AGED CARE ASSOCIATION NEW ZEALAND

Energy use reduction survey

APRIL 2025

Aged Care Association NEW ZEALAND

EECA TE TARI TIAKI PŪNGAO ENERGY EFFICIENCY & CONSERVATION AUTHORITY

berl

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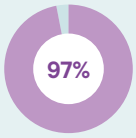
In summary, the results from the survey will enable the Aged Care Association (ACA) and EECA to develop an energy strategy that can help lower carbon emissions in the sector, while also helping unlock business benefits.

Key findings

The energy use survey conducted by Business and Economic Research Limited (BERL) for the Aged Care Association New Zealand (ACA) provides a comprehensive analysis of energy usage across aged care facilities. This energy benchmarking survey will help the ACA and EECA (Energy Efficiency and Conservation Authority) in developing an energy strategy to lower carbon emissions and unlock business benefits (such as reduced energy bills). The key findings from the survey are as follows:

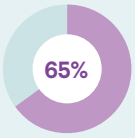
ENERGY SOURCES USED



Almost all aged care facilities (97 percent) used electricity sourced from a retailer.

- Natural gas was the second most commonly used energy source (50 percent), followed by fuel for vehicles or on-site equipment (38 percent), and LPG (26 percent).
- Analysis showed that respondents usually used natural gas, if a reticulated supply of natural gas was available, and LPG when it was not available. It is important to note that a reticulated supply of natural gas is only available in parts of the North Island.
- A small minority of respondents used coal and/or diesel for heating, cooking, and laundry purposes. These aged care facilities tend to be charitable entities located in the South Island.

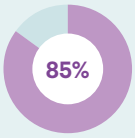
ENERGY USAGE PATTERNS



The average energy consumption in 2024 per facility was 631,382 kWh of electricity (65 percent), 277,332 GJ of natural gas, and 62,515 kgs of LPG.

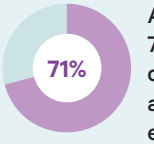
- When adjusted to a per bed measure the average energy consumption in 2024 was 6,277 kWh of electricity, 6,141 GJ of natural gas, and 2,509 kgs of LPG.
- Per bed, publicly listed businesses consumed the least energy, followed by charitable entities, with private businesses consuming the most.

INTEREST IN ENERGY REDUCTION



The majority (85 percent) of respondents expressed an interest in learning more about reducing energy usage or switching to low emission or renewable energy sources.

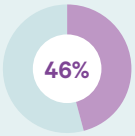
PAST ACTIONS TO REDUCE ENERGY CONSUMPTION



Approximately 71 percent of aged care facilities undertook actions to reduce their energy consumption over the last five years.

- Common actions included changing to LED lighting, installing solar panels, upgrading appliances and heating systems, and staff training on energy minimisation.
- The main challenges faced were the cost of actions and accessing funding.

PAST ACTIONS TO SWITCH TO LOW EMISSION OR RENEWABLE ENERGY SOURCES



Around 46 percent of aged care facilities undertook actions to switch to low emission or renewable energy sources over the last five years.

- Actions included adopting electric and hybrid vehicles, installing solar panels, and upgrading from coal and gas heating to electric.
- The main benefits noted were lower energy bills and reduced reliance on fossil fuels.
- The main challenges faced were the cost of actions, accessing funding, and finding the correct products.

CURRENT AND FUTURE ACTIONS

About 19 percent of aged care facilities are planning current or future actions to reduce energy consumption, with a focus on installing solar panels and upgrading insulation.

- Around 13 percent are planning actions to switch to low emission or renewable energy sources, primarily through the adoption of electric vehicles and electric on-site equipment.
- The main challenges for future actions are the upfront costs and the complexity of planned actions.

These findings highlight the predominant use of electricity and natural gas or LPG. It also reiterates the interest of aged care facilities in reducing energy consumption, and the actions already taken or planned to move towards more energy-efficient and sustainable energy practices. The insights from this survey will be informative for both the ACA and EECA and will aid in their development of an effective energy strategy for the aged care sector.

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CHAPTER ONE

Introduction

BERL was commissioned by the Aged Care Association New Zealand (ACA) to undertake a survey on energy usage across aged care facilities.

The survey was undertaken as part of the industry collaboration agreement between the ACA and EECA (Energy Efficiency and Conservation Authority) to help assess energy usages across its membership. This energy benchmarking survey will help the ACA and EECA in developing an energy strategy that could help lower carbon emissions in the sector while also unlocking business benefits (for instance, lower energy bills).

This report describes the overall demographics of care facilities respondents, their overall energy usage by source, the purpose of each energy source used by the care facility, and what past, current, and future actions are being undertaken by the care facilities to reduce their energy usage.

1.1 APPROACH

Our approach to answering the ACA's research question was to undertake a survey of individual care facilities. The survey was designed to determine current energy usage, by energy type, the types of energy used for different purposes within the facility, and the latest activities undertaken to reduce energy usage or move from fossil fuels to renewable or low emission energy sources.

The survey also delved into the benefits gained, the challenges faced, and how these were overcome by care facilities when intending to undertake activities to reduce energy usage or move from fossil fuels to renewable or low emission energy sources.

Given that there are around 590 care facilities members covered by the ACA, the survey enabled BERL to gather data from a wide range of care facilities to create a representative dataset from which to provide the ACA with the answers they are seeking around energy usage and energy reduction.

1.1.1 THE SURVEY

BERL and the ACA invited individual care facilities (ACA members) to complete an online survey. A total of 322 responses were received, of which 238 were valid responses, giving an overall response rate of around 40 percent, and an overall error rate of just under five percent at the 95 percent confidence interval. This response and overall error rate meant that BERL had a rich and robust data source for the analysis in this report.

Furthermore, the care facilities that responded to the survey represented around 21,100 beds out of the total of 37,000 beds for care facility members. This meant that the survey respondents represented almost 60 percent of aged care beds across ACA members.

CHAPTER TWO

Characteristics of facility respondents

In this section, we explore the characteristics of the facilities that responded to our survey. These characteristics include the location of the care facility, the ownership type of the facility, and the average size of the facility.

2.1 LOCATION OF CARE FACILITIES

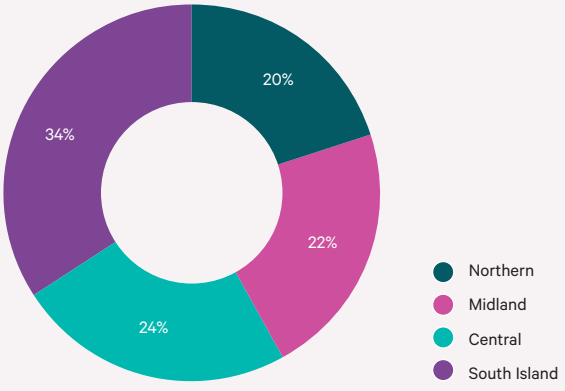
As part of the survey, each care facility was asked which Te Whatu Ora district the care facility was located in. For our analysis BERL has further grouped these districts into the four broad regions which are used by Te Whatu Ora.[1]

As shown in Figure 1, the care facility respondents were evenly spread across the four broad regions. Most responses were from care facilities in the South Island, followed by the southern portion of the North Island (Central) which includes Wellington, Hawke's Bay, and Manawatū-Whanganui regional councils.

To help determine the representativeness of the responses, we compared the share of total beds across respondents to the number of beds for the industry, as noted in the Aged Residential Care Sector Profile 2024 (BERL and ACA, 2024). According to the Aged Residential Care Sector Profile, 30 percent of total beds were in Northern, 17 percent in Midland, 23 percent in Central, and 30 percent in the South Island. The responses were very close to these shares as shown in Figure 2. Northern and the South Island were slightly under at 26 percent and 29 percent, respectively, fairly similar for Central at 23 percent (compared to 23 percent from the report), and a higher response from Midland with 22 percent of total beds covered in the survey.

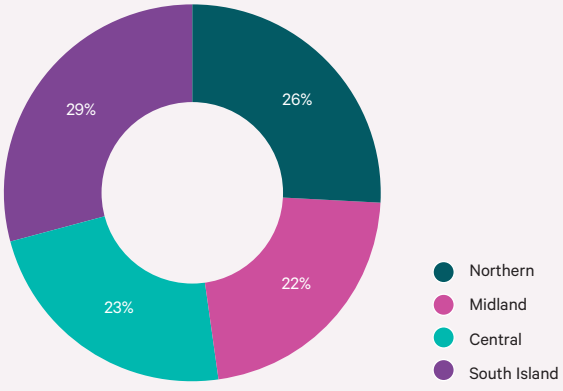
Overall, the respondents to our survey have a similar distribution of beds across the country to the total industry. This will ensure that the results of the survey are robust for the total industry in terms of the geographic location of the care facilities.

FIGURE 1: CARE FACILITY RESPONDENTS, BY BROAD TE WHATU ORA REGION, PERCENT OF BEDS



Source: BERL analysis

FIGURE 2: CARE FACILITY RESPONDENTS, BY BROAD TE WHATU ORA REGION, PERCENT OF BEDS



Source: BERL analysis

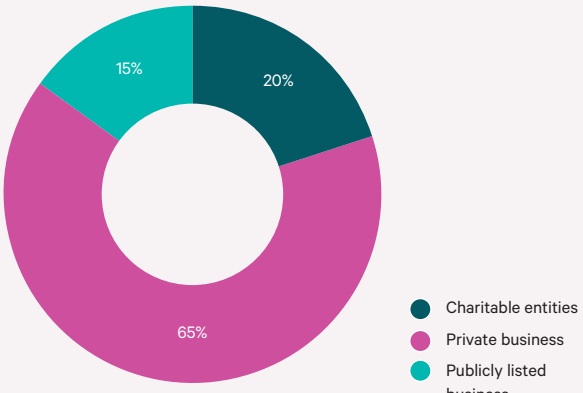
[1] A map of these broad areas and the Te Whatu Ora districts that comprise them can be found here: https://www.tewhatuora.govt.nz/corporate-information/about-us/map 20%

2.2 OWNERSHIP SEGMENT

A second variable is care facilities by ownership, compared to the overall industry identified in the Aged Residential Care Sector Profile 2024 (BERL and ACA, 2024). From the report, 20 percent of care facilities were owned by charitable entities, 56 percent were owned by private businesses, and the remaining 24 percent were owned by publicly listed businesses. As shown in Figure 3, the survey respondents show a similar portion of ownership by charitable entities, while the share of private business was above their industry share (65 percent compared to 56 percent), and the share of publicly listed care facilities was below their industry share (15 percent compared to 24 percent).

Despite the slight over representation of private businesses and slight underrepresentation of publicly listed businesses, we are confident that the sample of respondents to the survey was representative of the industry as a whole.

FIGURE 3: SHARE OF CARE FACILITIES BY OWNERSHIP SEGMENT



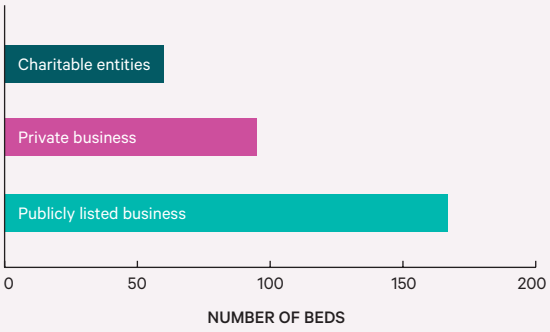
Source: BERL analysis

2.3 SIZE OF CARE FACILITIES

The last of the care facility characteristics is the median number of beds per facility. To examine this characteristic, BERL determined the median number of beds per facility by the ownership type of the care facility. This enabled a comparison to the Aged Residential Care Sector Profile 2024 (BERL and ACA, 2024), which noted that the median number of beds by ownership type was 85 beds for publicly listed businesses, 65 beds for private businesses, and 60 beds for Charitable entities. As shown in Figure 4, the median number of beds for charitable entities was 60, which was directly comparable to the size from the 2024 profile. For private businesses the median size was 95 beds, around 30 beds larger than the median from the profile, while for the publicly listed businesses the median size was 167 beds, compared to the 2024 profile of 85 beds.

There was a higher response rate from larger private businesses and publicly listed businesses compared to smaller businesses within these ownership segments, inflating the median number of beds per care facility.

FIGURE 4: MEDIAN NUMBER OF BEDS PER CARE FACILITY



Source: BERL analysis

CHAPTER THREE

Energy sources used

In this section, we explore the energy sources used across aged care facilities, as well as what they are most commonly used for within these facilities.

3.1 ENERGY SOURCES USED IN 2024

In the survey, the aged care facility respondents were asked which of the following energy sources they used in 2024:

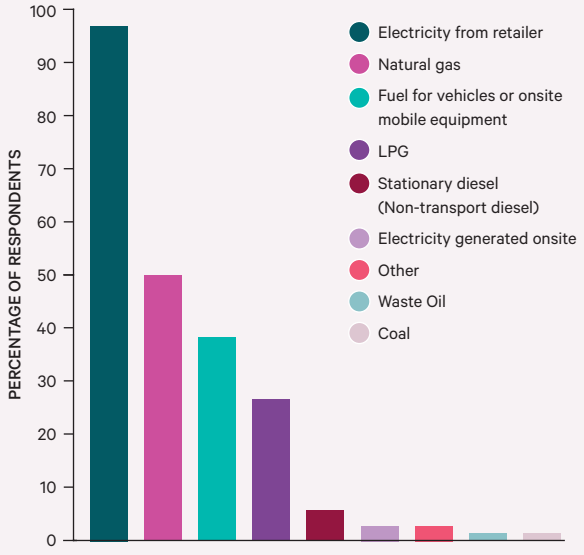
- Electricity from retailer (counts as low emission energy source)
- Electricity generated on-site (Solar panels, wind turbine, etc.) (renewable)
- Natural gas
- Stationary diesel (non-transport diesel used for space & water heating)
- LPG
- Coal
- Waste Oil
- Fuel for vehicles or site mobile equipment (cars, vans, mowers, etc).

As shown in Figure 5, almost 100 percent of aged care facilities used electricity sourced from a retailer, with just three percent not making use of this option. For those not making use of electricity supplied by a retailer, on-site natural gas, LPG, and electricity generated on-site were used. The second most commonly used energy source was natural gas, used by around 50 percent of respondents, this was followed by fuel for vehicles or on-site equipment (38 percent), and LPG (26 percent). As shown in the graph, other energy sources were used by less than five percent of respondents.

Of the respondents, 16 percent reported a single energy source, which given the results in Figure 5 is almost all electricity from a retailer, with just a few using natural gas.

The majority of respondents reported two energy sources (52 percent), while just over a quarter (26 percent), reported three sources and the final six percent reported four or more energy sources. This means that while most respondents used electricity from retailers at least one other energy source is commonly used. As shown in the figure, these other energy sources are commonly natural gas or LPG, with at least 70 percent of respondents using either source alongside electricity from a retailer.

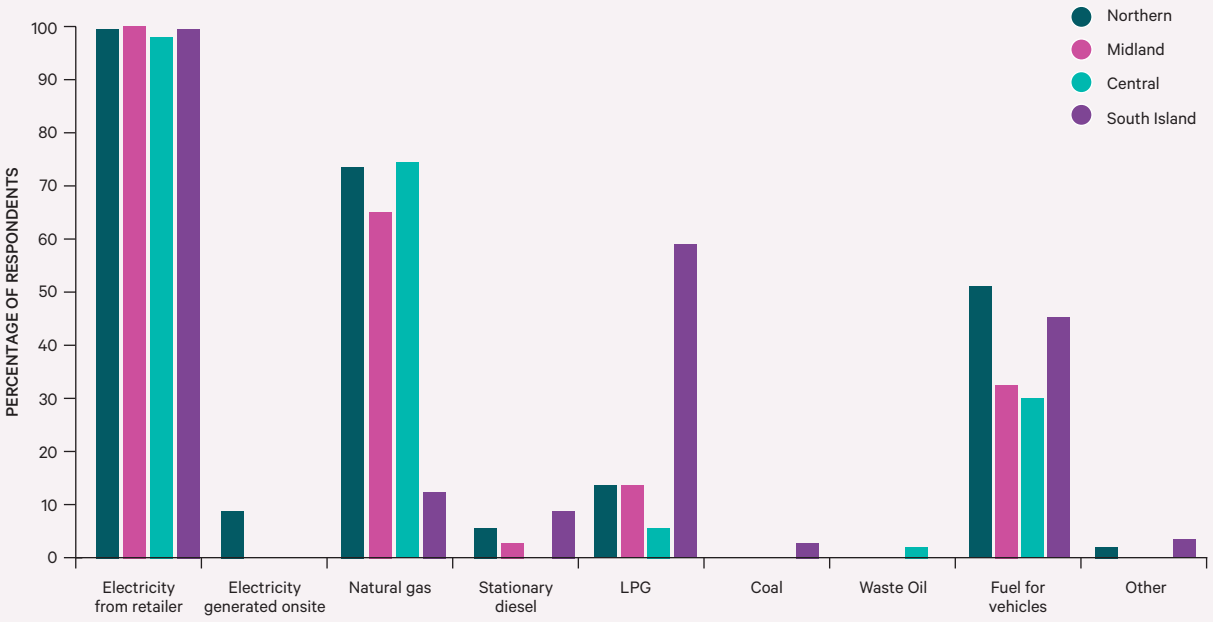
FIGURE 5: ENERGY SOURCES USED BY CARE FACILITIES IN 2024[2]



Source: BERL analysis

[2] Respondents could select multiple energy sources and so the graph does not add up to 100 percent.

FIGURE 6: ENERGY SOURCES USED IN 2024, BY TE WHATU ORA REGIONS[3]



Source: BERL analysis

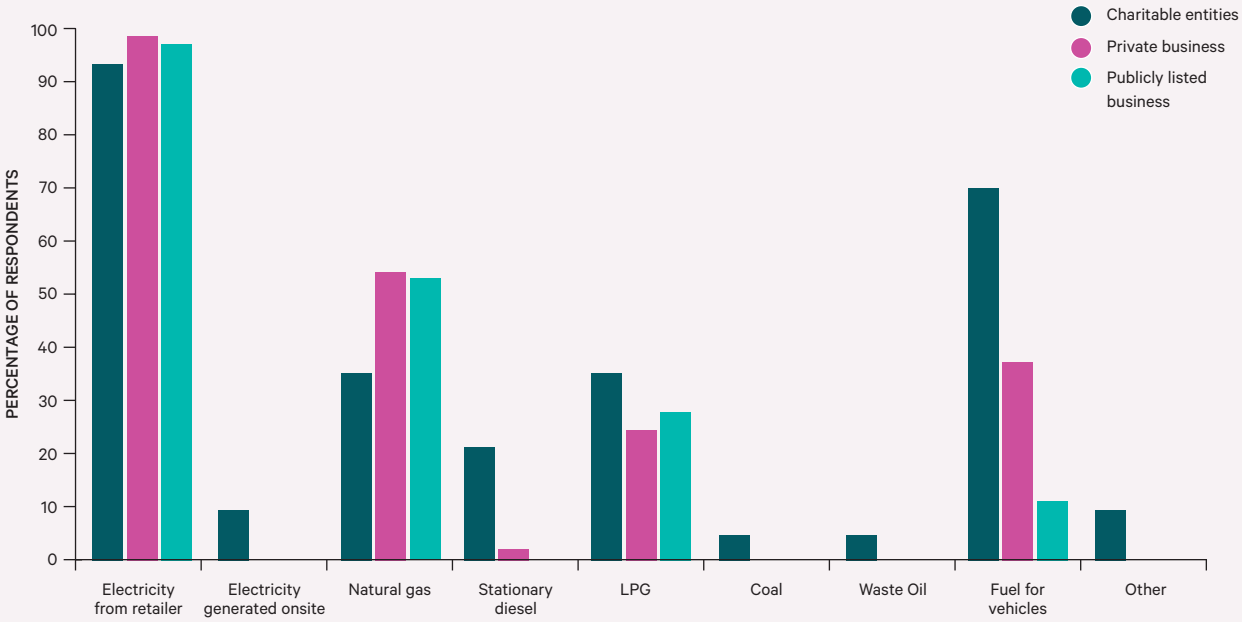
We can analyse energy consumption patterns of aged care facilities by location to determine if geographical location influences energy sources used. As shown in Figure 6, the key difference in energy sources between the Te Whatu Ora regions is the use of natural gas and LPG.

This use is determined by the availability of reticulated supply of natural gas. Those aged care facilities in the North Island where there is a widely available reticulated supply of natural gas will generally use natural gas, while those in the South Island without an available supply of natural gas generally use LPG (reticulated gas in the South Island is limited to a few spots).

Further, we can also split this data by the respondents' ownership type, which enables us to see if there are any variances across these different ownership types. Shown in Figure 7, publicly listed businesses reported the least use of different energy sources and while private businesses were very similar, a small number did report using a fifth energy source (stationary diesel for non-transport purposes). Charitable entities used the biggest variety of energy sources with their aged care facilities using all of the reported energy sources.

[3] Respondents could select multiple energy sources and so the graph does not add up to 100 percent.

FIGURE 7: ENERGY SOURCES USED IN 2024, BY OWNERSHIP TYPE[4]



Source: BERL analysis

Almost all private businesses (99 percent), along with 97 percent of publicly listed businesses, and 93 percent of charitable entities used electricity from retailers. There are more stark differences elsewhere, with 54 percent of private businesses and 53 percent of publicly listed businesses using natural gas, while for charitable entities this was only 35 percent. LPG was more widely used by charitable entities at 35 percent, compared to publicly listed businesses at 28 percent and private businesses at 24 percent. Also, 70 percent of charitable entities used fuel for vehicles or on-site equipment, versus just 37 percent for private businesses, and 11 percent for publicly listed businesses. Lastly for energy sources such as coal and diesel for stationary machinery, the respondents using these sources were predominantly chartable entities, of which most tended to be located in the South Island.

This leads to the conclusion that publicly listed and private businesses are more constricted with their energy sources, which may be a product of more centralised contracts for energy provision. The widespread use of other energy sources by charitable entities is something we will explore further when we examine respondents who are changing energy sources, and the reasons why, which may reveal why charitable entities are using a wider spread of energy sources.

It would interesting to examine, but it is outside of the scope of this research (due to lack of data on the question) to see if the difference in reported numbers using fuel for vehicles and on-site machinery, is due to charitable entities being more likely than private or publicly listed businesses to provide vehicles for use, or is it from private and publicly listed businesses moving more rapidly to electric vehicles. These would use electricity rather than fuels, resulting in a smaller percentage of respondents reporting the use of fuel for vehicles or on-site equipment. Respondents were able to indicate if they used electricity for a transport purpose in the survey, with mainly only private businesses using electricity for transport, as seen in Figure 8.

[4] Respondents could select multiple energy sources and so the graph does not add up to 100 percent.

3.2 PURPOSES OF ENERGY SOURCES

Having explored the diverse energy sources used by respondents, and the varying number of sources used, we now shift our focus to understanding the specific applications of each energy source. In the survey, respondents were asked which of five different purposes each energy source was used for. These purposes were as follows:

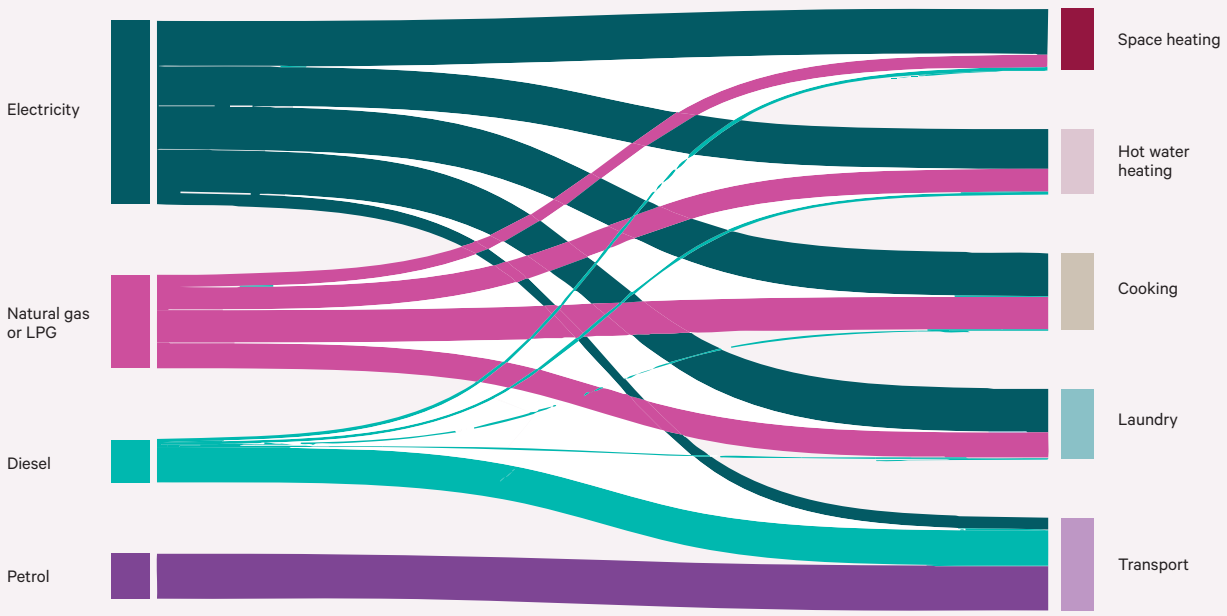
- Space heating
- Hot water heating
- Cooking
- Laundry
- Transport.

Based on the energy sources used, BERL focused on the four main energy sources (electricity, natural gas or LPG, diesel, and fuel for vehicles (petrol)). Figure 8 reveals that electricity was the predominant source of energy for space heating (88 percent), hot water heating (77 percent), cooking (85 percent), and laundry (84 percent). As expected, petrol (88 percent) and diesel (69 percent) were the main energy sources used for transport, although some facilities did use electricity (23 percent) for this purpose.

The figure illustrates that natural gas or LPG was the next most prevalent energy source for space heating (24 percent), hot water heating (44 percent), cooking (64 percent), and laundry (49 percent). The next most used energy source was diesel, although, as shown in the figure, apart from being used for transport, this fuel was mainly for space heating and hot water heating, with around five percent of respondents using diesel for these purposes.

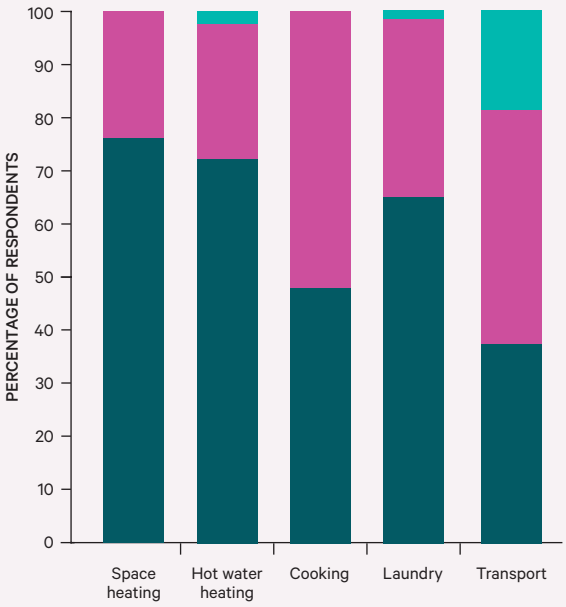
This highlights that while electricity is the predominant energy source for most purposes, it is usually not the only energy source being used. This is evident in Figure 9 which illustrates the percentage of respondents categorised by the number of energy sources they use per purpose. For instance, 73 percent of respondents rely on a single source for hot water heating, while 25 percent use two different energy sources, and the remaining two percent use three different energy sources. This demonstrates that aged care facilities often utilise a mix of energy sources to fulfil their hot water heating requirements.

FIGURE 8: ENERGY SOURCE BY PURPOSE OF USE



Source: BERL analysis

FIGURE 9: NUMBER OF ENERGY SOURCES USED PER PURPOSE



Source: BERL analysis

This figure also shows that over half of respondents use multiple energy sources for cooking, with 52 percent using two different energy sources, compared to 48 percent using just one energy source. This is most likely due to aged care facilities combining electrical cooking appliances with gas ones (fueled by either natural gas or LPG). Overall, these two graphs demonstrate that many aged care facilities often use different energy sources for different purposes. A deeper analysis of respondents shows only around 20 percent use only electricity for space heating, hot water heating, cooking, and laundry, while around 70 percent of respondents supplement their electricity usage with either natural gas or LPG.

Another approach to analysing this data is to split the aged care facilities into their ownership types; charitable entities, private businesses, and publicly listed businesses. Unfortunately, too few publicly listed aged care facilities answered this question, meaning we can only split the results into charitable entities (Figure 10) and private businesses (Figure 11).[5]

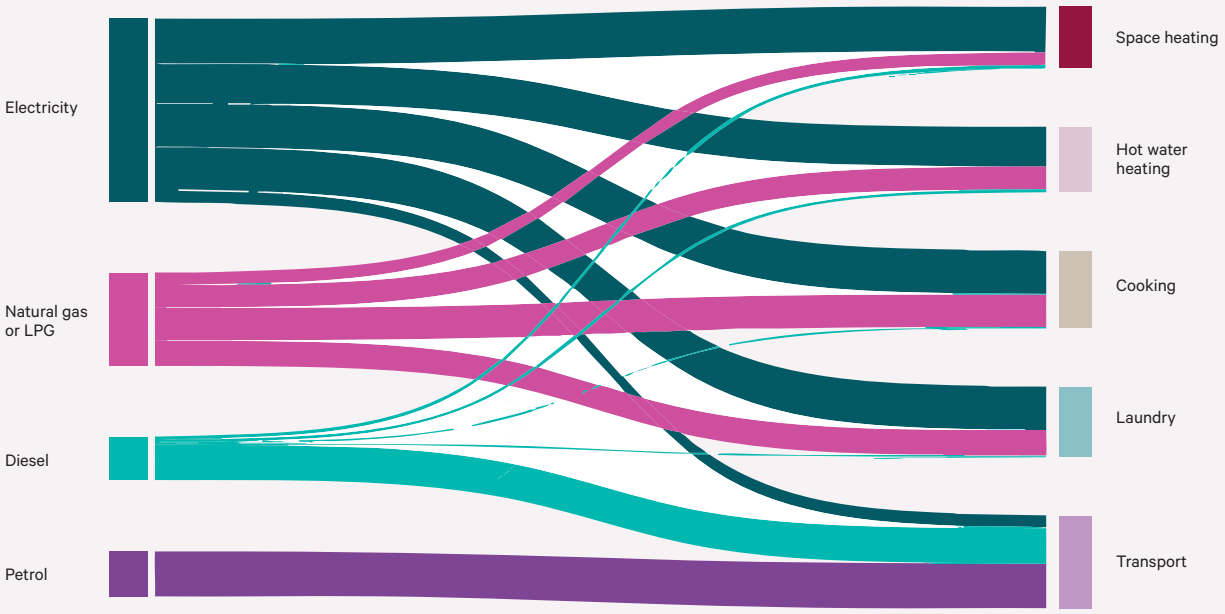
These two figures show that the main energy source for both private businesses and charitable entities is electricity, followed by natural gas or LPG for space heating, hot water heating, cooking, and laundry. Private businesses have a higher use of electricity compared to charitable entities for space heating and hot water heating, with 94 percent of private business respondents using electricity for space heating compared to 79 percent of charitable entity respondents and 78 percent using electricity for hot water heating compared to 74 percent of charitable entities. For cooking and laundry uses, private businesses lag charitable entities in the use of electricity, with 89 percent of charitable entities using electricity for cooking compared to 82 percent of private businesses and 92 percent using laundry compared to 82 percent of private businesses.

For charitable entities, natural gas or LPG is used more as an energy source compared to private businesses: for space heating (38 percent compared to 17 percent), for cooking (79 percent to 59 percent), and for laundry purposes (60 percent compared to 43 percent). Though for hot water heating purposes, natural gas or LPG usage is similar for both ownership types (44 percent).

Additionally, we can observe that just over 30 percent of private business aged care facilities use electricity for transport along with petrol and diesel, while only eight percent of charitable aged care facilities used electricity for transport. This does raise the question about the ability of charitable aged care facilities to adapt as quickly as private businesses to new energy sources such as electric vehicles (although both charitable entities and private businesses have very similar rates of use for petrol and diesel for transport).

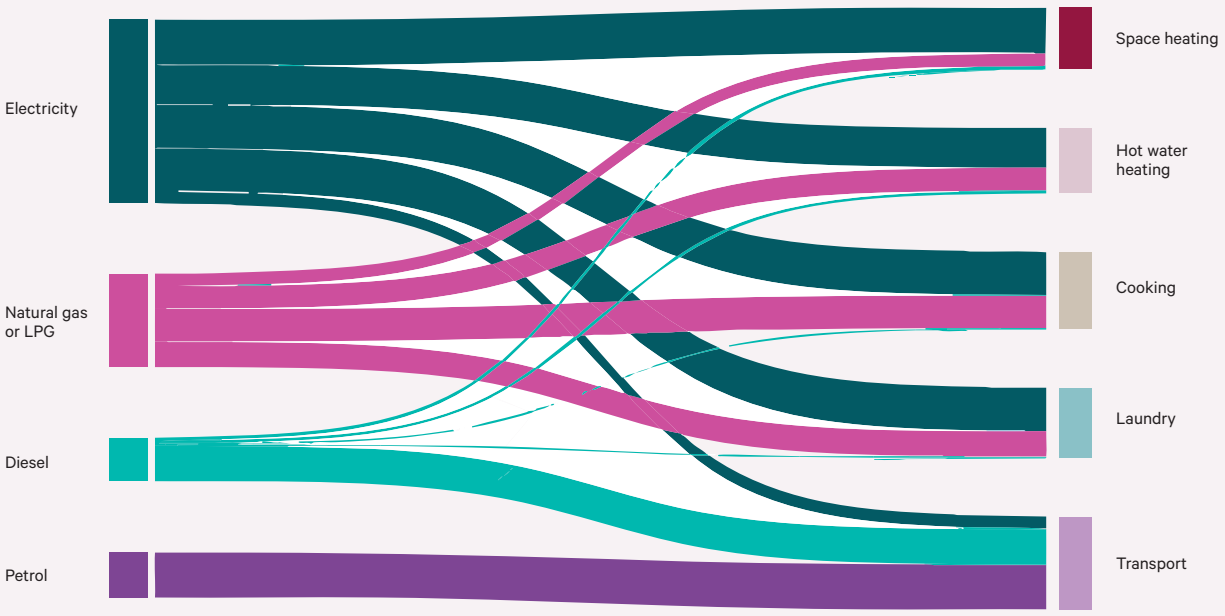
[5] Respondents could select multiple energy sources for each purpose of use and so the graphs do not add up to 100 percent.

FIGURE 10: ENERGY SOURCES BY PURPOSE OF USE, FOR CHARITABLE ENTITIES



Source: BERL analysis

FIGURE 11: ENERGY SOURCE BY PURPOSE OF USE, FOR PRIVATE BUSINESSES



Source: BERL analysis

CHAPTER FOUR

Energy usage

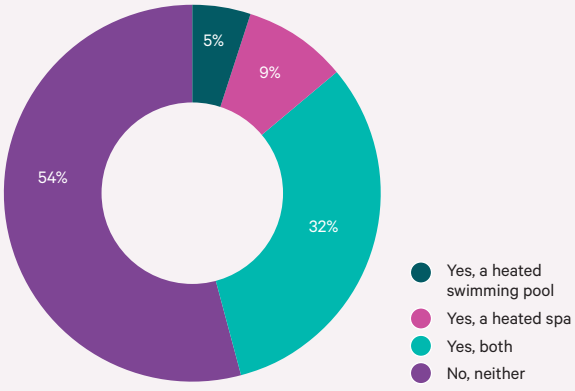
In this section, we will examine the average energy usage per facility, and how this energy usage compares across ownership types when adjusting for the size of each facility. We also examine which aged care facilities have amenities such as an indoor spa, indoor swimming pool, or both, which facilities undertake laundry on-site, offsite, or both, and which facilities monitor their energy usage and how that is undertaken.

4.1 AMENITIES

The inclusion of a heated swimming pool, spa, or both at an aged care facility may be useful and a welcome amenity for residents, but these do require substantial energy usage to heat. Figure 12 shows the percentage of aged care facilities that have a heated swimming pool (five percent), a heated spa (nine percent), and both a heated swimming pool and spa (32 percent). Just over half of aged care facilities do not have either.

Delving further into the data, 100 percent of charitable aged care facilities, and those that are not part of a group of aged care facilities, do not have a heated swimming pool or spa. This means that these facilities are the domain of private businesses and aged care groups, with 52 percent of private businesses and 63 percent of aged care group facilities having a heated swimming pool, spa, or both. Industry information shows that aged care facilities with a heated swimming and/or a heated spa are more likely to be associated with a retirement village, with these facilities being more likely used by independent residents of the retirement village.

FIGURE 12: SHARE OF AGED CARE FACILITIES WITH A HEATED SWIMMING POOL, SPA, OR BOTH

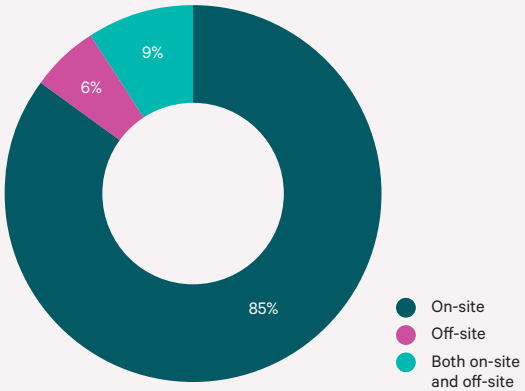


Source: BERL analysis

Another source of substantial energy usage for aged care facilities is laundry facilities. Figure 13 shows the share of aged care facilities with laundry facilities on-site, offsite, or with both on-site and offsite laundry facilities. As shown in Figure 13, 85 percent of aged care facilities have an on-site laundry facility, a further six percent have their laundry facility located offsite, and the final nine percent utilised both on-site and offsite laundry facilities.

Diving deeper, 98 percent of private business aged care facilities have an on-site laundry, with the remaining two percent having on-site and offsite laundry facilities. For charitable aged care facilities 60 percent have on-site laundry facilities, 23 percent have on-site and offsite laundry facilities, and 17 percent have offsite laundry facilities. For single aged care facilities this is split into 77 percent with on-site laundry facilities, and 23 with both on-site and offsite laundry facilities, while for aged care facilities that are part of groups, 89 percent have on-site laundry facilities, and 11 percent have offsite laundry facilities.

FIGURE 13: SHARE OF AGED CARE FACILITIES WITH ON-SITE, OFFSITE, OR BOTH LAUNDRY FACILITIES



Source: BERL analysis

4.2 MEASUREMENT OF CURRENT ENERGY USAGE

Part of the survey already measured current energy usage by energy source to gauge the magnitude of energy being used for each of the different energy sources utilised at aged care facilities. In addition, aged care facilities were asked specifically if they tracked or measured current energy usage and, if so, how did they undertake this tracking. The survey revealed that just 31 percent of the aged care facility respondents purposefully tracked their facilities' energy usage. Almost all respondents were able to provide the volume of energy consumed in 2024 by energy type, but most did not purposefully track or measure their energy consumption. The most common way aged care facilities kept track of their energy consumption was through spreadsheets with monthly costs and usages recorded, enabling trends to be observed.

How much energy did aged care facilities consume in 2024? Table 1 indicates the overall average per facility (for those that provided energy consumption data), and the average per care facility when we split the facilities into the three ownership types. As shown in the table, overall, on average a care facility consumed 631,382 kWh of electricity in 2024 (for comparison an average home consumes 7,000 kWh per annum) but given that the average size of an aged care facility was 112 beds or 20,775 sqm, it is understandable that these care facilities used around 90 times the amount of electricity as an average house.

As shown in Table 1, there is a wide disparity in the average energy consumption per source across the different ownership types. In 2024, both private and publicly listed businesses used around 1.7 times more electricity, and between three and five times as much natural gas on average than charitable entities. For other energy sources it is evident that charitable entities on average used more diesel, fuel for vehicles, and coal than either private or publicly listed businesses.

Much of these differences may be due to size differences across the ownership types, as shown in Figure 4, charitable entities having far fewer beds than both private and publicly listed businesses.

TABLE 1: AVERAGE ENERGY CONSUMPTION PER AGED CARE FACILITY BY OWNERSHIP TYPE IN 2024

ENERGY SOURCES	OVERALL	CHARITABLE	PRIVATE	PUBLICLY LISTED
Electricity retailer (kWh)	631,382	390,933	663,543	695,070
Natural gas (GJ)	277,332	63,578	340,375	186,135
LPG (Kgs)	62,513	41,024	79,797	6,384
Diesel (Litres)	413	1,055	383	0
Fuel for vehicles (Litres)	1,239	2,158	1,349	0
Coal (tonnes)	1	9	0	0
Waste Oil (Litres)	1	0	1	0

Source: BERL analysis

TABLE 2: AVERAGE ENERGY CONSUMPTION PER BED, PER AGED CARE FACILITY, AND OWNERSHIP TYPE

ENERGY SOURCES	OVERALL	CHARITABLE	PRIVATE	PUBLICLY LISTED
Electricity retailer (kWh)	6,277	5,646	7,406	3,201
Natural gas (GJ)	6,141	3,797	8,272	1,394
LPG (Kgs)	2,509	1,399	4,244	87

Source: BERL analysis

Therefore, in Table 2, the average energy consumption per care facility has been adjusted to a per bed measure, so a better comparison of energy consumption on average per ownership type can be seen.

The table shows that, per bed, publicly listed businesses consumed the least energy in 2024 across the three main energy sources (electricity, natural gas, and LPG), followed by charitable aged care facilities. Private aged care facilities consumed the most per bed across electricity, natural gas and LPG.

Given the limited data on the energy consumption patterns for 2024, we cannot judge how efficient the energy consumption was for any aged care facilities. As noted in Figure 12 and Figure 13, private aged care facilities are far more likely to have a heated swimming pool and/or heated spa on-site, and undertake the facilities' laundry on-site compared to charitable businesses.

The implications for this analysis are that a focus on private aged care facilities' efforts to reduce their energy consumption will be important, given their large share of the aged care facilities. They are, on average, higher energy consumers compared to charitable entities and publicly listed businesses.

CHAPTER FIVE

Energy reduction actions

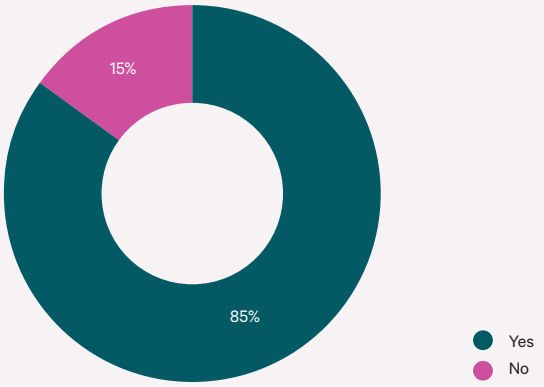
In this section, we further explore the interest of aged care facilities to learn more about reducing their energy usage or switching to low emission or renewable energy sources. We also look at what actions aged care facilities have undertaken in the last five years to reduce energy consumption, and what actions are being looked at, or planned to be undertaken in the next five years to reduce their energy consumption.

5.1 INTERESTED IN REDUCING ENERGY CONSUMPTION

We explore more about those aged care facilities that are interested in learning more about reducing their energy usage, or switching from fossil fuels to low emission or renewable energy sources. As shown in Figure 14, 85 percent of respondents were interested in learning more, this share was fairly consistent across ownership types, and grouped and single aged care facilities, although private businesses and single aged care facilities were slightly below the average with around 80 percent interested in learning more.

This indicates that there is a widespread interest in learning more about reducing energy usage or switching from fossil fuels to low emission or renewable energy sources. No doubt given the current rising prices of energy, and their considerable energy usage per facility, they are interested in reducing this unavoidable cost through lowering energy usage.

FIGURE 14: SHARE OF AGED CARE FACILITIES THAT WERE INTERESTED IN LEARNING MORE ABOUT REDUCING THEIR ENERGY USAGE, OR SWITCHING FROM FOSSIL FUELS TO LOW EMISSION OR RENEWABLE ENERGY SOURCES



Source: BERL analysis

5.2 PAST ACTIONS TO REDUCE ENERGY CONSUMPTION

Given the cost of energy, we can explore the share of aged care facilities that have already undertaken action to reduce energy usage in the last five years. This includes identifying what actions were undertaken, what benefits were realised, what challenges were faced, and how these were overcome. As can be seen in Figure 15, around 71 percent of aged care facilities undertook actions to reduce their energy consumption over the last five years. Of these aged care facilities that have undertaken actions to reduce energy usage, the largest groups were private businesses (83 percent) and grouped age care facilities (76 percent), while charitable entities (50 percent), and single age care facilities (64 percent) were less likely have undertaken past actions to reduce energy use.

Around 90 percent of respondents, who indicated that they had undertaken actions, noted these actions in their survey response. The main actions cited by respondents include the following:

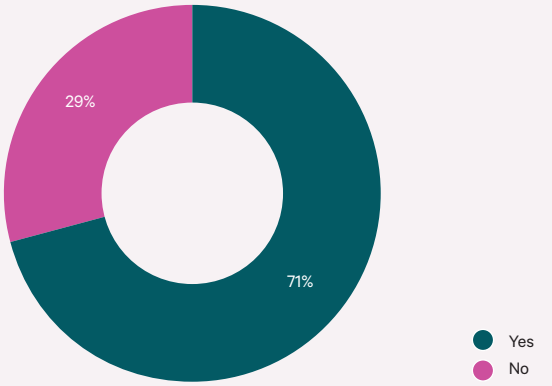
- Changing to LED lighting
- Installation of solar panels
- Upgrading of appliances, heating systems, and boilers to more energy efficient ones
- Upgrading to double-glazing to reduce heating requirements
- Minimising energy usage through staff training and education
- Switching energy sources for specific purposes to more energy efficient sources
- Adoption of electric and hybrid vehicles and electric on-site equipment.

Of these actions the most commonly cited action was changing to LED lighting, with around a third of respondents undertaking this action. All of the other actions were noted by much smaller numbers of respondents (around five to 10 percent of respondents).

Respondents noted the following results from these energy reducing actions,:

- Lower energy bills
- Improved awareness from staff of energy usage
- Lower energy usage
- Less reliant on gas usage
- Benefits unknown as they have not been measured
- Benefits unable to be measured due to other factors, such as size of facility increasing, or more appliances being used.

FIGURE 15: SHARE OF FACILITIES THAT HAVE UNDERTAKEN ANY ACTION OVER THE LAST FIVE YEARS TO REDUCE ENERGY CONSUMPTION



Source: BERL analysis

Overall, around 45 percent of respondents noted either lower energy consumption, or lower energy bills, as a benefit of their energy reduction actions. However, around one third of respondents noted that the benefits of the actions have either not been measured or are unknown.

In addition to the actions already mentioned, respondents were asked what the barriers, or main challenges, have been for aged care facilities in undertaking their energy reduction actions over the last five years. The following were the main challenges or barriers, if any, faced:

- No challenges encountered
- Cost of the action or funding for the actions
- Retrofitting infrastructure to enable more cost-efficient or sustainable options
- Ageing buildings and infrastructure
- Compliance costs related to fuel storage
- Finding sustainable products which would be reliable given the requirements of an aged care facility.

Overall, the largest segment of respondents (around 40 percent) noted that either the cost of the action, or funding the action, was the main challenge they faced in undertaking energy reduction actions. 16 percent did not encounter or note a main challenge faced while undertaking energy reduction actions. This informs us that across the industry the main challenge to overcome to enable energy reduction actions is the initial cost of the action, along with care facilities needing to find the funding to pay that upfront cost. This is also, partly, because energy reduction actions will only provide financial benefits over time through reduced energy bills.

And, finally, respondents were asked how these challenges or barriers were overcome. Responses noted the following approaches to overcoming the challenges:

» Budgeting and planning
» Fundraising
» Grants and bank loans
» Negotiating with retailers
» Staged implementation.

The most common approach to overcoming the challenges was budgeting and planning. About a quarter of respondents used this approach and 17 percent of respondents used staged implementation.

Collectively, these answers show that over the past five years the focus of those aged care facilities undertaking energy reducing actions has been targeted towards reducing overall energy usage and using energy more efficiently. This is highlighted by the move to LED lighting, with a wide range of facilities seeing reductions in their energy use and energy bills (though this is mitigated slightly by raising prices). The upfront costs of these upgrades, the main challenge to overcome, being addressed through good budgeting and planning, staged implementation, or raising additional funds (grants and bank loans, fundraising).

5.3 PAST ACTIONS TO SWITCH TO LOW EMISSION OR RENEWABLE ENERGY SOURCES

Alongside the past actions aimed at reducing energy use, we can also explore the share of aged care facilities that have already, in the last five years, undertaken actions to switch energy sources to low emission or renewable energy sources. We can review what actions were undertaken, what benefits were realised, what challenges were faced, and how these were overcome. As can be seen in Figure 16, only around 46 percent of aged care facilities undertook actions to switch to low emission or renewable energy sources over the last five years. Of those aged care facilities that have undertaken actions to switch to low emission or renewable energy sources over the last five years, it should be noted that a single private group (which comprised around three-quarters of respondents who said yes to this question) of aged care facilities is leading the way among respondents in switching to more solar power and electric vehicle fleets.

Around 98 percent of respondents, who indicated that they had undertaken actions, noted these actions in their survey response. The main actions cited by respondents included the following:

» Adoption of electric and hybrid vehicles and electric on-site equipment
» Installation of solar panels and moving to using more electricity generated from solar power
» Upgrading from older coal and gas heating to electric.

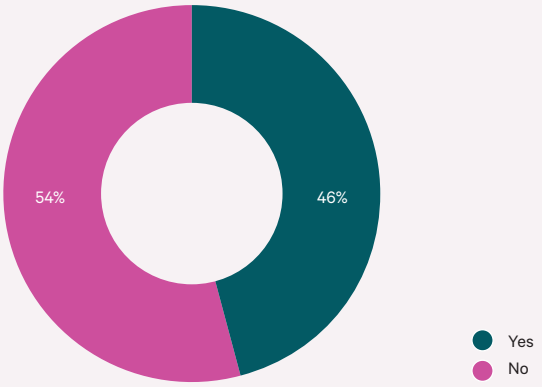
Of these actions the most commonly cited action was the installation of solar panels and moving to using more electricity generated from solar, with around 90 percent of respondents undertaking this action. Also, around 80 percent of respondents undertook the adoption of electric and hybrid vehicles, and electric on-site equipment, while around 15 percent of respondents undertook the upgrading of older coal and gas heating to electric.

What have been the benefits to aged care facilities from these energy switching actions? Respondents noted the following results:

» Lower energy bills
» Lower levels of reliance on third-party energy suppliers for hot water
» Less fossil fuels consumed
» More reliable and sustainable energy supply over time to reduce emissions and costs
» Benefits unable to be measured.

About 90 percent of respondents noted lower energy bills as a benefit of their energy switching actions, while around a third of respondents noted that the benefits of the actions have either not been measured or are unknown.

FIGURE 16: SHARE OF FACILITIES THAT HAVE UNDERTAKEN ANY ACTION OVER THE LAST FIVE YEARS TO SWITCH TO LOW EMISSION OR RENEWABLE ENERGY SOURCES



Source: BERL analysis

Respondents also identified the barriers or main challenges faced by aged care facilities in switching to low emission or renewable energy sources over the last five years. The following were the main challenges or barriers:

» Cost
» Funding
» Resident expectations and preferences around energy use
» Finding new products able to meet specific requirements.

About 90 percent of respondent noted cost as the main challenge, while the other three challenges were noted by around 20 percent of respondents each. And finally, respondents were asked how these challenges or barriers were overcome, with responses noting the following approach to overcoming the challenges:

» Staged implementation
» Budgeting and planning.

The most commonly approach to overcoming the challenge was staged implementation with around 50 percent of respondents using this approach, followed by budgeting and planning with around one-third of respondents using this approach.

Overall, the respondents who, that over the past five years, have switched to low emission or renewable energy sources have installed of solar panels or adopted electric vehicles and equipment to increase their use or renewable or low emission energy sources (namely electricity). This has resulted in a wide range of facilities seeing reductions in their energy use and energy bills (though this is mitigated slightly by raising prices), and a reduction in the use of fossil fuels. The main challenge of these upgrades, the upfront costs, has been overcome through good budgeting, planning, and staged implementation.

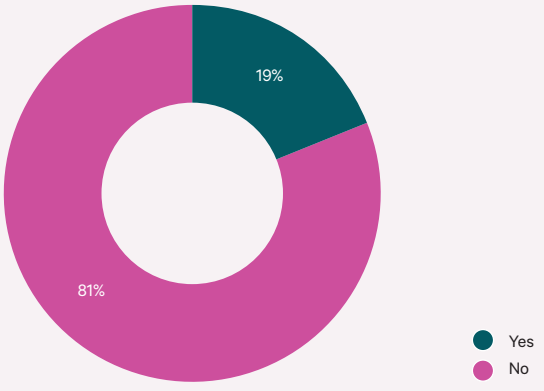
5.4 CURRENT OR FUTURE ACTIONS TO REDUCE ENERGY CONSUMPTION

We can explore the share of aged care facilities that are planning to undertake current or future actions to reduce energy usage, the actions that are being considered, and what challenges are faced. As can be seen in Figure 17, around 19 percent of aged care facilities are planning current or future actions to reduce their energy consumption. Of these aged care facilities around 80 percent also undertook actions to reduce their energy consumption over the last five years. The largest groups of aged care facilities come from charitable entities (30 percent) and single aged care facilities (28 percent), while private businesses (12 percent), and group aged care facilities (14 percent) are currently less likely to undertake current or future action to reduce energy use. Some of the difference between the results from Figure 15, could be explained by the ongoing nature of some of the past actions undertaken by aged care facilities, as they may be relying on the ongoing nature of these past actions to deliver current and future energy reductions.

Around 95 percent of respondents, who indicated that they had undertaken actions, noted these actions in their survey response. The main actions cited by respondents included the following:

» Changing to LED lighting
» Installation of solar panels
» Upgrading insulation
» Changing energy suppliers
» Investigation of more efficient energy sources
» Investigation of improving energy efficiency.

FIGURE 17: SHARE OF FACILITIES THAT ARE PLANNING CURRENT OR FUTURE ACTION TO REDUCE ENERGY CONSUMPTION



Source: BERL analysis

Of these actions the most commonly cited action was installation of solar panels, with around half of those respondents undertaking this action. All of the other actions were noted by much smaller numbers of respondents (around 10 percent of respondents).

For the actions proposed, what are the barriers or main challenges faced by aged care facilities in these current and future energy reduction plans? As noted by respondents, the following were the main challenges or barriers, if any, faced:

» No challenges encountered
» Complexity of planned actions
» Ageing buildings and infrastructure
» Identifying the right systems given the requirements of the facility.

Overall around half of respondents noted cost as the main challenge, while all of the other barriers were noted by much smaller numbers of respondents (around 15 percent of respondents).

The answers to these questions, show that current and future plans to reduce energy consumption for aged care facilities are focused on solar panels and solar power, a change from LED lighting seen for past actions, with the cost of the upgrades being noted as the main challenge to overcome in undertaking these current and future actions to reduce energy consumption.

5.5 CURRENT OR FUTURE ACTIONS TO SWITCH TO LOW EMISSION OR RENEWABLE ENERGY SOURCES

We can explore the share of aged care facilities that are planning to undertake current or future actions to switch to low emission or renewable energy sources, the actions that are being considered, and the challenges that are faced. As can be seen in Figure 18, around 13 percent of aged care facilities are planning current or future actions to switch to low emission or renewable energy sources. Of these aged care facilities around 80 percent undertook actions to reduce their energy consumption over the last five years, as well as to reduce energy usage in the future. The largest groups of aged care facilities are charitable entities (27 percent) and single aged care facilities (20 percent), while private businesses (seven percent), and group aged care facilities (nine percent) are currently less likely to undertake current or future actions to switch to low emission or renewable energy sources. Some of the difference between the results from Figure 16, could be explained by private businesses, and group aged care facilities having already been through the exercise of switching to low emission or renewable energy sources.

Only around 10 percent of respondents who indicated that they had undertaken actions, noted these actions in their survey response. The main actions cited by respondents included the following:

» Adoption of electric and hybrid vehicles and electric on-site equipment.

This action was the action noted by all survey respondents answering this question.

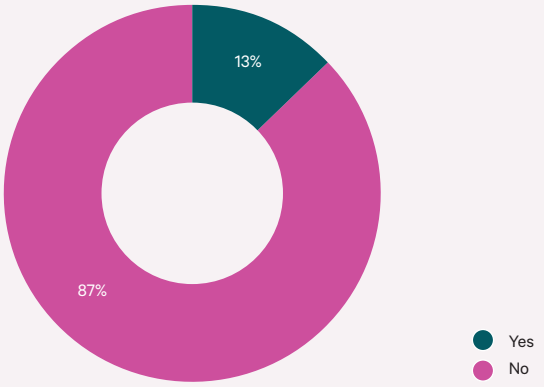
For the actions proposed, what are the barriers or main challenges faced by aged care facilities in these current and future energy reduction plans? As noted by respondents, the following were the main challenges or barriers:

» Cost
» Setting up charging stations for electric vehicles.

These two challenges were noted by all survey respondents answering this question.

The answers to these questions show that current and future plans to switch to low emission or renewable energy sources for aged care facilities are focused on the adoption of electric vehicles and on-site equipment. The main challenges for this plan are the upfront cost of the change and the practical challenge in establishing charging stations for the electric vehicles.

FIGURE 18: SHARE OF FACILITIES THAT ARE PLANNING CURRENT OR FUTURE ACTION TO REDUCE ENERGY CONSUMPTION



Source: BERL analysis

CHAPTER SIX

Summary

In summary, the characteristics of the survey respondents as shown in section 1 are representative of the overall aged care industry, and thus the answers and results from the survey questions can be interpreted as representative of the overall industry. These results will enable the Aged Care Association (ACA) and EECA to develop an energy strategy that can help lower carbon emissions in the sector, while also helping unlock business benefits (lowered energy bills, for instance).

ENERGY SOURCE USED

Almost 100 percent of aged care facilities used electricity sourced from a retailer. The second most commonly used energy source was natural gas used by around 50 percent of respondents, followed by fuel for vehicles or on-site equipment (38 percent), and LPG (26 percent). Of the respondents, 16 percent reported a single energy source, while the majority of respondents reported using two energy sources (52 percent), and just over a quarter reported using three sources (26 percent). This tells us that while most respondents used electricity from retailers, at least one other energy source is commonly used, be it natural gas or LPG. Analysis showed that respondents usually used natural gas if a reticulated supply of natural gas was available and LPG when it was not available.

From the survey results it is also clear that a very small minority of respondents still use coal and diesel as an energy source for heating, cooking, and laundry purposes. These respondents may be a good target to receive help to move away from these energy sources to others. However, this could be limited by ownership type and location, with charitable entities noting funding and costs as challenges to energy reduction and so being less likely to have plans in place for reducing energy usage.

INTERESTED IN LEARNING MORE

Around 85 percent of respondents were interested in learning more about reducing energy usage or switching to low emission or renewable energy usage. This response was fairly consistent across ownership types, and grouped and single aged care facilities. This shows that a wide range of the industry is interested in learning more, and therefore they may be open to working with the ACA and EECA to understand how they can reduce their energy usage, and what options there are for them to fund that work as well.

PAST ACTIONS ON REDUCING ENERGY USAGE OR SWITCHING

From the survey results there was a range of seven main actions that aged care facilities have undertaken over the last five years to either reduce energy consumption or switch to low emission or renewable energy sources.

These actions include the following:

- Changing to LED lighting
- Installation of solar panels
- Upgrading of appliances, heating systems, and boilers to more energy efficient ones
- Upgrading to double-glazing to reduce heating requirements
- Minimising energy usage through staff training and education
- Switching energy sources for specific purposes to more energy efficient sources
- Adoption of electric and hybrid vehicles, and electric on-site equipment.

From the list of actions, apart from staff training and education on energy minimisation strategies, the rest of the actions are around upgrading equipment and infrastructure of the aged care facility. These upgrades to equipment and infrastructure focused on either reducing energy consumption, generating electricity, or swapping from fossil fuels to electricity. This meant that for the aged care facilities undertaking these actions the main challenges pertained to funding the action, or the upfront costs of the action.

This means that helping aged care facilities with accessing funding for these costs associated with energy reduction actions, or switching to low emission or renewable energy, may need to be part of any energy strategy developed by ACA and EECA. This is because larger private, and publicly listed businesses may find funding these actions easier than charitable entities or small single aged care facilities, and thus may have already started with energy reducing actions.

FUTURE ACTIONS ON REDUCING ENERGY USAGE OR SWITCHING TO LOW EMISSION OR RENEWABLE ENERGY SOURCES

From the survey results there was a range of seven main actions that aged care facilities are considering undertaking now or in the future to either reduce energy consumption or switch to low emission or renewable energy sources. These actions include the following:

- Changing to LED lighting
- Installation of solar panels
- Upgrading insulation
- Changing energy suppliers
- Investigation of more efficient energy sources
- Investigation of improving energy efficiency
- Adoption of electric and hybrid vehicles, and electric on-site equipment.

Overall, three of these actions mirror those that other aged care facilities had already undertaken within the last five years, such as changing to LED lighting, installation of solar panels, and adoption of electric and hybrid vehicles, and electric on-site equipment. This could be due to the rate of adoption of such actions through the aged care industry, with some able to move and adapt earlier than others. Further actions noted in the list focused on investigations of options for the aged care facility to either improve their energy usage or to switch to low emission or renewable energy sources. This shows that there is a good opportunity for ACA and EECA, with the development of their energy strategy, to help aged care facilities better understand their options without each aged care facilities having to investigate these options independently.

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