

Behavioural Demand Management Techniques for a More Sustainable Community- Living Smart

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Living Smart Households

Achieving high level policy goals
through 'learning by doing'



Finalist 2011 UN World Environment Day Awards
Winner 2010 Australian Water Association WA Awards
Finalist 2011 Sustainable Energy Association Awards
Finalist 2010 WA Environment Awards

**Living
Smart**
Acting on climate change

Overview

Background

- What we know

Living Smart Households

- What it is
- Why it works
- What we have achieved
- Where to next

Acknowledgements

Living Smart is a community owned brand founded by the Southern Metropolitan Regional Council, City of Fremantle, the Meeting Place and Murdoch University to support a suite of programs developing capacity in community sustainability.

The Living Smart Households program is being managed by the Department of Transport.

Many individuals and agencies have also contributed to the development of the Living Smart Households program design. These include the Water Corporation, Alinta Sales, Synergy, WA Office of Energy, WA Office of Climate Change, the cities of Bayswater, Belmont, Joondalup, Mandurah and Swan, the shires of Kalamunda and Mundaring, the Town of Bassendean, SMRC, EMRC, Western Power and the Australian Government.



● It's how you get there that counts

Further Information

www.transport.wa.gov.au/livingsmart

www.livingsmart.org.au

Living
Smart
Acting on climate change

What we know

The TravelSmart program works

- Intensive behaviour change intervention to substitute car trips with walking/cycling/public transport (1997 – 2007)
 - Simplified information
 - Personalised approach (eco-coaching, incentives)



-10%



473,000



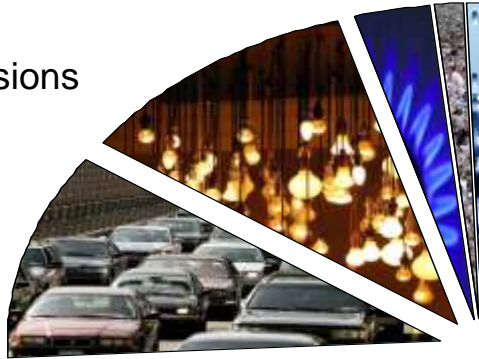
world leading

The Garnaut Review Report (page 409) acknowledges Western Australia as a leader in community education: “Programs need to be targeted and tailored to ensure that the right individuals receive suitable information. This seems to be done particularly well in the Western Australian Government’s TravelSmart program.”

What we know

Households are big emitters

Direct household emissions
(14.5 tonnes/HH)



Non-household emissions
(25.5 tonnes/HH)



Indirect household emissions
(16 tonnes/HH)



Total national emissions =
556 million tonnes CO₂e
(56 tonnes/HH)

What is Living Smart?

- A program to support and empower households to make changes such as:
 - switching off standby power
 - changing one car trip per week
 - installing water / energy saving devices
- This support includes:
 - coaching conversations,
 - information,
 - rewards,
 - referrals,
 - home audits, and
 - workshops and courses.
- To date
 - Living Smart 1: 2008/09, 15,000 households Mandurah and Joondalup
 - Living Smart 2: 2010/11, 10,000 households Eastern Metropolitan Perth



What did we know...

- That led us to develop the Living Smart program:
 - TravelSmart Works
 - Households are big emitters
 - Information alone is not enough
 - Collective messaging works
 - We are social beings – finances second
 - We want to do the right thing...but we don't know where to start



Collective messaging influences action

Door hanger message	Outcome (for energy use)	
“Save money by saving energy”		
“Save the environment”		
“Join your neighbours to help save”		

Information alone will not change behaviour

Are we rational?

Do we want to save money?



Price alone doesn't influence behaviour.
We are social (heart) beings first and we
respond to the values of others through
'social contracts' (head and hands).



12% have switched
69% are prepared to



most will pay
10% more

We want to 'do the right thing'

People want to do something but they don't know where to start



What we need to do

- Design comprehensive interventions that offer more than just information
- Help households to work out what to do – build efficacy to solve own problems
- Incorporate:
 - relationship building (friendly voice not a salesman)
 - coaching (social contracts)
 - normalisation (keeping up with the Joneses)
 - collective action (one part of a larger movement)



Key program components

Are you interested in:

- Reducing your impact on the environment? Yes No
- Reducing your energy bills? Yes No
- Saving energy and water? Yes No
- Creating a more comfortable home? Yes No



Water saving guides and ideas

- An introduction to saving water – easy ways to save water around the home often without spending a cent
- How to install a waterwise showerhead – what type do I need and how to do it?
- A 4 minute shower timer – to help the whole family!
- Your guide to waterwise gardening – what to plant, how to water and more
- Installing a rainwater tank – working out size, space and cost

Tick the guides and ideas that you need to start to cut your bills and to save energy and water. We will send just the things you choose – all for free.

Please send me:

Energy saving guides and ideas

- An introduction to saving energy – easy ways to save energy around the home without spending a cent
- Solutions to standby power – reducing about 10% of your energy bill
- Energy efficient lighting – what and how can I do it?
- How to convert downlights to a more energy efficient option – maintaining style with 'greener' lighting options
- How to adjust your water heater – to save money and greenhouse gases
- Upgrade to an energy efficient hot water system – how, why, how much?
- Natural heating and cooling for a comfortable home – staying warm in winter and cool in summer without the need for excessive heating and cooling
- Installing a photovoltaic (PV) system for your home – rooftop solar power – what, how, how much?
- How to choose the best electricity tariff for you and the environment – green power



Other resources

- Living Smart – how much money can I save? What can I do to stop wasting money on bills?
- Living Smart – how can I help the planet? Actions to reduce your household's environmental impact
- How to read your bills and track your consumption – of water, gas and electricity
- Star rate your home ready for an eco-makeover – a simple self audit of water and energy use in your home
- Home orientation compass – where to put blinds and trees to keep the house cool in summer
- A hardware store discount voucher for your local area – to make small changes easier
- A garden centre discount voucher for your local area – to make small changes in the garden easier
- My action list – pledging the changes that you would like to make
- Standby power reminder – to hang on the door as a reminder to turn off

Please turn over...

19 Station Street
Bayswater WA 6053

Dear Craig,

This is your final meter reading update for the Living Smart program. Your eco-coach will be in touch shortly to talk to you for the last time. However, there's no need to despair!

Their friendly voice isn't the only one out there that can help you make savings. There are plenty of groups, services and courses that will keep you on track to leading a more eco-friendly lifestyle. Check out the *Living Smart Lowdown* on page four. It's jam-packed with ideas and information on how to stay connected.

But first, please see your recent consumption results below.

Your household's energy (electricity and gas) over the past six weeks



	Daily Use	Comparison
Your household's consumption	29 units/day (kWh)	
Average for 3-4 person household	30 units/day (kWh)	😊
Living Smart target for households of your size	21 units/day (kWh)	😊

Your daily use is around the same as the average for a 3-4 person household and about 8 units (kWh) above the Living Smart target for the season. You nearly got two smiley faces this time! Some Living Smarties have achieved smiles all round by simply setting their air conditioner to 25°C and using it less often.

Your household's water usage over the past six weeks



	Daily Use	Comparison
Your household's consumption	489 litres/day	
Average for 3-4 person household	825 litres/day	😊



6

7

8



Call Analysis

1. **Establishment** – the participant identifies what might be causing the problem – air conditioning
2. **Engaging** them in **problem solving**: ‘Have you thought of a solution?’
3. **Facilitating change** – offering a ‘tool’ – shower timer, eco-consultant services
 - » Using normalising words ‘some people have found’

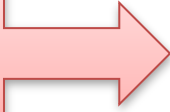
Call Analysis

4. **Action plan** – discussing the way they will go about it
5. **Social contract** – can I count on you to do that? I'll talk about it with you next time
6. **Setting targets** – 'see if your daughter will take shorter showers'

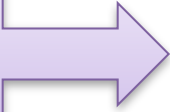
Designing Behaviour (change)

Change Process (Tim Cotter – Awake)

Interrupt the current behaviour



Introduce the new behaviour



Maintain the new behaviour



Methods and tools of change (Doug MacKenzie-Mohr - CBSM)

Method	Tool
Create a change moment	Phone coaching / event

Method	Tool
Normalise behaviour	Conversation: "many people have found.."
Highlight some options	Conversation: "have you thought of ..."
Highlight benefits	Information / stories
Social contract / commitment	Conversation: "when do you think you will ...?" / goal setting

Method	Tool
Prompt behaviour	Point of decision signage (e.g. shower timer)
Reward behaviour	Conversation: "how's it going?"
Reminder	Coaching calls / feedback letter

Monitoring and evaluation

Evaluation Plan

Process measures

Info ordering levels
Interest in program
Uptake of meter reads
Self reported actions
Eco-consultation uptake
PV referral uptake
SHWS referral uptake
Course participation
Quality survey

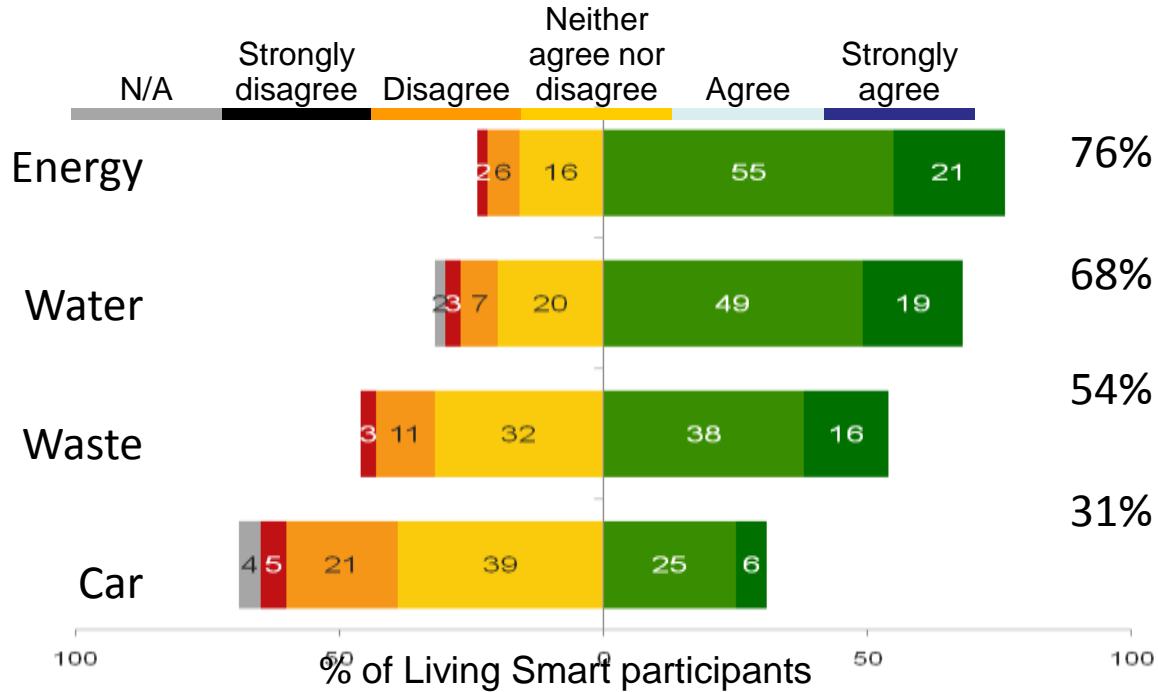
Outcomes

Indicator	Aim	System measure	Sample measure
Electric use	Reduce 10%	Suburb data	Meter reads*
Gas use	Reduce 10%	Suburb data	Meter reads*
Water use	Reduce 10%	Suburb data	Meter reads*
Waste	Reduce 10%	Suburb data	
Recycling	Increase proportion	Suburb data	
Car use (km)	Reduce 10%	Bus ticketing (proxy)	Random sample diary*

* participant and control group

Living Smart #1
(Demonstration Project)
results 2008/09

Reported shifts in behaviour



Reported household savings

Area	Daily reduction	Annual CO ₂ reduction	% saving
Energy	2.7 kWh/day	940kg CO ₂ e- pa	9%
Water	50L/day	23 Kg CO ₂ e- pa	8%
Car use	3 km/day	370 Kg CO ₂ e- pa	5%
Waste	0.4 kg/week	17 Kg CO ₂ e- pa	2%

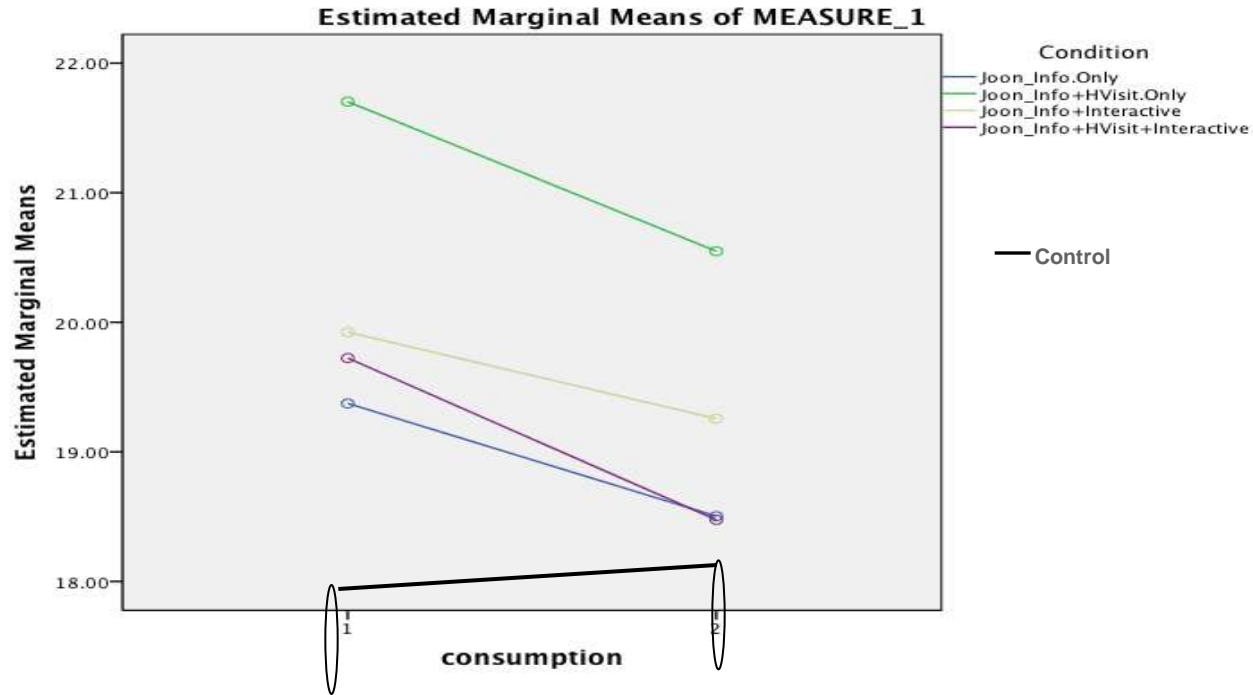
TOTAL participating household savings per annum

1.1 tonnes CO₂e-

19,000 litres of water

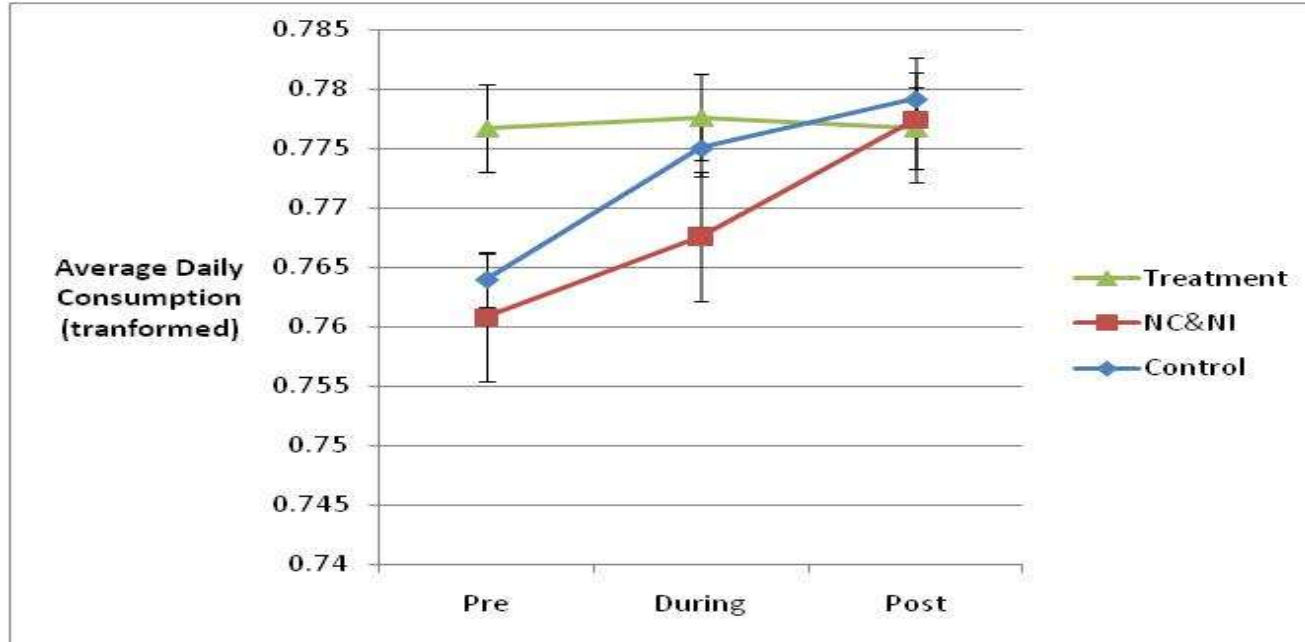
\$200 lower electricity bills

Daily energy use - Joondalup



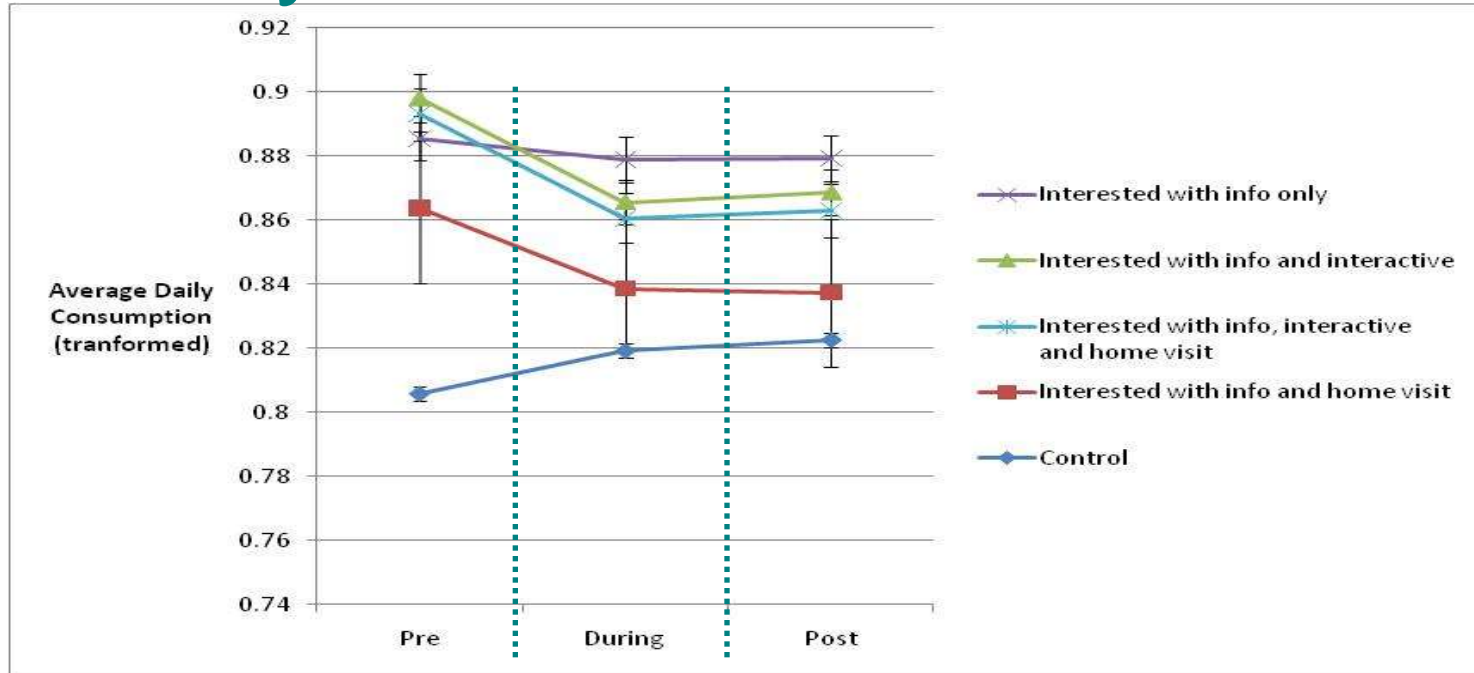
Participant consumption decreases (for all levels of involvement) and control consumption increases

Daily water use - Joondalup



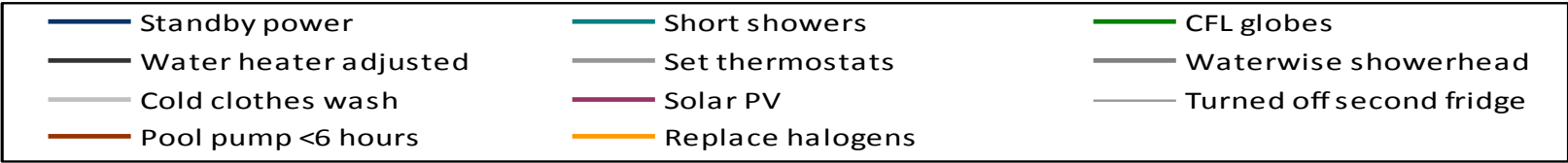
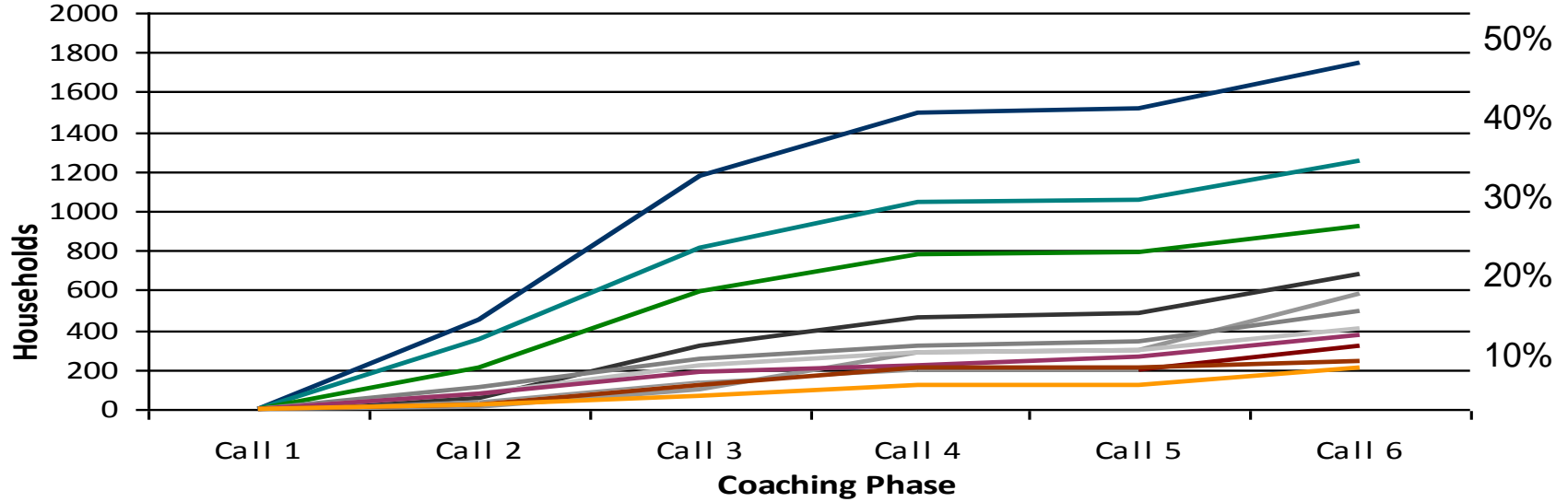
This translates to a 23 litre per day saving for the treatment groups relative to controls (winter)

Daily water use - Mandurah



This translates to a 53 litre per day saving for the treatment groups relative to controls (summer)

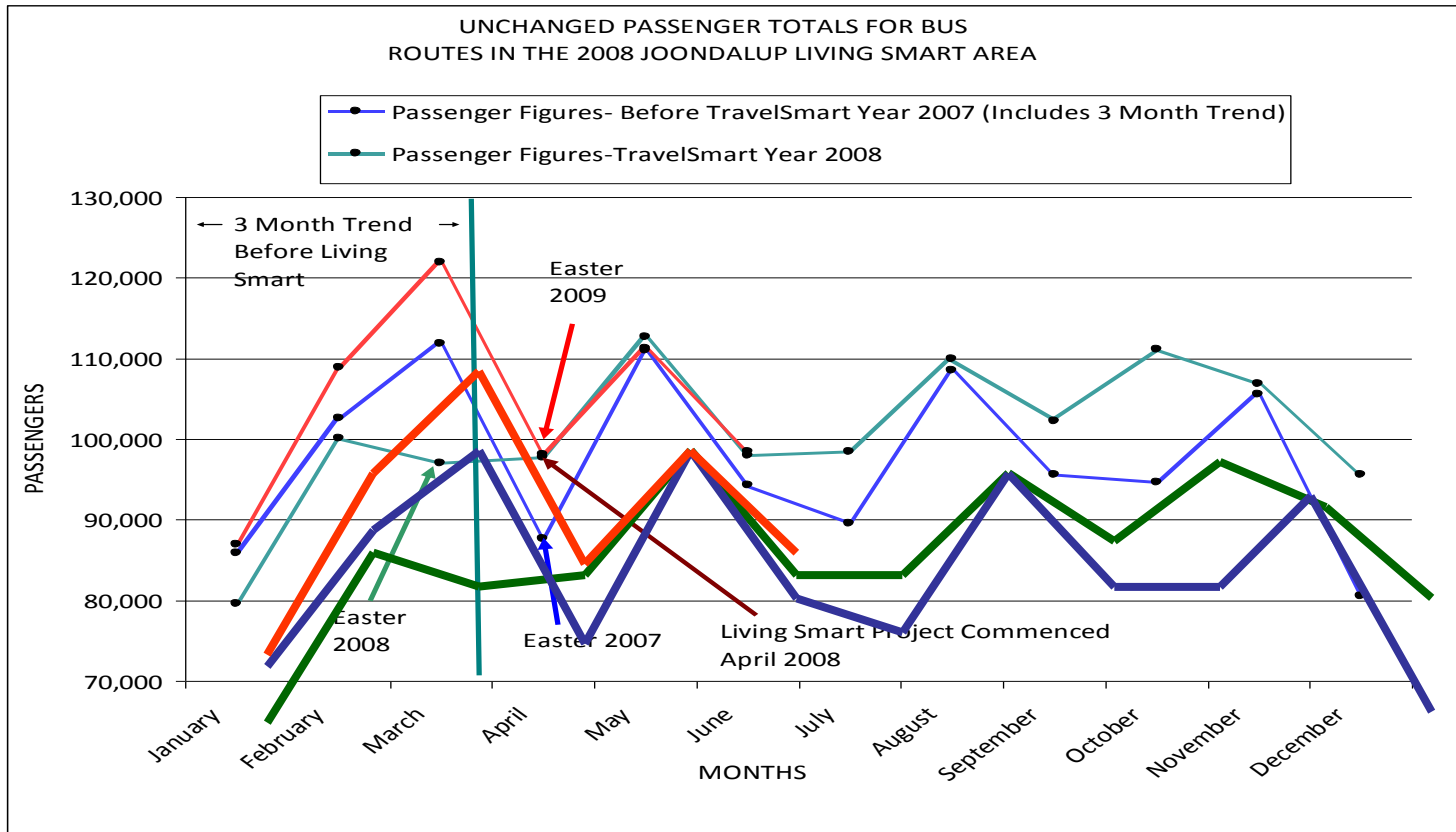
ENERGY ACTIONS



Pre and Post Travel survey results

Trips/pn/pa	Before	After	Change
Walking	87	101	+ 16%
Bicycle	17	24	+ 41%
Motorcycle	3	3	-
Car Driver	697	662	- 5%
Car pas	275	260	- 5%
P Transport	39	44	+ 13%
TOTAL	1118	1094	- 2%

= -1.7km/car/day or -3km per household/ day



Hard (bus system) data validates the result that bus patronage increased by around 10%

The program's annual impact



Long-term value for money (10 year)

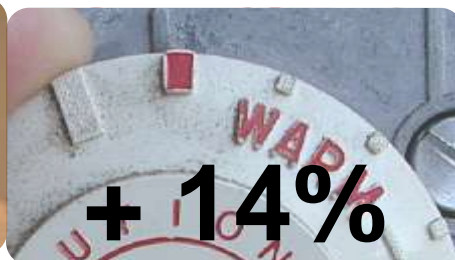


Desal \$2.20

Feed in tariff
20-40c

Living Smart #2
(Perth Solar City)
2010/11

Tracking for slightly better results



- Meter reading data validates self-reports
- Energy savings of 2.9kWh/hh/day
- Water savings of 40L/hh/day

Conclusions

- Living Smart was well received by households
- Multiple behaviour changes were achieved
- Results:
 - **2.7-2.9 kWh of energy reduction** per household per day (self report) = **-9%** reduction, meter readings mid point validate reductions
 - Meter data records **around 40L of water saving** per household per day = **-8%**
 - Travel diary **reductions of 3 km/day/hh** = **-5%**
 - The program **saved 1.2 tonnes CO₂e per active household** – **with an estimated 10 year abatement cost of \$25 per tonne** (\$2.2m to reach 8,000 active hh)
- Program has been recognised in national case studies and with awards