

## Re-defining comfort: Making energy conservation less painful

Future projections of increased stress on the power grid in the United States have forced utility companies to come to terms with the fact that sooner than later, there must be efforts to encourage behavioural change in households. This recent effort has led to roll out of home energy monitoring solutions, creative pricing incentives to reduce peak demand energy usage, and information recommendations and conservation tips across all utility websites. Without an advocate for what truly drives behavioural change in the long run, most of these efforts are proving ineffective at making lasting change. They often ignore important considerations such as presenting impact in terms people understand, not disrupting their existing habits and norms, and providing actionable and personally relevant information so that a person feels in control of their household impact. The following represents learnings from working in this space that can be applied to similar and analogous efforts around behavioural change and energy efficiency.

In the U.S., it has been the trend of late for utility companies, large and small, to re-think how they engage people around energy use. Why the sudden focus? With projections of increased stress on the utility grid in the coming years, memorable instances of blackouts in the South-west of the United States, and the fact that the cost of scaling to meet

household usage projections would make a substantial impact on a utility company's livelihood, behavioural change efforts around energy consumption are needed now more than ever. Who do you reach out to if you are a utility company with this need to motivate people to re-examine what comfort means to them? Someone that understands

behavioural economics and human behaviour, someone that can synthesize data-driven information and trends to provide the nugget that will make a person re-think what they are about to do and consciously decide to do something else. For utility companies, this role is often filled by a third party, sometimes an energy start-up eager to tap into the ubiquitous exposure of products and services in this space, sometimes a design firm, and for those not ready to make a commitment to address the inevitable, their internal marketing and management teams.

What current approaches are hoping to rouse people's consciousness around energy use? Two main tactics: financial incentives (rebates for reducing usage and increased pricing during peak times) and transparency (in-home energy monitoring). These two elements are most powerfully used together to raise motivation to and evoke a response. In conjunction, these two approaches provide actionable information when and where it is needed, and an obvious consequence for inaction – peak-time

charges. People are all of a sudden empowered and in control of both their bill and their home's impact on their community and the environment. Sounds like a great strategy, right? Unfortunately it's easier said than done. Financial incentives, although proven to lower usage during what utilities define as 'peak' or high demand times, rarely equate to lower overall consumption outside of these high demand times. Simply providing real-time usage and pricing information, through in-home devices such as 'Smart Meters' (see image 1) still ignores the need to re-frame usage information in order for people to be able to effectively understand and act upon it. The complex matrix of kilowatt hours, tons of CO<sub>2</sub>, air quality, dollars spent, degrees, usage behaviour, contributors, etc ... can be a cumbersome

synthesis challenge, especially without the time or expertise to work through it. It not only requires the communication of an overwhelming amount of information, but also requires confronting the fact that the majority of homeowners and renters across the United States have a severely fractured or nonexistent mental model of how their homes and appliances use energy. Did you know that if you live in the United States, the electricity your home uses probably comes from coal that your utility plant has to burn to generate electricity? If you're like a lot of Americans, this basic fact of where your energy comes from is unknown.

The problem is part education and awareness, and part making a person care about something they

are unengaged with. The former can be tackled by not only providing transparency of information that currently is inaccessible but also translating it from the technical form it is collected in, to the behaviours and actions that people can relate to. Talking about the impact of common household activities like running the dryer for an hour, or overriding your thermostat's program, as opposed to using total kilowatt-hours when most people have no mental model of how big that unit is and where it is derived from in relation to their household environment. Unless a person can clearly see the effects of their day-to-day actions on their overall energy use, will they be able to make changes. A nice example of re-framing energy information comes from global design firm IDEO's Shift Focus (see image 2) strategy for the United States Department of Energy (D.O.E.). Tasked with formulating approaches for engaging people around energy efficiency, IDEO developed a point of view, set of guidelines and inspirational concepts for the D.O.E. to reference when creating educational campaigns and funding initiatives around energy efficiency. After conducting qualitative research, some of the main findings were to make energy efficiency personal, interactive, positive, and in-line with existing behaviours and needs for energy use – essentially, to 'fit the way we live'. The concepts ranged from



Image 1: 'Smart Meters'

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By Aislinn Dewey

engaging children to help monitor home appliance output with a magnetic field detection gun and online game, to accessing energy planning information alongside local newspaper weather forecasts. It's evident that the more people can build a routine around monitoring and adjusting their energy usage, the more likely incremental behavioural change will occur.

The latter part of the challenge, making someone care, gets a bit tricky. That's where the current social norm, generally stuck at 'don't care', becomes a resistant force a designer must resolve. With creativity, exploring analogous forms of engagement, leveraging proven findings in the field of behavioural economics around human motivators like competition, peer pressure, and rewards, sustainable solutions for shifting behaviour are achievable. One significant opportunity here is helping people understand what 'normal' consumption is for their household. By providing people with a use or spending baseline of households similar to their own (in size, occupancy and lifestyle), people are forced to re-examine what comfort actually means to them compared to increased money and energy savings. Exposing social norms within a community can effectively encourage small steps towards increased efficiency. As economist Richard Thaler argues in his book *Nudge*, "One of the most

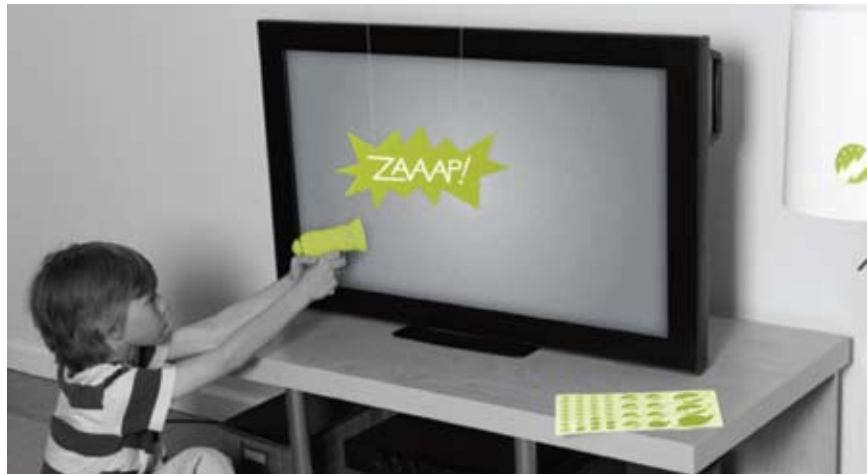


Image 2

important influences on people's behaviour is what other people do ... with the right prompting we'll change our behaviour to fit in with what we see around us." Even further, Robert Cialdini, Chief Science officer at OPOWER, an energy information software company, ran experiments in San Diego around presenting community usage information in context to individual's energy statements. He found that "the most effective [communication] was 'the majority of your neighbours.' That's how you decide what's possible for you: what people in your circumstance are able to do. Even though our prior survey indicated that residents felt that they would be least influenced by information regarding their neighbours' energy usage, this was the only type of door hanger information that led to significantly decreased energy consumption, almost 2 kWh/day"

(see image 3). That said, what is the right level of disclosure to most effectively catalyze behavioural change? What information is most impactful? Does it have potential to turn someone away out of a feeling of individual entitlement over what they are paying to use versus what is best for the whole?

As a senior interaction designer at IDEO, working in the energy space, an important learning thus far has been that actionable information – such as how community members are achieving increased energy efficiency and savings – is what people are looking for. There is an openness to experiment with new definitions of 'comfort' if it is shown that others are doing it and gaining value, whether it is the self-gratification of wasting less, achieving a lower energy bill, or altruism as the motivational driver. People

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want information that is personal, clearly mapped to their everyday activities, and that is complimented by personally relevant recommendations based on their goals and motivations. It is the role of designers to help utility companies

have empathy for these needs and to come up with original ways to re-frame, educate and empower people to change their behaviour.

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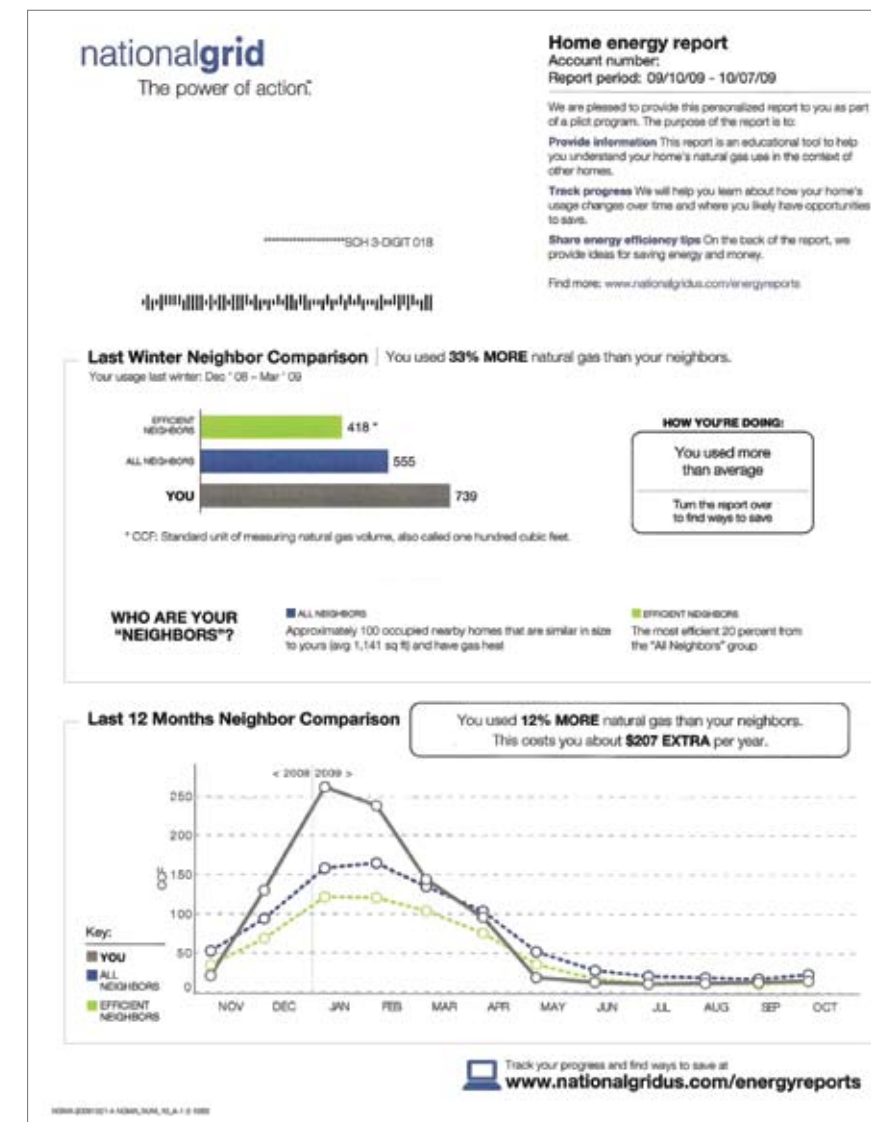


Image 3: Consumer utility bill by OPOWER in partnership with utility provider National Grid that compares a person to their 'neighbors'.



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