



Funded Project Final Survey Report

Principal Investigator(s):

Greg Walton, Assistant Professor, Stanford Psychology Department

Project Title:

A Randomized Intervention Field Experiment to Reduce Home Energy Use

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- 1. Project Description:** In this project, we are using descriptive social norms to help residents decrease energy use or water use.

Research Activities:

We have three separate projects, each of which uses a field-experimental methodology to test how various social- and social-norm related messages influence environmental behaviors relative to control messages.

Our partnership with the town of Hillsborough, CA targets residential water use. We incorporate messages into the customer water use reports that encourage residents to join with their community and reduce water use. Customers also receive information on their own water use.

A second program involves a partnership with High Energy Audits. We send residential energy customers in Mountain View, CA emails twice a month, which urge them join in with their community and reduce energy use or a control messages. One email a month includes information about the resident's home energy use. The other includes either tips or thematic information about saving energy. High Energy Audits also delivers various energy saving programs, such as in-person home energy audits, online home energy audits, and an in-home energy monitor, all of which we are also testing experimentally.

Our third program is an online program, PowerDown, in which residents can sign up and receive information about their energy use. PowerDown features a website which depicts the user's energy usage graphically and emails, which provide energy reports. In both contexts we also vary social messaging to test their effects.

Major Findings:

All results are ongoing and preliminary. However, to date residents in Hillsborough seem to respond to social messaging differently based on their prior water use; low water users seem to respond positively so social messaging but high water users seem to respond negatively.

In our Mountain View energy work, to date social messaging seems to reduce energy use as predicted. However, as noted, all results are preliminary and may change with additional data and analyses.

- 2. How have the results from this project contributed to the solution of energy efficiency challenges? How is it likely to contribute to solutions in the future?**

Our results will help contribute to energy efficiency by providing further information about what messages are effective at motivating better home environmental behavior—reducing water and energy use—and for whom. This information can inform energy efficiency programs and campaigns.

Moreover, because all intervention messages are being delivered through the Internet they are highly scalable.

- 3. What undergraduate or graduate students, as well as Post-Doctoral fellows, were involved this project. How were they involved? Please list their name, classification and a short description of their involvement.**

Dave Paunesku, a graduate student in psychology at Stanford has contributed extensively to all three projects, including material design, website design, and preliminary analyses.

- 4. Will you be continuing work on this project? How and with whom? Please include any comments.**

Yes, we will continue to run our projects in Hillsborough and Mountain View, as well as our online program. We will continue working with John Whitcomb, a Landscape Program Manager with Waterfluence, on our water use project in Hillsborough, and with High Energy Audits on our project in Mountain View.

- 5. Are you seeking or have you received additional funding as a result of this project, or for continued work on this project? Please list the amount you are seeking/have received, source of the additional funding and a short description.**

Not at this time.

- 6. Has this project generated any other projects? Please describe.**

It has not yet, but as we analyze the data further we expect that it will.

- 7. What patents, if any, have you received or applied for?**

None.

- 8. Please list all academic and non-academic (Op-Eds, news magazines, etc) publications and conference presentations as well as articles in progress that came about as a result of this project. May we post these on the PEEC website? If so, please list the URL or provide a pdf version.**

Professor Walton spoke at Climate One at the Commonwealth Club in San Francisco on July 22, 2011.

Transcript and audio: <http://www.climate-one.org/transcripts/power-down-transcript>

Video of talk: <http://www.climate-one.org/video/getting-new-normal>

- 9. Provide a URL address for any websites that provide more information for interested parties on your research project, including photos and videos. We will add this information to your project summary on the PEEC website.**

The Mountain View energy saving program website is: <http://energyupgrademv.org/index.html>. The website for the online home energy intervention (PowerDown) is: <http://powerdown.stanford.edu>

- 10. Have you developed any specific products, (such as databases, physical collections, educational aids, software, etc), as a result of this project? If so, please list along with a short description.**

Not yet. However, if the intervention effects prove reliable in reducing water and energy usage they can be readily transformed into products.

- 11. Were any undergraduate or graduate courses generated as a result of this project? If so, please list the course title and a short description.**

No.

- 12. Have you provided any information regarding your research to any public or private institutions (e.g., legislative briefing, government panel, congressional testimony, corporate presentation) or any public or private institution asked you for information regarding your research? If so, please list the organization, date and a short description.**

No.

13. Have you partnered or worked with businesses, governmental agencies, NGOs, or other public or private organizations in connection with your project? If so, what role have they played? Please list the institutional name, type of institution and a short description of the partnership.

We are working with the town government of Hillsborough to include our materials in their residential water use reports. The water consultant the city uses is John Whitcomb, a Landscape Program Manager with Waterfluence. We also work with Ed Cooney, an Environmental and Sustainable Programs Manager at CSG Consultants, Inc.. Ed Cooney and John Whitcomb helped us orchestrate our initial mailing. John Whitcomb currently sends electronic water use reports in which our materials are embedded to customers who opted for such delivery. John Whitcomb also removes identifying information and then provides us with water use data for every household in Hillsborough as well as relevant home information such as lot size, pool area, turf area, shrub area, number of occupants, and indoor water use data.

For our project in Mountain View, we are partnering with Steve and Lisa Schmidt of High Energy Audits. They created and manage an online program to test different energy saving techniques (e.g., home visit energy audits, online energy audits, in-home energy monitoring devices). They embed our materials in the emails that are sent to users every two weeks. In addition to distributing our materials, they recruited all participants, provide us with access to their database, which includes energy usage data (including electricity and gas) for every user, house size, the year the house was built, the dates they started the program, and other variables relevant to energy use.

For our online energy intervention program, PowerDown, we work with Bonsai Development, a software and services company that specializes in Information Network. They created the energy platform that we use to gather data, as well as the main frame of the website. They also troubleshoot problems with the energy platform or website.

14. What public education activities have you undertaken in conjunction with this project?

Our programs educate participants, who are comprised of the general public, about saving water and energy. Our incorporation of energy saving tips directly educates participants about what steps they can take to cut down their energy use.