

Changing Demand in Households with Children

September 2015

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Consumer Advocacy Panel (now Energy Consumers Australia) research priorities

1. **Changing demand profiles** — How has household demand changed in recent years? What are the drivers for those changes? Where is demand likely to go in the future?
2. **Tariff design** — What are the likely implications for different classes of consumers of any move toward more cost-reflective network tariffs?

Project Aims

- Increase evidence underpinning advocacy to reduce vulnerability of family households to changes in energy pricing structures, particularly time-of-use (TOU) pricing
- Better understand:
 - What changes in energy use are occurring in family households and are likely in the future
 - How (in)flexible family household energy practices are at different times of the day
 - What protection(s) and assistance may benefit this consumer group

Note, study-specific definitions:

‘Family households’ - households with 1 or more children under 18

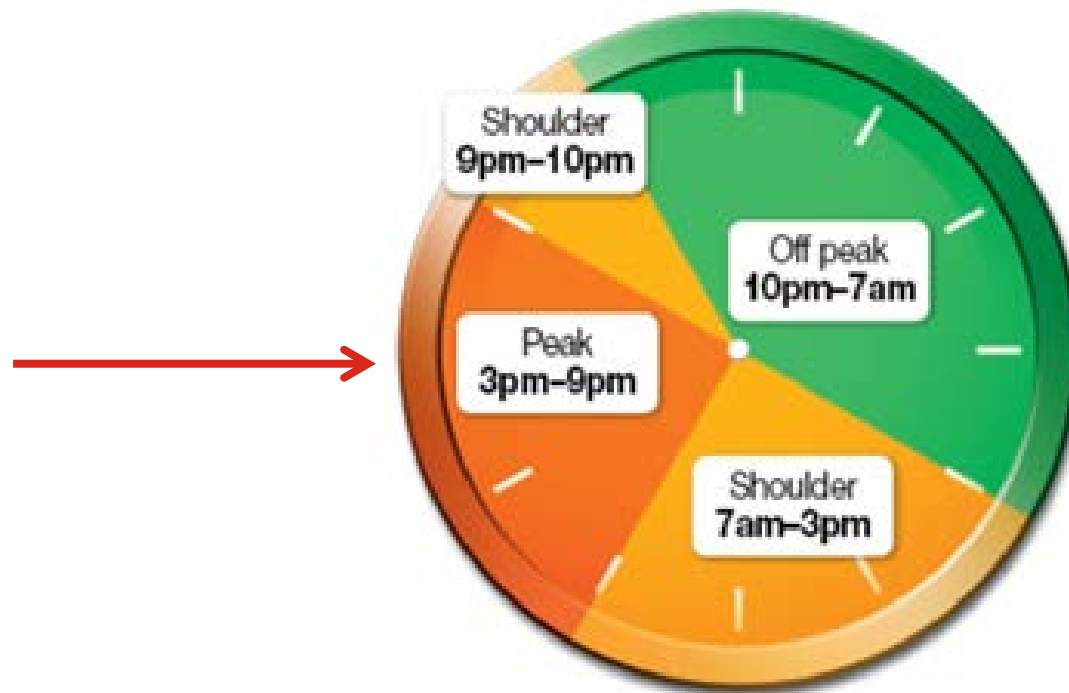
‘Parents’ – includes carers, guardians, grandparents with responsibility for caring for children at home

Why study households with children specifically?

- Often missed/under-represented but face unique challenges in responding to changes in electricity pricing
- More often have difficulty paying utility bills (Simshauser and Nelson, 2012; IPART2010)
- Reduced family income (ABS 2013)
- May have higher and less predictable consumption
- May have heat vulnerable occupants
- More likely to be at home during the day
- May be adopting new technologies/ appliances (Zpryme 2011)
- May have limited free time for thinking about energy

Example of TOU tariff structure in Victoria

Weekdays



Source: <https://www.switchon.vic.gov.au/flexible-pricing/how-flexible-pricing-works>

Flexible pricing 'opportunities'

Dishwasher.
Reduce costs by
\$20-\$40 per year



Clothes Dryer.
Reduce costs by
over \$50 per year



Washing Machine.
Reduce costs by
\$30-\$60 per year

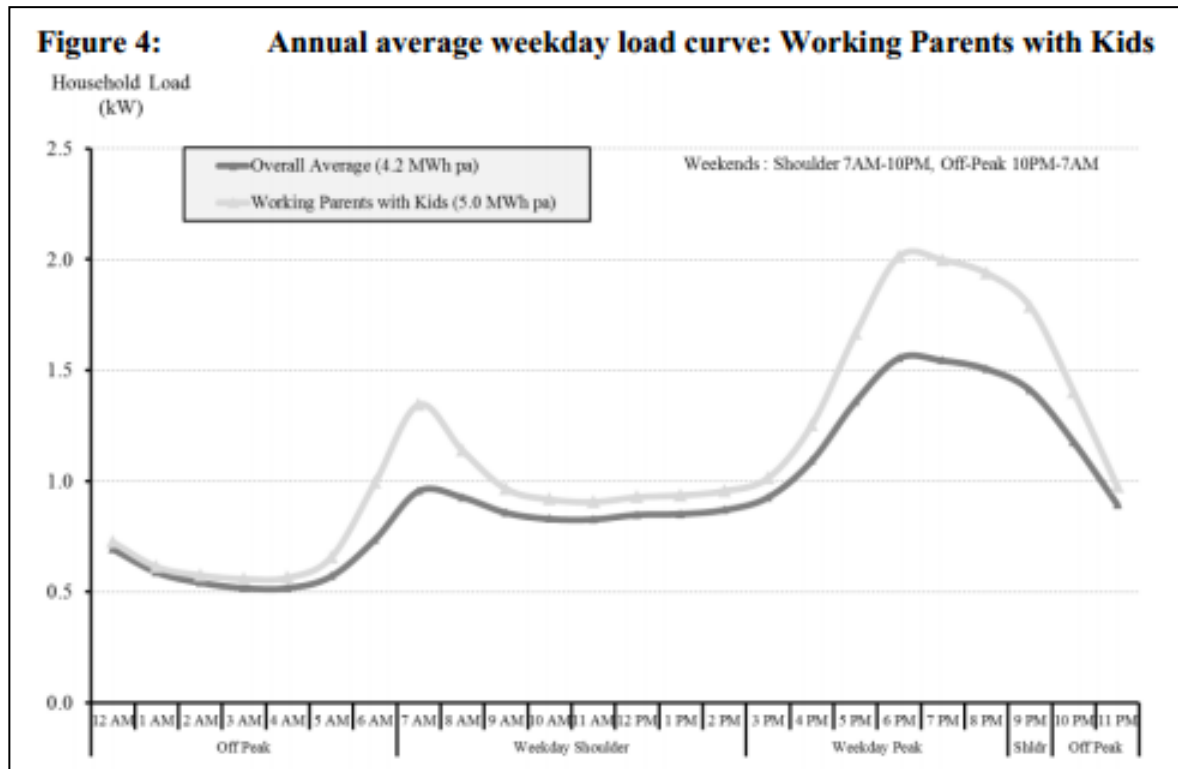


‘Flexible pricing saves you money if you can change a significant amount of your energy use to off-peak or shoulder times’

‘If all of these appliances were consistently operated at off-peak times instead of on a typical flat rate, your household could reduce the cost of using these appliances by up to \$100 to \$150 a year’

Source: <http://switchon.vic.gov.au/bills-pricing-and-meters/flexible-pricing>

Timing of electricity use in family households



→ Working parents and parents at home are most vulnerable to financial impact from Time-of-Use pricing

From Simshauser & Downer (2014)

Research method

- Consultation with energy consumer advocates
- Focus on everyday practices and routines – what people ‘do’ in their homes, how this is changing, and implications for energy use/demand
- Qualitative research followed by quantitative
 - **Stage 1:** In-home interviews and tours in afternoons/evenings with 44 households (parents/guardians) to find out ‘what it’s really like’ during busy/ peak times
 - **Stage 2:** Interview findings tested in national survey (547 eligible responses)
- Note: high participation by women in this research

Key findings and implications

Routines are important for households with children

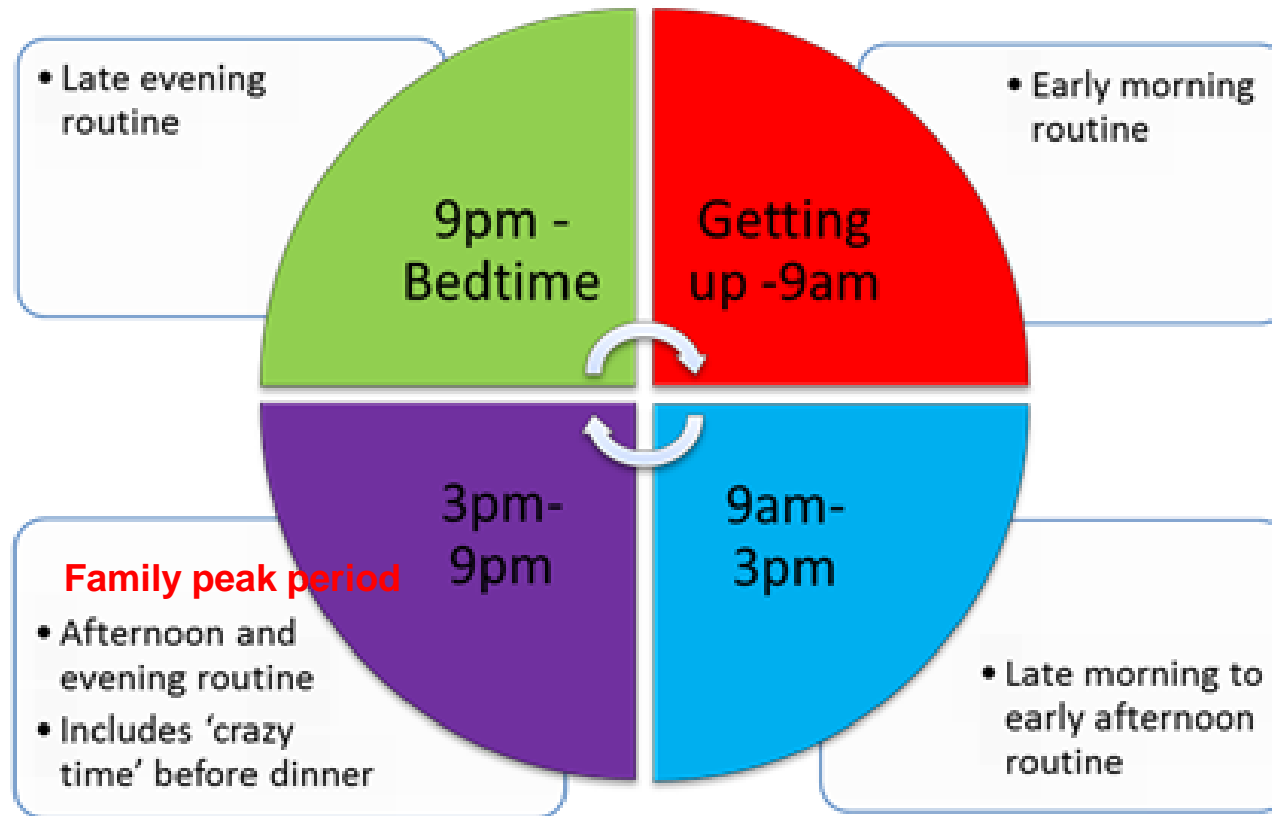
...particularly on weekdays

*‘[We are] **consciously creating routines** because... it’s just sort of to ensure that everything gets done.’ Peta*

*‘**Routine is my saviour...**it makes after school “do-able”.’
Mel*

*‘**Consistency** helps [the children] understand our expectations of them.’ Kim*

Weekday routine activity periods in family households



The family peak and ‘crazy time’

*‘Between about 4pm and 7pm and so if any family members would ring I’d say “What the hell are you doing ringing in **crazy time**?” Keira*

*‘**Arsenic hour**...it’s like from about 6 til 7:30 at night when children just are knackered from a day’ Kelly*

*‘**Feral o’clock**, ‘**witching hour**’...*

→ While managing many responsibilities electricity management is often not front of mind

Information and communication technologies

- ICT devices and their use viewed as ‘uncontrollable’ and fast-changing concern for parents
 - Parent’s focus is on children’s wellbeing but understandings of what’s best for children are varied, questioned by parents
 - ICTs are used to occupy and manage children
 - School-age children’s use of ICTs is compressed in peak tariff period
 - Increasing work from home affects timing and amount of energy use from ICTs and other activities
- Emerging ICT practices have highly unpredictable energy impacts for the future

‘Computers, iPhones, iPad, yeah. It’s insane...[The children will] be going from one thing to the other. I don’t even want to think about what it’s going to be like when my little guys get up to that age because, I mean, it’ll change again won’t it?’

Children, grooming and chores

- Childhood development meanings of grooming and doing chores are important to parents

‘So she’s on to the next stage... learning how to look after yourself which is part of your wellbeing. So it’s not just grooming. It’s really wellbeing.’

- Children’s chores (and much grooming) often occur during the peak period

‘The rule is whoever’s job [the washing up is], no matter how long they have to leave it, it’s all their job. So it’s accumulative nastiness, you don’t want to leave it for too long.’

- The contribution of older children to household chores can be important to managing the family peak, particularly in large households

→ Family households unlikely to shift children’s grooming and household chores in response to TOU tariffs

Food provisioning

- The evening meal is central to peak period routines
 - Some electric cooking appliances favoured for time efficiency *despite access to gas cooking*
 - Baking associated with entertainment and education for children
 - Some electric cooking appliances assist children's independence
- Social/health meanings in food preparation take precedence over energy considerations
- Dishwashers often run late at night but multiple loads per day in larger households
- Most families with a dishwasher are able to shift one load to off-peak times (but most already do this)



Bathtime

- Bathing frequency for children varies but mostly occurs during the peak period
- Bathtime is about much more than cleanliness
 - Fun, education, family relationships, calming children for dinner or bedtime, creating time for parents to get other things done
- Bathtime is interlinked with many other activities which use energy

‘[Bathtime] was a nice time for her and her dad to spend together. And it also gave me a bit of time out... The [kids] can shower themselves or bath themselves now, and that’s our time to get them out of our hair so we can clean the kitchen...So two purposes.’

→ Limited opportunity to shift bathtime (or linked activities)

Laundry

- Frequent washing, often reactive to opportunity (time gaps) and family needs (similar for ironing, vacuuming)
 - Much laundry already done outside the peak period (if practical)
 - Limits to laundry activities in off-peak, e.g. noise, loss of downtime
 - Preferences not to use clothes dryer often overridden by convenience and other family needs
- Opportunity for families to reduce peak period clothes-related energy use is likely to be less than anticipated

'I do [washing] all the time. I just do it whenever I've got a spare moment...'

The family peak and working towards 'down time'

- Activities are compressed into the family peak in order to reach a quieter period at the end of the day

*'We can just sit down and just relax for a couple of hours...[it's] a bit too frenzied sometimes 'cause [my husband] and I...we have the running joke that we're "**rushing to relax**".'*

→ Delaying housework and other energy activities until late in the evening may have health and social implications for households with children

Disruption and 'time gaps'

- Disruptions to routines are 'normal' in family life, e.g. illness & injuries, guests, pregnancy/new baby, relationship breakdown, employment changes, sport/activities, school holidays, heatwaves, blackouts, bushfires
- Parents use (unpredictable) 'time gaps' to stay on top of things

'[During my daughter's nap I] prepare dinner and cut vegetables, cleaning and wash clothes or something like that, I try to clean the house ...if she wakes up yeah, it's very mess[y].' Naomi

→ Routine provides a structural backbone to the unpredictable aspects of family life

‘Managing’ energy use

- Time and/or interest limit frequent attention to managing energy use
- Multiple household members (energy users) make management and ‘control’ of use difficult
- Energy saving intentions frequently subsumed by the intensity of responsibilities raising children
- Attention to intermittent quick and easy (small) savings, e.g. lights
- Energy efficiency often sought through exclusion of high energy appliances (e.g. clothes dryers) or inclusion of energy efficient appliances (if affordable) because monitoring/avoiding use is challenging
- Previously excluded appliances may enter home at times of difficulty (e.g. air-conditioners or clothes dryers)

Tariffs and confusion

- Householders often confused about electricity tariffs

‘They’ve “baffled” it so much that you actually can’t compare them. I guess you just go with your gut.’
- 57% of survey respondents were unsure about their current tariff structure (e.g. flat-rate, off-peak or TOU)
- Ideas that electricity is cheaper at night are widespread
- 50% don’t know what time their (perceived) off-peak rate starts
 - Suggests interest/capacity to utilise off-peak rates is low and/or
 - Many have already exercised their ‘flexibility’, e.g. running dishwasher late in the evening

With existing tariff confusion and disengagement is more tariff ‘choice’ and complexity likely to benefit households with children?

Financial implications for households with children

- Few interviewees were interested in shifting activities outside peak times in response to a TOU tariff
- Over half (54%) the survey participants who reported being on a TOU tariff said they didn't do anything differently on this tariff (or didn't know if they did)

'I'd like to think I would try and do [washing] in the hours of best energy conservation [off-peak] but...it doesn't work like that. So it's usually [done] when I remember or I've got a bit of time to do it.' Cass

→ Many households with children are likely to experience higher electricity bills with a TOU tariff

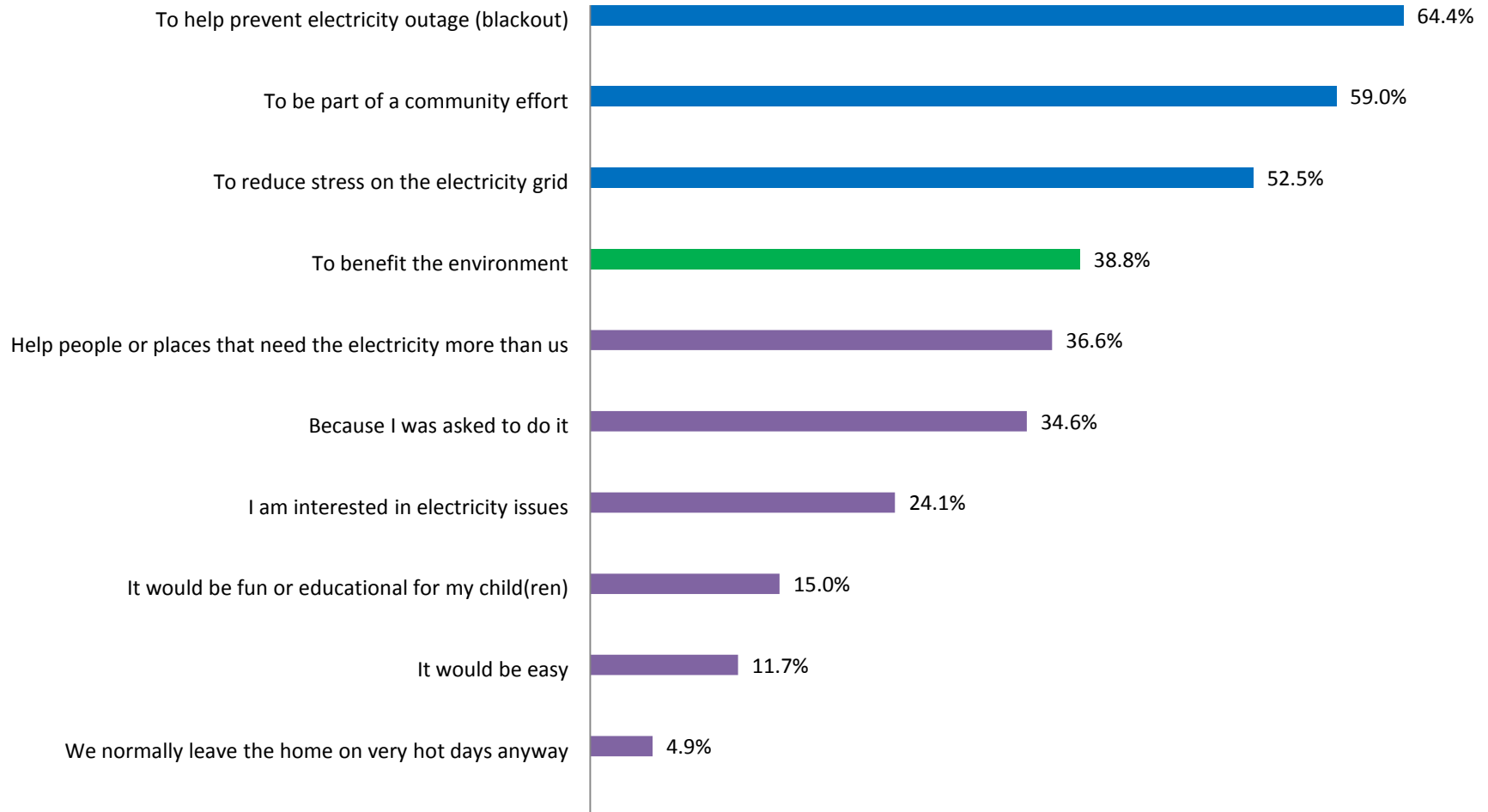
This **does not mean** family households are inflexible

- Family households are:
 - in a constant state of change, highly dynamic
 - live in an environment where their routines are regularly disrupted through other conditions and events
- Our previous research suggests that households (not specifically households with children) are willing to assist with network supply and demand issues for other (non-financial) reasons
- **85% of survey respondents indicated willingness to reduce peak period electricity use if occasionally requested on hot days when there may be electricity shortages.**

Why would they do that?

Occasional flexibility for the 'common good'

Reasons to respond to a peak alert



Preliminary recommendations

Ensure TOU tariffs are optional for households with children and that financial benefits/ opportunities are not overstated

Expand current models and paradigms of understanding electricity consumers as market participants and economic agents to consider householders' social relationship with, and connection to, energy

Develop demand management programs premised on 'non-financial' understandings of consumption and change

What would this look like?

Alternative demand management approaches

- Non-financial peak alerts
- ‘Common good’ campaigns: e.g. water restrictions, bushfires, public health issues
- Incentivising householders to innovate and adapt during peak periods (occasional flexibility)
 - Free/ low cost peak period movie tickets
 - Free library events during peak times (and extended opening hours)
 - ‘Share the air’ neighbourhood campaign

Thankyou and Discussion

- Research participants
- Consumer advocacy organisations (including BSL)
- Consumer Advocacy Panel

This project was funded by the Consumer Advocacy Panel (www.advocacypanel.com.au) as part of its grants process for consumer advocacy projects and research projects for the benefit of consumers of electricity and natural gas.

The views expressed in this document do not necessarily reflect the views of the Consumer Advocacy Panel or the Australian Energy Market Commission.

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Other considerations

- CALD households with children
- Low literacy and numeracy households
- Tools available, e.g. <http://www.yourchoice.vic.gov.au/> available
 - Low awareness, requires time
- Households with children are dynamic – routines change, e.g. school, sport, employment.
 - Are parents likely to review the suitability of their electricity tariff alongside these other changes?
- How much time and interest do households have for energy issues?

Recent research

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