

ESIG Down Under Session 2A
Customer Integration Impacts
Evolving Energy Users
10 September 2020

Behavioural Science: Insights Into Energy Consumer Behaviour

Dr Karen Stenner
Director
www.Concentric.Energy

 **CONCENTRIC**
consumer-centric solutions for energy

The consumer of the future?

- ▶ The consumer of the future = the consumer of today.
- ▶ The consumers you're hearing from/hearing about are either:
 - ▶ The 5-10% who are (somewhat) interested in energy (or public affairs in general)
 - ▶ People who like to give their opinions (especially if paid for it)
 - ▶ A wishful figment of the collective imagination.
- ▶ Why 'engage' anyway? Is customer engagement really the behaviour you actually need at the other end?
- ▶ Regular consumer don't much care about energy (until the bill comes)
- ▶ Regular consumers don't want to be in a 'relationship' with you (although they do want to trust you).
- ▶ Mostly, what consumers want is not to have to think about it at all

Don't they just need to be better informed?

- ▶ Providing more information is usually our first solution. It's a bad one.
- ▶ Consider the #1 law of human psychology:
 - ▶ **Human decision-making deteriorates, or is avoided altogether, the more information, and choices, are provided**
- ▶ The human brain evolved:
 - ▶ to justify our intuitive choices after the fact
 - ▶ To persuade others to follow
 - ▶ not to make rational decisions (after carefully weighing up the costs and benefits of alternative courses of action).

Behavioural economics: cognitive biases & psychological influences

Inertia

Status quo bias

Sticking to
defaults

Temporal
discounting

Spatial
discounting

Loss aversion

Risk aversion

Neglect of
opportunity
costs

'Public good'
motives

'Warm glow'
effect

Trust
(as a decision
heuristic)

Mental
accounting

Sunk costs
effect

Social
influence and
'norms'
Conformity

How best to proceed then?

So, what can we do about 'engaging' (i.e., shifting!) consumers?

- ▶ 1. Make it easy for them.
 - ▶ How this feels for the consumer? Easy → at ease → true & good
 - ▶ Trust in the organisation is crucial. Take care to maintain it – very costly to lose it.
- ▶ 2. Try something. See how it works out.
 - ▶ Ideally, Randomized Controlled Trial on representative sample of customer base.

Examples of the utility of behavioural science campaigns / messaging interventions

1. Re-framing energy efficiency materials
2. Peak demand / demand response messaging
3. Uptake & usage of alternative tariffs

Example 1: Reframing energy efficiency materials

- ▶ Strong pull of the **status quo**, especially when confronting complexity or risk.
- ▶ People reluctant to abandon familiar behaviours = avoid making decisions
- ▶ Education and/or material incentives don't usually work
- ▶ How, then, to shift household energy practices?
- ▶ **Signal positive social norms**
 - ▶ convey to consumers that energy efficiency is the 'new normal'
 - ▶ use human desire for 'normalcy' to induce a change in practices

Re-framing energy efficiency messaging via social norms

Signalling negative norms (↑ electricity usage)

- ▶ “Many people these days leave air conditioning running all the time throughout the summer, and don’t usually turn it back when the weather is mild or the day cools down. **Is this how it is in your household?**”

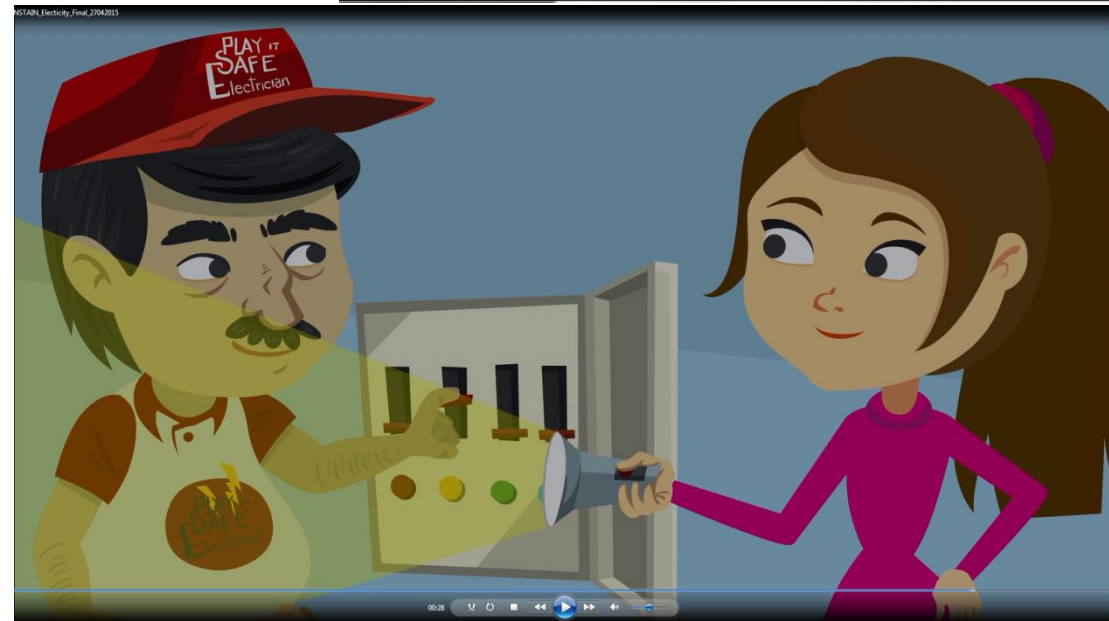
Signalling positive norms (↓ electricity usage)

- ▶ “Many people these days don’t leave air conditioning running all the time throughout the summer, and instead will usually turn it back when the weather is mild or the day cools down. **Is this how it is in your household?**”

Example 2: Peak demand / demand response messaging

- ▶ Beware the power of social norms!
 - ▶ Might be particularly problematic re. peak demand messaging
 - ▶ e.g., “the problem is lots of people are using electricity at the same time...”
- ▶ ‘Wall of noise’ vs. simple cues
 - ▶ More info / more complex info → worse decision / indecision / no decision at all
 - ▶ Price signals & in-home displays vs. energy orbs, fridge magnets, simple animations
- ▶ Material incentives can sometimes backfire
 - ▶ signing bonus vs. rebate
 - ▶ ‘**crowding out**’ altruistic motives with \$\$\$ (if necessary, use gift card vs. ‘dirty cash’)
 - ▶ consumers’ loss of ‘**warm inner glow**’ can actually decrease the desired behaviour

Use simple animations



Example 3: Uptake & usage of alternative tariffs (e.g., cost reflective pricing).

1. Solution cannot depend on customer attention, calculation, exertion!
2. Simpler, more familiar and seemingly lower-risk offers are more appealing (so, make 'peak time rebate' pricing look / work like flat-rate tariff).
3. Greatest barrier of all is actually consumers' aversion to making any kind of choice, i.e., status quo bias.
4. Taking into account those who will never even respond to a tariff offer, calculations suggest that initial uptake of cost-reflective pricing is unlikely to exceed 5-10% of households.
5. Significant uptake & effective usage will require automation / agents.

First, we'd like to hear your opinions on how electricity is priced in Australia. Some electricity retailers are considering whether to stick with current ways of pricing, or to do things differently. One type of pricing is described below. We're interested in hearing what you think about this sort of pricing plan, and whether it's something you'd choose if an electricity retailer offered it to you. Here's how it might work...

Under this pricing plan, you'd pay:

- ♦ a flat price for each kilowatt hour (kWh) of electricity you use. This price would not vary over time.

And you'd receive:

- ♦ a rebate (money back on your bill) on each occasion that you use less electricity than normal, during about 15 'extreme temperature' days each year.

This means that the price (cents per kWh) you pay for using electricity would remain the same regardless of when you use it (e.g., no matter what time of day, day of the week, season). But you would earn a rebate each time you used less electricity than normal during the very hottest and/or coldest days each year.

You'd always be alerted the day before an 'extreme temperature' day was to happen, either by text message and/or email.

If you didn't use less electricity than normal – either because you didn't want to, or couldn't manage it – you'd simply pay the normal price for the electricity you did use, but wouldn't earn the rebate (money back on your bill) on that occasion.

Under this plan, you could deliberately reduce the amount of electricity you were using during one or more of these 'extreme temperature' days, in order to earn a rebate each time you managed to do so.



PRICING OF ELECTRICITY		
TIME PERIOD	IF YOU DON'T USE LESS ELECTRICITY THAN NORMAL ON THAT OCCASION	IF YOU DO USE LESS ELECTRICITY THAN NORMAL ON THAT OCCASION
For a few hours on 'extreme temperature' days (up to 15 days per year)	Normal price	Normal price <u>plus receive a rebate</u>
All other times	Normal price	Normal price

References used in this presentation

Behavioural economics

- ▶ **“Household energy use: Applying behavioural economics to understand consumer decision-making and behaviour”** *Renewable & Sustainable Energy Reviews*. 2015. (Frederiks, Stenner & Hobman)

Randomised controlled trials

- ▶ **“Evaluating energy behavior change programs using randomized controlled trials”** *Energy Research & Social Science*. 2016. (Frederiks, Stenner, Hobman & Fischle)

Cost reflective tariffs

- ▶ **“Australian Consumers’ Likely Response to Cost-Reflective Electricity Pricing”** CSIRO report. 2015. (Stenner, Frederiks, Hobman & Meikle)
- ▶ **“Uptake and usage of cost-reflective electricity pricing: Insights from psychology and behavioural economics”** *Renewable & Sustainable Energy Reviews*. 2016. (Hobman, Frederiks, Stenner & Meikle)

Demand management

- ▶ **“Willingness to participate in direct load control: The role of consumer distrust”** *Applied Energy* 2017. (Stenner, Frederiks, Hobman and Cook)

Thank you!

For more information:

Dr Karen Stenner

Director

Concentric.Energy

Karen.Stenner@Concentric.Energy

0423 358 035

1 800 95 96 96