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Energy Consumers Australia

Hug, Nudge, Shove or Smack?

Testing approaches to enabling consumer energy use behaviour change:

Policy

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Who we are

Professor Uwe Dulleck

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Agenda
and Purpose of the Session

- 9.30-9.50am: Introductions
- 9.50-10.30am: Background to the Project
- 10.30-11.30am: Interactive Discussion
- *The session on method occurs in the afternoon, for those who have RSVP'd to attend.*

Introductions

Who is in the room?
What is your interest in today's session?

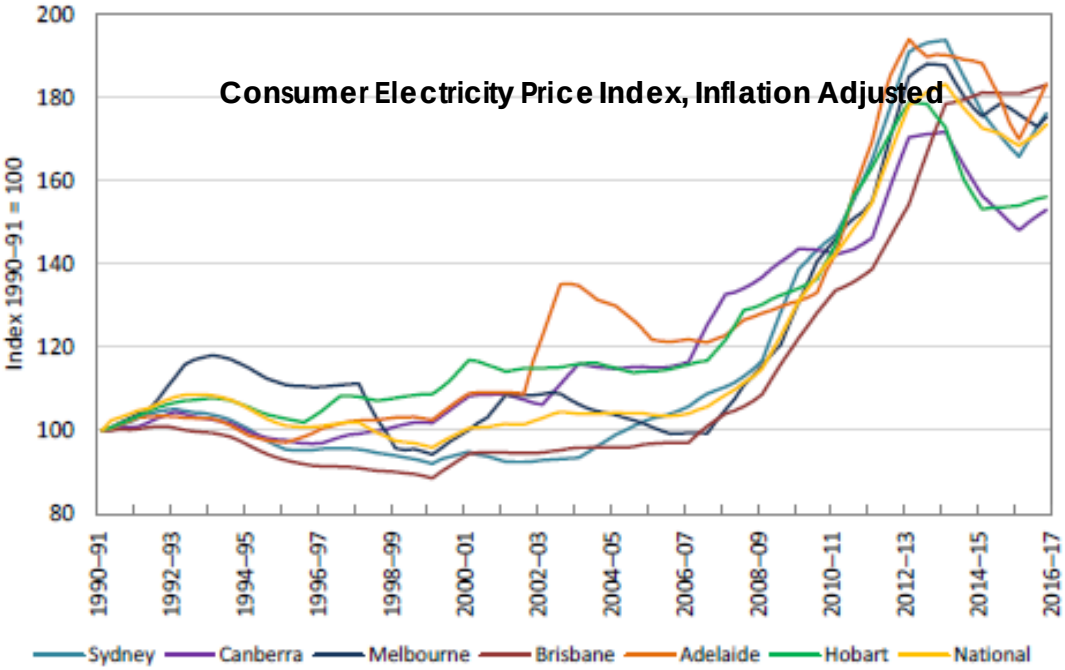
Background to the Project

“It has been said that man is a rational animal. All my life I have been searching for evidence which could support this.”

- Bertrand Russell

Electricity pricing and consumers

- Electricity prices are increasing
- There is increased pressure on consumers
- We can either influence the demand or the supply side



Source: Data from ABS, Graph from ACCC: *Retail Electricity Pricing Inquiry – Preliminary Report*, 22 September 2017

How to influence the demand side when electricity is invisible to consumers?

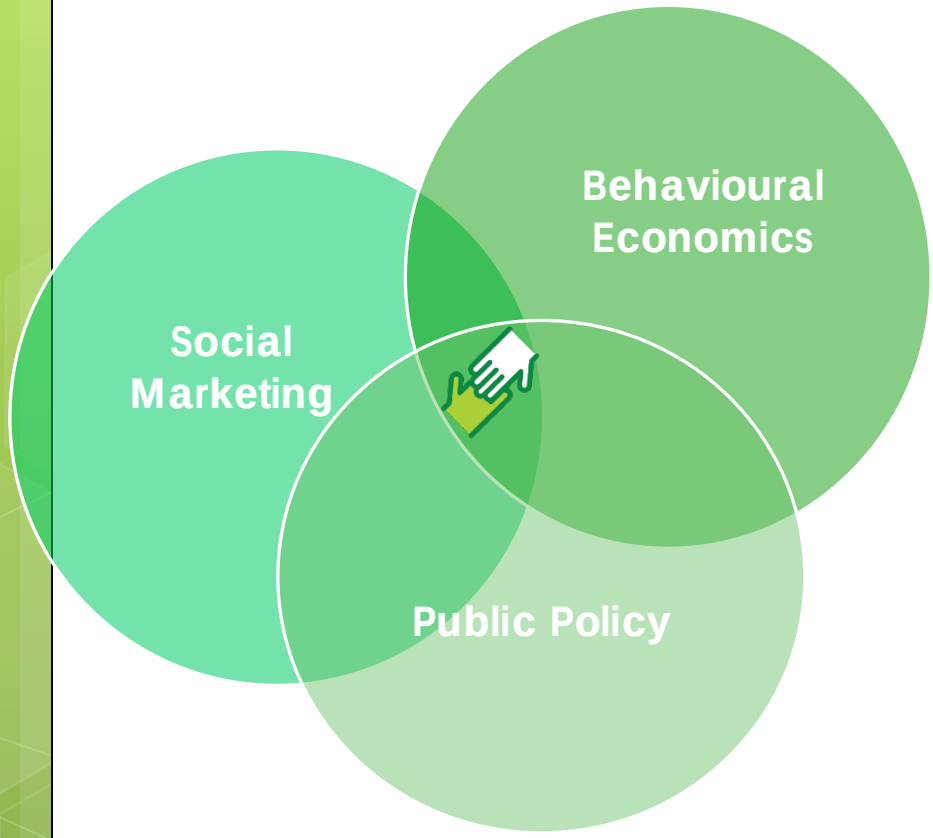
There is evidence that much electricity consumption takes place **without any conscious consideration** of consumers usage (Thøgersen & Grønhøj, 2010; Pierce, Schiano, & Paulos, 2010).

It is bound up with **routine and habit** (Shove, 2003).

Electricity is '**abstract, invisible and untouchable**' (Darby, 2006)

It is considered a **low-involvement** product (Wong & Sheth, 1985).

Consumer Habits & Decision-making– Background Literature



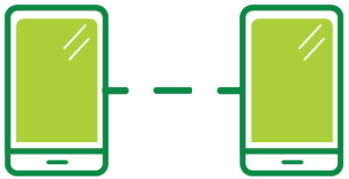
- Social Marketing (Kolter & Zaltman, 1971: design, implementation, and control of programs **calculated to influence the acceptability of social ideas** and involve considerations of product planning, pricing, communication, distribution, and marketing research.
- Behavioural Economics (Thaler and Sunstein, 2009): studies effects of psychological, social, cognitive, and emotional factors on economic decisions, provides important insights into how people make choices. Contrasts this with normative insights from economics.
- Public Policy (Hertier & Lehmkuhl, 2008): Hierarchical: "Legislative decisions and executive decisions that steer democratic governmental action at the national level… legislators can threaten to enact adverse legislation unless potentially affected actors **alter their behaviour to accommodate the legislators demands**".

Behavioural Economics: Insights and Limitations

- **Defaults and Efficiency**
  Efficient (CFLB) bulbs are kept 80% of the time when they are installed as the default, whereas traditional ILB (incandescent) bulbs are kept 56% of the time (Dinner et al., 2011) – US study.

“Default is an implicit endorsement”

(Sunstein, 2016; Madrian & Shea, 2001; McKenzie et al, 2006).



Behavioural Economics: Insights and Limitations

- **Smart Meters**
  EU target of 80% of homes with smart meters (directive 2009/72/EC).
  - Oelander and Thorgerson (2013) show opt out frame leads to a **50% higher uptake** in smart meters than information alone.
  - Sunstein (2016), Johnson and Goldstein, see inertia or procrastination as a major reason.

Behavioural Economics: Insights and Limitations – Hugs & Smacks

- **Loss aversion**
  German data (Infas Energiemonitor, 2012) shows tariff switches are rare – even if the alternative is "green and cheaper".
  - How a price is presented matters – Thaler et al. (1994), McGraw et al. (2010).
  - Brown et al. (2013) – people go with the default unless it makes them too cold, pay too much.

The Ethics of Energy Nudges

- Sunstein (2016):
  - Welfare, net-benefits: Green Defaults vs. “benefits, as judged by themselves”
  - Dignity/Autonomy: Active Choice.
  - Self government – trusting institutions: Evaluated solutions as defaults.

Social marketing assumptions

Temporal orientation

Consumers are more motivated by short-term, self-oriented options than long-term and altruistic

Pleasure principle

Consumers act to minimise pain and maximise pleasure

Social orientation

Individuals do not act alone - homo sociologicus

Knowledge-action gap

More education does not equal more action

Consumer empowerment

Consumers need to feel in control

Value-orientation

Consumers make choices that deliver them value- their definition of value not ours

Segmentation

Consumer choice goals and choice processes differ by household and by individual

How do consumers respond to different policy and industry approaches?

Electricity usage is a social dilemma?

- A 'public good' **social dilemma** is where an individual must decide whether to contribute to a common resource (Dawes, 1980).

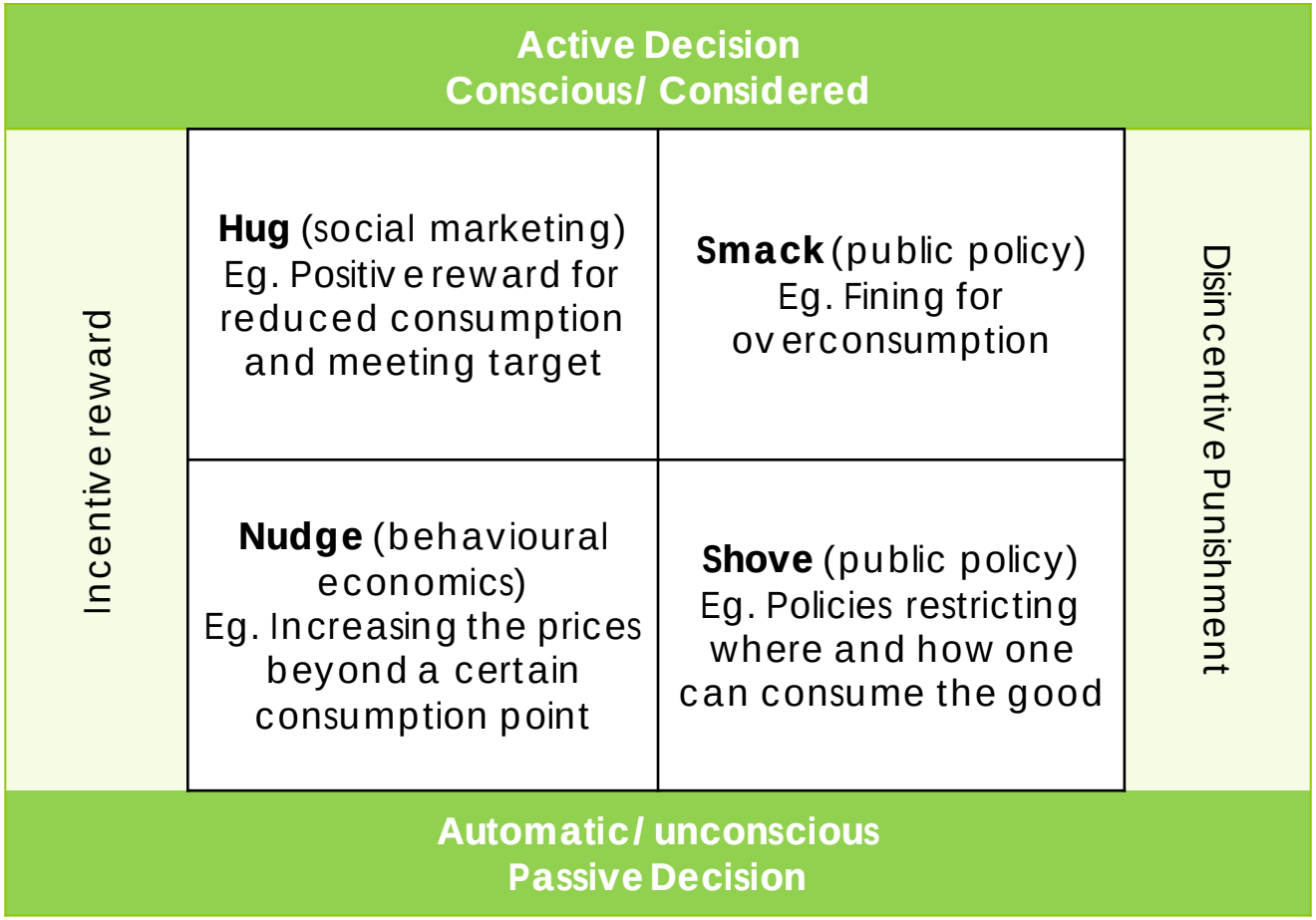
- Individual choices generally are made based on intuitive and implicit judgments concerning **short-term and long-term benefits**, and the many competitive options available (Rothschild, 2001).

- **Prosocial Personalities** influence behaviour (McDougall, 1908). **Prosocial Propensity,** refers to the individuals predisposition to engage with prosocial behaviour.

The Consumer must decide; Will I reduce my own consumption, incurring a personal cost, to contribute to a common resource (Dawes, 1980).

Question: what do you think? What do consumers think?

Hug, Nudge, Smack, or Shove



Source: French, 2011

Overview of Results from Prior Study

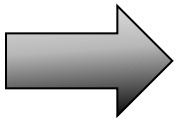
The long-term effectiveness of the shove approach

The short-term effectiveness of the hug approach

The ineffectiveness of the nudge and smack

The moderating effects of pro-social propensity in electricity consumption.

Males and females respond differently to intervention approaches.

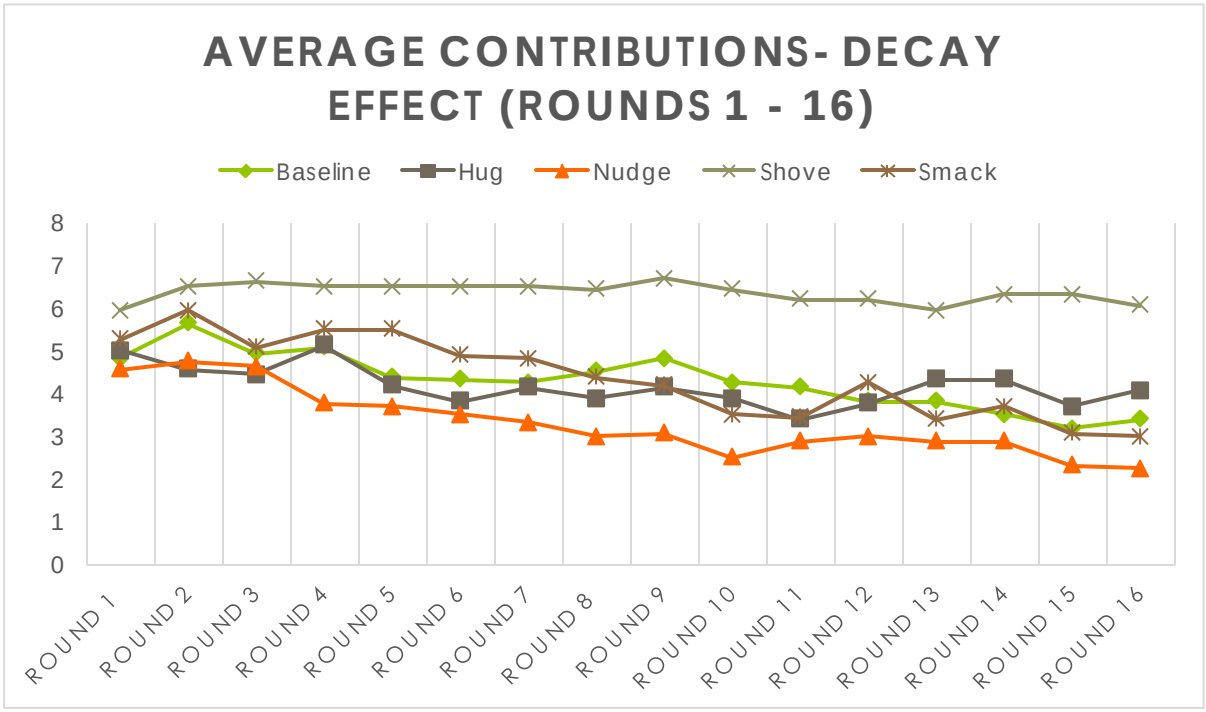


Practical Implications: Policy Development in the Pro-Environmental Space

- Nanny State vs Free Choice
- Delaying the Saturation Point
- Segmentation

Source: Orr, Russell-Bennett & Dulleck, 2017

Experimental Data (Orr et al, 2016): Behaviour change for electricity consumption.



Key Points

- The shove was the most effective approach (caveat – level chosen; political backlash).
- The hug provided temporary behaviour change in reducing electricity consumption.
- The nudge and smack were not effective approaches to achieving reduced electricity consumption.

High pro-social (other-oriented empathy) consumers will make higher contributions to the public good.

The data says:

- Other Orientated Empathy moderates contributions to the public good
- Helpfulness moderates contribution to the public good
- Post-Hoc testing revealed significant variance between the shove and hug in low other-orientated empathy individuals.
- Post-Hoc testing revealed significant variance between the shove and hug in low helpfulness individuals.

What this means…

- Prosocial Propensity works as a single moderator
- Low pro-social individuals saw larger effects of the treatments (in both pro-social factors)
- The shove and the hug are the most effective approaches in low pro-social individuals.

Hugs, Nudges, Smacks, and Shoves

Hug = Rewards + active effort

- Reward for action/inaction – monetary incentive for lowering cholesterol

Nudge = Rewards + passive effort

- Provision of information – Calorie counts on menus
- Changes to environment – Designing buildings with fewer lifts
- Changes to default – Making salad the default side option instead of chips
- Use of norms – Providing information about what others are doing

Smack = Punishment + active effort

- Financial disincentives – Taxation on cigarettes Restricting choice – Banning takeaways setting up close to schools

Shove = Punishment +passive effort

- Eliminating choice – Making certain foods and drugs illegal, imposing fines

Research Questions

What we know

- The four policy levers can be successful at affecting behaviour change

What we don't know

- How (different types of) consumers will respond to each of the four levers when it comes to ToU pricing

Research Questions

- **RQ1**: How do consumers respond to each of the four policy levers?

RQ2: How does the initial effect decay over time for each lever?

RQ3: How do individual differences influence consumer responses to the levers?

Question: is the focus on ToU still appropriate, general power demand, or should we focus on smart meters installation?

Dependent Variables

- Consumer responses:
  - Willingness to forgo electricity consumption for the common good.

Question: what other behaviours would you like to influence with policy?

Individual differences -options

- What do we think might influence the effect of the levers on consumer responses?
  - Social/environmental consciousness
  - Demographics – gender, age, income
  - Political persuasion (citizen type)
  - Structural energy efficiency tools e.g. solar PV, batteries
  - Learned/Perceived helplessness
  - Self efficacy
  - Perceived behavioural control

Question: what else do you think influences the effectiveness of energy policy?

Research Method

Experimental Lab Design

- Abstract public good game
- Questionnaire including individual differences like prosocial propensity

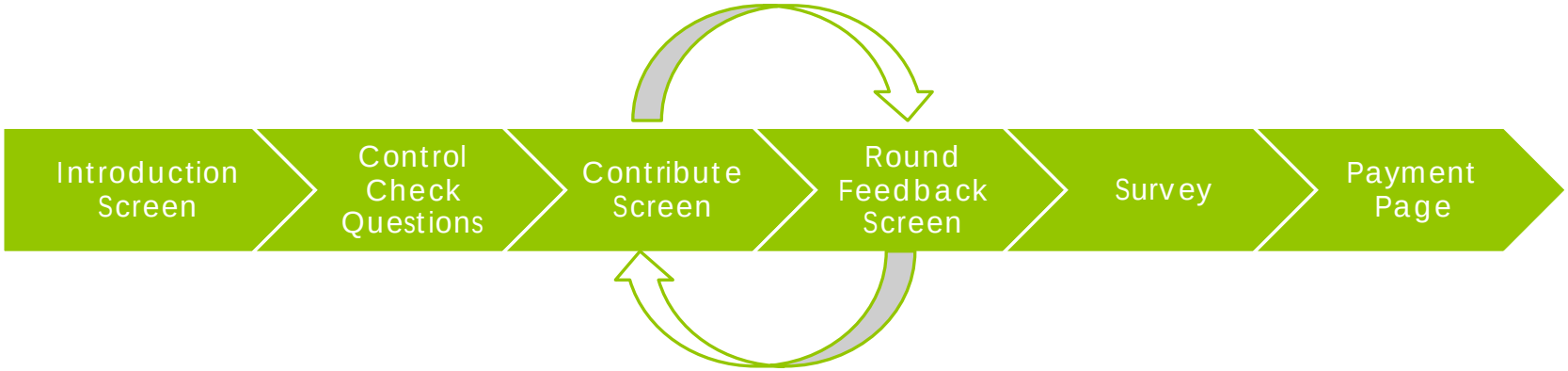
Sample

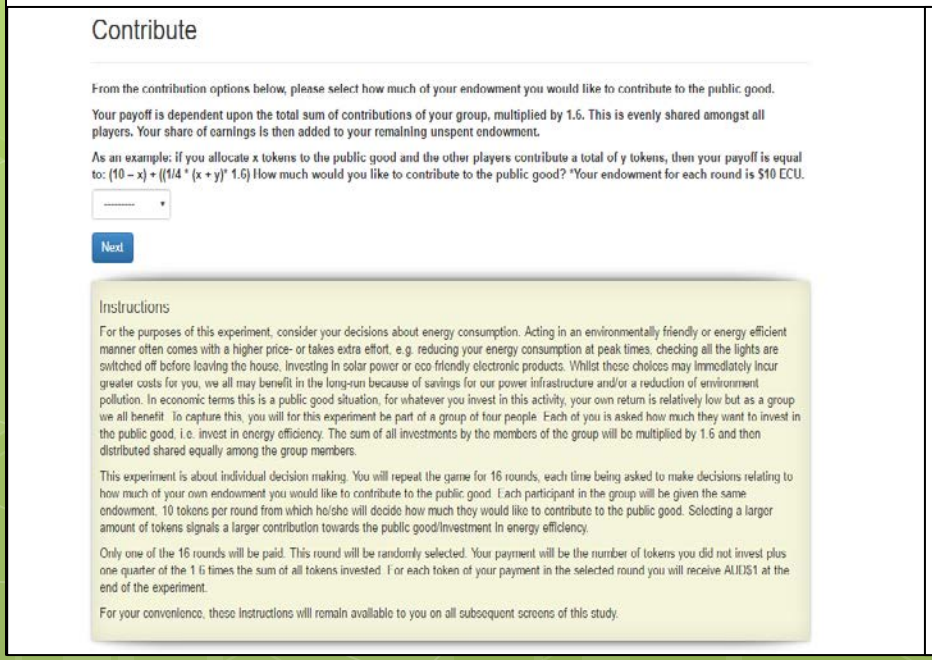
- 160 people, general population
- 10 groups of 16 people (4 groups per session)

Data Cleaning and Analysis

- T-Tests and ANOVAs – Which lever is most influential, How does this decay over time
- ANCOVA and Factorial ANOVA – Which individual differences influence the effectiveness of the levers for encouraging prosocial behaviour?

How does the game run?





Contribute

From the contribution options below, please select how much of your endowment you would like to contribute to the public good.

Your payoff is dependent upon the total sum of contributions of your group, multiplied by 1.6. This is evenly shared amongst all players. Your share of earnings is then added to your remaining unspent endowment.

As an example: If you allocate x tokens to the public good and the other players contribute a total of y tokens, then your payoff is equal to: (10 – x) + ((1/4 * (x + y)* 1.6) How much would you like to contribute to the public good? *Your endowment for each round is $10 ECU.

Next

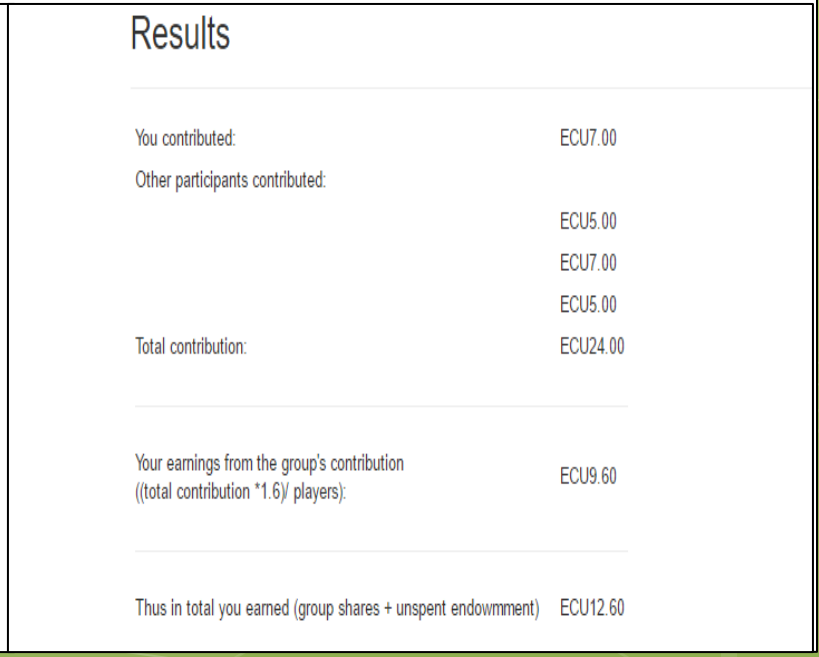
Instructions

For the purposes of this experiment, consider your decisions about energy consumption. Acting in an environmentally friendly or energy efficient manner often comes with a higher price- or takes extra effort, e.g. reducing your energy consumption at peak times, checking all the lights are switched off before leaving the house. Investing in solar power or eco-friendly electronic products. Whilst these choices may immediately incur greater costs for you, we all may benefit in the long-run because of savings for our power infrastructure and/or a reduction of environment pollution. In economic terms this is a public good situation, for whatever you invest in this activity, your own return is relatively low but as a group we all benefit. To capture this, you will for this experiment be part of a group of four people. Each of you is asked how much they want to invest in the public good, i.e. invest in energy efficiency. The sum of all investments by the members of the group will be multiplied by 1.6 and then distributed shared equally among the group members.

This experiment is about individual decision making. You will repeat the game for 16 rounds, each time being asked to make decisions relating to how much of your own endowment you would like to contribute to the public good. Each participant in the group will be given the same endowment. 10 tokens per round from which he/she will decide how much they would like to contribute to the public good. Selecting a larger amount of tokens signals a larger contribution towards the public good/investment in energy efficiency.

Only one of the 16 rounds will be paid. This round will be randomly selected. Your payment will be the number of tokens you did not invest plus one quarter of the 1.6 times the sum of all tokens invested. For each token of your payment in the selected round you will receive AUD$1 at the end of the experiment.

For your convenience, these instructions will remain available to you on all subsequent screens of this study.



Results

You contributed:	ECU7.00
Other participants contributed:	
	ECU5.00
	ECU7.00
	ECU5.00
Total contribution:	ECU24.00
Your earnings from the group's contribution ((total contribution *1.6)/ players):	ECU9.60
Thus in total you earned (group shares + unspent endowmment)	ECU12.60

Interactive Discussion

Revisiting our Discussions

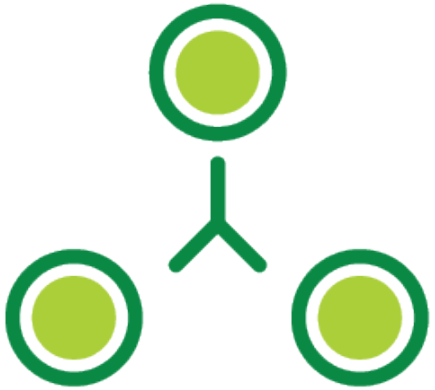
- Electricity usage as a social dilemma: What do you think? What do consumers think?
- Is the focus on ToU still appropriate?
- What other behaviours would you like to influence with policy?
- Individual differences and beyond - what else do you think influences the effectiveness of energy policy?

Question

- How are customers responding to electricity tariffs now?

Question

- Is there a policy preference for choice or reward to encourage different consumer behaviour in energy?

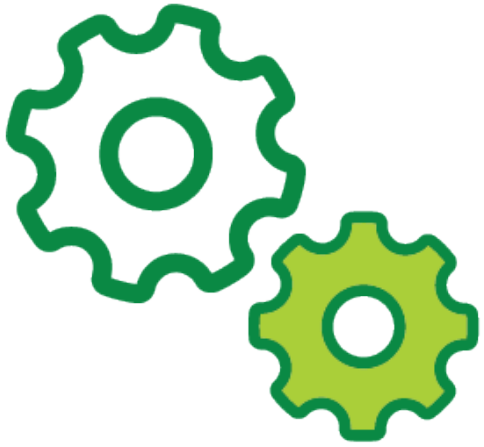


Question

- Other than price, what is important in changing consumer behaviour in energy?

Question

- How do you foresee using these findings in your role/organisation?

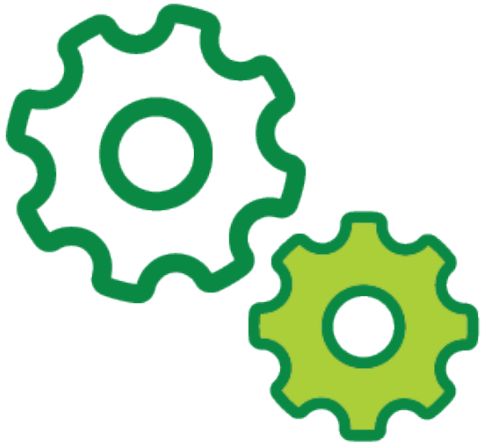


Question

- What can be done to make *nudges, hugs, smacks, and shoves* operational?

Question

- Can policy changes help to promote the use of *nudge, hug, smack and shove*?



Next Steps

- Discussion today
- Submission of draft research plan
- Ethical clearance, preparation, recruitment
- **Final research plan (Stage 3)**
- Then on to Stage 4: Conducting the experiments

Thank you!