$1 OF ELECTRICITY GETS ME...

...600 hours of light, 140 slices of toast, mobile phone charging for a year, and more...

The examples above are illustrative of what would be experienced by a typical consumer. Figures will vary according to factors such as age of appliance and consumer preferences. If you would like to know the exact running costs of your appliances, we recommend the EECA Energywise calculator: **https://www.energywise.govt.nz/tools/running-costs-calculator.**

If you would like to know how we calculated the figures used in this info-graphic, please refer to the ERANZ companion document: *How we calculate '$1 of electricity gets me...'* available from the ERANZ website.

ERANZ
Electricity Retailers' Association of New Zealand

How we calculated ‘$1 of electricity gets me…’

The examples we used in our ‘$1 of electricity gets me…’ infographic are illustrative of what would be experienced by a typical consumer. They are intended to provide an indicative ‘rule of thumb’ to help consumers visualise what a dollar worth of electricity would typically buy.

Figures will vary according to factors such as age of appliance and consumer preferences. The table below show the assumptions we have made in determining the figures we have used.

We have primarily used two sources:

1. Consumer New Zealand’s 2017 on-line article: ‘Appliance Running Costs, 4 September 2017’.
2. Trustpower’s on-line guide for the running cost of appliances: https://ask.trustpower.co.nz/app/answers/detail/a_id/364/~/guide-for-the-running-cost-of-appliances

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10 minutes in the shower
How long you can spend in the shower for $1 will vary according to several factors, but primarily the type of shower head used (rate of water flow) and the temperature of the shower (consumer preference). Trustpower had a range of 60c - $1.63. Consumer NZ had a 10-minute shower at 85c. From this we believe that $1 for a 10-minute shower is suitable as a rule of thumb.

2 dishwasher loads of dishes
Consumer had 31c per load for a new dishwasher and 46c a load for a dishwasher 15 years old. For our example we have been conservative and assumed an older appliance. This would then be 92c for two loads, which we have rounded up to $1 for use in our example.

Dries 1 large load of clothes
Consumer had 86c for a 3.5kg load and $1.06 for a 5kg load. Trustpower had a range of 42c – 95c. From this we believe $1 per load serves as a conservative rule of thumb for the purposes of our infographic.

Phone charging for 1 year
Consumer had the cost of charging an iPhone 7 from zero to fully charges every day at 71c. We have rounded up to $1 for our purposes.

20 hours of TV
Consumer had an 80cm LCD television at 3c per hour. Trustpower had a range of 5c – 12c per hour. For our purposes we used a conservative assumption of 5c per hour, which equates to 20 hours for $1.

Lighting 60 hours (incandescent lightbulb) 600 hours (LED)
We assumed a lightbulb rating of 60W and LED equivalent (6W). Using a cost of electricity as 28c per unit, $1 buys 3.57kWh.
Length of time for $1 for an incandescent bulb = 3.57kWh/0.06kW = 59.52 hours, rounded up to 60 hours for our rule of thumb.
Length of time for $1 for 60W LED equivalent = 3.57/0.006kW = 595 hours, rounded up to 600 hours.

Large electric heater (2.4kW) for 1.5 hours or Heatpump (6kW) for 2 hours
For $1 you can either run a 2.4 kW electric heater for 1 ½ hours, or run a 6 kW heat pump for 2 hours. Assumptions: 28 c/kWh electricity price, Heat pump rated input = 1.8 kW (the 6 kW refers to the rated heating capacity).

E-Bike
Assuming a 36V battery (worst case) it takes around 0.36 kWh to fully charge a battery: https://www.energuide.be/en/questions-answers/what-does-my-electric-bike-consume. This means you could charge you battery around three times for $1.
How far you can travel on one battery charge varies according to several parameters such as rider weight, terrain, and how much effort the rider contributes themselves. Using reasonable assumptions faced by a typical rider on the Bosch e-bike range calculator https://www.bosch-ebike.com/en/service/range-assistant/ indicated a range of around 100km per charge. Therefore, three charges for $1 would be around 300km.

Electric Car
Like the e-bike example, how far $1 would take you is dependent on a range of factors. In particular vehicle size, terrain, and driving type (eg open road vs urban). The electric vehicle industry typically uses a figure of 30c per litre equivalency for electric vs. petrol, which on average fuel consumption is about 30-40km. The website https://pushevs.com/2017/05/23/electric-car-range-efficiency-table-nedc/ show EV efficiency ratings and provide kWh/100 km. The most popular EV in NZ has an efficiency of 15kWh/100km, which translates to 6.67 km/KWh * 3.57 kWh/$ = 23.8 km / $. Assuming 28c/kWh, (3.57kWh/$). For the purposes of our infographic we have used 25km as a rough rule of thumb.

Cooks 2 roast dinners
Trustpower had the electricity usage per roast at 1.75kWh. At 28c/kWh this equates to 49c per roast. Consumer had the cost of cooking a roast at 38c. 50c per roast seems a fair approximation to use as a rule to thumb.

Toasts around 140 slices of bread
How many slices depends on appliance efficiency and consumer preferences such as bread type and toasting level preference. Trustpower estimates ¼ unit usage for a two-slice toaster for 15 minutes. How long it takes to toast bread varies according to several factors. An internet search ‘how long does it take to toast a slice of bread’ suggested 3 minutes would not be an unreasonable assumption for our calculations. 15 minutes would then equate to 5 rounds of toasting. 15 minutes consumers ¼ of a unit, so for one unit you would have 5 x 4 = 20 rounds of toasting, which for a two-slice toaster would result in 40 slices of toast. $1 buys 3.57 units of electricity (using the MBIE average residential retail price of 28c) so 3.57 x 40 = 142.8 slices of toast. Consumer had a range of 1.1-1.6c per ‘load’ for a 2-slice toaster. Which would be a range of 125 - 181 slices of toast for $1. Given all this, 140 slices seems reasonable as a rule of thumb.

Runs your fridge/freezer for 2-3 days
Consumption varies with appliance size and amount of use (i.e. how often the doors are opened and closed). Another significant factor is the age of the appliance. For a 380L appliance, Consumer had the cost at 54c/day for a 15-year old unit, 44c/day for a ten-year old unit, and 32c/day for a new unit. Truspower have a fridge freezer using 3 units per day, so around 80c. Trustpower do not specify age or size of appliance. ‘That Power Guy’ http://thatpowerguy.nz/fridge-energy-consumption/ measured his fridge consumption for a week and determined it was around 50c per day – for what was a high use household.