

Totally Renewable Magnetic

16 September 2023



Magnetic Island
Community Development
Association



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1. Electricity Prices Have Increased



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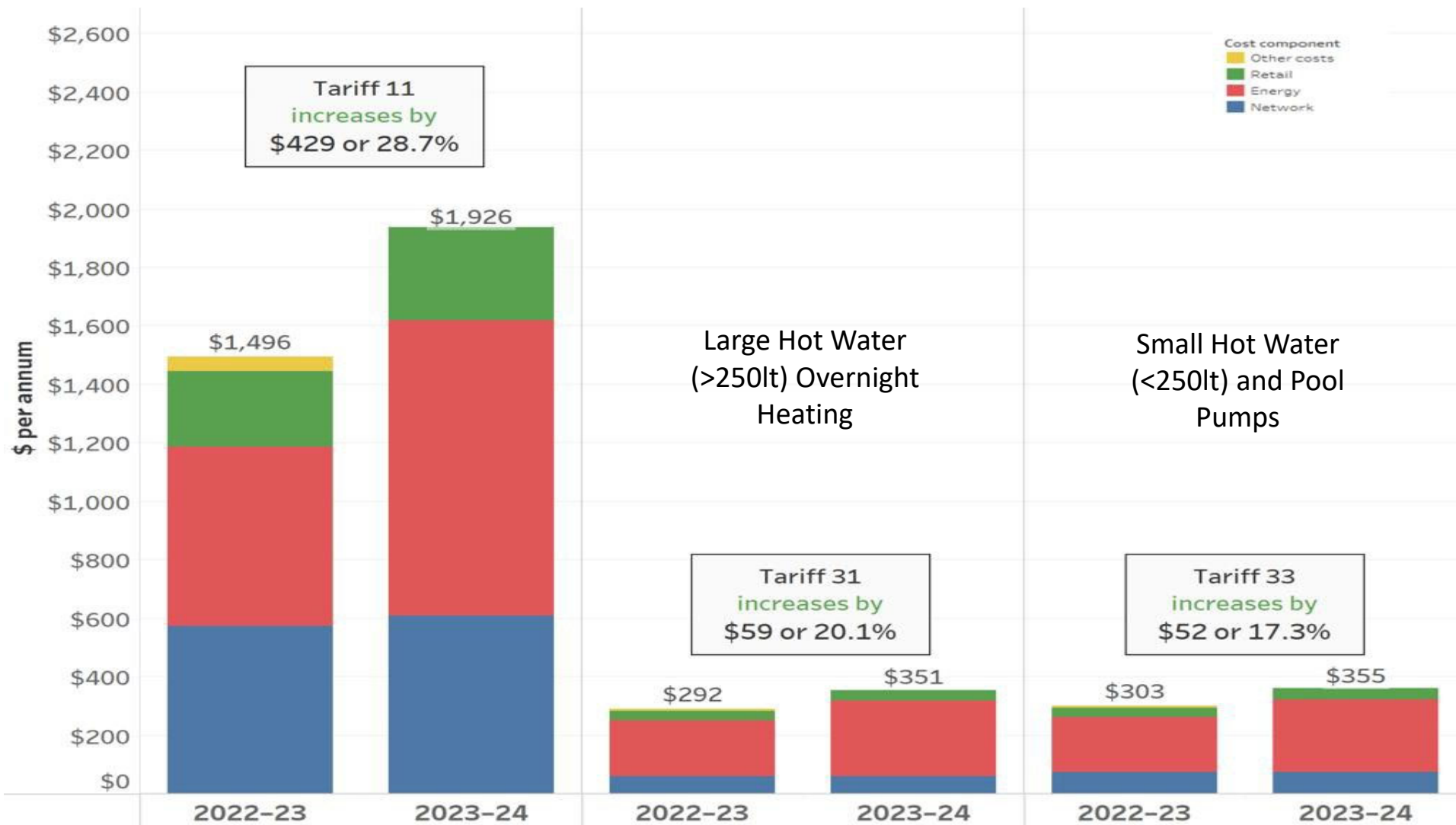


1. Energy Prices Have Increased

| | Old Pricing (From 1 July 2022 to 30 June 2023) | New Pricing (from 30 June 2023) | Percentage Increase |
|------------------------------------|------------------------------------------------------|---------------------------------------|------------------------|
| Tariff 11 (Typical Tariff per kWh) | \$0.24349 | \$0.33250 | 36% |
| Daily Connection Charge | \$0.99449 | \$1.20473 | 21% |
| Solar Feed in Tariff (per kWh) | \$0.093 | \$0.13441 | 48% |

<https://www.ergon.com.au/retail/residential/tariffs-and-prices/price-changes-from-1-july>

All rates include GST



<http://www.qca.org.au/project/customers/electricity-prices/regulated-electricity-prices-for-regional-queensland-2023-24/>

Assumes consumer uses only 4,468 kWh per annum (ie 12.24 kWh per day)

Why Did Prices Increase?

Wholesale energy costs are estimated to increase significantly due to several factors, including:

- Higher gas and coal prices faced by generators, principally due to the war in Ukraine
- Uncertainties associated with the availability and reliability of coal-fired power plants in Queensland

Other costs that have contributed to increases in notified prices include:

- higher costs for retailers
- higher network costs for most customer groups

What does that mean for MI households?

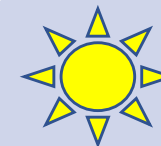
| AVERAGE RESIDENTIAL ELECTRICAL COSTS | Old | New | Difference |
|--------------------------------------|----------------|----------------|--------------|
| Tariff 11 costs | \$1,370 | \$1,870 | |
| Daily Supply Charges | \$363 | \$440 | |
| Total | \$1,733 | \$2,310 | \$577 |
| Percentage Increase | | | 33.3% |
| SOLAR | Old | New | |
| Average Annual Solar FIT Income | \$405 | \$586 | \$180 |
| Percentage Increase | | | 44.5% |



There are 1,908 residential metered connections at 1,744 residences on Magnetic Island using an average of 15.41 kWh/d



There are 195 business metered connections on Magnetic Island using an average of 134.5 kWh/d



There are 534 solar connections on Magnetic Island on average each exporting 11.9 kWh/d

Energy usage data by postcode (4819 data used as at 30 March 2023):

<https://www.ergon.com.au/network/help-and-support/about-us/who-we-are/data-to-share/energy-usage-data-to-share>
<https://abs.gov.au/census/find-census-data/quickstats/2021/318021483>

2. What Can You Do?

A. Install Solar PV

B. Use Electricity More Efficiently



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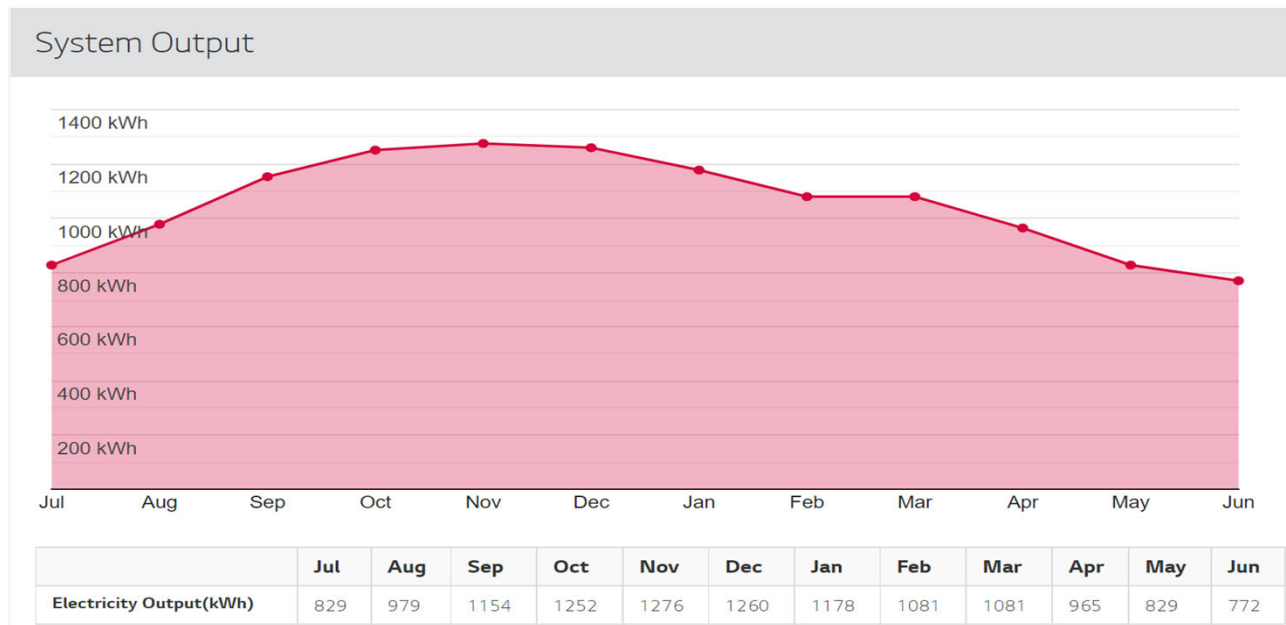


A. Install Solar Generation

- **If you can afford electricity, you can probably afford solar.**
- A **6.6kW** solar system on Magnetic Island can pay for itself within **4 to 6** years.
- The major variable for the payback period is **day/night** usage
- Finance the installation of solar - **money saved** from electricity bills, extensions on **mortgages** and **loans** at special interest rates
- For more information about your specific circumstances, see reliable websites such as:
 - apvi\sunspot.org.au
 - solarquotes.com.au
 - solarchoice.net.au
- Or **talk to a TRM** member
- Increasing solar generation would reduce Magnetic Island's carbon impact (solar on Magnetic Island is estimated to save 5,438 tonnes of carbon emissions per annum)

A. Install Solar Generation

- **Solar is the cheapest electricity** available on Magnetic Island with 320 days of sunshine a year (and, yes, solar even generates when it is cloudy)
- A typical **6.6kW** solar system -> generates over **30kWh** of electricity a day
- Daily average use **16.5kWh**



- Approximately 540 of premises on Magnetic Island now have solar with c.600kW added in the last 12 months (c.600kW of 3.7MW)

B. Use Electricity More Efficiently

| Appliance | Power Rating | Hours per Day | Common Power Use in a Day | Percentage of Power for the Day |
|----------------------|---------------|---------------|---------------------------|---------------------------------|
| Split System Air Con | 1200W | 6 | 6 kWh | 18.0% |
| Pool Pump | 1100W | 8 | 8.8 kWh | 26.5% |
| Electric Hot Water | 3600W | 1.5 | 5.4 kWh | 16.2% |
| Electric Cooktop | 2400W/element | 1 | 4.8 kWh | 14.4% |
| Fridge | 150W | 12 | 1.8 kWh | 5.4% |
| Toaster | 900W | 0.2 | 0.18 kWh | 0.5% |
| Microwave | 1200W | 0.2 | 0.24 kWh | 0.7% |
| Kettle | 2400W | 0.2 | 0.48 kWh | 1.4% |
| TV | 200W | 5 | 1.0 kWh | 3.0% |
| Sound System | 60W | 4 | 0.24 kWh | 0.7% |
| Phone Chargers | 15W x 2 | 5 | 0.15 kWh | 0.5% |
| Laptop | 100W | 2 | 0.2 kWh | 0.6% |
| Combined Lighting | 130W (LED) | 5 | 0.65 kWh | 2.0% |
| Bathroom Fan | 60W | 0.5 | 0.03 kWh | 0.1% |
| Washing Machine | 2400W | 4 hrs / week | 1.37 kWh | 4.1% |
| Standby Appliances | 120W | 16 | 1.92 kWh | 5.8% |
| TOTAL | | | 33.3 kWh per Day | |

- Air-conditioning
- Pools
- Hot Water
- Cooking

Typically: **75%**
of domestic use

B. Use Electricity More Efficiently

Air-Conditioning

- Avoid using unless necessary (shade walls, insulate ceilings and open screened windows for breeze...)
- Set at as high as can enjoy **21 to 23°C** (1°C reduction could save ~10% of AC energy costs)
- Use timers or smart thermostats
- Smallest needed for each room is better than a big system
- Clean the filters and ducts annually
- Use the AC regularly to prevent internal mould growth
- Use ceiling fans to keep air circulating
- Keep the heat down (create shade - close blinds and curtains, cook outside, use induction cooking, turn appliances off, salads, fish...)

B. Use Electricity More Efficiently

Swimming Pool

- Time pumps and chlorinators to the minimum required
- Time pumps and chlorinators to coincide with solar generation (i.e. 9am to 3pm)
- Maintain regularly and clear filters
- Use energy efficient variable speed pumps and timers
- Use solar heating (if required)
- Cover your pool (less cleaning and evaporation)

B. Use Electricity More Efficiently

Hot Water

Bathroom

Hot water typically accounts for about **21%** of home energy use

- Have showers not baths
- Installing an efficient shower head. This can save at least 10 litres of water a minute and significantly lower energy costs
- Keep showers short to four to five minutes
- Replace electric resistance heaters and gas heaters with heat pump or solar hot water
- Switch appliances such as electric toothbrushes off at the wall

Laundry

- Use a cold wash, it can cost 80-90% less than a warm wash
- Let the sun and wind do the drying or use a clothes rack
- Run Dryer on medium instead of high. It takes a little longer but uses less energy and is less damaging to your clothes (N/A heat-pump type dryers)
- Avoid putting wringing wet clothes in the dryer. Run an extra spin cycle first to remove excess water
- Clean the clothes dryer lint filter after every load and
- Don't mix light and heavy clothes together because they take different amounts of time to fully dry
- (Bonus tip: Dissolving powder detergent before adding it to the washer will improve its performance in cold water)

B. Use Electricity More Efficiently

Cooking

Oven

- Use an electric frypan, pressure cooker, air fryer or microwave rather than the oven
- Bake between **9am and 3pm** (if you have solar generation) and reheat in the microwave

Stove Top

- Go **induction** (85 to 90% of the energy efficient c.f. gas 38%, standard electric 70%, Electric Kettle 80% and microwave 50%).

Kettle

- Only boil as much water as you need and **don't fill the jug**

Dishwasher

- Only turn it on when it is full
- Select the cycle with the **lowest temperature** and **shortest duration** to get the job done
- Don't rinse plates as most modern dishwashers can easily deal with the remaining soil following scraping alone. Or **cold-water rinse**

B. Use Electricity More Efficiently

Kitchen

Fridge/freezer

- Set your fridge no colder than **4 to 5 degrees Celsius** and your freezer to between **-15C and -18°C**
- Allow air to circulate around appliances. Most modern fridges rely on good air flow past the sides and rear of the cabinet to remove the heat they release. Poor air circulation can increase energy use by **15 per cent or more**
- Fill any **large** empty spaces in your freezer with ice blocks (empty milk bottles make good ones). They take up the room so no extra hot air can get in when you open the door
- But **do not overloading** the fridge or freezer - leave about 20 per cent free space for air circulation
- Avoid placing hot food in the fridge — it just makes your fridge work harder. Let it cool first
- Locate fridges and freezers out of direct sunlight and away from other sources of heat, such as ovens and stoves.
- Do not locate them on poorly insulated external walls exposed to sun or heat

B. Use Electricity More Efficiently

Lounge

- Switch it off at the wall when not in use
- Turn off peripheral devices that can cause consoles to use more electricity if connected, even when not in use
- Angle your TV away from the glare of sunlight. Turning up the brightness, increases energy use (just like on your phone)
- If you like background noise, consider using a speaker or radio, which use less electricity than televisions
- Fitted curtains and pelmets also reduce heat transfer
- Close blinds and windows to keep heat out (and keep heat in on those odd occasions when that is wanted)
- Use LED lighting

Home Office

- Ditch the PC for a laptop that uses less power
- Have all devices into a power board that can be switched off when not in use
- Use energy saver mode for computers

3. What Else Do You Do To Minimize Electricity Use?



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4. What Rebates and Incentives Exist?



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Check for Rebates and Incentives

Queensland:

1. Concession card holders could be entitled to an electricity rebate of up to \$372.20 per year:
 - Seniors, Pensioners, Veterans, Health Care Cardholders...
 - Must be for a principal place of residence and be the electricity account holder to apply
 - Qualifying persons must apply for this rebate
 - More details, please see:
<https://www.qld.gov.au/community/cost-of-living-support/concessions/energy-concessions/electricity-gas-rebates>
2. There is also an additional \$700 cost of living rebates for those receiving the \$372.20 rebate and a \$550 rebate for all other Queensland households:
 - This will be a \$175 or \$137.50 credit to your bill for each quarter of FY23/24
 - More details, please see:
<https://www.qld.gov.au/community/cost-of-living-support/concessions/energy-concessions/cost-of-living-rebate>

Check for Rebates and Incentives

Queensland:

3. Energy efficient appliances rebate program (purchased and installed after 4 September 2023) with up to \$1000 rebate for the installation of more efficient appliances (4 star):

| APPLIANCE | STANDARD INCOME | LOW INCOME |
|---------------------------------------|-----------------|------------|
| Washing Machines | \$300 | \$550 |
| Dish Washers | \$300 | \$550 |
| Dryers | \$300 | \$550 |
| Refrigerators | \$350 | \$600 |
| Air conditioners | \$400 | \$650 |
| Solar and heat pump hot water systems | \$800 | \$1,000 |

- Limited to one rebate per household
- Low income are those that meet the threshold for the ATO Low Income Tax Offset (i.e. Less than \$66,667 p.a.)
- More details, please see:
<https://statements.qld.gov.au/statements/98333>

Check for Rebates and Incentives

Federal:

- For small business (less than \$50 million turnover)
- Extra 20% tax deduction for energy efficiency spending of up to \$100k in FY23/24
- Must improve energy efficiency, energy storage or replace fossil fuel use...
- Does not apply to cost for certain assets e.g. motor vehicles, solar panels...
- More details, please see:
<https://www.ato.gov.au/General/New-legislation/In-detail/Direct-taxes/Small-business-energy-incentive/>

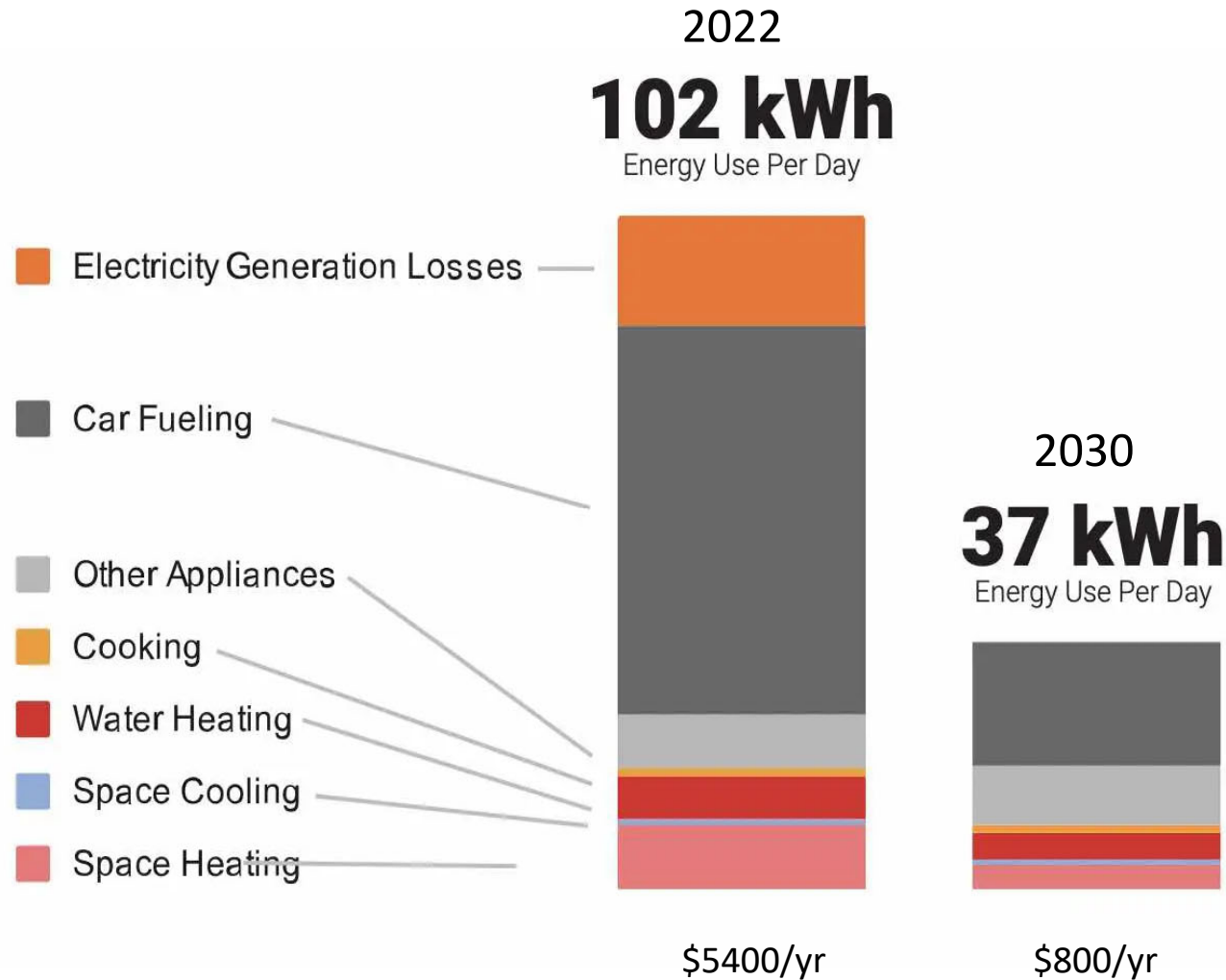
5. How Do You Get to Net Zero as a Household?



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What does Net Zero Look Like?



<https://reneweconomy.com.au/electrify-everything-and-go-renewable-turns-out-its-much-cheaper-than-thought/>

Getting to Net Zero as a Household?

A staged approach over time:

1: Get out of the fuel car

2: Install solar generation

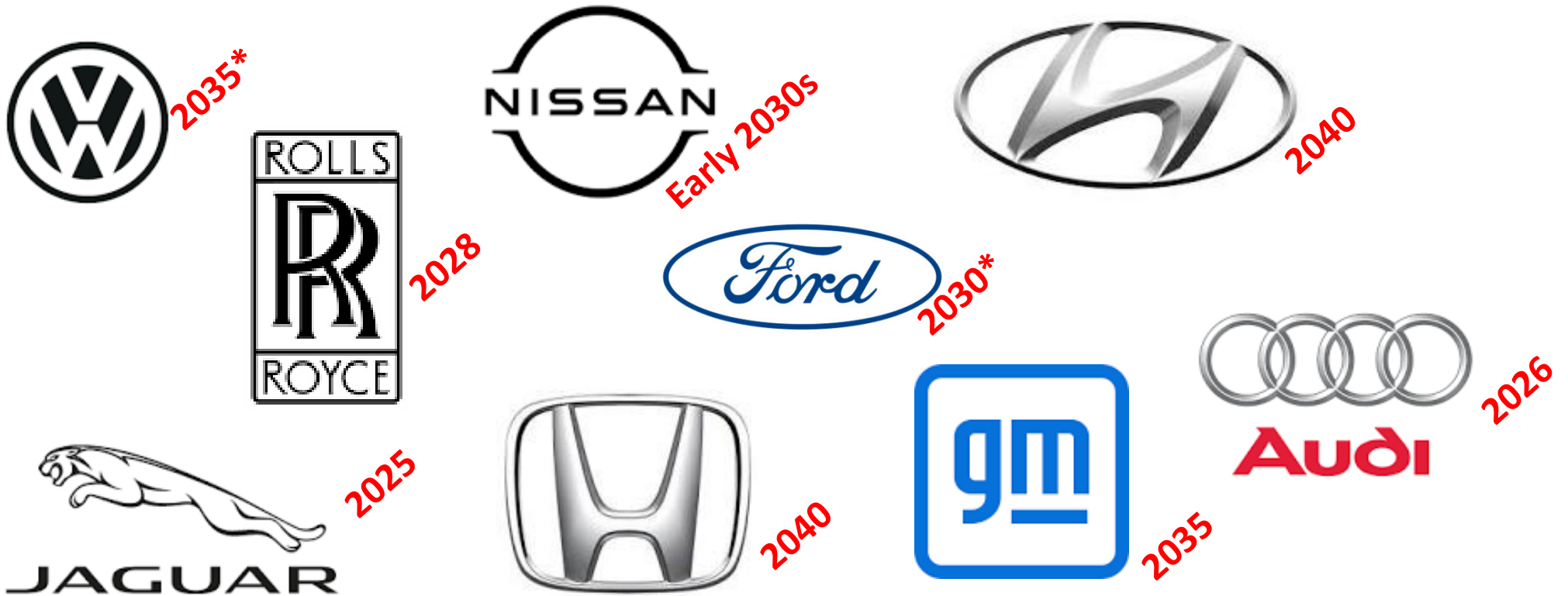
4: Use the savings to fund an electric vehicle

The EV need not be a car – the most popular EV is a bike

5: Replace gas appliances with electric/solar

Changing from fuel to EV?

Manufacturers are going all electric:



If you buy a fuel car again, what will it be worth as a trade-in?

* Europe only

6. What has TRM been Doing?



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6. What has TRM been doing?

- Meets monthly (in person and Zoom)
- Advised over 20 residents on the installation of solar generation
- Advised a small number of residents on the installation of batteries
- Met with a number of businesses to discuss the process for installing solar
- Applied for a number of grants for feasibility studies for microgrids and assisted other MI groups to apply
- Attended community events
- Coordinates with other community groups (e.g. Transport, TMI...)
- Communicates with TCC, Ergon and local and State politicians
- Alerts the community of incentives for electrification and energy efficiency
- Holds information sessions like this one – aim for 1 per year

7. What Else Would You Like TRM to Do?



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THANK YOU!



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