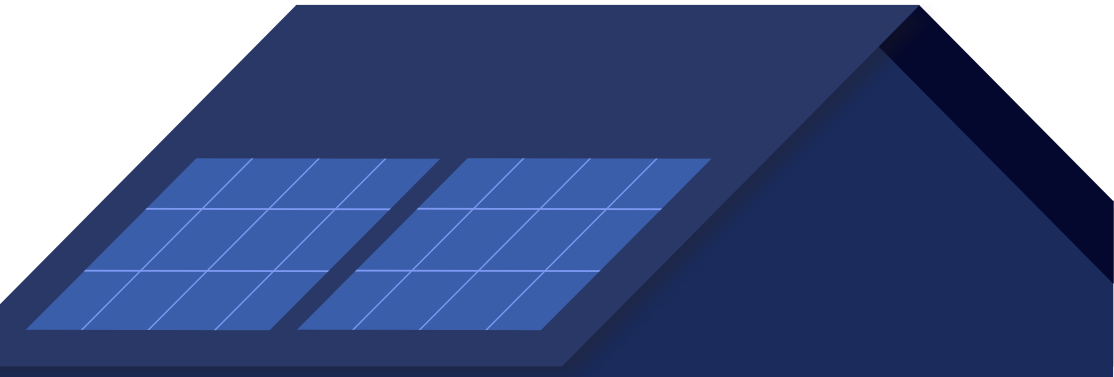
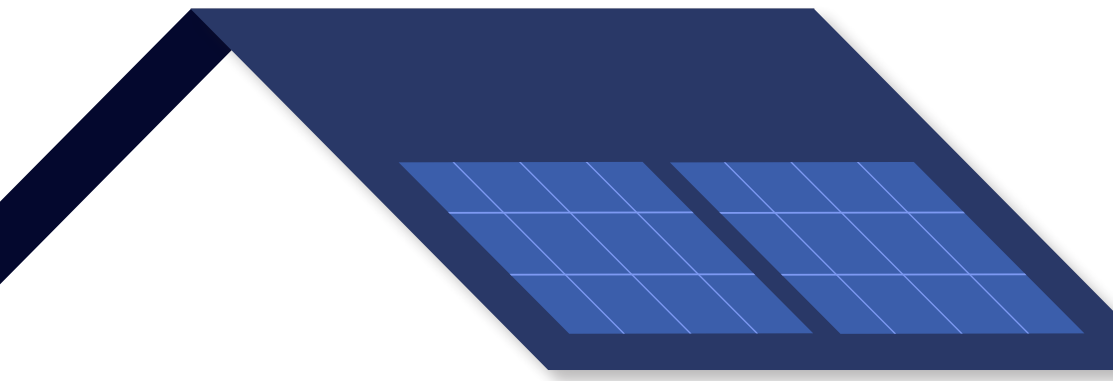
ELECTRIFICATION

A Sustainable, Cost-Effective Future



Electrification enables a more energy-efficient, sustainable future for all.

It involves transitioning from fossil fuels to electricity as our primary energy source which is not only an environmentally friendly choice but also a smart way to save money and preserve our planet's resources.

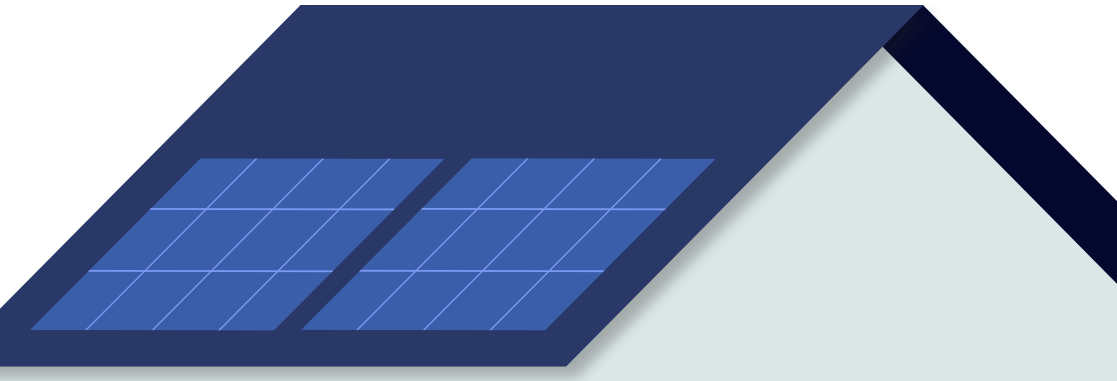


Benefits of electrification

Electrification holds the promise of a cleaner, more efficient and sustainable future and is something that everyone can contribute to within their home, business or on the land.

The key benefits include

Reduced emissions	By replacing fossil fuels with renewable energy sources, electrification significantly cuts greenhouse gas emissions.
Energy efficiency	Electric technologies are much more efficient than their fossil fuel counterparts. As we electrify various sectors—homes, industries, and transportation—we achieve greater energy savings.
Renewable compatibility	Electrification supports the expansion of renewable energy. As more electricity is used by homes, businesses and industry, flexible capacity is increased on the grid, which helps to incorporate renewables.

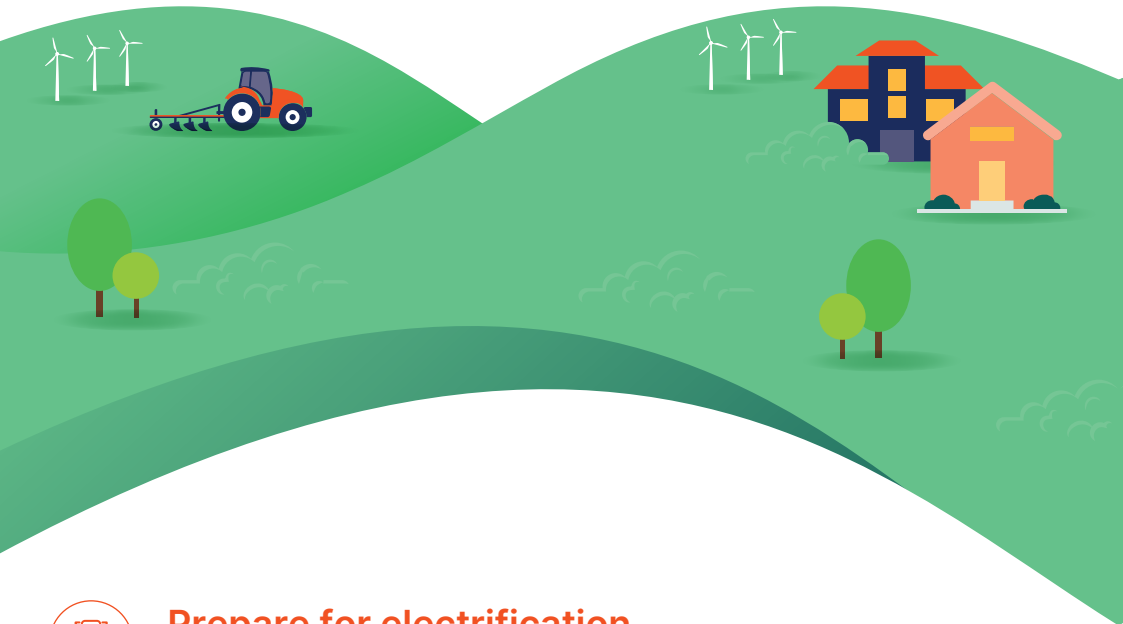


Benefits of electrification continued

Transportation	Electrifying the road transport sector has huge benefits. Electric vehicles are more efficient and help to reduce CO_2 emissions in the air.
Climate and health	By lowering our carbon emissions, electrification helps to minimise our carbon footprint. This reduces the health hazards of air pollution.

The use of smart home technology and apps can also allow consumers to schedule, monitor, and control devices remotely based on real-time data, allowing everyone to better understand their energy use.

For business, industry and across agriculture, electrification streamlines operations and can be used to boost productivity, while electric machinery is used to reduce energy consumption.



Prepare for electrification

You don't have to make the transition all at once. You can create a step-by-step plan, starting with the items you use most.

For example	
Within twelve months	Use the Energy Made Easy website (energymadeeasy.gov.au) to ensure you're on the best retail electricity plan based on your energy usage. If possible, install solar panels at worksites or in the home to utilise energy during the day when the sun is shining.
Within two years	Replace gas hot water systems with electric heat pumps.
Within three years	Replace gas heating with reverse cycle air conditioners to heat buildings and replace gas cooktops with an induction cooktop.
Following years	Install battery storage. When purchasing vehicles, consider electric vehicle options.

Prepare for electrification continued

Whatever your plan, remember to:

- ✓ Get multiple quotes.
- ✓ Explore incentives, rebates or tax credits that may be available for electrification projects.
- ✓ Check with local, state, and federal government agencies to see if you qualify for any financial assistance.
- ✓ Do your research and be ready for when an opportunity to move to electric comes up, such as a replacing a broken gas hot water system with an electric heat pump.

Essential Energy

Calculate your energy consumption

An energy consumption calculator estimates the energy usage and annual running costs of various appliances.

It is a tool that assists with making informed decisions about energy-efficient appliances while enabling cost comparisons and encouraging energy-saving practices.

While calculators can provide valuable insights, it's important to note that these are generally indicative only.

Essential Energy

Electrify your home

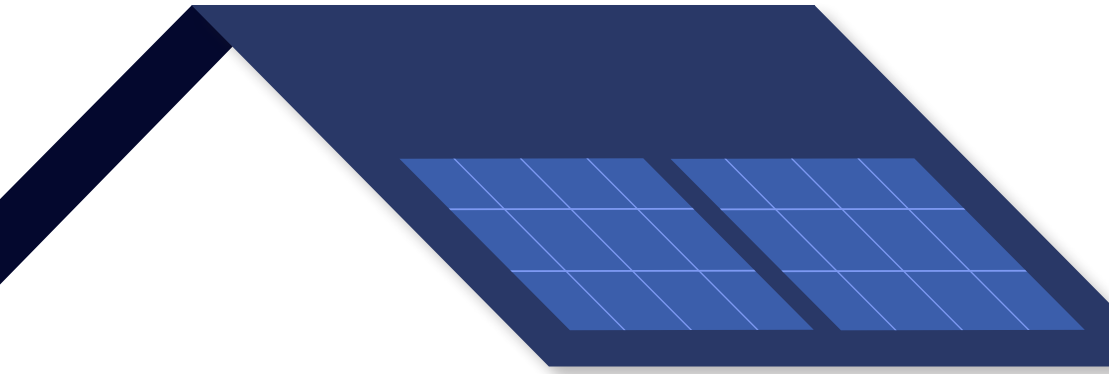
A. Appliances	Choose high energy star-rated appliances. Unplug or switch off devices and chargers when not in use to prevent 'phantom' energy consumption.
B. Energy Management	Use smart devices and home automation systems to monitor and optimise energy use. Use delay start functions for flexible loads such as dishwashers, washing machines, and dryers to run during the middle of the day to make use of yours or the grid's solar electricity. Participate in load management programs offered by companies to reduce peak energy consumption.
C. Electric vehicles	Purchase an electric vehicle when replacing or buying a new car.
D. Lighting	Replace old incandescent and halogen light bulbs with energy-efficient LEDs to save on power while enjoying longer-lasting lights. Install motion or occupancy sensors to automatically turn off lights in unoccupied areas.

Electrify your home continued

E. Hot Water	Install a heat pump hot water system when replacing an old hot water system. If you have solar panels, program your heat pump to come on during the day when the sun is shining, or, during lower cost Off-Peak periods. Ensure proper insulation of hot water pipes.
F. Heating and Cooling	Opt for electric heat pumps and reverse cycle air conditioning units, which are highly efficient for both heating and cooling. Ensure proper insulation and sealing of your home to stop the heat escaping. Use programmable thermostats to optimise temperature settings and reduce energy consumption when you're not at home. Program to pre-heat/cool your home during the middle of the day to make use of solar generation where possible.
G. Renewable Energy	Consider installing solar panels to generate your electricity. Consider options such as batteries that can store electricity. Explore incentives and rebates that may be available for renewable energy installations.

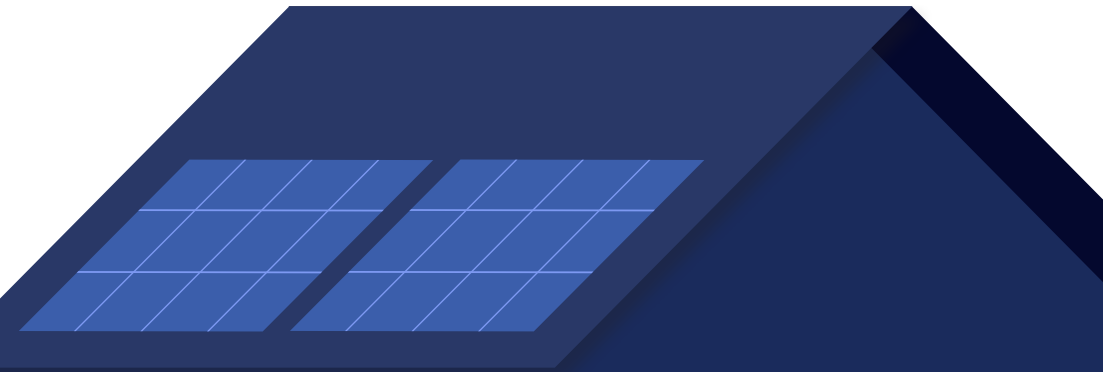
Make informed product choices

- **Battery Energy Storage:** capture renewable energy from solar panels for use during the evening peak period and participate in virtual power plants to support the grid.
- **Electric Boilers and Water Heaters:** provide hot water and heating while reducing your carbon footprint (based on forecast NSW grid carbon intensity over the next 10 years).
- **Electric Lawn and Garden Equipment:** can be quieter, more eco-friendly, and produce lower emissions.
- **Electric Vehicles (EVs):** produce zero tailpipe emissions, reduce our carbon footprint and provide a cleaner, quieter ride.
- **Energy-Efficient Appliances:** like fridges, washers, and dishwashers are designed to reduce consumption and shrink our carbon footprint.
- **EV Charging Stations:** can further reduce our collective carbon emissions. In-home units allow top-ups or full charges while home doing other things.
- **Heat Pumps:** use electricity to transfer heat, making them a greener and more efficient alternative to traditional heating and hot water systems.



Make informed product choices continued

- **Home Energy Management Systems:** use gadgets like thermostats, monitors, and automation devices to cut waste and lower carbon impacts.
- **Induction cooktops:** offer efficient and precise cooking using electromagnetic fields to heat cookware directly. Induction cooktops enable rapid heating, precise temperature control and enhanced safety.
- **LED Lighting:** use less energy than traditional light bulbs, lasting longer and reducing carbon emissions.
- **Solar Panels:** harness clean, renewable energy from the sun, cutting reliance on fossil fuels and carbon emissions.



Essential Energy

To learn more about electrification and what you can do visit:
essentialenergy.com.au/electrification