Serious Games and Energy Use Behavior

Precourt Institute for Energy Efficiency

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Executive Summary

Sophisticated multiplayer games, a dominant genre of new interactive media, have psychological features that can significantly change human behavior. This project proposes the creation of a multiplayer game platform to enable empirical research about how serious games can change consumer decisions about energy consumption.

We propose to link energy sensors in homes (with possible extensions to cars and businesses) to a multiplayer computer game that can promote changes in energy use in the context of compelling play and community participation. The primary thesis is that an alignment of personal motivations (e.g., increased involvement encouraged by timely reinforcement, achievement recognition, and a sense of belonging), and community environmental goals (e.g., reduced electricity usage and time-shifted energy use) can result in sustainable behavior change that is personally rewarding as well as socially responsible.

There are five parts to the proposed first year of the project:

1. Build a game platform that links state-of-the art energy sensing (e.g., smart meters and possibly other home, car, and building monitors) with multiplayer game play. (Q4 2009)
2. Use the game platform to conduct empirical tests that can validate the positive influence of three primary game ingredients (self representation, feedback in multiple time domains and competitive teams) on energy use behavior. (Q4 2009 - Q1 2010)
3. Find energy industry partner(s) to facilitate and fund scalable field tests of game psychology and energy consumption in built environments (e.g., utility and technology companies that are connecting communities with new smart meter technology). (Q4 2009 - Q1 2010)
4. Seek media industry partner(s) who can support professional and scalable game design, hosting, marketing and services for a commercially viable energy game based on the research. (Q4 2009 - Q1 2010)
5. Secure federal, foundation and/or industry support for a sustainable multi-million dollar research and game development project over the next three years. (Q3 2009 - Q2 2010)

Precourt funding will be used to support faculty, students, game development and research staff. The project began in fall 2008 with seed funding from the Stanford H-STAR Institute and already includes a demonstration game video, initial review of relevant media and human behavior literature, and a presentation delivered by Byron Reeves at BECC, 11/2008 (video demonstration available at http://www.youtube.com/watch?v=dDR0-QgqIEk).