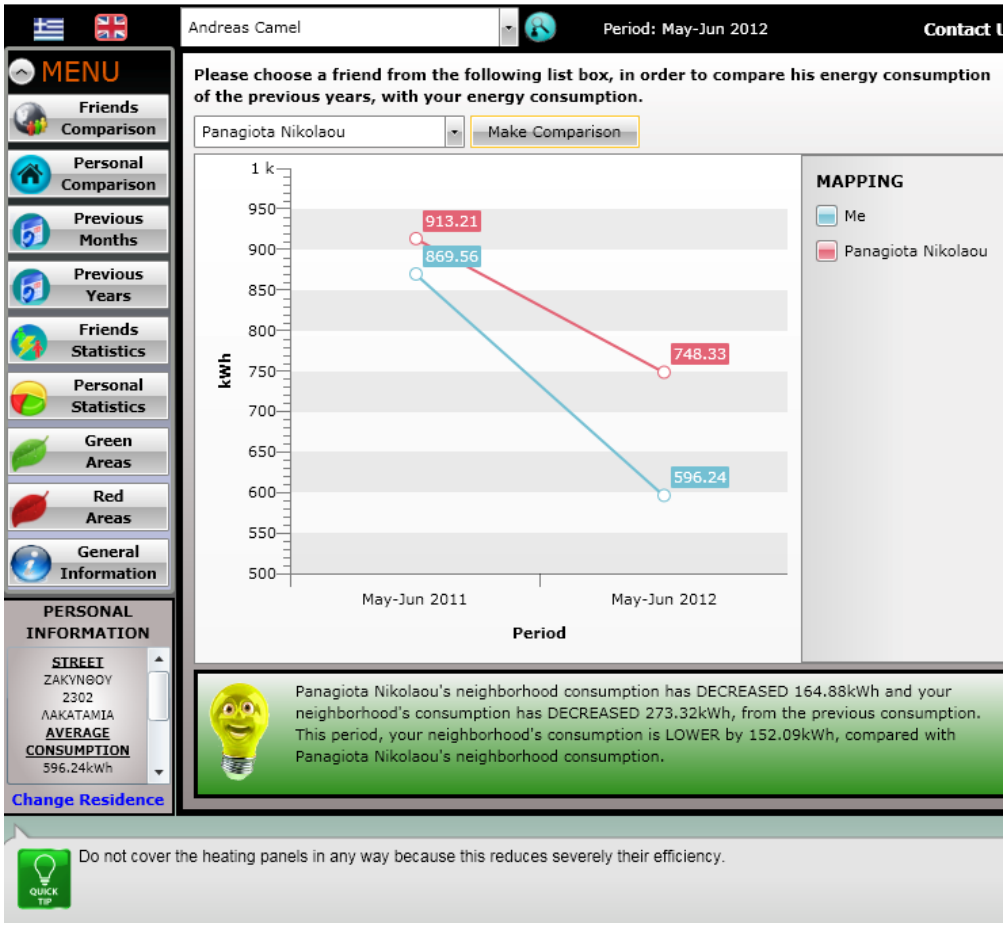
Social Comparisons: Compare the electrical consumption at your street with that consumed by the streets of your friends, who are tagged on the map of Cyprus where they live.

Functionalities III



Location-based Statistics: Observe the most and least energy efficient streets in your neighbourhood as well as the most and least energy efficient areas and villages around Cyprus.

Functionalities IV



Historical Comparisons: Compare the energy behaviour of your street in previous months or at the same month in previous years. Make this comparison more social by including the energy behaviour of your friends' streets.

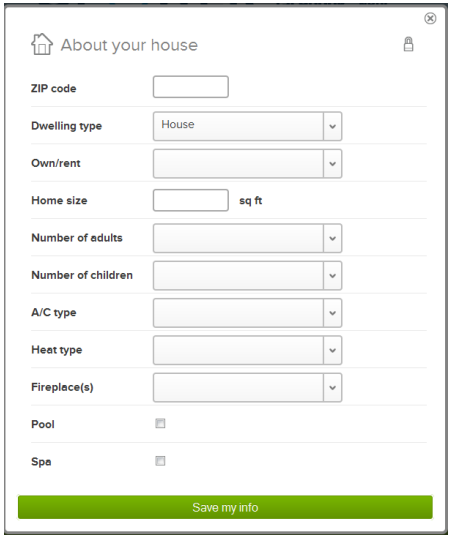
Some Initial Facts

- The application started officially at 1st August 2012.
- More than 550 users after 1.5 months, 570 likes in our Facebook page.
- Eponymous supporters like the Interior Minister Mrs Eleni Mavrou and the Commissioner for the Environment Mr Charalambos Theopemptou.
- Extensive reportages and publicity in large media of Cyprus (TV channels, radio channels, newspapers, magazines, online blogs).
- The application was invited to be presented at the East meets West Congress, Session “Innovative Cities”, Nicosia, Cyprus, 2012.
- Various conference and journal publications.

Some Initial Findings

- 54.9% Male, 44.6% Female.
- The most popular group of users (39%) is between 25-34 years old. Younger people between 18-24 are also highly interested (32%).
- 65% of users live in an urban environment, 28% in the suburb, 17% in rural areas.
- 48% of users live in the capital of Cyprus, Nicosia.
- Average visit duration is 6 minutes, 40 seconds. 32.18% of users used the application more than once.
- 29% of users checked also their own personal consumption.

Next Steps I



More effective electrical comparisons between people that share common house preferences (e.g. home size, number of residents, heat type).

More effective statistics including a colour map of Cyprus according to the electric behaviour in different areas of the country. Discussion for building-specific statistics.

Next Steps II

A newsletter sent by email to the users of the application every two months, to inform them about their electricity footprint, comparing it with their local and social environment.

Access to Social Electricity by people who do not have Facebook through a Web site that offers location-based statistics and general information to Cypriot consumers of electricity.

Envisioning the Future

By 2020, the 80% of houses in Europe
need to be equipped with smart meters.

Social Electricity can be extended into a real-time platform for electrical energy awareness and electricity-related comparisons.

Electrical energy competitions between friends, neighbourhoods and areas in real-time.

Awards to energy-efficient citizens and locations.

Financial motives to individuals, organizations and municipalities to save energy.

Live Demo


Πανεπιστήμιο Κύπρου
Τμήμα Πληροφορικής
ΑΗΚ
NETRL
work
esearch
aboratory