MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

DIGITAL, DATA & INSIGHTS

Components of the energy wellbeing framework

New Zealand Government

1 Introduction

The Electricity Price Review recommended that the Ministry of Business, Innovation and Employment (MBIE) develop a definition of energy hardship. With the government's focus on promoting the wellbeing of all New Zealanders, MBIE has developed a definition of energy wellbeing.

Energy wellbeing is defined as when

> *individuals, households and whānau are able to obtain and afford adequate energy services to support their wellbeing in their home or kāinga.*

For more information see the webpage on defining energy hardship.

To support this definition, MBIE has also developed a framework of energy wellbeing. This document gives an overview of the components of this framework.

2 An energy wellbeing framework

The energy wellbeing framework demonstrates the different factors that can interact and affect energy wellbeing or hardship. It helps identify the underlying drivers of a household's energy situation, which can then be used to develop or focus initiatives aimed at reducing energy hardship. This framework is shown in the diagram below.

People and their dwellings are at the centre of the framework, surrounded by the factors that can affect their energy wellbeing. Factors can interact with each other in a number of ways so individual households may have different experiences of energy hardship.

Figure 1 Conceptual framework of energy wellbeing

3 Components of the framework

The following subsections explain each component of the framework.

3.1 Environment

3.1.1 Climate

Temperatures and weather conditions vary widely across Aotearoa, influencing the energy requirements of a dwelling. This includes keeping warm in winter and cool in the summer. With changing weather patterns likely to occur due to climate change, New Zealanders may be facing increasingly variable conditions in the future.

3.1.2 Location

Houses built on wet terrain, and rooms with minimal natural light can be more prone to being damp or cold. Location may also affect the amount of energy a household may be able to generate itself, for example using solar panels or local geothermal energy. The location of a household also influences the energy sources available to them, as well as their retail plan options. Local regulations around energy use also vary across regions.

3.1.3 Taiao

Within this framework, taiao represents the natural environment and its link to wellbeing. Within Te Ao Māori and other worldviews, human and environmental health are deeply linked. In other words, an unhealthy environment impacts on human health and vice versa.

The type of energy available to people can also impact their wellbeing. For some people, the use of non-renewable energy sources can be harmful to their wellbeing as the associated environmental impacts cause stress and uncertainty for the future.

3.2 Energy Prices

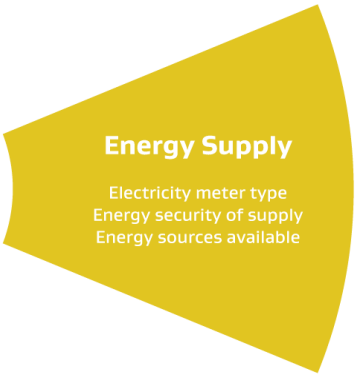
3.2.1 Energy prices

Domestic prices for all types of energy are made up of wholesale prices, distribution, and retail costs. These can vary over time of day and season, as well as over different areas of the country. Energy prices directly affect the size of a household's energy bill.

3.2.2 Energy retail plans

Energy plans can be structured in many different ways, which may or may not suit a household's needs. This includes bundling, discounts, and time of use pricing or fixed price components. Different types of plans may be available in different areas of Aotearoa. Available options can also depend on a household's energy consumption and household debt, which is likely to limit the number of retail plans available to them.

3.3 Energy Supply



3.3.1 Electricity meter type

The type of meter a dwelling has affects the level of information the household gets about their energy use and the retail plans available to them. Smart meters enable more regular consumption monitoring, while older meters are read less frequently (such as every second month). Prepayment meters are also occasionally used by households and can have various fees.

3.3.2 Energy security of supply

If energy is not consistently accessible, households cannot expect to always be able to meet their needs and will have to manage this uncertainty.

3.3.3 Energy sources available

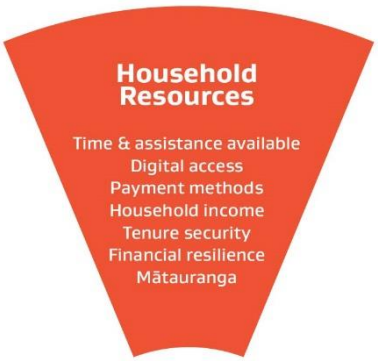
The availability of energy sources affects the choices a household has to meet their energy requirements. This availability can differ depending on whether a household is located in a rural or urban area, as well as the geographic region that they live in.

Rural homes may have more challenges connecting electricity to their dwellings, while it may be more difficult for urban homes to source firewood cheaply. Other examples include:

- The ability of some households to gather free firewood locally
- Households living near coal mines have the ability in some situations to purchase coal at low prices
- People living in the South Island having to buy LPG (liquid petroleum gas) for gas appliances or access a local network as reticulated natural gas is unavailable in the South Island
- Households and communities in some parts of the country being able to access geothermal resources to use directly for heating

Additionally, different regions of Aotearoa can be subject to different regulations which can affect the methods of energy use that can be used in homes.

3.4 Household Resources



3.4.1 Time and assistance available

The amount of time that a household has to manage their energy situation is critical. Managing energy bills and researching different options, among other things, can be a time-consuming process and a barrier to energy wellbeing.

Assistance can include financial contributions from family members, or the accessibility of support organisations.

3.4.2 Financial resilience

If individuals, households, or whānau do not have savings to help pay for an unexpectedly high energy bill, then they could be pushed into energy hardship. Financial resilience also takes into account unexpected or regular costs that can make energy less affordable.

Debt and savings are also a factor as debt repayments increase a household's costs. Personal debt levels can also affect eligibility for some energy retail plans, creating barriers to accessing energy services.

3.4.3 Household income

Income is a key determinant of a household's ability to afford adequate housing and sufficient energy. In particular, income after housing costs is critical to the amount of money a household has available to spend on energy and other services. Household income includes all sources of income, including benefits and family/community assistance.

This is linked with financial wellbeing, appliance efficiency, and housing quality.

3.4.4 Tenure Security

Tenure security refers to whether the dwelling is owned, has a mortgage, or is rented. Homeowners have greater incentives as well as autonomy to improve the quality of their home, while renters may have less control over housing quality and appliance efficiency.

Another influence is the security of their situation. If tenants have good relationships with their landlords, then it will likely be easier for them to raise concerns or request energy efficiency improvements.

3.4.5 Mātauranga

Mātauranga can be described as knowledge and understanding of the world and use of resources from a Māori worldview. Mātauranga Māori is a taonga passed down from ancestors through iwi and hapū[1].

Mātauranga can enhance energy wellbeing by informing ways of accessing and using energy, especially where wood and geothermal sources are available. Mātauranga can also increase household resources in other ways; for example, the ability of iwi to hunt and gather food on their whenua may leave them with more money for other things.

3.4.6 Payment methods

Retail plans and prices are affected by whether payment is via direct debit, internet bank transfer, or by debit or credit card.

Some retail companies offer electronic payment discounts. For some prepay options, there can be a higher cost depending on the method a consumer uses to top up.

This factor links with digital access.

3.4.7 Digital Access

Digital access refers to whether households have access to the internet, a computer, or a phone to manage their energy situation, pay bills, and get advice. The access to and means to pay for these tools can help households manage their bills more effectively and be connected to other resources. Not having access to these technologies can be a barrier.

[1] Hikuroa, D. (2017). Mātauranga Māori—the ūkaipō of knowledge in New Zealand. *Journal of the Royal Society of New Zealand*, 47(1), 5-10, https://doi.org/10.1080/03036758.2016.1252407

3.5 Service Literacy

3.5.1 Energy Literacy

An understanding of how the energy retail sector works allows consumers to compare plans and switch to the most cost-effective option. Good energy literacy will increase awareness of the resources available to help with energy costs and gives people the confidence to talk to retailers about bills.

3.5.2 Financial and numerical literacy

To manage their energy situation, households need to be able to understand the financial and numerical aspects of their bills. This is also important for knowing which plans will be the most cost effective and how discounts can be applied.

3.5.3 Languages used

All aspects of service literacy are impacted if consumers are unable to communicate with energy providers. Challenges could include accessing assistance, changing plans, and understanding bills and communications from energy providers.

3.5.4 Digital Literacy

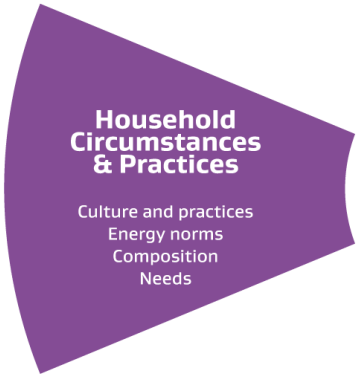
As well as being able to access technology like phones and the internet, it is necessary for consumers to have some digital literacy to use these technologies for managing their energy situation. Information is available online to help inform consumer retail choices and provide energy management tips. Use of these tools can help consumers get a better retail deal, or access assistance if they need it.

3.5.5 Energy awareness

Energy awareness refers to the understanding of how much energy your household uses, for what purpose, and the most efficient way to use it.

Changing some energy use habits can save households money on their energy bill. However, it is important to note that many households in energy hardship will not be able to get out of hardship solely by becoming more aware of how they can manage their energy use.

3.6 Household Circumstances and Practices



3.6.1 Culture and practices

An individual, family or whānau will have patterns of energy use that are influenced by their culture.

An example of this is manaakitanga, which can be interpreted as the uplifting of one's mana, values hospitality and relationships and is often expressed through the responsibility to provide hospitality and protection[2]. In order to extend manaakitanga, extra energy use may be required for guests, including greater use of heating and other services for welcoming and hosting.

3.6.2 Energy norms

How a household, whānau or individual perceives 'normal use' of energy for them will influence their actual consumption. This includes whether people will put up with a cold home or wear more layers of clothing rather than heating/insulating the home (if they are able to). People may also be reluctant to use air conditioning in summer and put up with overheated housing.

This can be linked to energy awareness.

3.6.3 Composition

Composition relates to the make-up of the household, and this feeds into household needs (below). Composition covers the number of people in a household or whānau, the age of occupants, and their health and wellbeing.

Composition also influences a household's resources, for example households with only one income earner are likely to have less income than those with multiple earners.

3.6.4 Needs

Needs can affect both the amount of energy a household uses as well as the amount of disposable income a household has available to spend on energy.

Household composition is a contributing factor and can increase or decrease energy needs. For example, larger households are likely to consume more energy, and people of different ages have different energy needs. If members of a household are at home during the day (such as working from home or caring for children), then they will have greater energy needs than other households.

[2] https://www.imsb.maori.nz/maori-wellbeing-in-tamaki-makaurau/manaakitanga/

If occupants require energy that is specific to their health or disability (such as ventilators) these are needs that cannot be compromised.

3.7 Dwelling appliances

3.7.1 Efficiency

Appliances include anything that consumes energy, such as heat pumps, wood burners, and lights. More energy efficient appliances use less energy to perform the required task. The use of more efficient appliances, such as heat pumps and LED lightbulbs, can reduce a household's energy bill as they use fewer units of energy to meet their energy requirements. However, they can have a higher upfront cost and be difficult for lower income households to afford.

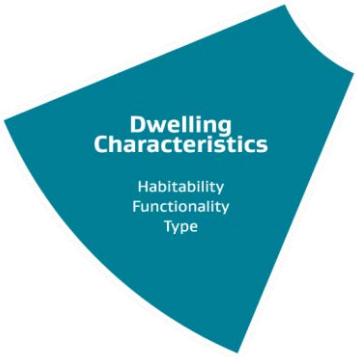
3.7.2 Fuel used

In Aotearoa, the fuel that is most easily available and affordable for different energy services varies. This also depends on the type of appliances in the house and what fuel they require.

3.7.3 Suitability and reliability

Unsuitable appliances include heaters that cannot heat a whole room or are not available in living areas or bedrooms. Some appliances can be unsafe when used incorrectly, and broken or unreliable appliances are not suitable to meet energy needs.

3.8 Dwelling characteristics



3.8.1 Habitability

Habitability refers to the degree to which housing and its location provide a physically safe, secure, and healthy environment. This includes the design, construction, materials, service provision and how well it has been maintained. It covers the primary function of housing as

providing shelter, focusing on the condition of the house's physical structure and the facilities within it[3].

Dwelling habitability is a key factor in energy wellbeing. For example, a draughty and uninsulated house will be expensive and difficult to heat to a comfortable temperature.

3.8.2 Functionality

This covers the degree to which the design, construction, and location of housing support the specific physical, mental, emotional, cultural, and social needs of individuals, families, and whānau in their kāinga and communities[4].

3.8.3 Type

The type of dwelling a household or individual is living in, such as a standalone building or part of a complex, affects the thermal envelope of the dwelling. It can also affect the energy retail plans available to inhabitants. For example in some apartments or rentals, households are required to join with a specified retailer.
The scope of the energy wellbeing definition includes all types of dwellings, including those that may be insecure like garages and motor homes.

[3] Stats NZ. (2019a). *Framework for housing quality.* https://www.stats.govt.nz/methods/framework-for-housing-quality

[4] Stats NZ. (2019a). *Framework for housing quality.* https://www.stats.govt.nz/methods/framework-for-housing-quality