Esperance Energy Transition Project

Knowledge Sharing Report

November 2023

Owned by the people of WA

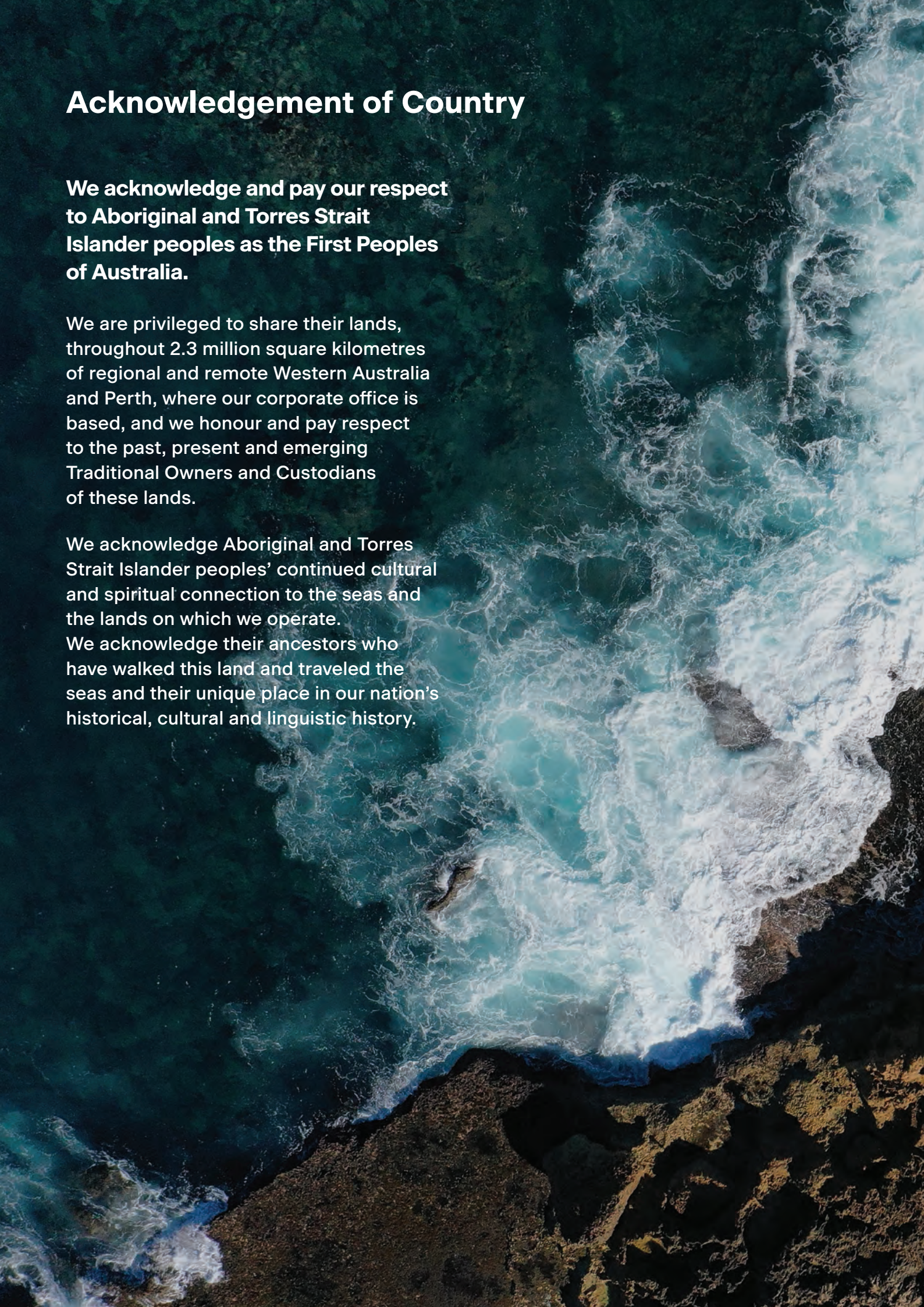
HORIZON POWER

Acknowledgement of Country

We acknowledge and pay our respect to Aboriginal and Torres Strait Islander peoples as the First Peoples of Australia.

We are privileged to share their lands, throughout 2.3 million square kilometres of regional and remote Western Australia and Perth, where our corporate office is based, and we honour and pay respect to the past, present and emerging Traditional Owners and Custodians of these lands.

We acknowledge Aboriginal and Torres Strait Islander peoples' continued cultural and spiritual connection to the seas and the lands on which we operate.
We acknowledge their ancestors who have walked this land and traveled the seas and their unique place in our nation's historical, cultural and linguistic history.



Message from the Minister for Energy

The Cook Government is committed to providing cleaner, greener energy and Horizon Power's Esperance Energy Transition project is a significant milestone delivering the first electrification program of its kind in Australia.

This groundbreaking program has set a benchmark for the rest of the country.

The majority of residents, that transitioned from reticulated gas to energy efficient alternatives, resulted in them saving an average of 38% on their electricity bills, while contributing to a decarbonised future.

In September 2021, Esperance's private gas operator advised customers it would cease supplying reticulated gas, leaving residents to source an alternate energy source.

Horizon Power successfully negotiated a 12-month extension so it had time to quickly develop this program, which has delivered great outcomes for customers and businesses.

The program is a great case study for cessation of reticulated gas networks and provided valuable learnings for supporting customer uptake of electrification, which forms a vital part of the Global Climate Action Agenda.

I commend Horizon Power on its leadership and commitment in successfully delivering the Esperance Energy Transition project, while bringing significant benefits to the Esperance community.

Thank you also to the dedicated project team, tradespeople, energy experts and the impacted community, who worked together to ensure the success of this innovative project.

Hon. Bill Johnston MLA
Minister for Energy

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Executive Summary

The Esperance Energy Transition Program (EETP) supported approximately 400 residential, business, and government customers in Esperance, Western Australia to transition from a soon to be closed reticulated gas network to alternative energy sources. Delivered from April 2022 to March 2023, the Program successfully transitioned customers by the 31 March 2023 deadline, achieving a customer satisfaction rate of 94% with the process. There were zero safety incidents and 75% of residential customers choose to fully transition to energy efficient electric alternatives. The Program design and outcomes not only serve as a case study for cessation of reticulated gas networks, but also establish valuable learnings for supporting customer uptake of electrification which forms an integral part of the Global Climate Action Agenda.

The Esperance Energy Transition Program was founded on the key principles of customer choice, like-for-like support and 'no impacted customer left behind'. The project undertook extensive customer engagement, ensuring firm governance structures were in place whilst also providing flexibility in assessment outcomes, respecting the bespoke nature of some households. This ensured fairness and equity across all impacted customers.

Business customers were provided with independent energy audits to inform them of their most suitable transition options. The majority of small businesses transitioned to 100% electric alternatives but 61% of large business[1] gas customers selected to move to LPG. This decision was primarily due to the lack of commercially viable electric alternatives for commercial equipment, or the requirement for significant infrastructure upgrades to support electrification and the limited time available to undertake the works.

1 This includes independent residential customers and Department of Community residential customers.

2 Customers were classified based on gas consumption. Small business customers = 1-30,000 MJ p/a. Large business customers = 31,000-1.8M MJ p/a. Extra-large use business customers = $1.81M-6M MJ p/a.

Key outcomes

- ✓ 304 residential transitions completed with 75% electing to transition to 100% electric appliances.
- ✓ Modelling shows residential customers who selected 100% electric alternatives for their cooking, heating and hot water are expected to save approximately 38% per year on their household energy bills.
- ✓ Actual case study review of five impacted customers indicates savings of 14-59%, dependent on the number and type of appliances transitioned.
- ✓ 94% customer satisfaction rating achieved throughout delivery of the transition.
- ✓ 38% of business customers transitioned to 100% electric alternatives, with majority electing to transition to LPG or hybrid solution.

Key learnings

Delivery model

Balancing customer choice whilst maintaining quality standards is critical. Trades were vetted for adherence to safety and licencing requirements and then the customer was given the choice of which trade to engage for their transition.

Trade engagement

Trades are critical to success as they are influential in customer appliance selection and the overall customer experience. Engaging trades that understand the program objectives and customer experience goals is essential, followed by careful onboarding and appliance education. Local trades were highly effective at customer engagement, given the need to uphold their own local reputation during delivery.

Customer engagement

On the ground support is essential for customer experience. A well-designed online experience is valuable for digitally savvy customers, but customers value face-to-face engagement. This is particularly key in the current climate with data security breaches frequently reported in the media and a lack of trust over sharing personal information. Face to face engagement also assists customers experiencing overwhelmed with information and uncertainty around what action to take.

Education is key

Educating customers and trades on new technologies leads to a greater uptake of energy efficient appliance selection. Practical demonstration of new technologies, such as induction cooktops, also assists this education process.

1.0 Background

On 30 September 2021, Infrastructure Capital Group (ICG), trading as Esperance Gas Distribution Company (EGDC), issued a letter to its Esperance gas customers advising its intent to surrender its Gas Distribution and Gas Trading Licences. The notice advised of an intent to commence decommissioning activities with gas supply ceasing on 31 March 2022. The Minister for Energy asked Horizon Power and Energy Policy WA (EPWA) to develop potential solutions to ensure that customers in Esperance did not face continuity of supply issues in the immediate term and to determine a viable long-term solution.

On 3 February 2022, with State funding support, Horizon Power executed an agreement with ICG to provide an extension of reticulated natural gas supply for Esperance until 31 March 2023. After this date the reticulated gas supply would cease. Horizon Power then worked with EPWA, advisers to the Minister for Energy, the Shire of Esperance, Department of Communities, Department of Education, WA Country Health Service, impacted local businesses and local tradespeople to deliver a transition solution. This solution eliminated reliance on the Esperance reticulated gas network for the supply of natural gas by 31 March 2023 by transitioning affected customers to alternate energy sources.

2.0 Governance principles

Strong governance principles and a 'customer first' approach facilitated the transition, with equitable support and retention of customer choice at the forefront of the solution. Quick decision making and flexibility in delivery accommodated unique household and business circumstances, while ensuring adequate oversight to maintain constant vigilance over fairness and data privacy.

2.1 Identification of impacted customers

Customer privacy and data protection remained a key focus throughout the program. Due to the restrictions placed by the Privacy Act 1988 (Cth), ICG was unable to provide Horizon Power with details of customers who would be impacted by the gas cessation. To identify impacted customers, Horizon Power undertook extensive engagement with the Esperance community to ensure no customer would be left behind. Online surveys, letterbox drops, information stands, radio ads, posters, Facebook posts and community events were used to identify potentially impacted customers. From this, a database of impacted customers was developed and Horizon Power then contacted these customers directly to offer support.

The program team also worked with local real estate agents to identify renters who may be impacted, acknowledging that some property owners do not live in Esperance and may have been unaware of the impending deadline. Once a customer was identified, tailored engagement was undertaken to assist them on their journey.

Customers received tailored engagement to assist them on their journey to transition away from gas

Some customers who registered with the program were identified as not being on reticulated gas and therefore not eligible for funding under this program. Despite the best efforts of Horizon Power and ICG correspondence, some eligible customers did not identify themselves until the latter part of 2022 or early 2023. Despite this, all customers were identified and contacted prior to 31 March 2023 and offered full support for a smooth transition to a new energy supply.

2.2 Procurement in a changing market

Horizon Power worked closely with local suppliers and maintained open communication with trades throughout delivery of the program. This allowed prompt identification of potential delays due to lead times or capacity constraints. In the time between program design and delivery and throughout the course of the program, the development of strong procurement guidelines addressed the challenges encountered from trade availability and supply chain delays.

The customer was free to work with a qualified trade of their choice, however, all residential trades were required to complete a registration process with Horizon Power. This provided Horizon Power with certainty that all works were undertaken by qualified, licensed and insured trades. The contractual relationship for the works remained between the customer and trade, as outlined in the terms and conditions for both trades and customers, however, Horizon Power made payment directly to the trades on behalf of the customer, as opposed to reimbursing expenses incurred by the customer. This methodology encouraged trades to register, offering certainty of payment. It also reduced the impact to customers who may not have had the funds readily available for immediate payment.

Trades were responsible for quoting both supply and installation of the works and trades procured appliances through local supplier networks. Funding supply caps were implemented by Horizon Power to cover the cost of a typical quality appliance in each category, to ensure equity in appliance procurement. Customers were given the option to upgrade their appliance choices through a funding co-contribution. For example, if a customer had a 60cm cooktop but wanted to upgrade to a 90cm cooktop, the program would provide funding support up to the 60cm supply cap size, with the customer paying the differential directly to the trade. The program also provided financial support for reasonable installation costs.

To validate eligibility for funding support, photographs of appliances at both the quote and invoice stage were required from the trades. This also mitigated potential quality concerns and, combined with the program request for customer approval prior to releasing payment to the trade, ensured that the customer was satisfied with the quality of the works. Customers continue to be protected under consumer protection laws for any future faults or workmanship concerns.

2.3 Case management

Each household was unique, and personal to the customer. The program identified early in design that not every customer application would fit within the agreed guidelines. Whether it was due to bespoke appliances, hardship conditions, required upgrades, or process variations, there would be some customers who required additional support. To ensure the customer-centric approach was maintained and that each case was assessed fairly, the program included an escalation pathway to a case management team against an agreed set of criteria. The case management team included senior representatives from Horizon Power and EPWA. After each case management ruling, the endorsement was retrospectively applied to previous applicable assessments to maintain program equity and a new rule was subsequently introduced.

To illustrate, the program had originally classified cooktop funding supply cap groupings into 30cm, 60cm and 90cm sizes. A customer who had an 80cm cooktop approached the program to advise they could not find a suitable replacement that fit within the 60cm supply cap. The ruling was made that any customer who was between sizes would be eligible to round up to the nearest supply cap size. This ruling was then retrospectively applied to previous assessments, to ensure no customer was adversely impacted.

To support this case management approach, fortnightly Steering Committee meetings were held, in which further escalation and framework changes could be addressed. The Steering Committee was comprised of representatives from Horizon Power, EPWA and the Office of the Minister for Energy. This regular reporting to key representative bodies allowed the program to remain agile and to make timely and accurate rulings. It also assisted in identifying areas for improvement and expedited resolution of key risks.

Further examples of variations to program parameters for approval of works, or approval of funding include:

- ✓ A customer with ducted gas heating and cooling was approved to transition to electric ducted heating and cooling. This was to maintain like-for-like replacement and remove the need for multiple split air conditioning systems to be installed, adding unnecessary additional cost and disruption to the customer's transition.
- ✓ Some customers pre-purchased their own appliances following the announcement of the gas cessation and prior to the launch of the program assistance process. These customers were entitled to reimbursement of costs in line with published supply caps and other standard program criteria.
- ✓ Customers who wished to change from a free-standing cooker to a separate cooktop and oven, or vice versa, were entitled to appliance funding support in line with the published supply caps for their existing arrangement.
- ✓ An additional appliance supply cap was introduced for a side-by-side elevated cooktop and oven, to maintain like-for-like exchange.
- ✓ Rectification works for the removal of a functional and decorative gas fireplace were approved under the program to ensure peak energy efficiency of the living space was maintained.
- ✓ An increase in the solar hot water unit funding supply cap was provided to address circumstances where issues of space or access constraints meant that a heat pump installation was unsuitable .
- ✓ A minor to moderate electrical upgrade to the property to accommodate additional electrical load arising from the transition.

Some case management applications were not approved by the project, including:

- ✕ Customers seeking an increase in the funding supply cap to purchase a premium brand appliance. The supply caps were created from assessment of the cost of medium quality brand replacements. Like-for-like replacement was based on capacity, not quality. Customers seeking to upgrade to a premium brand were given the choice to pay the difference directly to the trade.
- ✕ Customers seeking significant residential electrical upgrades. These cases were assessed by the trade as being required for the property independent of the need to transition energy sources.
- ✕ Additional funding requested to support a cassette air conditioner as a customer preference, rather than being due to location, safety or access considerations.

2.4 Proactive risk management

Strong planning and regular Steering Committee engagement with key decision makers allowed the program to proactively manage risks throughout delivery, by identifying and mitigating new and evolving risks as they became apparent. The notable risks identified and managed throughout the program are highlighted below

Risk	Mitigation
No impacted customer left behind 	• Identify all impacted households through public call to action activities. • Engage with local real estate agents to assist in customer identification. • Engagement of a dedicated stakeholder manager. • Creation of online customer hub with all information available in one location. • Letterbox drops and door knocks to finalise impacted customer information. • Community forum events pre-program launch.
Trade availability and capacity impacting on time delivery 	• Early engagement of interested trades. • Weekly trade check-ins to monitor transition rates and discuss capacity vs committed workload. • Redirection of customers when trades became capacity constrained or unavailable. • Call out to trades from surrounding areas to supplement local capacity.
Appliance lead times and increasing costs to supply 	• Engagement with local supplier to monitor for changes. • Early trade quote and purchase of equipment to lock in process and mitigate lead time delays. • Customer engagement to encourage early action to allow for potential delays.
Safety and quality of workmanship by trades including compliance of home infrastructure and electrical boards 	• Thorough trade onboarding, including licence and insurance checks. • Customer approval to pay trade upon completion. • Photos required of completed works, checked by program team. • Receipt of trade safety documentation as part of onboarding. • Regular safety messaging included within trade weekly emails. • Licensed trades subject to having works checked by either electrical or DMIRS inspector.
Impact to Horizon Power infrastructure and load capacity 	• Horizon Power to undertake load studies to determine any impacts to load requirements associated with transition works. • Horizon Power review of transformer capacity to determine if upgrades required. • Electricians required to submit infrastructure upgrade requests in line with standard practice.

3.0 Delivery framework

3.1 Overview

The delivery framework of the Esperance Energy Transition Plan was designed with the customer journey and program integrity front of mind. The support offered to impacted customers ensured that they retained freedom of choice over their transition. Freedom of appliance choice, alternate energy source, and trade selection was maintained, with Horizon Power providing funding, safety, quality and scheduling support. Supply and installation costs for like-for-like energy efficient electric appliances up to the approved funding supply cap amount, were supported for residential customers, with alternate support available for those customers wishing to transition to bottled gas.

Business customers were supported through provision of independent energy audits, grant funding and connection to specialised trades if required. In addition, 100% of costs were covered for not-for-profit businesses, including two aged care facilities providing vital services to the community. Business customers were encouraged to speak to discuss concerns with the program team, should the transition cause undue financial impacts, or if further specialised support was required.

David Mackenzie and apprentice

3.2 Trade support

From the outset, the severe trade shortages occurring in Western Australia following the COVID-19 pandemic were a key consideration. Prior to launching the program in April 2022, Horizon Power undertook extensive engagement with the local trade community to identify interested and qualified tradespeople to participate in the program. Horizon Power contacted 24 local trades prior to launch and eight were registered at the time the customer hub went live. By mid-2022, five of those trades withdrew from the program, citing capacity constraints, leaving the program with one registered electrician to complete the works. Horizon Power undertook further local engagement of trades with minimal interest and subsequently elected to extend the call out to include surrounding areas and Perth-based trades, requesting registrations of interest via Facebook and LinkedIn.

Following additional engagement with multiple Kalgoorlie and Perth-based trades, only one Perth-based trade completed registration and went on to quote and transition customers. In late 2022, Horizon Power had further electricians register for the program, however, most customers had connected with trades of their choice by this time.

The program continued to discuss trade availability with customers. Where a customer discussed using a trade not registered with Horizon Power, the program informed the customer that they would assist that trade to undertake the required onboarding.

The trade registration process was designed to be straightforward for the trade while providing comfort to Horizon Power and customers that the trade had the qualifications, licensing and insurance to perform work to a high standard. An online trade hub was designed for trades to register and provide supporting program documentation. Once licensing was verified, trades were registered as a Horizon Power supplier and provided with details of the funding and supply caps, sample quote and invoices to illustrate the required information including sample photographs of appliances and the requirement to separate supply and install costs.

The process for customers was to send a request for quote through the online portal with the details automatically forwarded to the trade. The trade then contacted the customer to visit the property to quote for the works. This quote was provided directly to the customer, who then made the application to the program for funding support. The customer journey was paramount to the program success, but trade engagement was also critical. Trades were sent weekly personalised updated summaries throughout the delivery of the program, clearly outlining customers still requiring a quote, those approved and those with outstanding requirements to complete works.

The trades played a vital role in successful program delivery and feedback indicates customers were heavily influenced by their trade's recommendations. Ensuring trades are well educated on current technology, such as induction vs conduction cooking and heat pump benefits, is one of the key lessons learned throughout delivery of the transition. This has been reinforced by the spike in uptake on induction cooking, following a celebrity chef cooking demonstration which some trades attended.

3.3 Residential customer details

In April 2022, Horizon Power launched its online customer hub for impacted customers. This hub was designed as a one-stop information portal outlining the simple four-step process to transition. It included appliance energy efficiency fact sheets and estimated running costs, funding support criteria and caps, and information on how to contact a registered trade and get in touch with the program team.

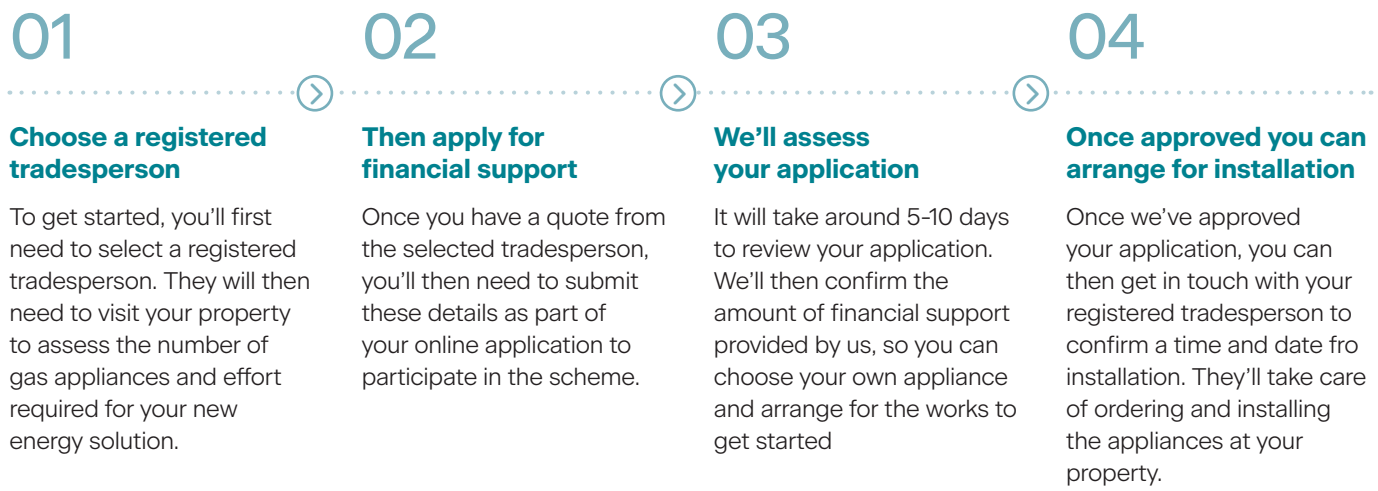


Image 1: Customer Journey Map

Residential customers were able to request a quote from a trade through the website, selecting from a list of registered trades. The trade then contacted the customer directly to arrange a time to visit the property and discuss the customer's options. Once the quote was received by the customer, they made an online application for funding support, providing supporting documentation, such as photos of eligible appliances, copies of rates notices and 100pts of ID verification, to confirm they had authority to make changes at the property. Applications were assessed by the program team and on approval, emails were issued to both the trade and the customer confirming the approved amount and any customer contribution required. The trade then contacted the customer directly to schedule the works.

Throughout the process, some residential customers took the opportunity to upgrade appliances by co-contributing to their transition. In addition, some customers had bespoke or unique appliances which required special consideration. For these customers, their application was escalated to the case management committee for review. Residential customers were supported by a dedicated stakeholder manager, who was available to provide support for their entire transition. This one-on-one engagement was particularly important for customers who were not digitally savvy and needed additional support in engaging trades, submitting their application and providing supporting documentation.

The program received a 94% customer satisfaction rate from residential customers responding to the post completion survey. This can be directly attributed to the high level of support from the program team and the customer-centric focus ensuring equity and assessment integrity. A free text feedback field at the end of the survey resulted in several customers highlighting the support and assistance of the Horizon Power program team as a key factor in their overall satisfaction.

94%

Customer satisfaction rate post-project completion

3.4 Business customer details

The cessation of reticulated gas in Esperance impacted 30 business and three additional government customers including WA Country Health, Department of Communities and Department of Education sites. The business total included six not-for-profit customers, who received 100% funding support for their transition. All impacted business customers were provided with an independent energy audit which detailed their estimated CAPEX and OPEX costs for various transition pathways, including 100% electric, 100% LPG and hybrid, where appropriate. These reports were provided free of charge to business customers to help inform their decision-making process, noting that the decision to transition to electric or LPG alternatives remained the choice of the customer.

In some instances, electric alternatives to large-scale commercial equipment were not available. In other instances, customers elected to transition to LPG due to significant infrastructure upgrades required for an all-electric option, which were not feasible in the limited timeframe.

The program worked closely with Horizon Power's internal teams to identify potential upgrades to the network to accommodate any increased electrical load. No significant upgrades were required in delivery of this transition and therefore no resulting budget or time barriers affecting a customer's choice to electrify.

Business customers were encouraged to engage the trade of their choice. The program did not require registration for business trades for the following reasons:

- Business customers had sufficient knowledge of trade compliancy and licensing requirements.
- Business funding was provided in the form of a grant, with customers paying trades directly. Trades were not required to register as a supplier with Horizon Power as it was not paying the trade invoices.
- Business customers have regular trade and maintenance personnel for business-as-usual activities. The requirement to register increases red tape and creates barriers to completing the work on time.

Once the business customer received a quote for works from their chosen trade, they made an application to Horizon Power for grant funding. This required a submission of the quote and acknowledgement of the program terms and conditions. As with residential customers, photographic evidence to support the application was also required. The program team assessed the application and an approval email detailing the funding support was provided to the customer.

On completion of works, customers submitted proof of completion and evidence of payment to trade. The approved grant amount was then reimbursed to the business within seven working days.

At the request of some businesses, such as not-for-profits, Horizon Power agreed to pay the trades directly for the works. To maintain the integrity of the working relationship between the customer and the trade, specific terms and conditions were required to be acknowledged by the customer.

A defined hardship application process was available to any business customer who identified that their financial contribution to the transition would cause undue financial impact to their business. To apply for additional funding, businesses were required to submit a minimum of two years' financial statements, which were reviewed by an independent financial auditor. If the review identified that the financial contribution required would cause detrimental impact to the business, additional funding was made available by the program team for the transition works following Steering Committee approval of the funding contribution.

The majority of customers completed their works prior to 31 March 2023, however, some business customers chose to delay their transition for commercial reasons.

3.5 Customer engagement and communications summary

Personalised communication was paramount in delivering the transition in the required timeframe. A comprehensive customer engagement approach included phone calls, targeted emails, in person events, door knocks, letterbox drops and media campaigns. Throughout the program, the focus was on ensuring all impacted customers identified themselves to Horizon Power. Once engaged, they received step-by-step support through their transition journey. A dedicated stakeholder manager gave all customers direct phone and email access to a consistent program representative for support.

Early in the program customers were slow to engage and the decision to introduce individualised support proved extremely successful. It became apparent that some customers were not digitally savvy or perceived the process to be overwhelming. The stakeholder manager role enabled tailored support based on customer need and customers felt empowered to act. This at times extended to a face-to-face meeting at the Horizon Power depot to support those with digital literacy or computer access challenges to complete their application.

Evidence of this success was apparent in the direct correlation between increased customer activity and the stakeholder manager being on site in Esperance. Face-to-face contact with both customers and trades played a significant role in the progress of transitions for both residential and business customers. The local Esperance depot also provided in-person assistance to impacted customers.

The customer engagement strategy also included:

- **2** community forums
- **17** direct email newsletters
- **registered letters**
- **300+** non-registered letters
- Radio campaigns in November 2022 and February 2023
- Celebrity cooking demonstration
- Facebook and LinkedIn posts
- Information stand in main Esperance shopping centre

The celebrity cooking demonstration in August 2022 proved to be a valuable educational experience, not just for impacted customers, but for local trades as well. The demonstration highlighted the benefits of energy efficient electric cooking, in direct contrast to the perceived association with old inefficient electric coil technology. The increased uptake of induction cooktops post event was evidence of success, coupled with some great feedback, including:

> "Well organised and informative and entertaining."
>
> "You've pretty much convinced this gas girl!"
>
> "Very useful. Made an appointment for tomorrow to start registration."
>
> "I want it! So glad I came to the event. Very informative."

4.0 Transition statistics

4.1 Residential customers

304
Total residential transitions completed[3]

8
Customers who chose to opt out of the program

94%
Customer satisfaction post completion (scoring 4 or 5 out of 5)

88% Completed by local trades

84% Of expenditure directed to local trades

96%
Customers who answered YES to the following survey question:

Was the application process straightforward?

97%
Customers who answered YES to the following survey question:

Was/were your trades supportive and knowledgeable in helping you choose your appliances?

4.2 Business customers

7
Small business customers who completed the transition

8
Large business customers who completed the transition

4
Extra-large use business customers who completed the transition

7
Not-for-profit business customers who completed the transition

5
Government sites who completed the transition[4]

3
Customers who received additional funding under hardship provision

38%
Businesses who selected 100% electric alternatives

3.5%
Business customers selecting hybrid alternatives

58.5%
Business customers selecting LPG alternatives

3 Inclusive of Department of Communities properties

4 Excluding Department of Communities which are captured in the residential customer figures

4.3 Residential customer appliance selection (excluding Department of Communities properties)

To undertake the analysis detailed throughout this report, a comparison of pre and post interval data was assessed. Due to the timeframe in which completions occurred, and the many varied selections made by customers, some sample sizes are impacted by the limited post transition data available. For example, the majority of customers did not complete their transitions until after October 2022, which does not provide a full 12-month comparison data for analysis.

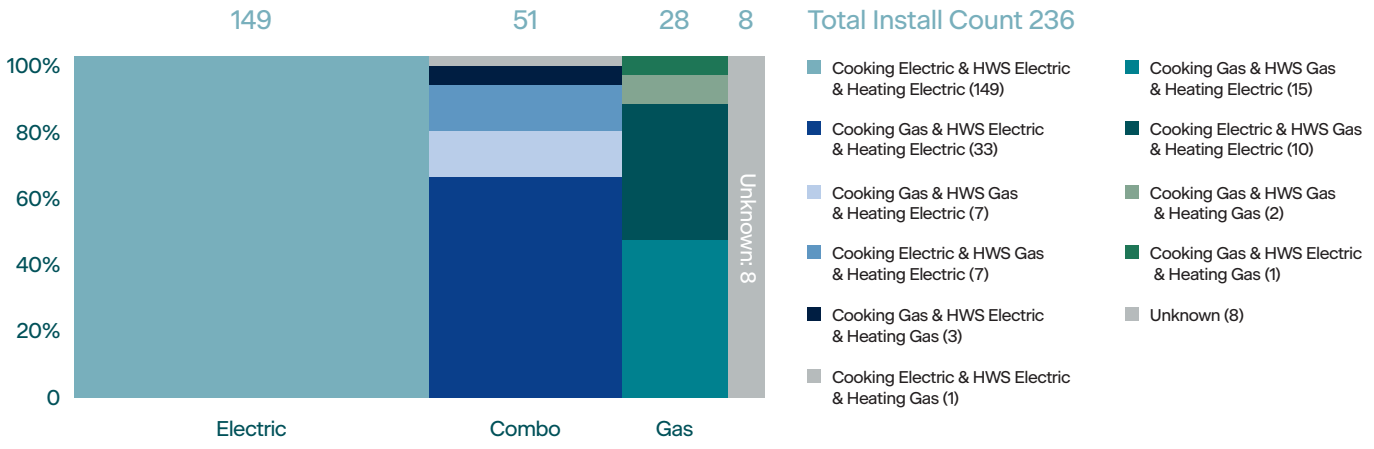


Table 1: Shows the appliance type and combination transitioned by residential customers

4.4 Cooking appliances

Feedback from customers and trades, and the increased uptake of induction cooking upon completion of the cooking demonstration, has shown that education on current technologies is vital in successful electrification opportunities. This is further evidenced by the table below, which showcases that customers who were transitioning a freestanding cooker were more likely to replace it with a conduction vs induction cooktop. Despite program support and encouragement to customers to discuss their options with their trades, including an increase to the supply cap to accommodate the additional cost of an induction cooker, this may in part have been due to the appearance of glass conduction cooktops, which look like induction. Feedback from customers is they were not aware of the difference until the cooking demonstration was able to highlight the benefits of induction responsiveness. Upon completion of the cooking demonstration, the program saw an increase in the uptake of induction cooking technology.

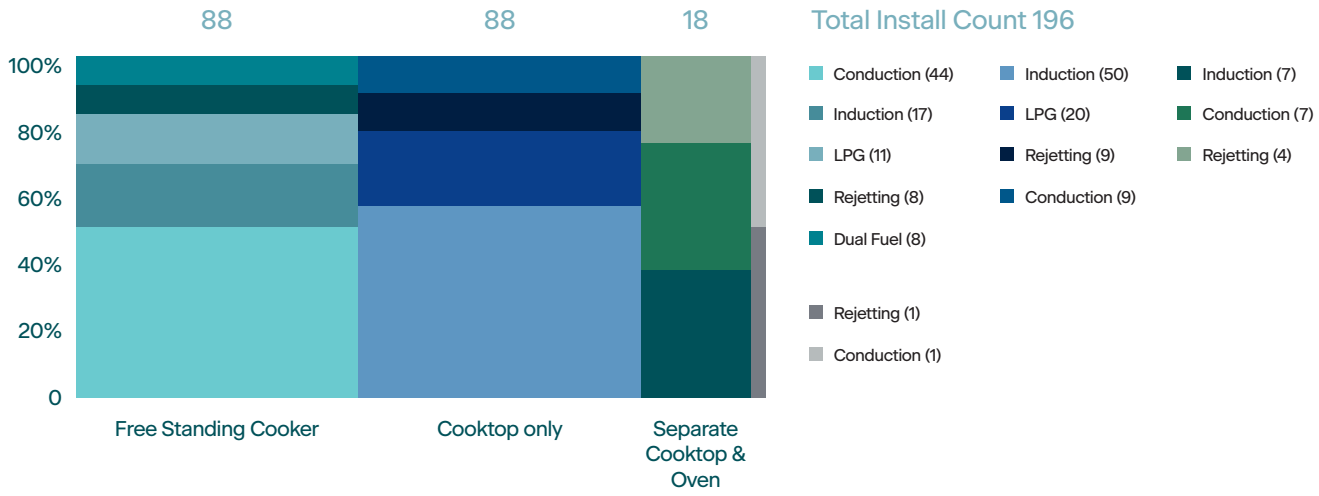


Table 2: Cooking unit type for residential customers

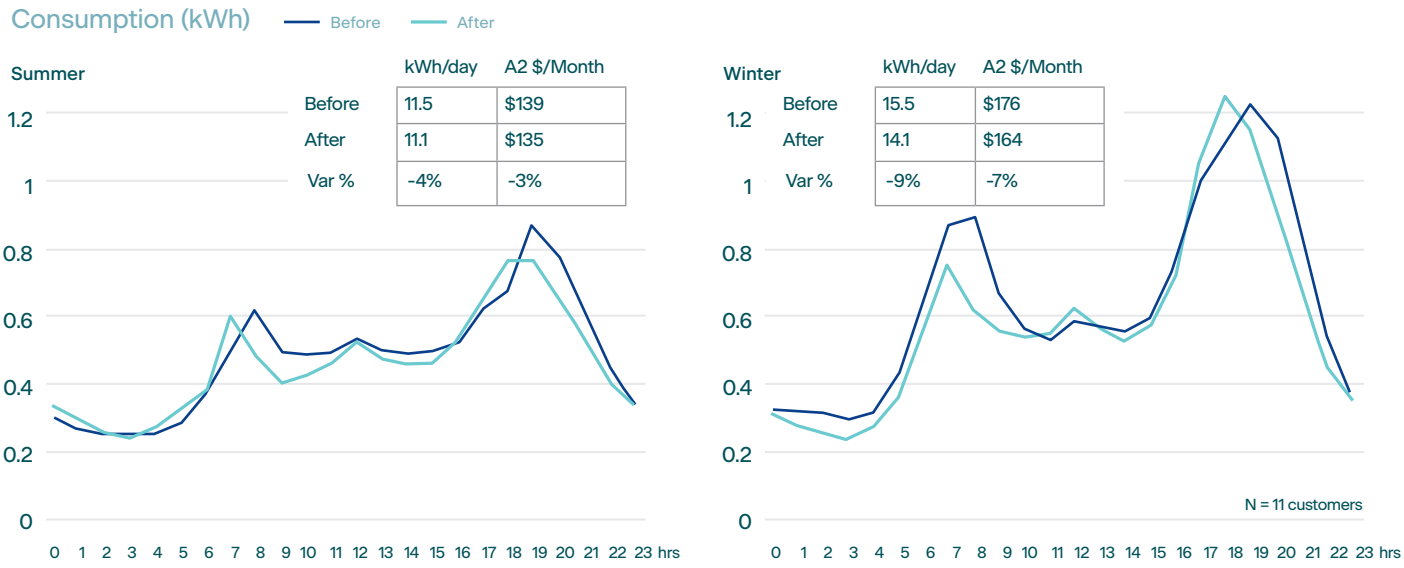


Table 2: Average hourly consumption for electric cooking appliance by season. The variation in use is not a reflection of the appliance selection alone, and includes variables in overall customer usage patterns post transition.

4.5 Hot water units

Heat pumps were the most common replacement appliance, with 77% of residential customers electing to install a heat pump. When combining this with 100% of Department of Communities properties also transitioning to heat pumps, the opportunity now exists for local trades to become accredited repair and maintenance experts for ongoing works, and trades have indicated they are undergoing accreditation training with their suppliers.

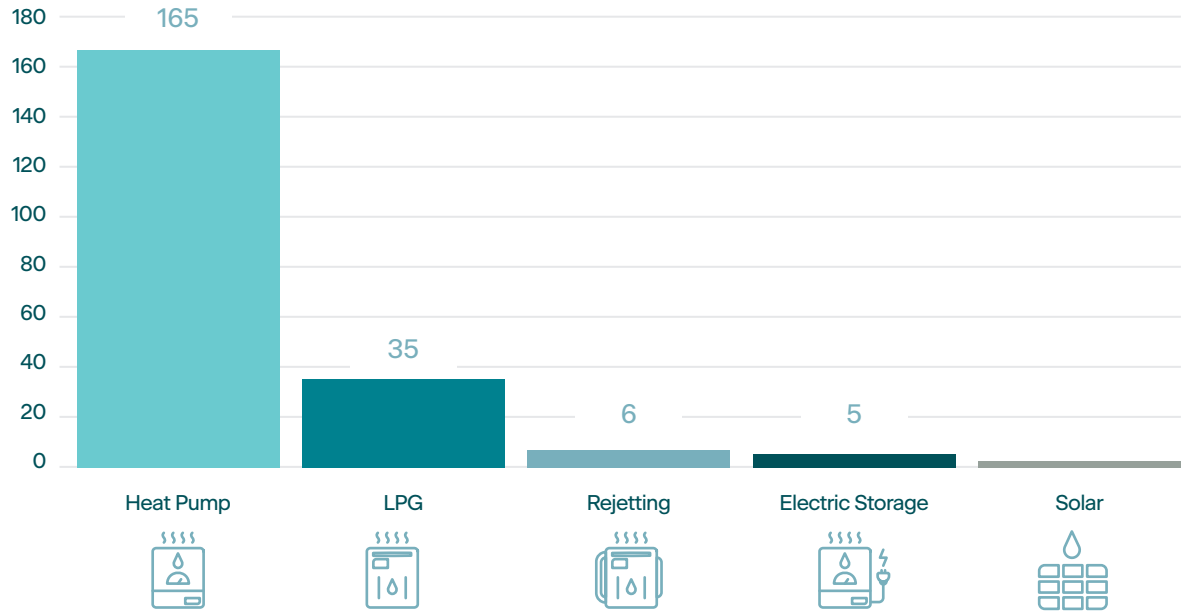


Table 4: HWS replacement by type for residential customers

Comparison of customers who transitioned their heat pumps shows a significant increase in electrical consumption, particularly during the winter months. Further education around heat pump operations, the ability to time the active heating in line with daytime usage, particularly in those properties with solar installed, would assist customers to further reduce their peak usage and reduce energy bills.

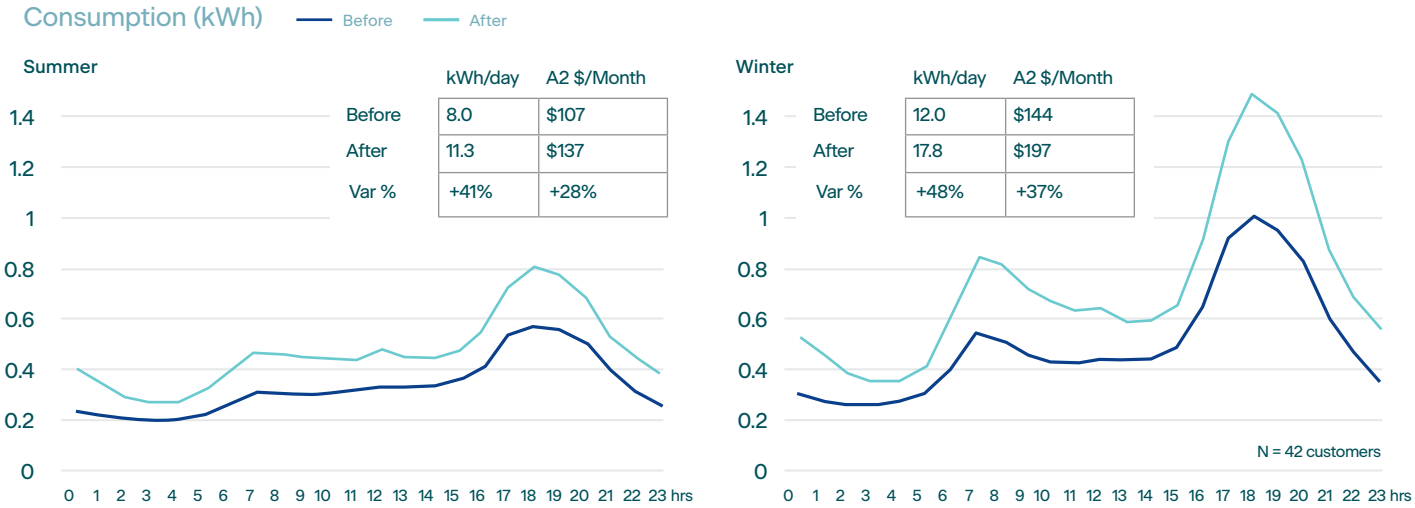


Table 5: Average hourly consumption for electric hot water appliance by season, for residential customers. The variation in use is not a reflection of the appliance selection alone, and includes variables in overall customer usage patterns post transition.

4.6 Heating

A total of 66 residential customers transitioned their household heating, with the majority electing for split system replacement for their gas heaters. One customer had an existing ducted heating system which was transitioned to electric, and one elected to contribute to the cost of installing ducted rather than installation of split systems. Many customers impacted by the gas transition did not have heating to transition, with the assumption being made they had existing split system or alternate electric heating already installed in the home.

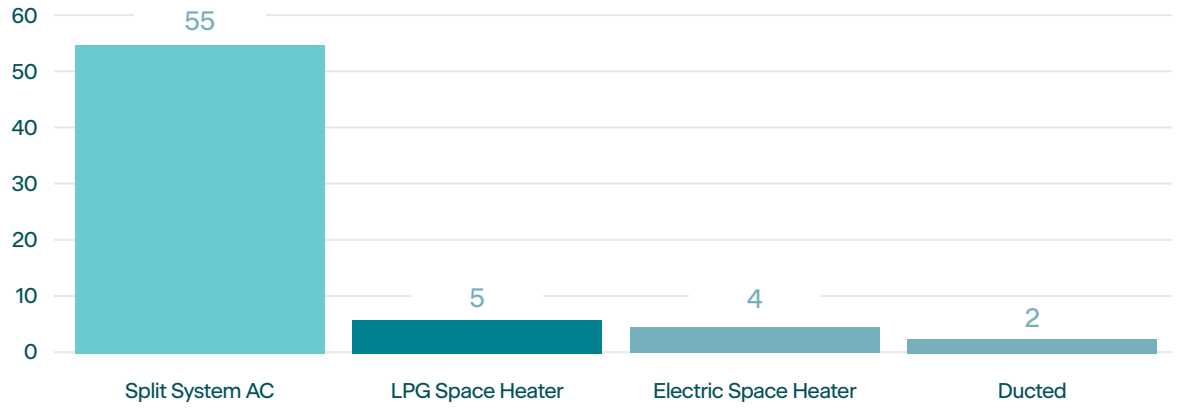


Table 6: Electric heating replacement for residential customer

Consumption data shows that winter usage has increased, which is expected in the Esperance region, and is an anticipated outcome given it was gas heating that was replaced.

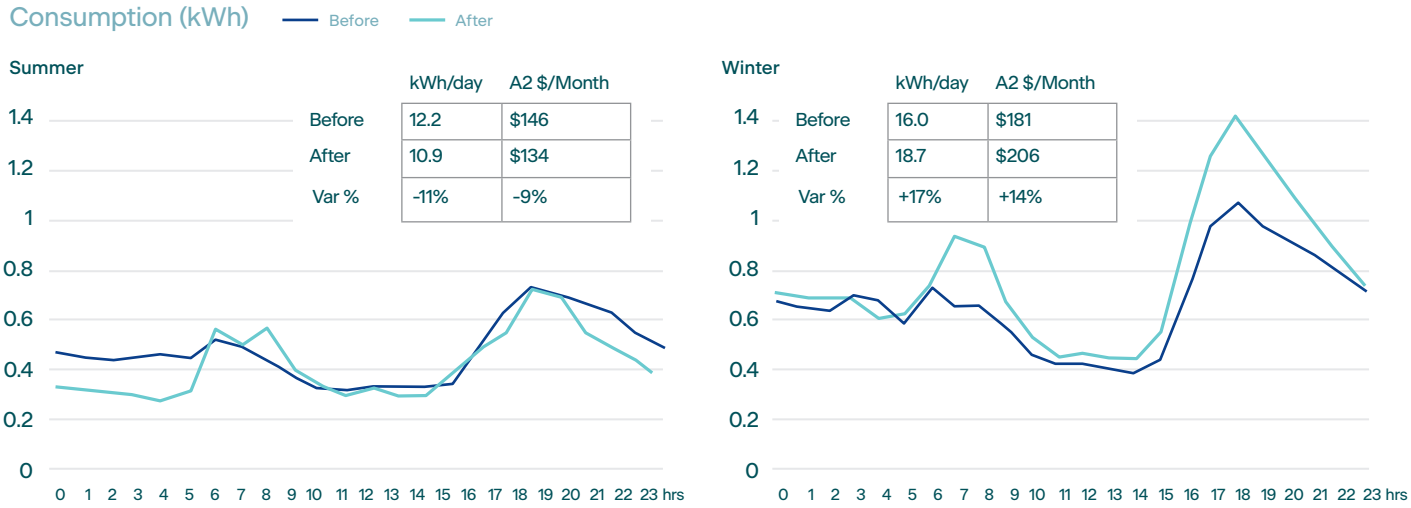


Table 7: Average hourly consumption for electric heating by season. The variation in use is not a reflection of the appliance selection alone, and includes variables in overall customer usage patterns post transition.

4.7 Department of Communities

Department of Communities elected to transition all 76 impacted customers to electric alternatives. This included transition of hot water units, cooking and heating appliances. Each property had varying combinations of appliances to be transitioned, with 95% of properties having cooking and hot water replaced, and 87% having split systems installed.

Department of Communities managed their own transition for impacted customers, from appliance selection, trade engagement and through to works completion. Further details on their transition learning can be found by contacting them directly.

Appliance(s) replaced		Count	% of total*
	Electric elevate stove - benchtop stove with oven	14	18%
	Freestanding electric upright cooker	40	53%
	Hot plate	18	24%
	A/C split system	66	87%
	Solar HWS	32	42%
	Heat pump	40	53%

Table 8: Department of Communities appliance overview

4.8 Overall consumption

Electrical data trends post transition

Due to the completion date of transition works occurring for customers participating in the program, combined with trade constraints and supply delays, the below analysis has been impacted by restricted sample sizes. To fully understand the load change impact caused by the transition, further analysis is required once a full summer and winter period of 12 months has occurred for all impacted customers. The below analysis is exclusive of Department of Community properties, unless otherwise indicated.

Based on the data available since the transition, EETP residential customers have, on average, increased their electrical consumption by approximately 24%, with costs increased by 18% (or $26 per month). This is countered by the savings to household bills by the removal of the gas supply costs, which results in a net benefit for the customer. There are also significant changes to usage per season, with average summer consumption up by 6% compared to the winter average increase of 19%. It is important to note that these figures will be subject to change upon analysis of a full 12-month period, as the slower than anticipated customer uptake of the program meant that many customers did not complete their transition until the end of 2022.

It should be noted that the only tariff available for residential customers in Esperance is the regulated A2 Tariff which is a flat rate across the day, therefore customers do not currently have any incentive to shift consumption from the peak period, unless they have a solar PV system installed. Time of Use tariffs may be beneficial in supporting future electrification programs to ensure the network peak does not increase.

Please refer to the five case studies beginning on page 22 comparing real customer pre and post transition usage, using gas bills that were provided to Horizon Power for case study and analysis use. The analysis below is based on the available sample sizes as at October 2023, which provides indicative overall impact to customer usage.

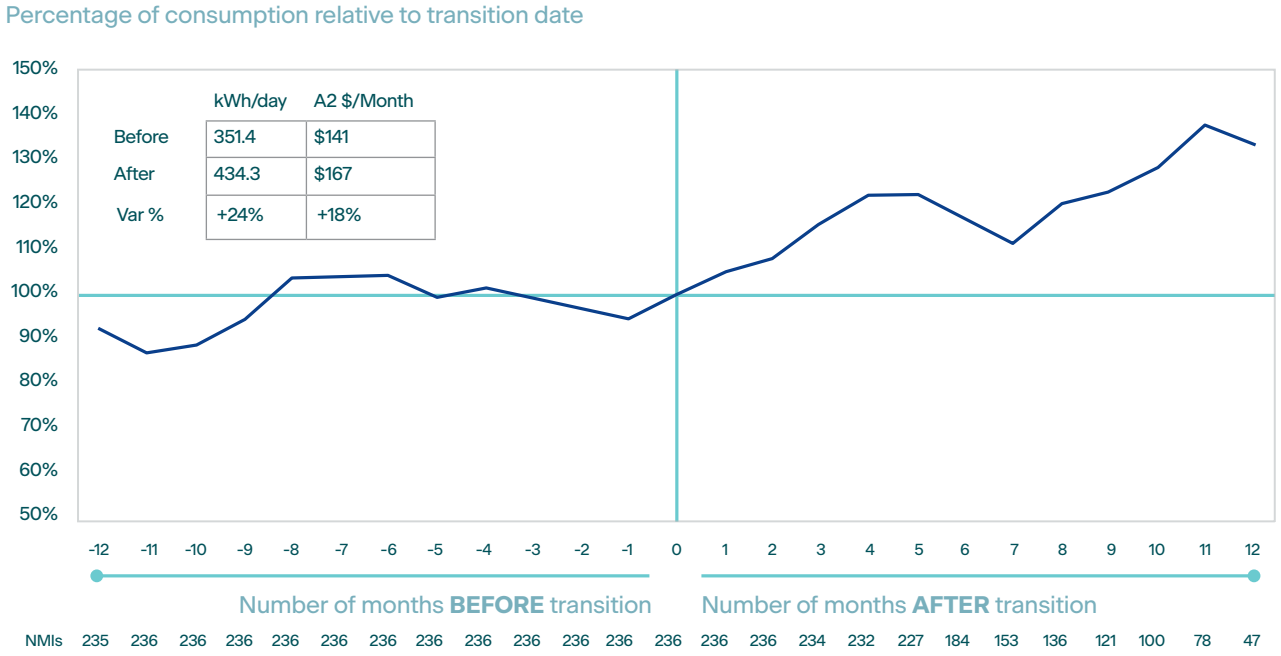


Table 9: Consumption pre and post transition for residential customers. Note this is not full 12-month post transition data for customers. Due to approximately half of customers transitioning over the summer, the increased consumption will be overstated due to the concentration of winter months in the post transition results.

5.0 Residential cost analysis and case study review

The cost to transition each customer varied from property to property due to various unique circumstances. Costs were impacted by trade capacity constraints, supply lead times, increasing retailer appliance costs and a restricted timeline to complete the work.

In order to develop case studies to accurately measure the impact of the transition on household bills and emissions, the program engaged with residential customers to request gas usage information prior to the transition. Five residential customers agreed to share their pre transition gas usage information, and their individual case studies are below.

In addition, the program elected to engage an independent specialist to calculate the average running costs and emissions outputs for different types of appliances using a set of agreed and consistent assumptions. This enabled the development of generalised case studies, outlined below, for the different types of transitions encountered and the expected impact to customer household energy bills.

On average, the findings from the independent report indicate that customers who transitioned to electric alternatives can expect to save an average of 38% per year. This was supported by the results of the five case studies which showed an average of 43% saving on household energy bills across the five households, noting it has not yet been a full 12 months since they transitioned.

38%

Customers who transitioned to electric alternatives can expect to save an average of 38% per year

Case studies based on independent general running costs and emissions data

Scenario 1

Customer transitions from natural gas hot water, four burner cooktop and space heater to electric alternatives.

Average cost					
Pre-transition	Annual cost	Post-transition	Annual cost	$ saving	% saving
Instant gas HWU	$661	280L heat pump	$361	$300	45%
4 burner gas cooktop	$159	4 burner induction cooktop	$81	$77	48%
Gas space heater	$661	3kW split system	$361	$300	45%
TOTAL	$1,629		$1,016	$613	38%

Average emissions				
Pre-transition	tCO_{2e} p/y	Post-transition	tCO_{2e} p/y	Annual tCO_{2e} saving
Instant gas HWU	1.06	280L heat pump	0.40	0.66
4 burner gas cooktop	0.26	4 burner induction cooktop	0.10	0.16
Gas space heater	1.53	3kW split system	0.68	0.85
TOTAL	2.85		1.18	1.67 tCO_{2e}

Scenario 2

Customer transitions to heat pump, but keeps gas cooktop

Average cost					
Pre-transition	**Annual cost**	**Post-transition**	**Annual cost**	**$ saving**	**% saving**
Instant gas HWU	$661	280L heat pump	$361	$300	45%
4 burner gas cooktop	$159	LPG 4 burner cooktop	$287	-$128	-80%
TOTAL	$820		$648	$172	21%

Average emissions				
Pre-transition	**tCO_{2e} p/y**	**Post-transition**	**tCO_{2e} p/y**	**Annual tCO_{2e} saving**
Instant gas HWU	1.06	280L heat pump	0.40	0.66
4 burner gas cooktop	0.26	4 burner induction cooktop	0.28	-0.02
TOTAL	1.32		0.68	0.64 tCO_{2e}

Findings from generalised case studies

It is apparent from the case studies that the greatest benefit to the customer is gained from transitioning the entire property to energy efficient electric alternatives. It was identified during the course of the program that personal preference in cooking methods is a key decision-making factor. The education undertaken by the program team to highlight the benefits of energy efficient induction cooking technology, particularly the practical cooking demonstration, was enlightening for customers who traditionally favoured gas and resulted in a change of thinking. For those customers who ultimately chose induction cooktops, the average savings were greater than those electing to transition to LPG.

5.1 Case studies from impacted residential customers

Throughout delivery of the program, Horizon Power sought to engage customers who would be willing to share their pre and post transition energy information for case study purposes.

Customers were hesitant to share data, in part due to the climate of regular data breeches in the media, and concern over protecting private information. Post transition, the program again reached out to all customers who had transitioned to 100% electric sources, a minimum period of nine months prior, to seek their inclusion in case study review. Nine months was selected as the minimum period to allow for a larger sample of customers to come forward. Of the 74 customers contacted, five responded and provided their pre transition gas bills, and their case studies are presented below.

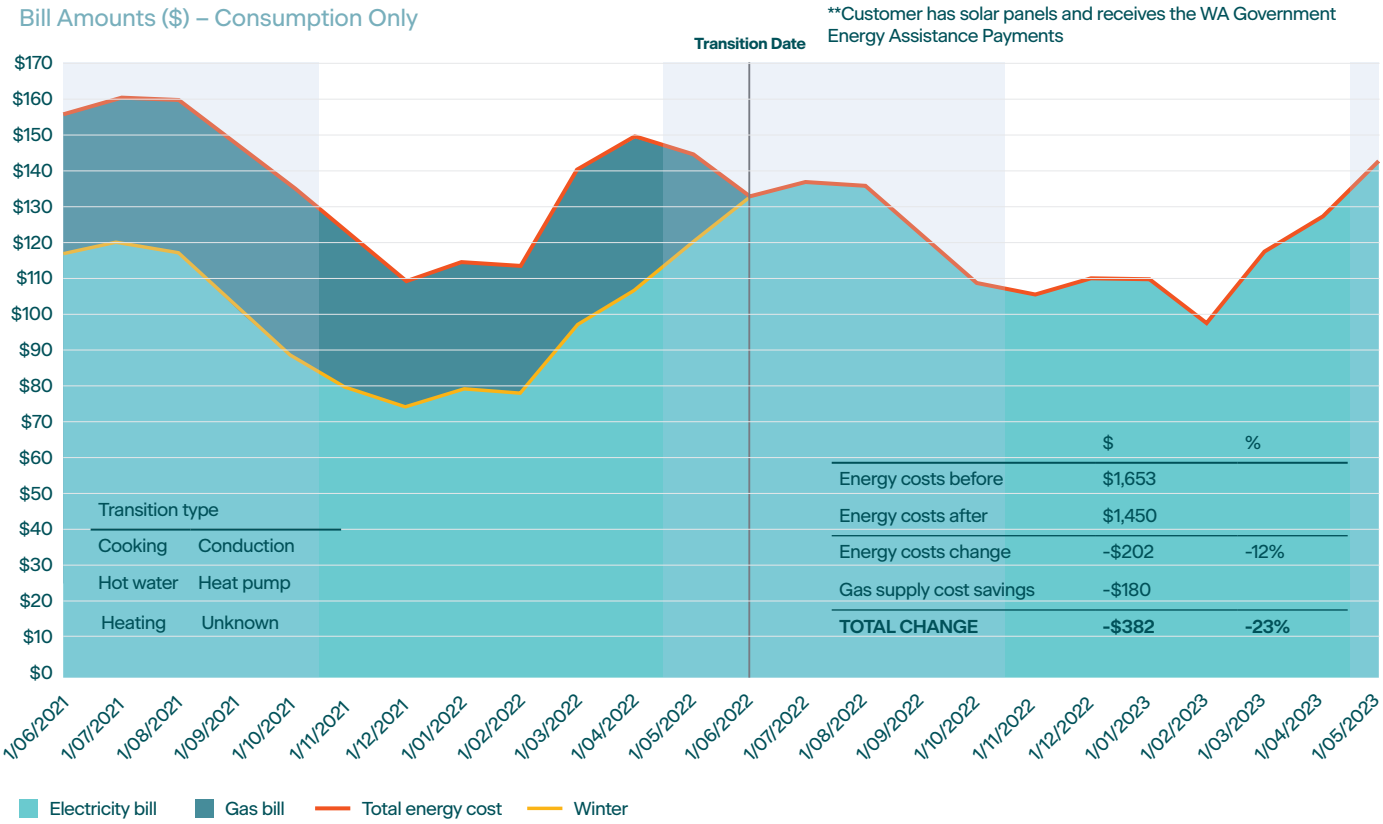
Of the five customers, three switched their heating appliances to split systems, two moved to electric cooking and all transitioned to heat pump hot water. The below case studies provide an average of nine months post transition data comparison.

Based on the nine months post transition data available, overall energy consumption costs, exclusive of gas supply charges, dropped by an average of 30%. When the gas supply charges are incorporated, their overall energy costs dropped by 43%.

Average for all five customers (9 months pre/post)	$	%
Energy consumption costs before	$6,558	-
Energy consumption costs after	$4570	-
Energy consumption costs change	-$1,989	-30%
Gas supply cost savings	-$840	-
TOTAL ENERGY COSTS CHANGE	-$2,828	-43%

Case study 1

	Pre-transition	Post-transition
COOKING	**4 burner gas cooktop and 60cm gas oven**	**60cm Westinghouse conduction cooktop and electric oven**
HOT WATER	**Instantaneous gas hot water unit**	**170L Chromagen heat pump**
HEATING	**N/A**	**N/A**

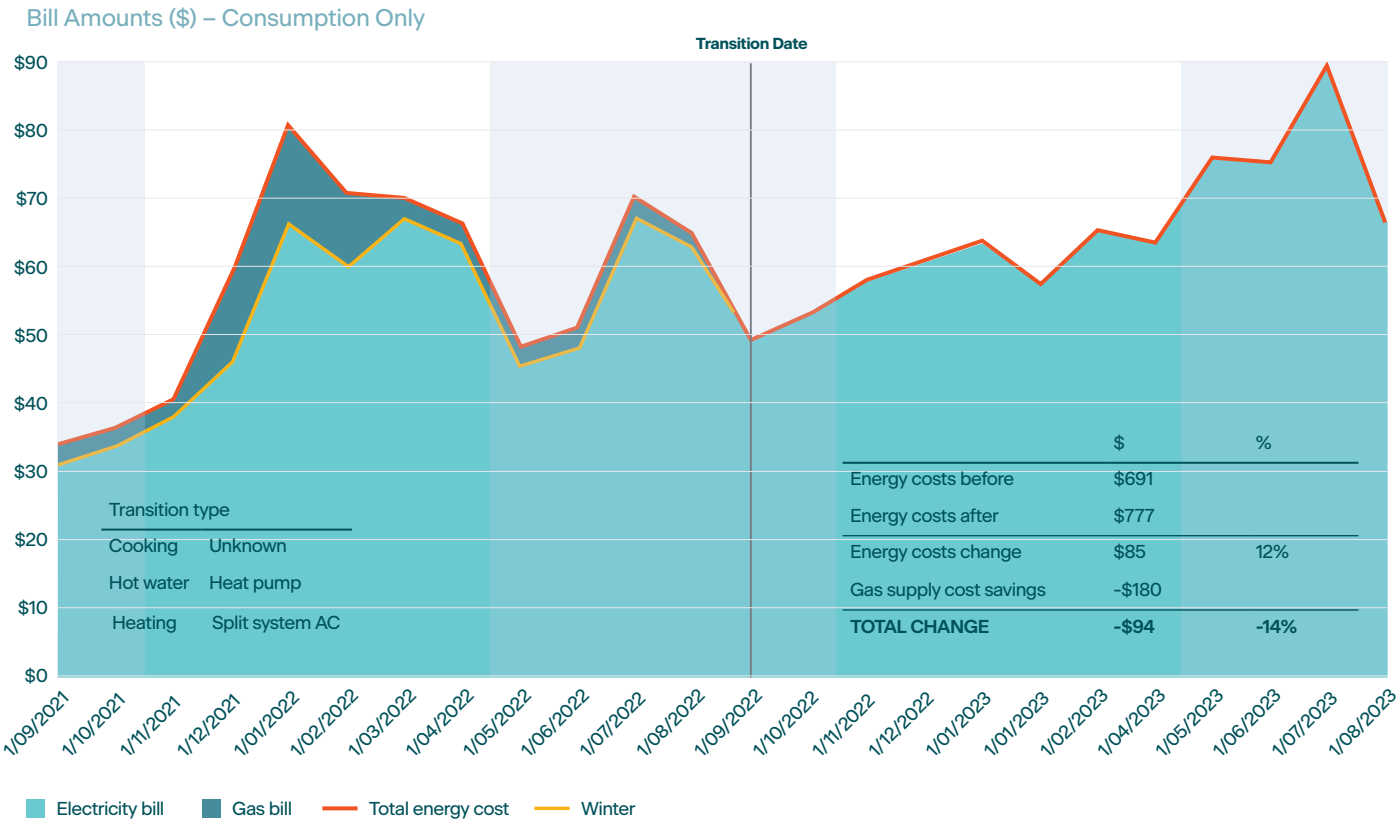


Approximately a third of the customer's total energy consumption costs pre-transition was from gas.

While electricity consumption costs increase, there is still a saving of 12% relative to their pre-transition total energy consumption costs, and once the gas supply charges savings are added, there is a 23% savings.

Case study 2

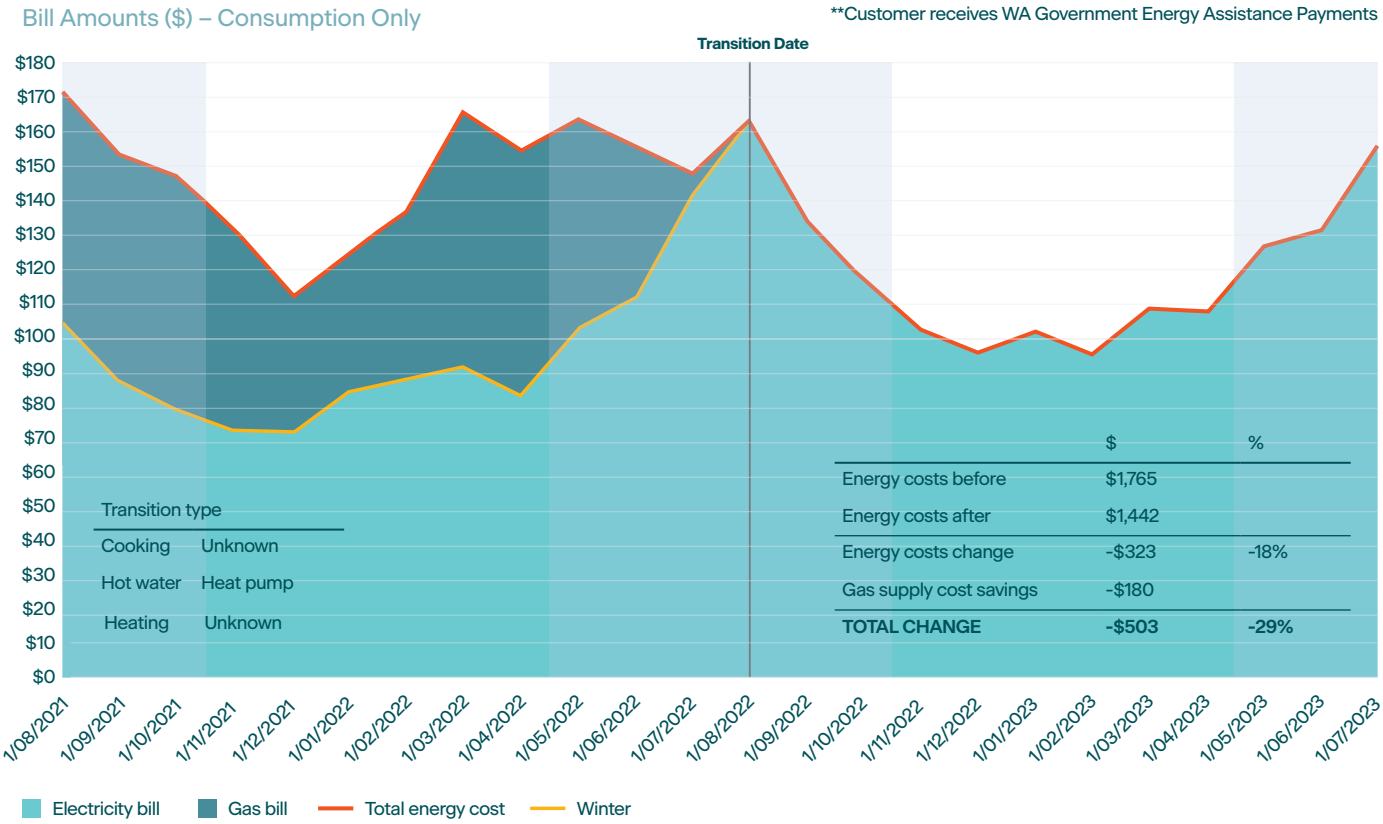
	Pre-transition	Post-transition
COOKING	N/A	N/A
HOT WATER	Instantaneous gas hot water unit	280L Chromagen heat pump
HEATING	Portable gas heater	7kW split system



For this customer, gas consumption costs were a relatively small portion of their overall energy consumption costs before transition. There is an increase in the overall energy consumption costs of 12% post-transition, but when the savings on the gas supply charges are considered, there is a net 14% savings.

Case study 3

	Pre-transition	Post-transition
COOKING	**N/A**	**N/A**
HOT WATER	**Instantaneous gas hot water unit**	**270L Chromagen heat pump**
HEATING	**N/A**	**N/A**



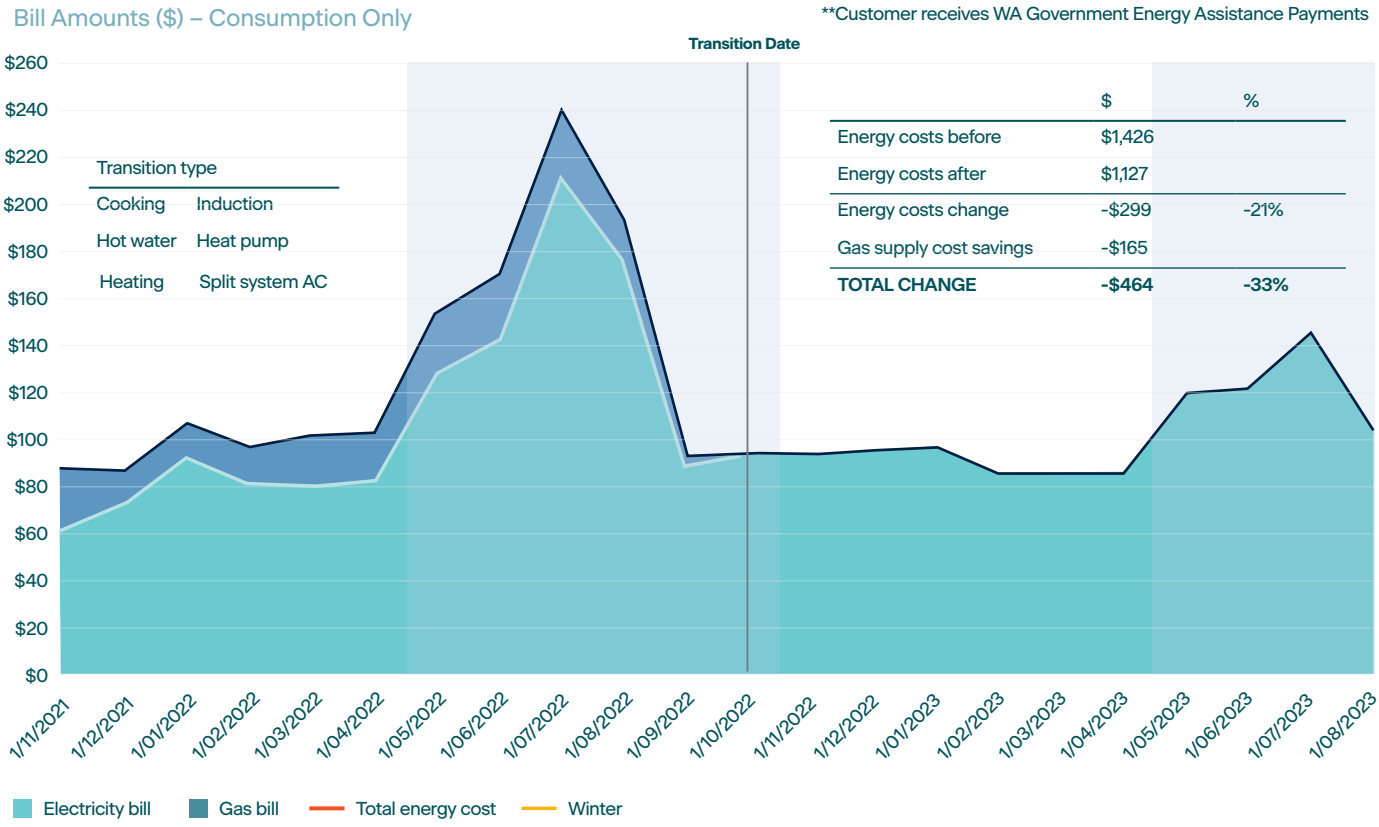
This customer has a relatively high proportion of gas consumption costs before transition which results in a higher increase in their electricity energy consumption costs post transition.

While electricity consumption costs increase, there is still a saving of 18% relative to their pre-transition total energy consumption costs, and once the gas supply charges savings are added, there is a 29% savings.

This customer receives WA government energy assistance payments.

Case study 4

	Pre-transition	Post-transition
COOKING	90cm gas cooktop	90cm Electrolux induction cooktop
HOT WATER	Instantaneous gas hot water unit	280L Chromagen heat pump
HEATING	Portable gas heater	2.5kW split system



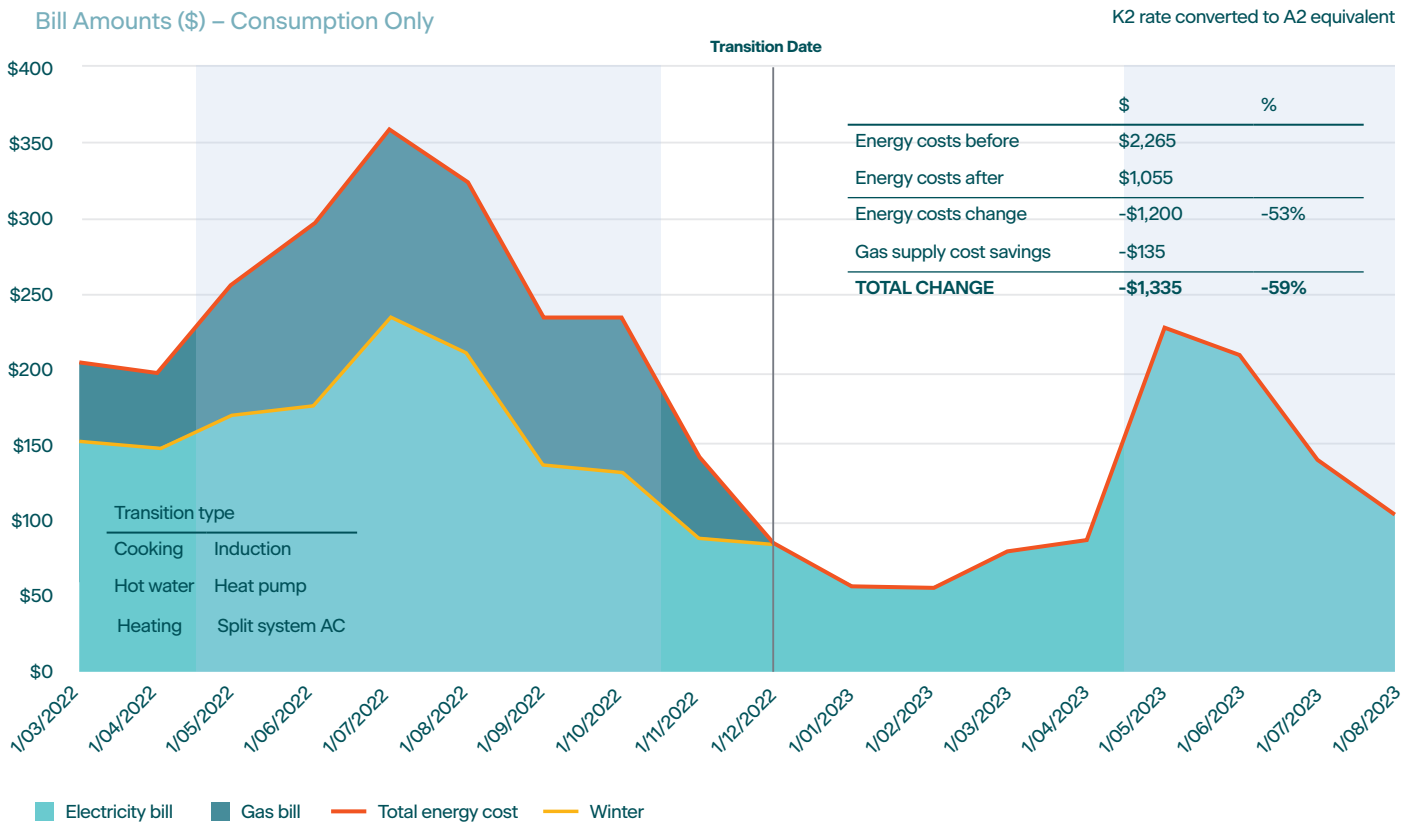
For this customer, while there is a large decline in winter consumption costs post-transition, there is an increase during the summer months.

This results in savings of 21% relative to their pre-transition total energy consumption costs, and once the gas supply charges savings are added, there is a 33% savings.

This customer receives WA government energy assistance payments.

Case study 5

	Pre-transition	Post-transition
COOKING	90cm freestanding gas cooktop and oven	90cm Fisher and Paykel freestanding induction cooktop with electric oven
HOT WATER	Instantaneous gas hot water unit	280L Chromagen heat pump
HEATING	Portable gas heater	7kW split system



This customer had a high proportion of gas consumption costs pre-transition but does not appear to have transitioned this consumption to electricity.

Due to this, there is a significant decline in their overall energy consumption costs of 53%, which increases to 59% once the gas supply charge savings are also considered.

A possible explanation is that this customer has undergone behaviour changes in their electricity usage, and in addition this customer also has solar panels (but no recorded buyback) so they could be offsetting their daytime gas consumption from their panels.

5.2 Cost analysis

The program identified that unique household circumstances, combined with the external constraints of trade capacity and supply limitations, created significant variations in transition costs. The table below illustrates indicative average costs associated with transitioning residential properties to energy efficient electric alternatives.

Heat pump					=	$5,500
Heat pump	+	4 burner induction cooktop			=	$8,000
Heat pump	+	4 burner induction cooktop	+	7kW split system AC	=	$14,000

* Outliers have been removed when determining the above averages. Costs include gas disconnection and compliance costs, supply, installation, administration, removal and disposal fees.

6.0 Business customers

Business customers were provided with an independent energy audit to assist in their determination of a transition pathway.

This audit assessed current infrastructure and operational requirements for the business, and compared alternatives which included 100% electrification as well as LPG and hybrid options. For many business customers, these pathways were influenced by unique complexities such as site limitations, tank locations, current electrical infrastructure and load restrictions. Due to the unique and bespoke nature of business appliances and transition requirements, aggregation of business customer costs is not practicable.

Business customer funding was divided into small, large and extra-large use customers. Each category was determined by gas usage in the preceding year (shown in the table below), which informed the variable available funding support.

Business size	Gas usage	Funding available
Small business customers 	1 - 30,000 MJ	75% of costs for LPG works 95% of costs for electric works **Capped at $15,000**
Large business customers 	31,000 - 2,000,000 MJ	75% of costs for LPG works 95% of costs for electric works **Capped at $50,000**
Extra large use business customers 	2,000,000 - 6,000,000 MJ	75% of costs for LPG works 95% of costs for electric works **Capped at $200,000**

Funding was initially provided to extra-large use business customers capped at $50,000. Upon completion of the majority of customer transitions, and as part of the program's governance review, additional support was allocated from available funding in recognition of higher costs to complete the works to maintain equity in the proportion of transition costs to be incurred by each business.

7.0 Customer survey and testimonial

On completion of their transition, residential and business customers were sent a survey link to obtain feedback on the process inviting them to score their satisfaction and to provide another opportunity to raise any concerns.

Of those residential customers who responded to the survey, 94% confirmed overall satisfaction with their transition experience. No business customer responses were received.

The residential customer survey included the following three Yes/No questions with a free text field for final comments.

Customer survey questions

1. Was the application process straightforward?
2. Was/Were your trades supportive and knowledgeable in helping you choose your appliances?
3. Are you satisfied that your appliances are installed and working correctly?

7.1 Residential customer testimonial

The following quotes came from the residential survey:

> "Trades neat and tidy. Very happy with trades and noted [it] was a smooth process."

> "Trades were good and communication from project team good."

> "Trades tidy and clean and beautiful work and thanks to Horizon Power crew also."

> "Reservations surrounding the whole process and the safety around the trucking the LPG. Once I got my head around the process, I found it very good."

> "Guys did a good job. I was offsite working throughout and they got it all done."

> "The tradies were very professional and efficient and a pleasure to deal with. My wife and I were extremely happy with the professionalism and workmanship of the trades people they were awesome to deal with."

> "I thought it would be hard but it was easy. Trades and help along the way. Thanks Horizon Power."

> They did a good job, the [Hot Water System] took some time to get to the right temperature as we had it on ECO [setting] but we have sorted that now."

8.0 Gas network considerations

The Department of Mines, Industry Regulation and Safety (DMIRS) is the responsible government agency for gas equipment safety compliance and licensing matters.

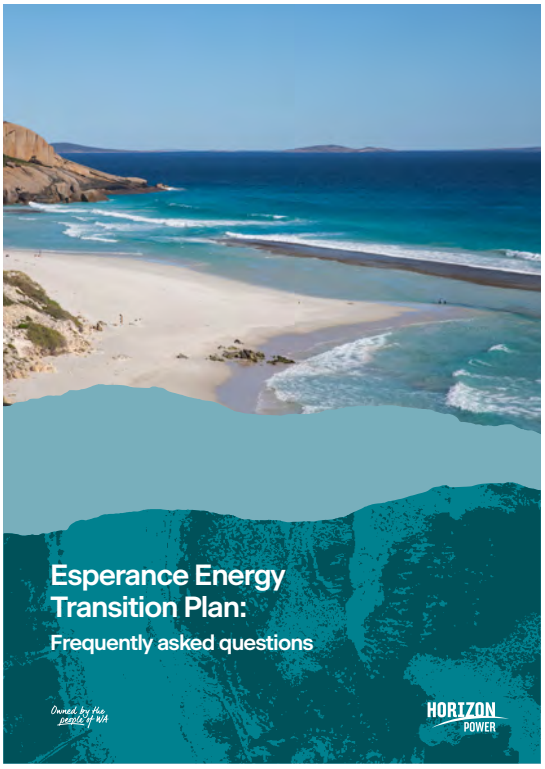
Throughout delivery of the program, they reviewed their gas standards to ensure that the pipeline was safely decommissioned. The below statement was issued by DMIRS, and further information is available by contacting them directly.

DMIRS advises **the scope of decommissioning activities currently required under WA law are addressed in Pt. 4 div.2 of the Gas Standards (Gas Supply and System Safety) Regulations 2000;**

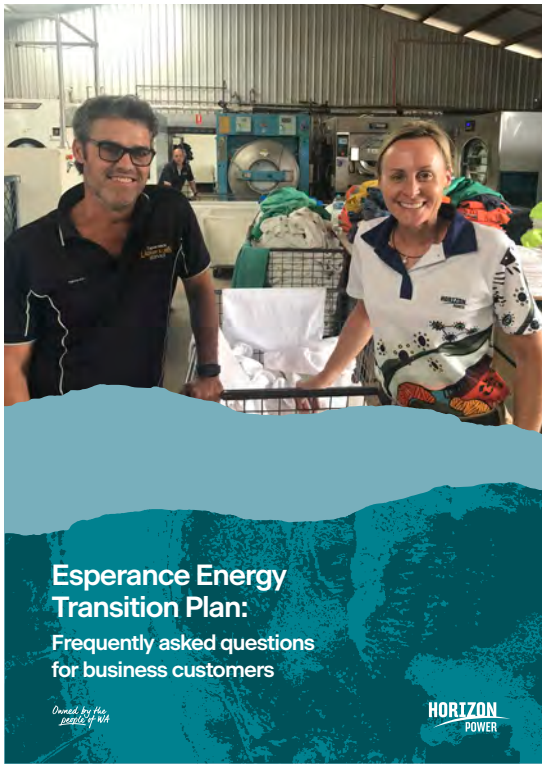
The scope of obligatory decommissioning activities, are extensive and include:

- disconnecting the distribution system from the gas supply source;
- disconnecting the distribution system from the consumers' gas installations;
- purging of any flammable gas from the distribution system safely;
- removing all aboveground pipework and components owned by the distribution system including meters, service risers and cathodic protection devices (where applicable);
- grouting pipes at locations sensitive to subsidence (such as railway crossings), for long term protection against structure failure;
- filling service pits (where applicable);
- plugging and capping all open pipe ends;
- reinstating excavation sites where system components were removed; and
- recording the location of any components of the system that are not removed in a public accessed directory (Before You Dig).

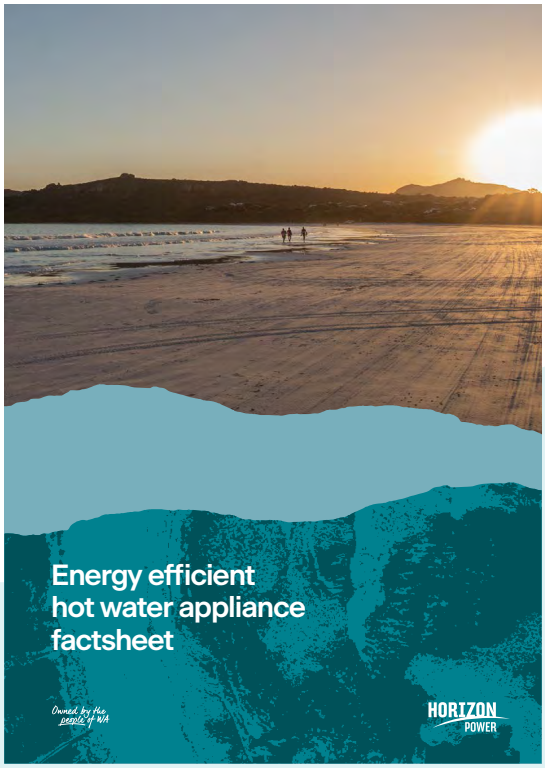
9.0 Attachments



Residential Customer FAQ



Business Customer FAQ



Example appliance fact sheet

Supply Cap Rate Card

Esperance Energy Transition Plan:

Frequently asked questions

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Background

What is happening with the Esperance Gas Distribution Network?

The Esperance Gas Distribution Company (EGDC) provides reticulated gas to 379 customers in Esperance (41 businesses and 338 residential customers). On 30 September 2021, the EGDC announced it would cease supplying reticulated gas to the Esperance community effective 31 March 2022.

Following this announcement, Horizon Power, on behalf of the State Government, executed an agreement with EGDC to secure a 12-month extension on the reticulated gas supply.

This means customers with appliances that use reticulated gas will need to transition to another energy source before 31 March 2023.

Depending on your energy needs, you may be able to choose between bottled gas, electrification, or a combination of both.

Why can't reticulated gas supply continue past 31 March 2023?

EGDC has indicated it cannot commercially continue to supply gas and operate the reticulated gas network beyond that date.

Horizon Power has worked with the EGDC to investigate different options to ensure customers would continue to have access to the energy they need.

Transitioning from reticulated gas was found to provide the greatest benefits for customers and the broader community, with the least risks.

How will affected customers be supported through this process?

Horizon Power will deliver the Esperance Energy Transition Plan, to support customers with this transition. The program includes:

- Financial assistance for 'like-for-like' replacement of appliances
- Guidance from energy efficiency experts
- Connection with local tradespeople
- Dedicated phone line and email support.

Four simple steps to make the transition from reticulated gas

There are four simple steps for a smooth energy transition.

Step 1. Choose a registered tradesperson

Visit **www.horizonpower.com.au/energypackage** to select from an approved list of tradespeople. They will visit your property and provide a quote for your new energy solution.

Step 2. Apply for financial assistance

Once you have a quote from the selected tradesperson, you'll then be able to submit an application online with Horizon Power.

Step 3. We'll assess your application

It will take around 5-10 days to review your application. We'll then confirm the amount of financial support provided by us, so you can choose your own appliance(s) and arrange for the work to get started.

Step 4. Arrange for installation

You can then get in touch with your registered tradesperson to confirm a time and date for installation. They'll take care of ordering and installing the appliances at your property.

That's it!

Your tradesperson will then submit an invoice to Horizon Power to cover the cost of the confirmed financial support.

Getting started

What do impacted customers need to do first?

If you have not already registered your details with us, please email **Esperance-etp@horizonpower.com.au** or call **(08) 9072 3470** as soon as possible. This will ensure that you receive all important communications going forwards.

When will the transition program end?

All impacted customers will need to transition to a new energy source by 31 March 2023. You will need to obtain quotes from your registered tradesperson **before 31 October 2022** to ensure that you meet this deadline.

We recommend that you take early action to secure your preferred tradesperson. To request a quote visit **www.horizonpower.com.au/energypackage**.

If you need support, please call **(08) 9072 3470.**

How does the residential financial support work?

Horizon Power will pay tradespeople directly for approved transition works. To view a directory of participating tradespeople visit **www.horizonpower.com.au/energypackage.**

The website also includes information on choosing your energy solution - electrification or bottled gas conversion, or a combination.

You will need to arrange quotes for your chosen solution and submit these via the application form available on the website.

Once Horizon Power has approved your application, contact your tradesperson to arrange a date for the works which suits you.

When work is complete, Horizon Power will pay tradespeople directly.

We're here to help

The Horizon Power team is here to help you through this process. Call **(08) 9072 3470** or email **Esperance-etp@horizonpower.com.au** for support or advice.

Choosing your energy solution

What is electrification?

Electrification is the process of converting an appliance or equipment to run on electricity.

Electric appliances have become more popular in recent years, removing the need for separate gas supplies for most household cooking, water and space heating needs.

What are the benefits of electric appliances in homes?

- Lower utility bills – by choosing an energy efficient electric appliance, and no longer paying a gas network supply charge.
- Avoid unregulated gas price rises – experience has shown that bottled gas prices, especially in regional areas, can increase steeply.
- Decrease your carbon footprint – since a large portion of Esperance's electricity comes from renewable sources, electric appliances create less greenhouse gas emissions than gas counterparts.
- Safe and healthy homes – as safe as modern gas appliances are, you can avoid possible risks by switching to electricity.

What does 'like-for-like' mean?

It means Horizon Power will cover the cost to replace a similar appliance.

Horizon Power has created appliance fact sheets to help you and your selected tradesperson to understand what financial support you can access.

If you would like to take this opportunity to upgrade an appliance above the 'like-for-like' standard, you will need to pay the gap between the appliance cost and 'like-for-like' financial support.

How were the lists of 'like-for-like' appliances determined?

An independent energy efficiency specialist provided advice regarding technology, appliance options and reasonable costs. This process included consultation with local Esperance trades.

What if electrification is not an option for my home?

If electrification is not feasible, Horizon Power will provide you with financial support to convert your existing appliances to bottled liquefied petroleum gas (LPG).

If you believe your home cannot be transitioned to bottled LPG or electric appliances, please send a brief description of your energy needs to **Esperance-etp@horizonpower.com.au** or call Esperance Horizon Power office on **(08) 9072 3470**.

What happens to my old appliances if I replace them with electric options?

Horizon Power covers the cost to remove your existing appliances, however, if you would like to keep your appliances or sell them to a third party, you are welcome to do so.

How do renters apply for this program?

If you are renting your home, we recommend you speak directly to your property manager or the property owner, to ensure they are aware of the Esperance Energy Transition Plan. The application will need to be completed by the person listed on the property Rates Notice.

Is solar PV installation a part of this transition?

No. The program's priority is to ensure affected customers transition off the gas network prior to 31 March 2023. However, Horizon Power is working on future solar releases across regional WA, including Esperance.

Program delivery

May I use my own tradesperson?

To qualify for the Horizon Power financial support, you must use a Horizon Power approved and registered tradesperson who has completed our standard onboarding and Safety Induction Program. If there is a tradesperson you specifically wish to use, they can simply complete the Horizon Power registration process.

How can a tradesperson be included on the Horizon Power list of registered trades?

Horizon Power will conduct a contractor registration and approval process requiring evidence of licences and certificate of insurance for any supplier participating in the program. All participating suppliers will be required to complete the Horizon Power Safety Induction program and agree to perform the works in accordance with industry practices and appropriate standard of work.

What if my home cannot transition to electricity prior to 31 March 2023?

We will be supporting you throughout this process and will frequently check-in with both customers and tradespeople, to ensure all transition work is completed on time and in accordance with Horizon Power safety and installation standards.

For more information

For more information on the Esperance Energy Transition Plan, please send an email to **Esperance-etp@horizonpower.com.au** or call **(08) 9072 3470.**

Esperance Energy Transition Plan:

Frequently asked questions for business customers

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Esperance Energy Transition Plan

Frequently asked questions for business customers

What does 'like for like' mean?
Horizon Power will cover the cost to replace an appliance with one of a similar size or output capacity.

What if I want to upgrade my appliance(s)?
If you would like to take this opportunity to upgrade an appliance above the 'like for like' standard, you will need to pay the gap between the appliance cost and 'like for like' funding.

What if I want to keep a gas appliance but it can't be re-jetted?
Horizon Power will cover 75% of the cost to replace a 'like for like' appliance for a product that verifiably cannot be re-jetted.

Can I re-jet some appliances to LPG and replace others with electric options?
Yes. You will be covered for 75% of the LPG re-jetting costs and 95% of the electric appliance replacement costs.

I want to electrify but am concerned that this won't be completed before the gas is turned off
Please contact us at Esperance-etp@horizonpower.com.au or call 08 9072 3470 for assistance.

Can I use my own tradespersons?
Yes. You can use your own tradespersons but they must be suitably qualified and licenced for you to be eligible for the funding.

I am having trouble providing the right supporting documentation
Please contact us at Esperance-etp@horizonpower.com.au or call 08 9072 3470 for assistance.

What if my business cannot afford the upfront costs for transitioning off reticulated gas?
Please contact us at Esperance-etp@horizonpower.com.au or call 08 9072 3470 for assistance.

Example – combined solution with electric and gas appliances

Activity	Detail	Cost	Applicable funding %	Total
New electric option	Gas appliance changed to an electric option (e.g gas stovetop to induction cooktop). Eligible cost includes removal of gas appliance and capping of gas line. Appliance must be 'like for like' in capacity.	$8,000	95%	$7,600
New LPG appliance	Existing gas appliance cannot be re-jetted due to condition of appliance or availability of re-jetting kit, therefore replacement 'like for like' LPG appliance purchased.	$3,500	75%	$2,625
Re-jetting	Existing gas appliance re-jetted to LPG option.	$700	75%	$525
Total eligible funding amount				$10,750

Energy efficient hot water appliance factsheet

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Heating appliance factsheet

Space heating and cooling account for 40%[1] of the total energy consumed at a residential property. The typical residential natural gas heating systems are either ducted heating systems with a centralised heating unit that serve multiple rooms or a space gas heater to heat individual spaces which can be flued or unflued. Households can reduce their energy costs by electrifying these appliances using high-efficiency heat pumps which operate between 300% to 600%[2] efficiency, compared to gas heating systems operating between 61% to 90% efficiency.

Technology overview

Heap pump air conditioners, also known as reverse cycle air conditioners, are considered the most energy efficient technology for heating homes. These systems not only warm up your home but also provide cooling functions. Both functions circulate a refrigerant gas and can do so in two directions to deliver either cool or hot air.

The technology can operate between 300-600%[3] efficiency, meaning for every unit of electrical energy consumed, the system delivers 3 to 6 times more heating or cooling energy. Heat pump air conditioners offer a high energy efficiency as they utilise the properties of a refrigerant to absorb energy from the surrounding air, increase the temperature using a compressor and then blow warm air into the house. In summer, this process works in reverse by absorbing the warm air from inside the house and expelling it to the outside.

Reverse cycle air conditioner systems have three different configurations:

- **Ducted systems:** can replace an existing gas fired ducted gas system. The gas fired heating unit would be replaced with an outdoor heat pump air conditioning unit.
- **Split systems:** can replace single room space heaters. These systems have an outdoor unit and an indoor unit (the fan) which is usually mounted on an internal wall.
- **Multi-head systems:** are an option for households with multiple room space heaters. One large outdoor unit can be connected to multiple indoor units. This option can reduce installation costs and maintenance costs due to the reduced number of components.

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: Most efficient appliance quick facts

LPG appliance	Electric equivalent	Electrification benefits
LPG ducted space heater	Reverse cycle air conditioner	• **Efficiency:** operate at 300% to 600%[2] efficiency • **Flexibility:** capable of heating and cooling space with a single unit

Table 1: summarises an electrical equivalent technology and user benefits compared to a gas equivalent.

When reviewing electric appliance options, 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: Comparative annual costs of LPG and electric appliances

LPG appliance	LPG annual costs	Electric equivalent	Electric annual costs	Potential annual energy cost savings
LPG ducted space heater	$1545	Reverse cycle air conditioner	$643	$902

*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.

[1] Commonwealth of Australia Department of Industry, Science, Energy and Resources, Heating and Cooling, < www.yourhome.gov.au/energy/heating-and-cooling >

[2] Commonwealth of Australia, Heating and Cooling, < www.energy.gov.au/households/heating-and-cooling

[3] Commonwealth of Australia, Heating and Cooling, < www.energy.gov.au/households/heating-and-cooling

Installation considerations

The type of heat pump air conditioning system installed at a residential property is dependent on the home occupancy levels, room sizes and whether a ducted system already exists. The below list highlights some considerations to consider when installing a reverse cycle air conditioning unit; however, this is only an indicative list and final requirements and considerations need to be provided by a licensed electrician and gas fitter.

Some installation requirements to consider include:

- Ensure heat pump air conditioning is designed to operate in Climate Zone 5 and has a high energy efficiency star rating. For more information on air conditioners and energy rating, please visit **energyrating.gov.au/products/air-conditioners**. For information on how to read energy rating labels, please visit: **energyrating.gov.au/label**.
- When retrofitting a heat pump air conditioner into an existing ducted system, the ducts' infrastructure must be inspected to ensure that it is properly insulated and can be integrated into the new heat pump system.
- Properties considering split systems or multi-head systems should understand where the indoor and outdoor units can be installed and the implications of drilling holes in walls and running electrical cables to switchboards. A licenced electrician or gasfitter should be able to provide this information.
- Engage a licenced electrician to review your switchboard to ensure there is adequate capacity to install the new appliance and determine whether switchboard or wiring upgrades may be required.
- When removing a natural gas hot water system, a certified gasfitter will be required to make the redundant natural gas fittings safe.

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Government of **Western Australia**
Energy Policy WA

Esperance Energy Transition Plan:

Household funding guide

Owned by the people of WA

HORIZON POWER

Esperance Energy Transition Plan

Household funding guide

If you own a home with reticulated (piped) gas appliances, you can now choose your energy transition solution.

Use this guide to work out how much funding could be available for your household.

Important notes:

- The amounts in this document are provided as a guide only. You must apply for your own funding, which will be specific to your household.
- Funding for installation is not included in this guide – this will be assessed individually.
- Funding Caps have been developed based on the purchase cost of energy efficient electric appliances of different capacities.
- You can choose to upgrade to a more expensive option – if you do so, you must pay tradespeople for any excess beyond your Funding Cap.
- A maximum of three space heating appliances per household will be funded.
- To receive space heating funding, you must have an eligible natural gas appliance for space heating – this is defined as a natural gas bayonet with a corresponding gas heater.

Should you have any questions about how these rates apply to your situation, please call 08 9072 3470 or email Esperance-etp@horizonpower.com.au and we will be happy to work with you to support your energy transition.

Funding for your stove and oven

*Match your **current appliance capacity** with a **new appliance type** to find the Esperance Energy Transition Plan Funding Cap.*

New appliance type			Current appliance capacity		
			2-burner (300 mm)	4-burner (600 mm)	6-burner (900 mm)
	Upright cooker	Induction cooktop with electric oven	$3,500		
		Conduction cooktop with electric oven	$1,800		$3,000
	Cooktop only	Induction	$1,200	$1,500	$2,200
		Conduction	$700	$700	$1,200
	Oven only	Convection	$1,200		$2,500
			Funding Cap		Funding Cap

Funding for your water heating

*Match your **current system capacity** with a **new system type** to find the Esperance Energy Transition Plan Funding Cap.*

New system type	Current system capacity		
	Less than 250L	More than 250L	
Electric heat pump	$4,000	$5,000	
Electric storage **Electric instantaneous** **Solar Hot Water**	$1,000	$1,500	
	Funding Cap		Funding Cap

Funding for your space heating

*Reverse cycle air conditioners can be funded to replace eligible space heaters, with Funding Caps based on your current system's **heating capacity**, and the **area of heated room/s**.*

		Current heating Area of heated room/s, heating capacity			
		Small (<20m², ~3kW)	**Medium** (20-40m², ~5kW)	**Large** (>40m², ~7kW)	
New appliance	**Reverse cycle air conditioner** Requires minimum 4-star energy efficiency rating for heating capacity	$1,200	$1,800	$2,500	**Funding Cap**
		Funding Cap			

Funding for bottled LPG conversion

If you choose to convert to bottled gas, a flat Funding Cap applies for each eligible household.

		Each household	
Included costs	• Re-jetting of appliances • Installation of LPG bottles • Additional pipework • New LPG appliances - only where existing appliance cannot be converted	$2,500	**Funding Cap**
		Funding Cap	

Esperance Energy Transition Project

Knowledge Sharing Report

Project Number: P1000899

HORIZON POWER