



Residential LPG factsheet

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HORIZON
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LPG guide

Liquefied petroleum gas (LPG) is composed of a mixture of hydrocarbon gases – which in Australia is typically propane. Although LPG is a fossil fuel that burns similarly to natural gas, it has a higher energy content, is transported and stored pressurised in a liquid state and is supplied to appliances at a different pressure than natural gas. Therefore, LPG-fueled appliances, such as water heaters, space heaters, and cooking appliances require a different flow rate, pressure, and oxygen-to-gas ratio for safe, efficient combustion. .

Converting a natural gas appliance to LPG

As different operating conditions may require special considerations to convert a natural gas appliance to LPG, you should complete an initial check on the suitability of a natural gas appliance for conversion to LPG. Typically, the information can be found in the appliance's manual or on warning labels attached to the appliance. If an appliance's make and model were designed to operate on dual fuels, it is important to use the approved manufacturer's conversion kit as it will be registered with the Australian Gas Association Certificate. However, some older appliances may not have this information available, in which case an assessment will need to be made by the manufacturer or a licensed gasfitter. In either case, it is important that a licensed gasfitter inspects the appliance, piping systems, and installation for suitability of conversion before deciding to convert an appliance from natural gas to LPG.

Domestic appliance owners in Western Australia are required by Energy Safety WA to have a licensed gasfitter perform any gas fitting work, inspect their gas appliances, as well as issue a certificate of inspection if required. If your appliance has a manufacturer supplied conversion kit, a gasfitter may use that kit in accordance with the manufacturer's installation instruction to convert the appliance. If an appliance was not originally registered for dual fuel operation, it will require bespoke modifications from a licensed gasfitter. The installation will need to be verified by an inspector to approve and re-certify the appliance as safe and meeting regulatory requirements.

Storing and managing your LPG

If you are converting to LPG, a suitable pressurised tank will need to be installed to hold the necessary volume of LPG to run the appliances for several days. LPG tanks can either be purchased or rented from an LPG supplier. LPG cylinders should be stored:

- outdoors and in a well-ventilated area;
- in an area free from flammable materials; and
- far away from potential ignition sources (e.g. electrical structures and appliances).



Understanding LPG costs and the unregulated market

LPG cylinder gas costs vary according to the cylinder size and supply costs, such as delivery area and supplier availability. In general, the purchase agreements with LPG suppliers are on a non-lock in basis.

Typically, the cost of a 45kg LPG cylinder ranges from \$120 to \$150 in the Esperance area, in addition to the rental costs of the cylinder, which range from \$40 to \$50 annually. Unlike the price of natural gas and electricity, there are no caps that limit the price LPG providers can charge households. As uncertainty continues to rise in international markets, LPG increases could be expected.

LPG versus electric equivalent appliance

When choosing between converting a natural gas appliance to electric or LPG, consumers will often have a preference based on familiarity with an appliance type and previous user experiences, but you should also consider the energy efficiency, bill impact and operational considerations. When reviewing your options, you should also consider advancements in technology. Modern, electrically powered appliances can often deliver the same or improved user experience compared to a gas equivalent. Table 1 summarises an electrical equivalent technology and some user benefits compared to a gas equivalent.

Table 1: Most efficient appliance quick facts

LPG appliance	Electric equivalent	Electrification benefits
LPG stovetop	Induction cooktop	<ul style="list-style-type: none">• Cooking time: cooks up to 50% faster than average cooking times• Precision: more accurate temperature control and heat distribution• Cleaning: Simple and easy to clean
LPG oven	Convection oven	<ul style="list-style-type: none">• Cooking time: cooks up to 25% faster than traditional ovens• Precision: internal fans ensure an even distribution of heat throughout the oven space
LPG storage tank water heater	Hot water heat pump	<ul style="list-style-type: none">• Efficiency: roughly 250% to 400% efficiency, compared to a maximum 75% efficiency of a traditional gas hot water system• Performance: no change in water supply compared to a natural gas hot water system
LPG ducted space heater	Reverse cycle air conditioner	<ul style="list-style-type: none">• Efficiency: operate at 300% to 600% efficiency• Flexibility: capable of heating and cooling space with a single unit

When considering electric appliances, you should also consider other factors, such as energy bill savings, only having a single supply charge (not paying a supply charge for both LPG bottle and electricity connections), safety, and air quality. Table 2 provides a comparison of the annual operating costs of different LPG appliances compared to electric equivalent appliances for an average household.

Table 2: Comparative annual costs of LPG and electric appliances

LPG appliance	LPG annual costs	Electric equivalent	Electric annual costs
LPG stovetop	\$287	Induction cooktop	\$156
LPG oven	\$168	Electric oven	\$95
LPG upright cooker	\$487	Induction cooktop and electric oven	\$362
Instantaneous LPG hot water system	\$1,261	Hot water heat pump	\$361
LPG space heater	\$1,545	Reverse cycle air conditioner	\$643

*The above comparison considers a medium household of 3-4 people; higher savings are expected for larger households.

**Costs are based on the average cost of a 45kg LPG tank from local Esperance suppliers, and the average household electricity A2 tariff in Esperance as of 31st March 2022.



Government of **Western Australia**
Energy Policy WA

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