LIFE AFTER FEED-IN TARIFFS

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Premium feed-in tariffs

NSW – Solar Bonus Scheme:

- Paying a premium price for solar electricity exported to the grid
- Stimulating investment in solar industry
- Cost have come down
- Designed to operate for a limited time

Who is affected?

South Australia

Since 2011

62,785 customers

Until 30 Sep 2016

New South Wales

Since 2010

146,000 customers

Until 31 Dec 2016

Victoria

Since 2011

67,160 customers

Until 31 Dec 2016

NEWS

Solar power: Bill shock looms as lucrative tariffs roll back, advocates warn

By consumer affairs reporter Amy Bainbridge

Updated Tue 19 Jul 2016, 12:59pm

Thousands of Australians will be hit by electricity bill shock of about $1,500 when generous solar feed-in tariffs are rolled back in coming months, consumer advocates have warned.

The tariffs were introduced for a set period to kickstart Australia's uptake of rooftop solar by offering money to solar users who fed energy back into the grid.

More than 275,000 households will be affected when the tariffs are unwound from September to January in New South Wales, South Australia and Victoria.

PHOTO: The tariffs were introduced to boost Australia's rooftop solar uptake.

Bill shock

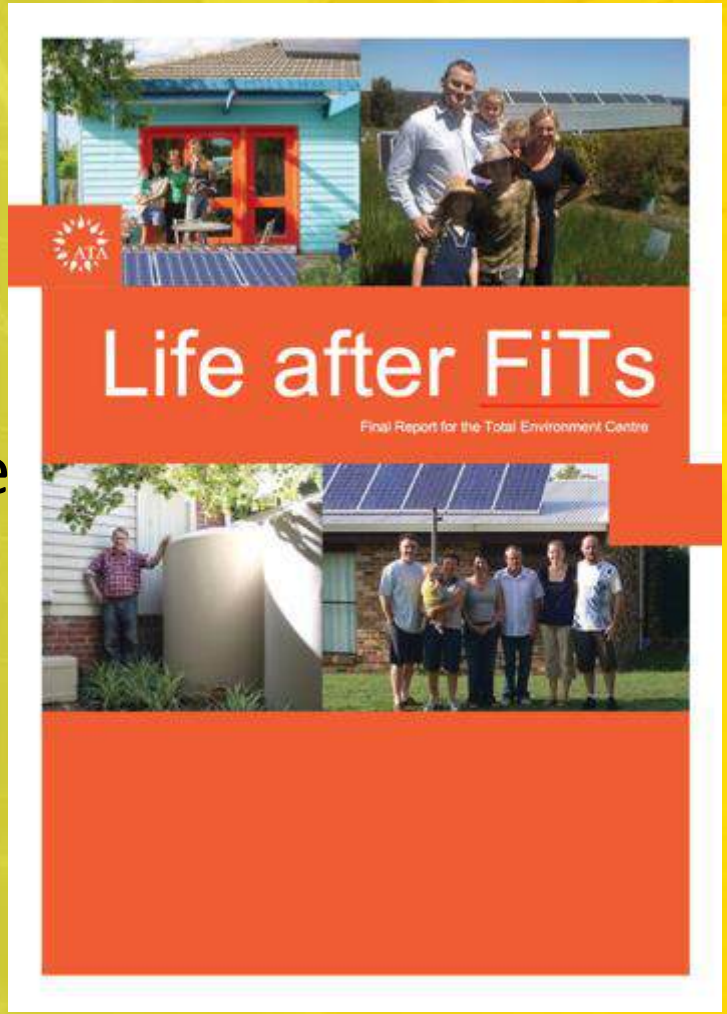
- The average loss of income for someone with a 2kW system currently on the 60c SBS is ~$1600 pa
- Your “behind the meter” solar will still be worth about $450 pa
- Increasing your usage from 50% to 75% will earn you about another $200 pa

Financial motivation

"How to minimise the financial impact of the end of the Solar Bonus Scheme"

Tech report

- Commissioned by Total Environment Centre
- Prepared by Alternative Technology Association
- Describes the financial impact on customers of the end of premium feed-in-tariffs
- Outlines opportunities such as metering, retail strategies, batteries, etc.



Key terms

- Premium feed-in tariff - 60c/kWh or 20c/kWh
- Retail energy cost ~27c/kWh
- Standing charges ~$1/day
- Solar export price - 0-10c/kWh
- Payback period

FIVE STEP PLAN

LIFE AFTER FEED-IN TARIFFS

Before you start

- You aren’t legally required to do anything – but you’ll be worse off, and decisions may be made for you
- It’s good to know who your retailer is, what tariff you’re on and what appliances use the most energy around your home
- To lower your electricity bills there’s a host of other energy conservation and efficiency measures you could consider

Step 1: Get the right metering

- NSW Solar Bonus Scheme was based on a ‘gross’ feed-in tariff

GOOD

Step 1: Get the right metering

If your feed in tariff is higher than the price you pay for electricity, gross metering is better

GOOD

Step 1: Get the right metering

If your feed in tariff is lower than the price you pay for electricity, net metering is best

GOOD

Step 1: Get the right metering

Options

- Do nothing
- Network may read your gross meter as a net meter (~$150?)
- Get a new interval meter from your network (up to $600?)
- Get a new “free” smart meter from your retailer

Step 1: Get the right metering

What is a smart meter?

- 2 way comms – ie, sends data back to network and retailer daily
- Makes some functions easier and cheaper
- Required from 2018 for new home + replacements
- Radiation concerns

What do smart meters do?

- Turn electricity supply on and off remotely
- Meter read — scheduled and on demand
- Meter installation enquiry — remotely obtaining energy information, meter status, and usage data
- Meter reconfiguration – remotely enable access to new tariffs and new arrangements, such as solar connections and demand tariffs

AEMO Ancillary Services | AEMO Guide to Ancillary Servi... | Battle royale brews over batt... | powershop :: Unit balance

Powershop Australia Pty Limited (AU) https://secure.powershop.com.au/unit_balance

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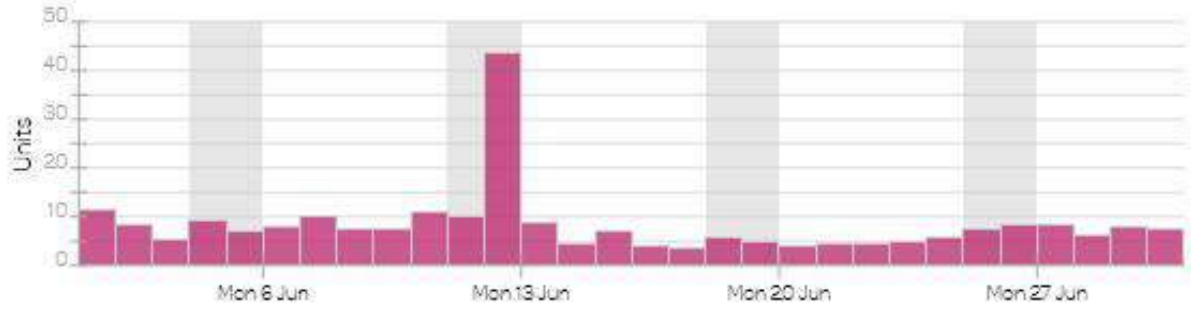
Days Units

You're about 833 units ahead

Buy power

You've saved
$524.06
off Base Rates
in the last 12 months

You're currently using about
$2.99 (7.4 units)
per day



Key:

Power Organiser

July

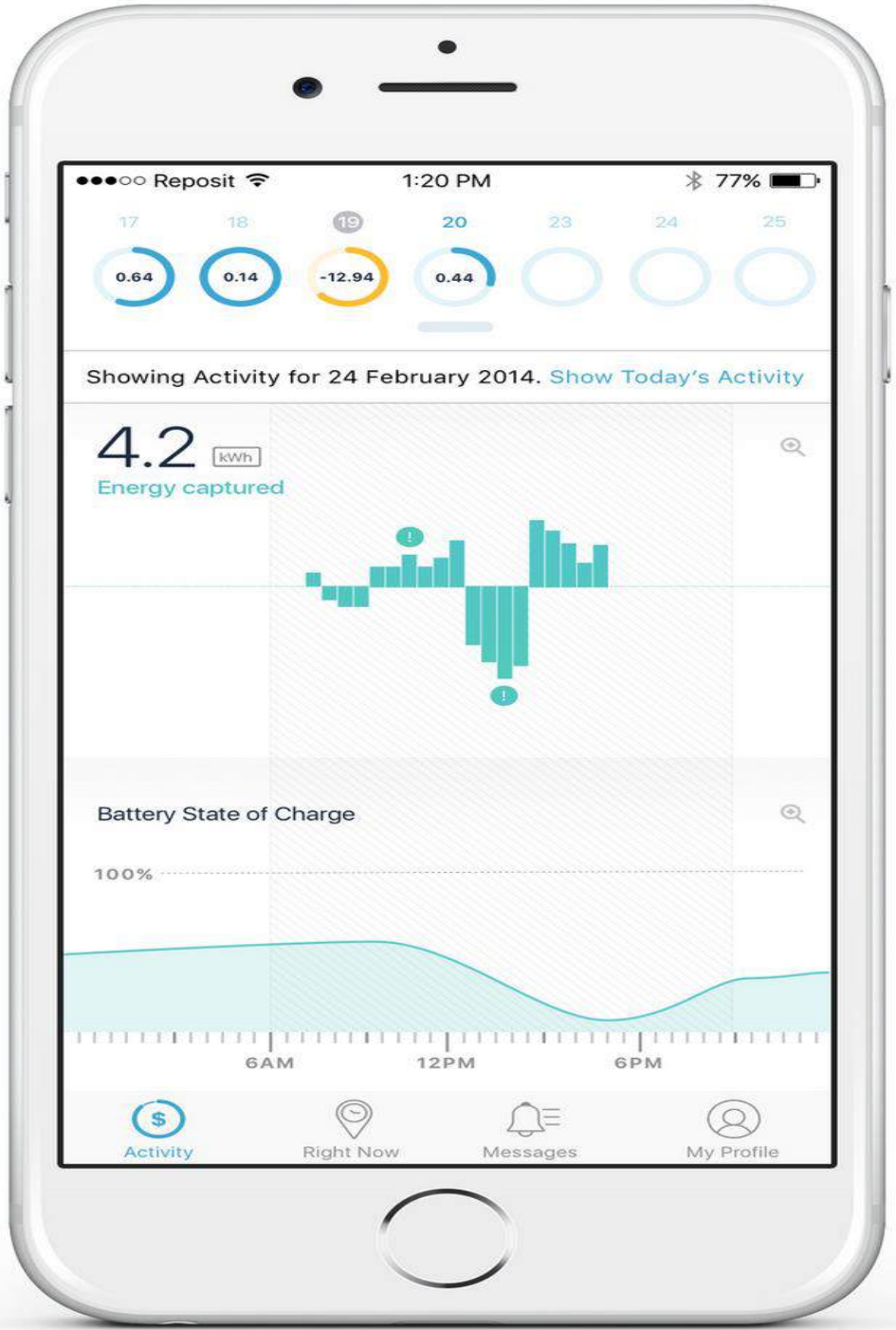
M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Passive energy monitors and in home displays

Energy management systems & “push controls”

- “Internet of things”
- Control appliances remotely
- EMSs automatically choose best place to put your solar energy

Selling your energy

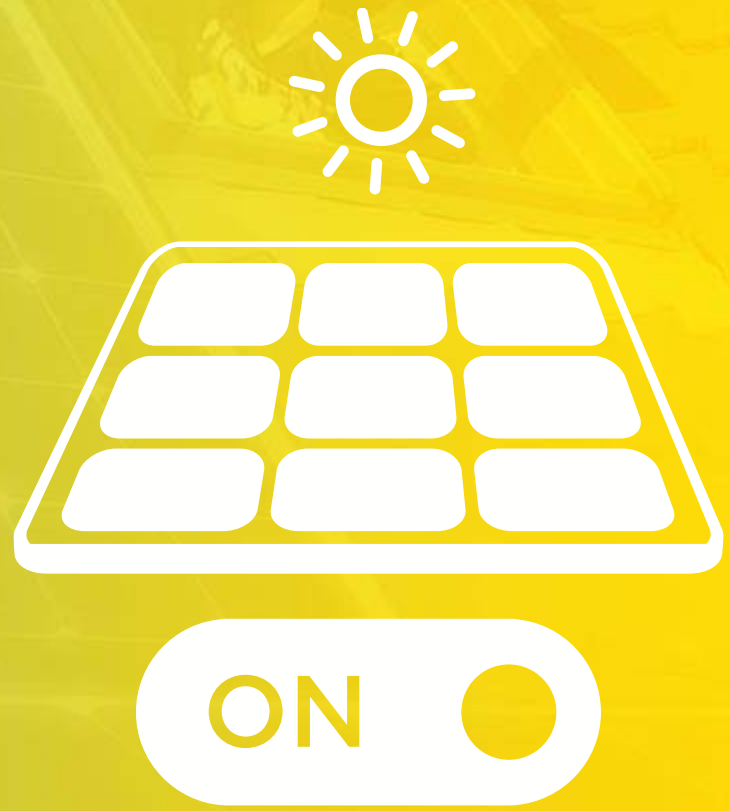


STEP 1: WHAT TO DO?

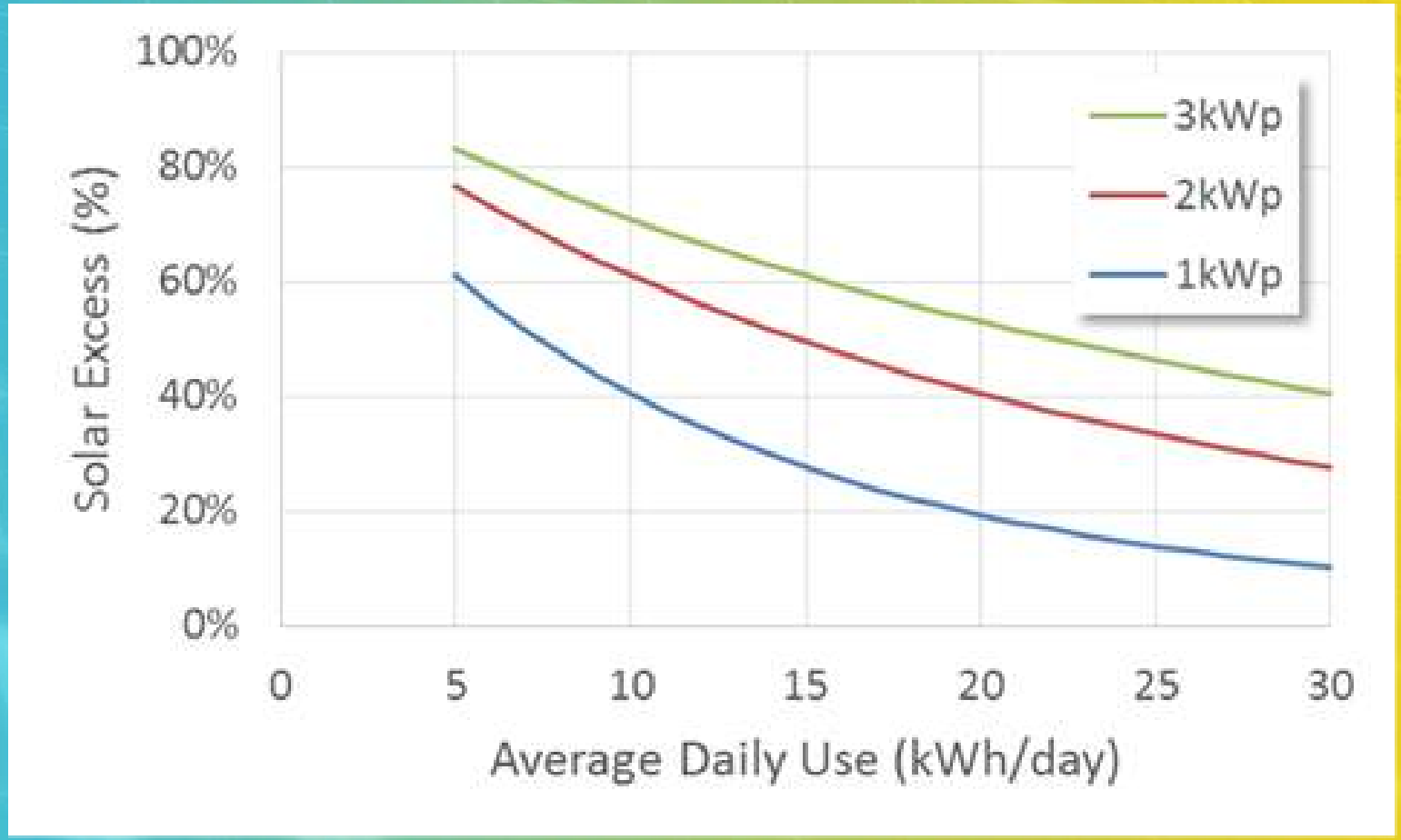
- Has your retailer already contacted you?
  - If so, get cracking!
  - Opt-in or opt-out?
  - Carefully evaluate their offer, eg re new terms & conditions
- Make sure your ‘gross’ metering runs until 31 Dec 2016
- Get enrgy data from the retailer’s web portal
- Consider an energy monitor

Step 2: Use more of your solar electricity

- The average household exports more than 50% of its solar energy to the grid, but…
- Your solar is worth more to you (~27c) than to your retailer (0-10c) so…
- Maximise the use of your solar rather than export it!



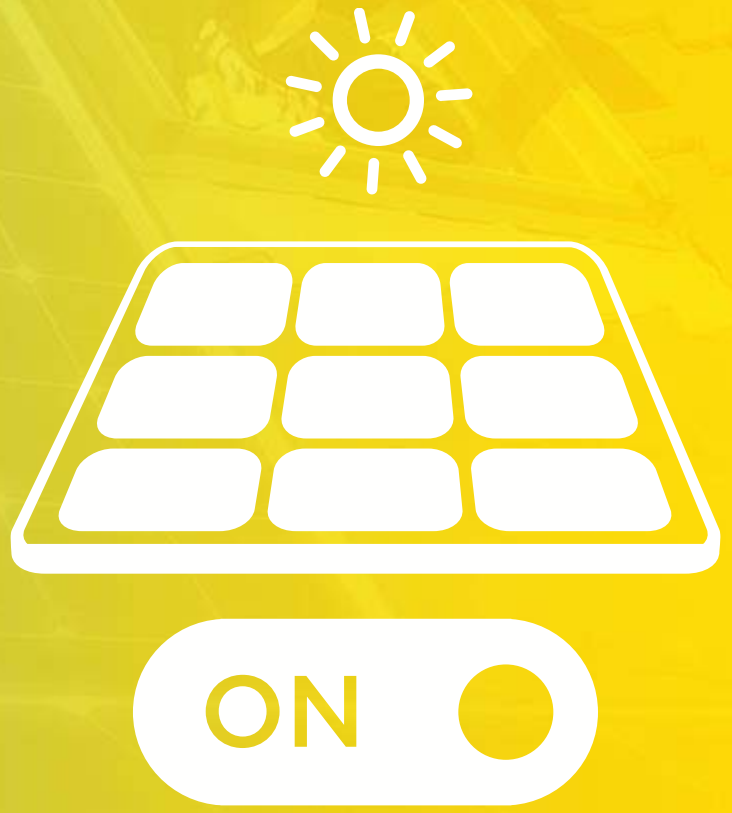
How much am I “wasting”?



Step 2: Use more of your solar electricity

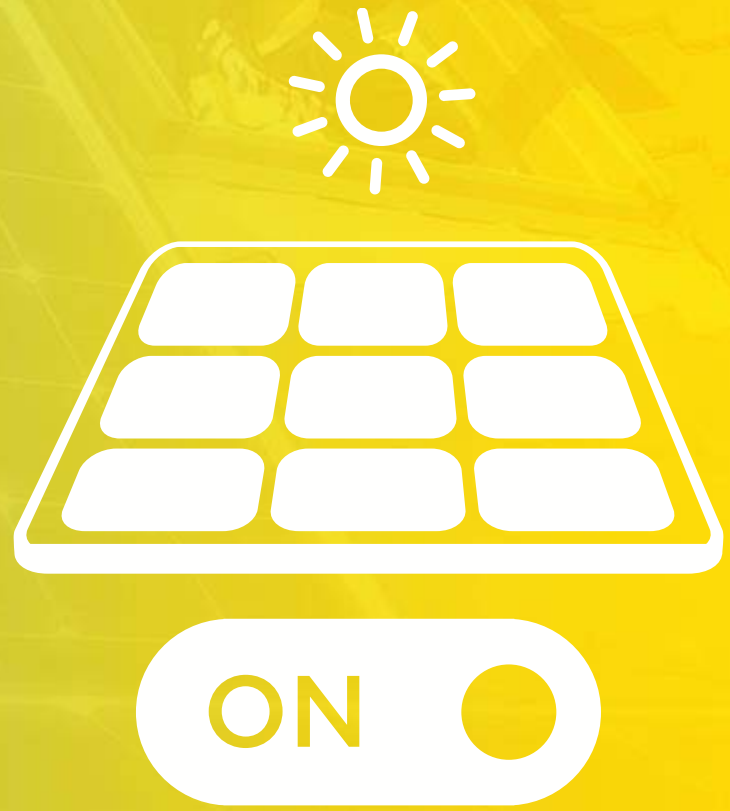
What are the two biggest energy uses in a typical Sydney home?

- Space heating and cooling
- Hot water



Step 2: Use more of your solar electricity

- Hot water heating using solar electricity
  - Traditional electric storage hot water system
  - Heat pump (similar to a reverse-cycle air conditioner)
- Requires
  - Net metering
  - Water heater <u>not</u> on off-peak circuit
  - Operates during the day (install a timer or switch)
  - May require rewiring



“A large 400L tank will store about 19kWh of usable energy, which is more than double the nominal capacity of Tesla's new daily-cycle 7kWh Powerwall unit.”

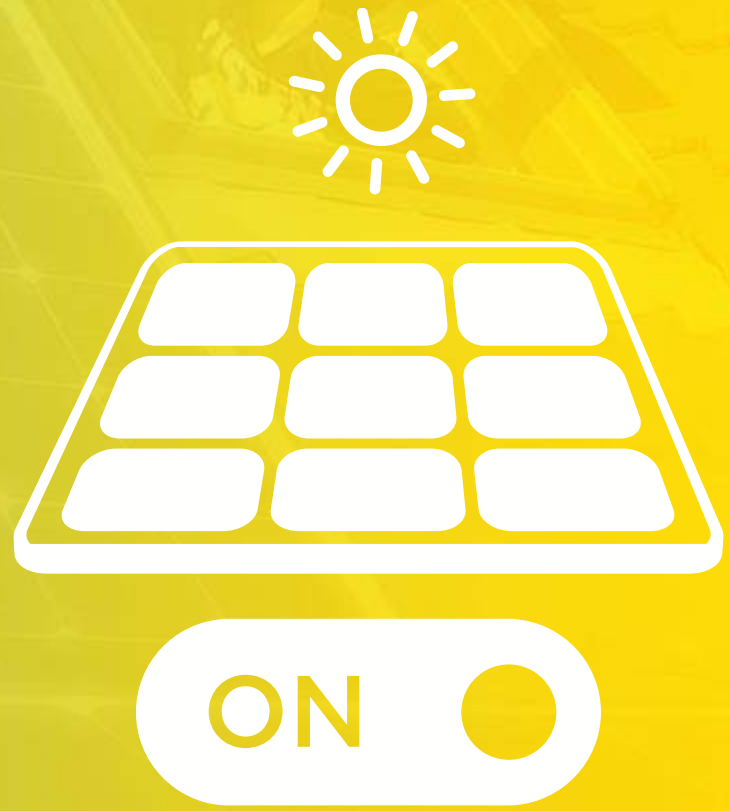
CHOICE

Considerations

- How big is your solar system and your hot water tank?
- How much do you get for exported solar and pay to heat water?
- Do you need an electrician to do this?

Step 2: Use more of your solar electricity

- Heating or cooling using solar electricity
  - Reverse cycle air conditioning
  - Heat pump hydronic system
- Requires
  - Net metering
  - A well insulated house
  - Possibly remote control of appliances



Power diverters

NABERS Energy Explorer

Sample Hot Water Result

Estimated Energy Use (per annum)

	Electricity (kWh)	Total Energy (MJ)	GHG Emissions (kgCO2)	Running Cost
Total	3,339	12,020	3,105	$709

Replacement Options

Option	Estimated Upfront Cost	Estimated First Year Cost	Annual GHG Emissions (kgCO2)
Existing Hot Water System	$0	$708	3,105
Natural Gas Boosted Solar	$7,260	$190	270
LPG Boosted Solar	$7,260	$270	290
Natural Gas Instantaneous - 6 Star	$2,130	$510	760
Natural Gas Storage - 6 Star	$2,020	$550	770
LPG Instantaneous - 6 Star	$2,060	$720	820

STEP 2: WHAT TO DO?

- Where possible use appliances when the sun is shining
- Move towards electric hot water and heating/cooling
- Install timers on your hot water system and other appliances
- Pre-heat or pre-cool your house (if you've got good insulation)

STEP 3: Make a plan to get off gas

- Why have 3 sources of energy?
- Using electricity to power your two main appliances (hot water and heating/cooling) makes more sense
- An all electric home can save thousands of dollars each year
- Induction cooking is more efficient than cooking with gas

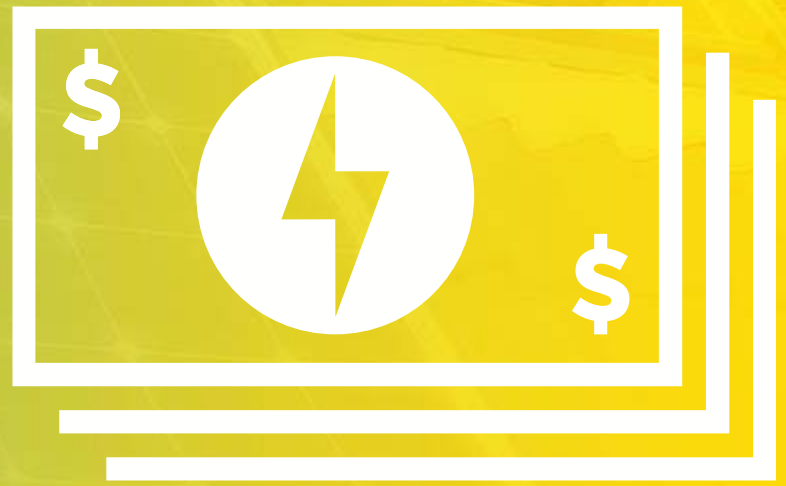
STEP 3: WHAT TO DO?

No urgency, but gas appliances, when they fail, may need replacing immediately, so make a plan to get off gas

- Hot water system
- Cooking
- Heating

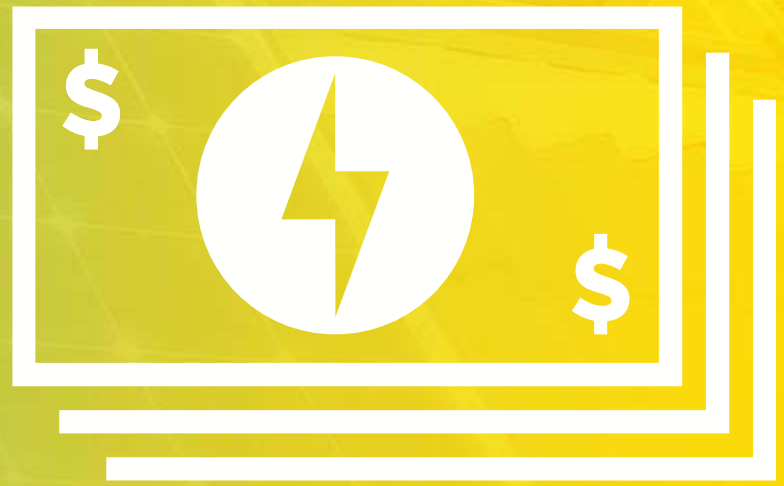
Step 4: Get the best electricity deal

- Shop around, taking into account
  - Your solar export price
  - Daily supply charge
  - Consumption (c/kWh) charges
  - Pay on time discount
- Know the tariff types available to you
- Avoid getting locked into a bad deal for a long time



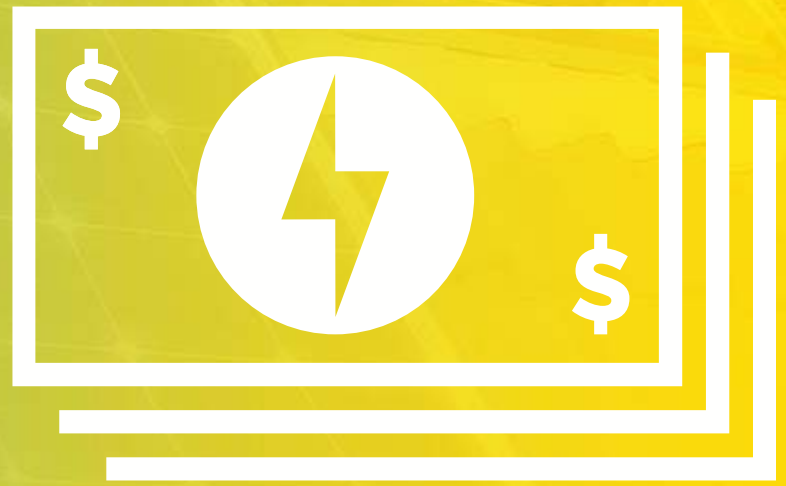
Solar export prices

- IPART's "benchmark rate" = 5.5-7.2c/kWh
- Retailers currently offering 0c-10c/kWh

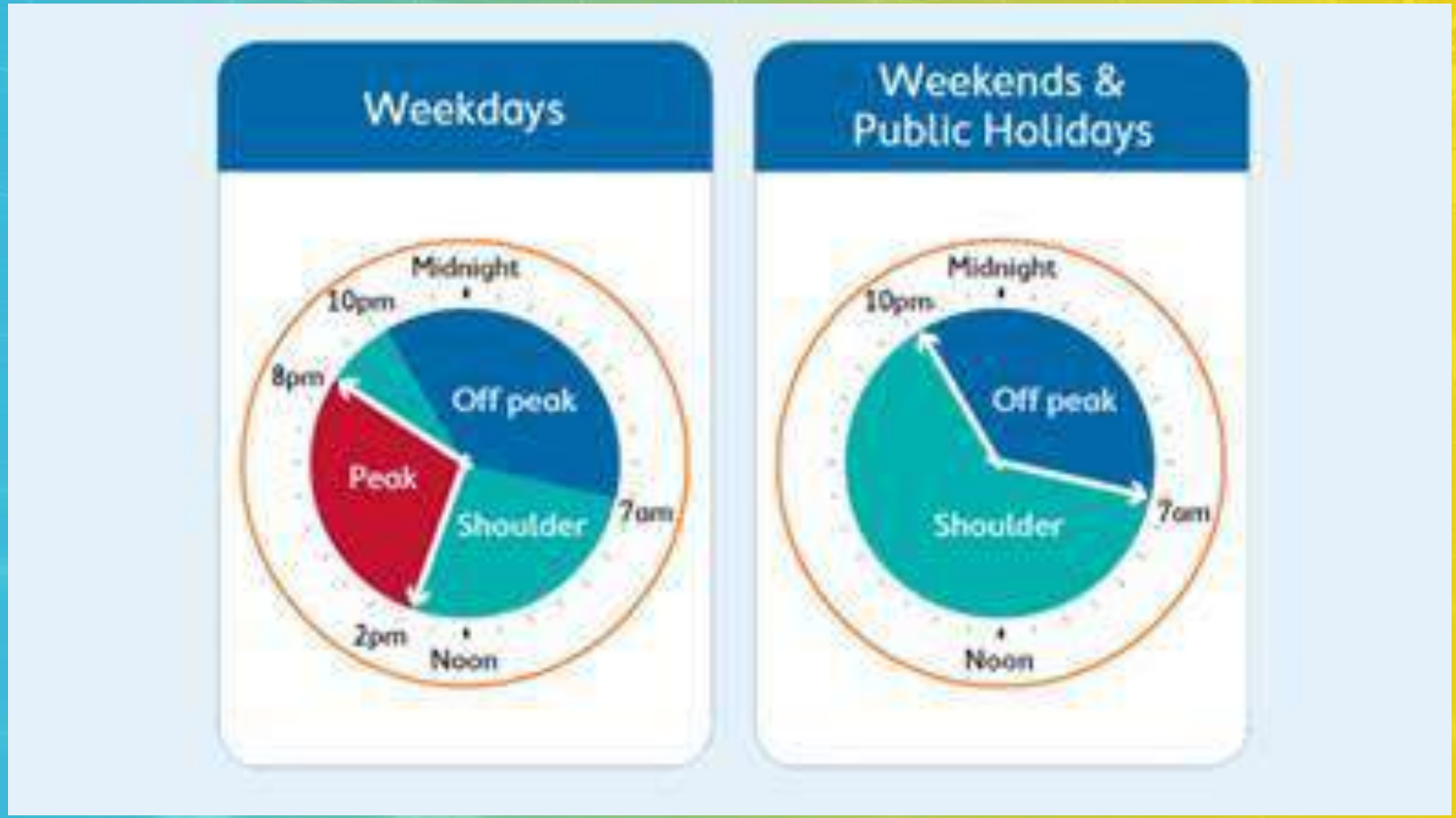


Tariff types

- Flat
- Inclining or declining block
- Time of use
  - Better for “at homes”, worse for working families
- Demand
  - Likely to be more common in future
- New
  - Fixed for a year or “All you can eat”
  - Wholesale plus flat monthly fee

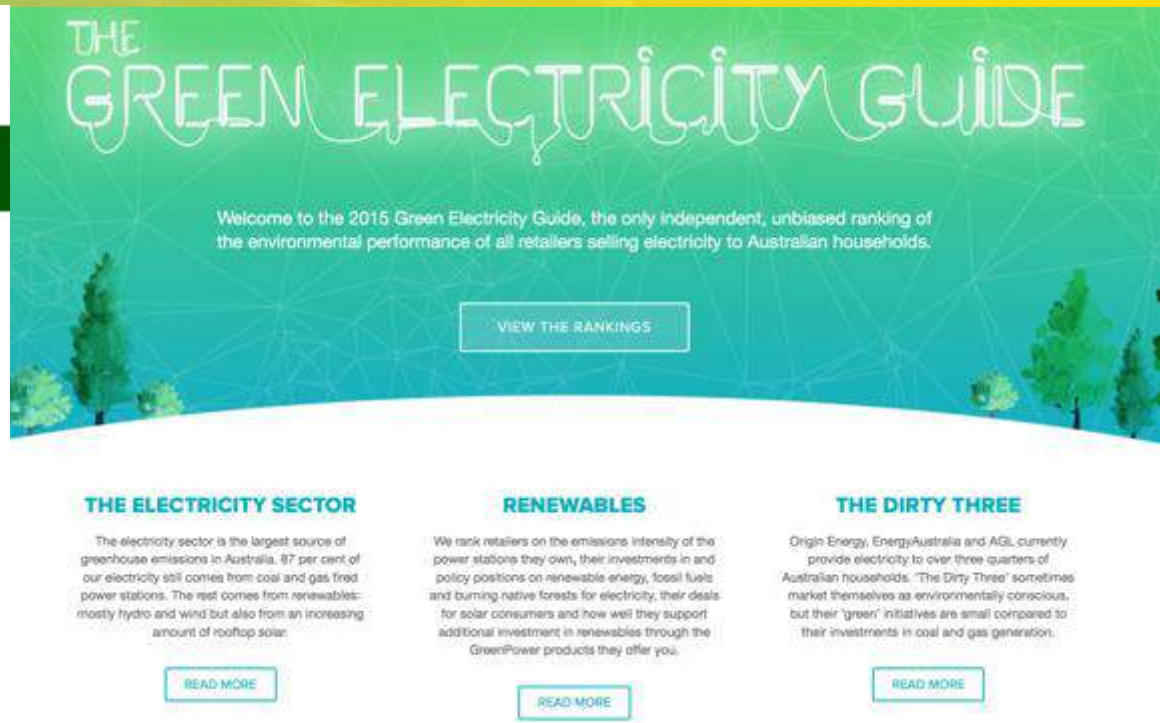


Ausgrid's time of use tariffs



Step 4: Get the best electricity deal

- For green electricity, consider GreenPower
- Check out the Green Electricity Guide

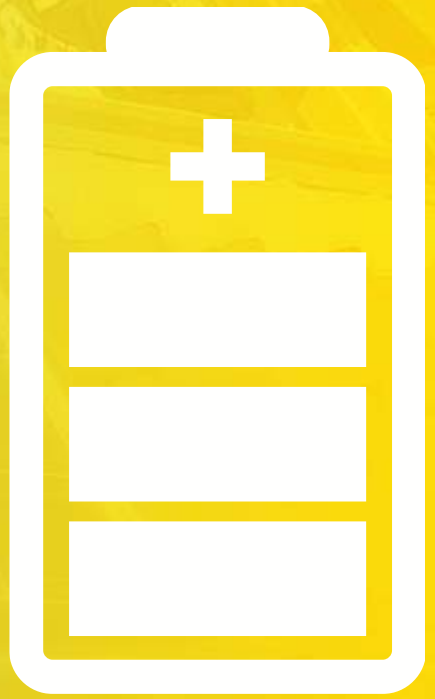


STEP 4: WHAT TO DO?

- Calculate your likely total annual bill with your current retailer after the SBS ends
- Consider whether you are on the best tariff type
- Use a comparison site like Energy Made Easy to shop around
- Read the terms and conditions closely

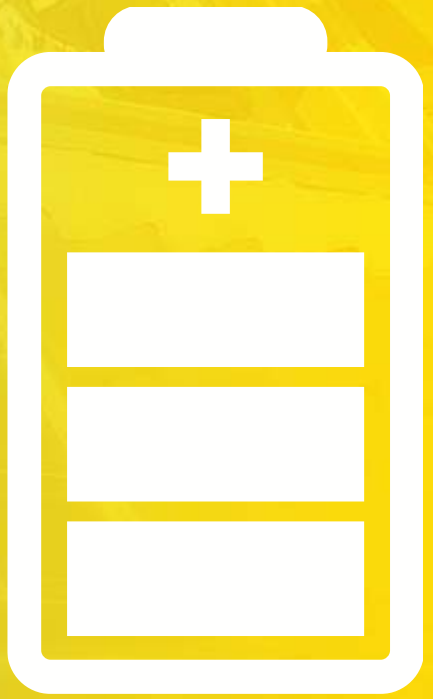
Step 5: Consider more solar or a small battery

- More solar might makes sense if you have a west-facing roof
- May require wholly separate system

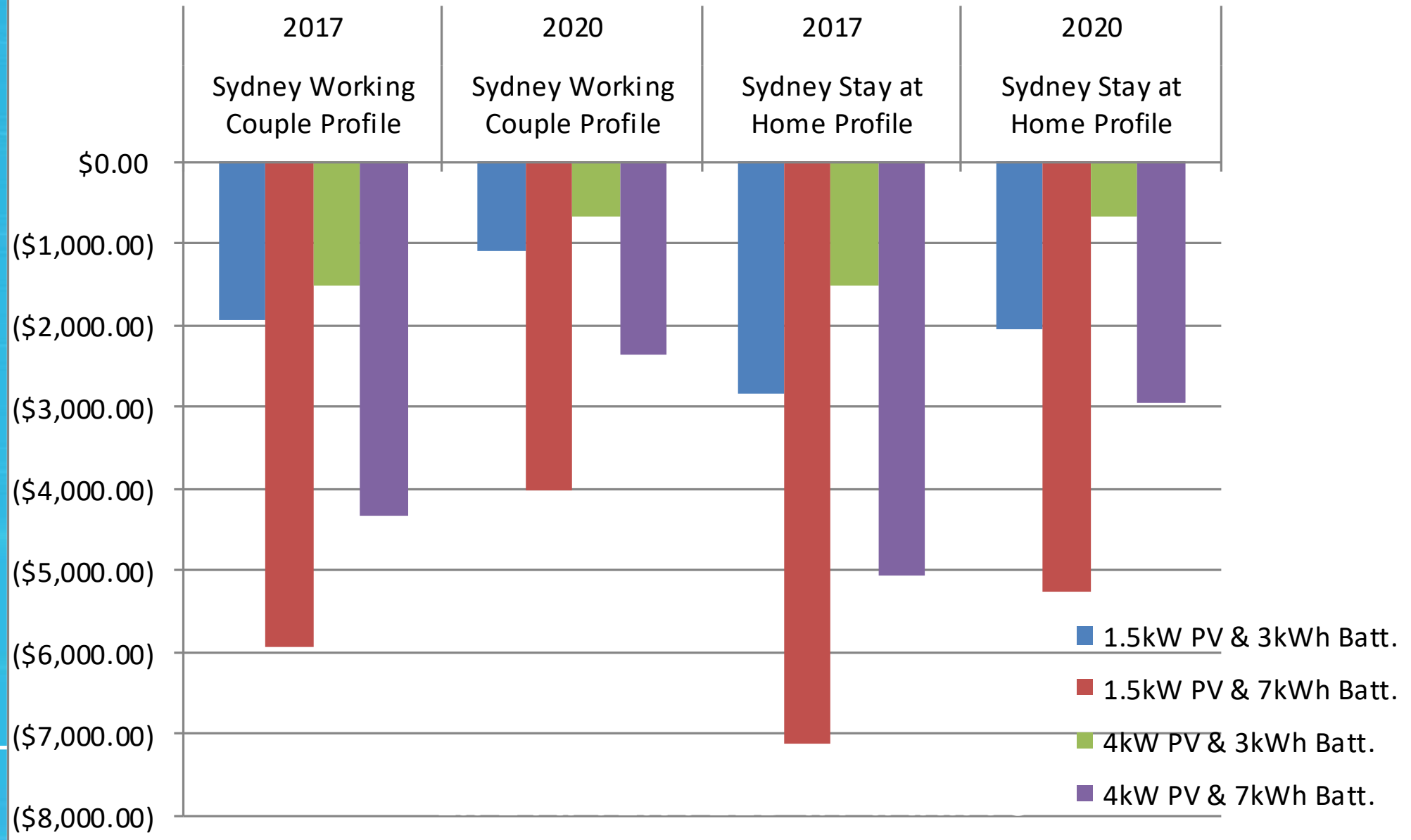


Battery economics

- Retrofitting batteries is not currently cost effective
- Smaller batteries may become economic before 2020
- Going offgrid is unlikely to be economic for decades

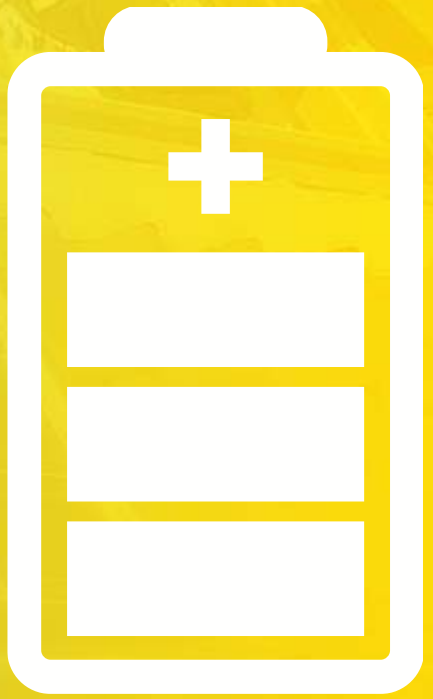


Sydney Battery Storage Net Present Value (NPV)

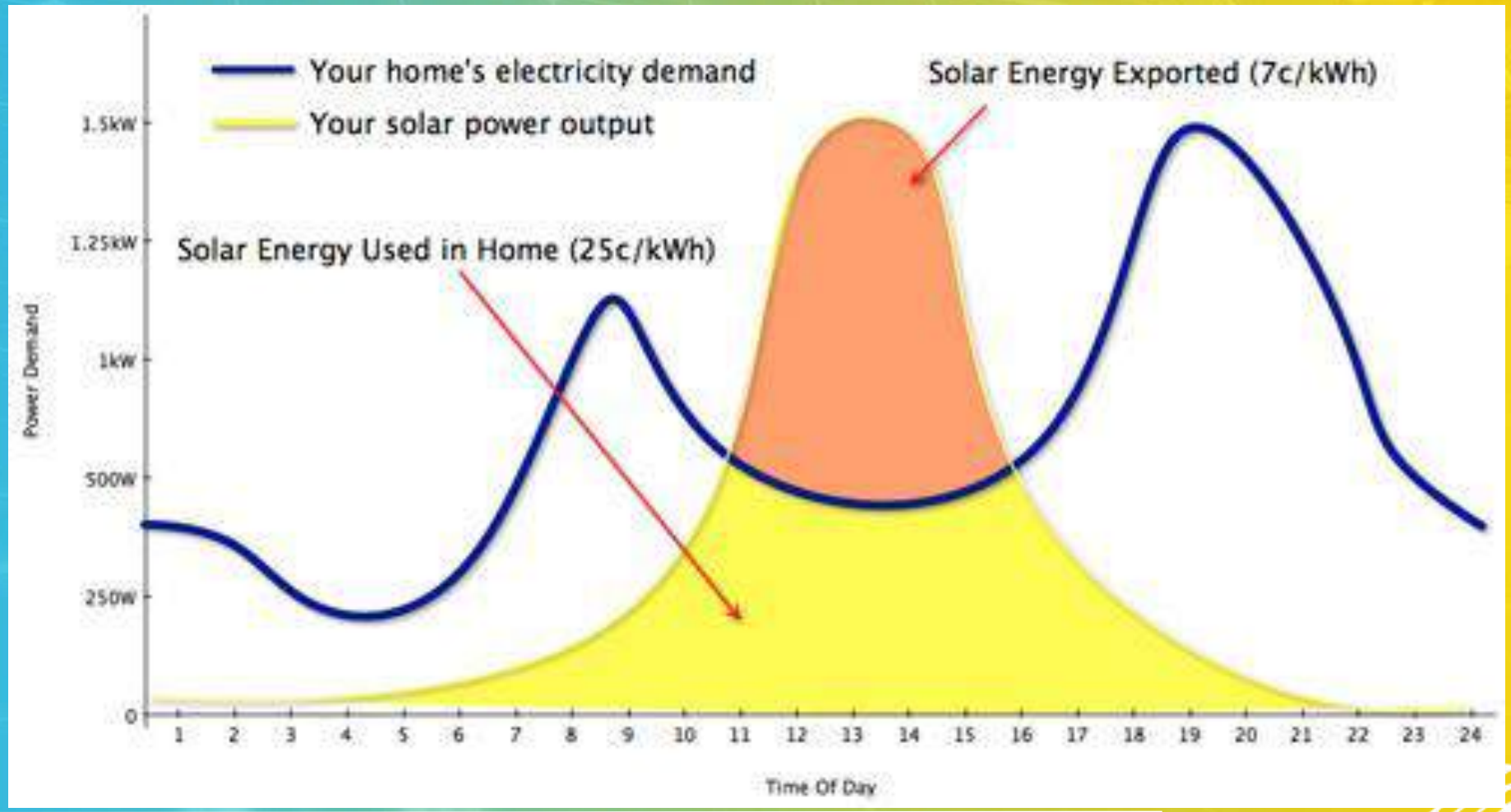


Why get a battery?

- Save money by reducing peak consumption
- Make money by selling power back to the grid
- Have backup in case of blackouts
- Be energy independent
- Store renewable energy



The logic of peak shaving



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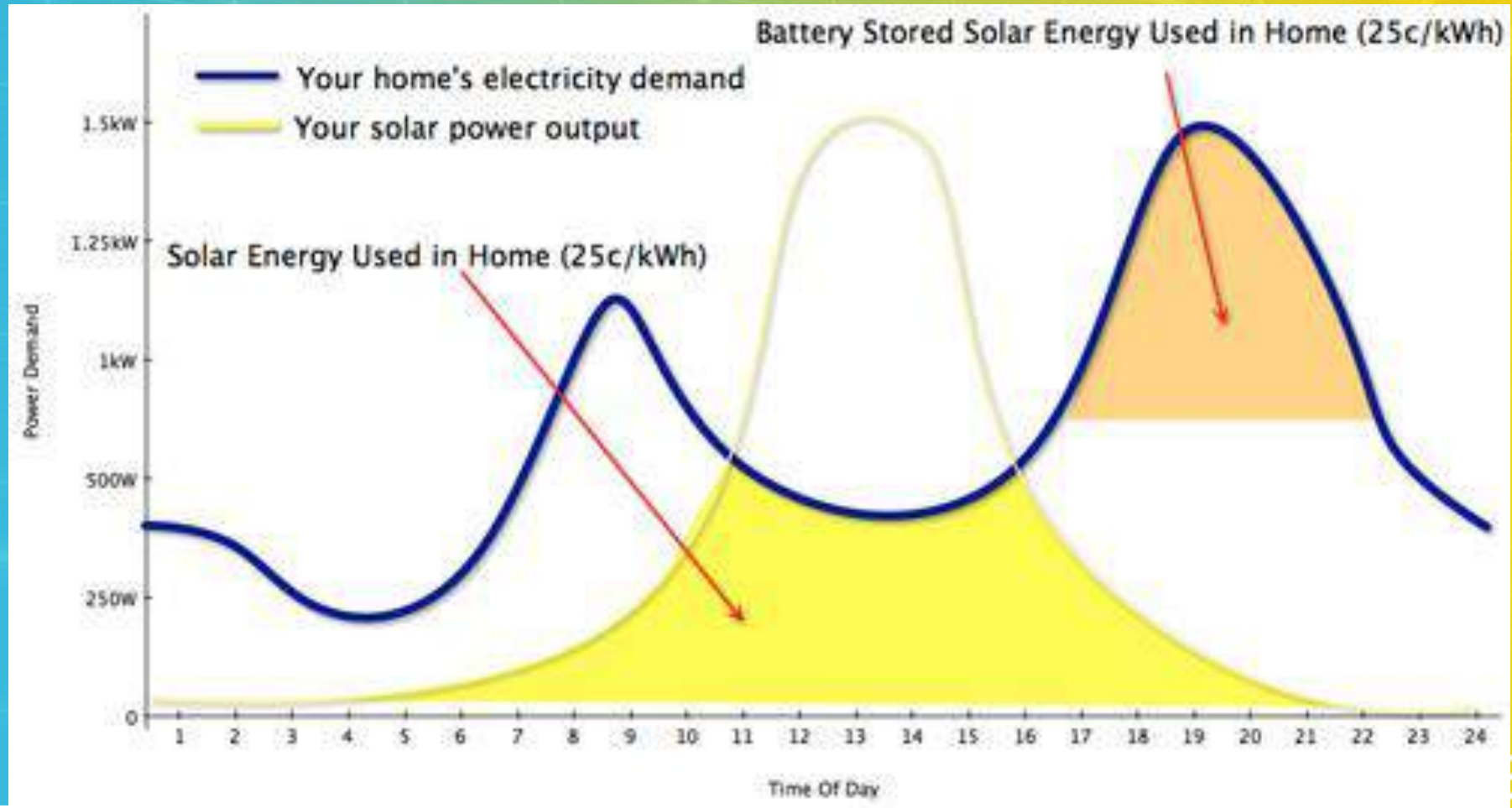
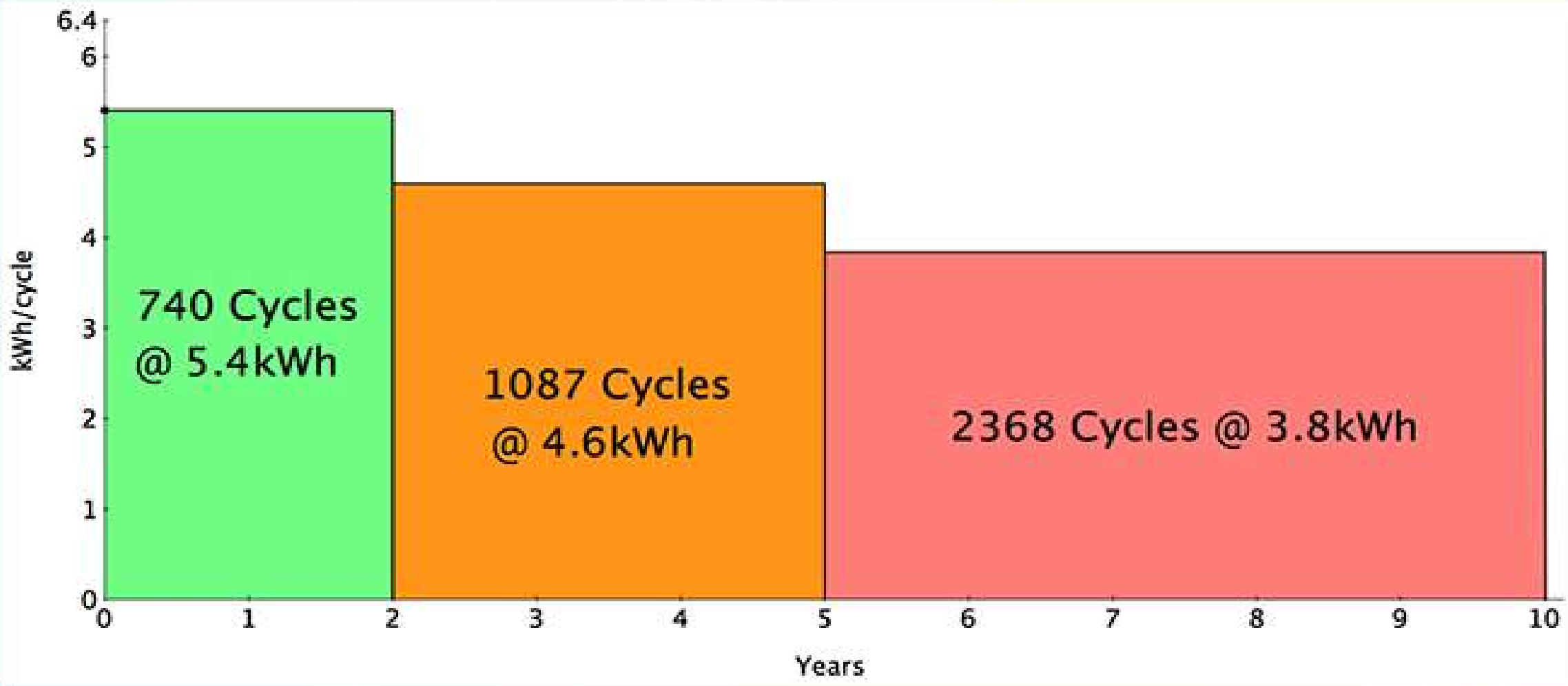


Considerations

- Peak shaving, backup or offgrid capability
- Matching output to solar + consumption
- Single or modular
- Power or energy
- Warranty – eg cycles
- Tech specs
- Compatibility with hybrid inverters
- Environmental (lifecycle) concerns

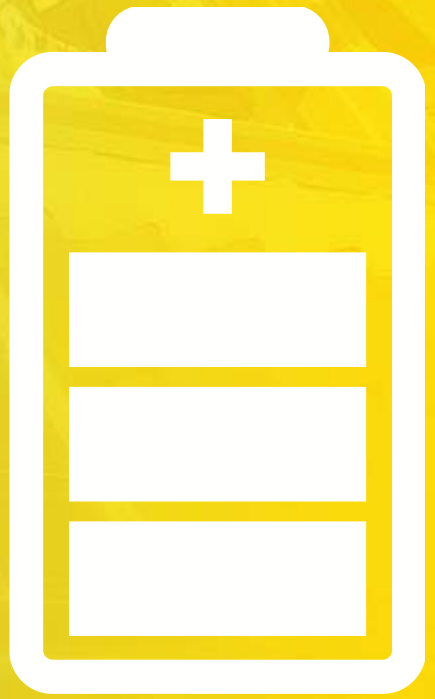
Tesla warranty



LIFE AFTER FEED-IN TARIFFS

Offgrid economics

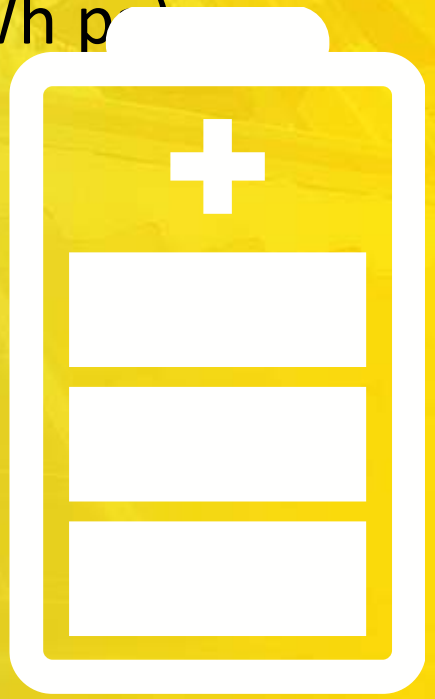
SCENARIO 1 – TYPICAL SYDNEY HOUSEHOLD (6500kWh pa)



- Average daily consumption = 20kWh
- 5 day wet/cloudy spell = 100kWh
- Battery cost @ ~$1000/kWh = $100,000
- Average bill = $2000 pa
- Oversimplified payback period = 50 years

Offgrid economics

SCENARIO 2 – SMALL EFFICIENT RURAL HOUSEHOLD (1500kWh p[illegible])



- Average daily consumption =5kWh
- 2 day wet/cloudy spell* = 10kWh
- Battery cost @ ~$1000/kWh = $10,000
- Average bill = $1000 pa
- Oversimplified payback period = 10 years

** How much do you like candlelight and melted icecream?*

STEP 5: WHAT TO DO?

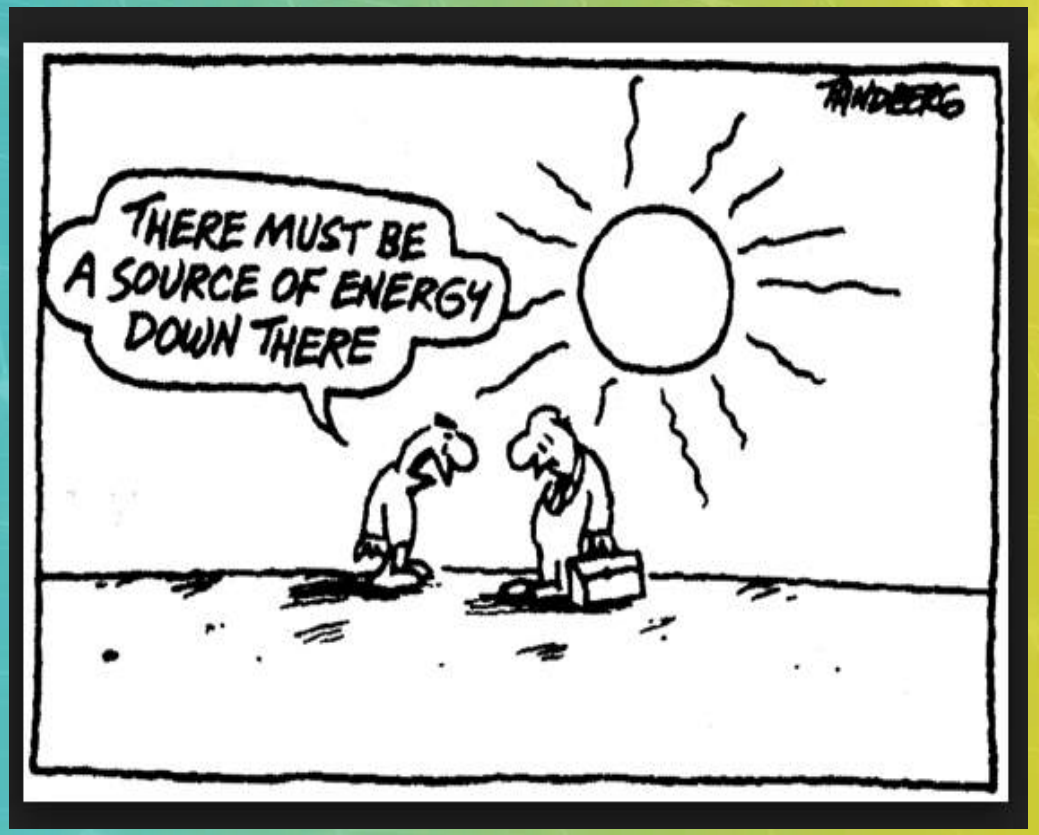
- Prepare for batteries by completing steps 1-4
- Do your sums: for love or money?
- Don’t upgrade your existing inverter until you’re ready to consider batteries
- Keep your eye on prices
- Talk to an established local solar specialist

THE BOTTOM LINE

- OPTION 1: HERE AND NOW or MINIMALIST
  - Follow steps 1 and 4
- OPTION 2: FUTURE NO-SHOCK
  - Generate most of own power
  - Bills under $1000
  - One meter
  - One fuel source
- Then…
  - Follow all 5 steps
  - Don’t forget energy efficiency

Getting help

- This project: www.solarcitizens.org.au/life_after_fits
- Basic info:www.resourcesandenergy.nsw.gov.au/energy-consumers/solar/solar-bonus-scheme
- Retailer comparison: www.energymadeeasy.gov.au
- Energy Storage Council: http://energystorage.org.au/wp-content/uploads/2016/05/BATTERY_GUIDE_WEB.pdf
- Home energy options: http://home.nabers.com.au
- Complaints: www.ewon.com.au



THANK YOU

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