Energy hardship definition and measures

Final report

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Te Kāwanatanga o Aotearoa
New Zealand Government

Ministry of Business, Innovation and Employment (MBIE)

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1 Purpose

This report summarises feedback Ministry of Business, Innovation and Employment (MBIE) received during the public consultation process on defining and measuring energy hardship and sets out an initial set of measures of energy hardship.

MBIE was tasked by Cabinet to create a definition of energy wellbeing, energy hardship, and an accompanying framework, with indicators and measures of energy hardship. The definition of energy wellbeing, energy hardship, and an accompanying framework was published on MBIE's website in June 2022. Additionally, MBIE published a summary of submissions received from stakeholders which contains key themes raised by submitters.

The measures are intended to measure the levels of energy hardship across Aotearoa and help target policy intervention and programs. With these measures, we will also be able to track levels of energy hardship over time to measure the effectiveness of such policies and programmes.

MBIE consulted with a wide range of stakeholders, including community groups and other governmental agencies. This report outlines the feedback that we received and our recommendations. Additionally, it sets out next steps for the energy hardship measures and improvements for future releases.

2 Executive summary

The 2019 Electricity Price Review's final report recommended that the MBIE develop a clear and generally accepted definition of energy hardship and determine what statistics should be gathered to monitor changes at a national level.

To inform this, we engaged with a range of stakeholders and subject matter experts including other agencies, the energy industry, researchers, Māori interest groups, and community organisations to develop a proposed definition and conceptual framework of energy wellbeing. We also undertook analysis of selected measures of energy hardship using Stats NZ's Integrated Data Infrastructure, specifically the Household Economic Survey (HES).

Drawing on research, analysis, and discussions with experts, we released a discussion document covering our proposals on 4 November 2021. This included:

- a proposed definition of energy hardship and energy wellbeing
- a supporting conceptual framework
- a proposed suite of measures for monitoring energy hardship in New Zealand
- potential future work for improvement measurement.

MBIE also consulted on a set of potential expenditure-based (ie using expenditure on energy in relation to income or total household spending) and non-expenditure-based measures on households' experiences of energy hardship.

We sought feedback on these proposals, with a seven-week public submission period between 4 November and 23 December 2021. We also ran several webinars and a series of wānanga with Māori communities. Table 1 outlines the initial suite of energy hardship measures, along with its corresponding aspects of energy wellbeing, data source, and what the measures show.

This report presents an overview of themes that came through in feedback on the proposed energy hardship measures, and MBIE's recommended initial suite of measures.

- Section 3 provides background to this work

- Section 4 provides an overview of the public consultation process
- Section 5 provides a definition of energy hardship and a conceptual framework
- Section 6 summarises the feedback received from the public consultation process
- Section 7 summarises feedback received from Iwi and Māori submitters
- Section 8 outlines MBIE's initial suite of measures of energy hardship
- Section 9 provides next steps for measuring energy hardship

More information on the proposals can be viewed on the consultation website: mbie.govt.nz/have-your-say/defining-energy-hardship/

Table 1: *Measures of energy hardship and how it links with aspects of energy wellbeing*

Measure of energy hardship	Data source	What this shows	Aspect of energy wellbeing
Could not pay electricity, gas rates, or water bills on time more than once in the last 12 months	Stats NZ HES	Households that have been unable to pay bills on time are likely to be at risk of disconnection	Able to afford energy bills without borrowing or economising on other expenses
Cannot afford to keep dwelling adequately warm	Stats NZ HES	Direct measure of energy hardship as shows energy rationing and the ability of the household to pay for heating	Able to wash, clean, cook, and heat/cool as required to stay comfortable (without economising on other necessities)
Put up with feeling cold a lot to keep costs down	Stats NZ HES	Direct measure of energy hardship as shows energy rationing	
Dampness and/or mould a major problem	Stats NZ HES	Indicates poor housing quality and internal environment – such a dwelling is likely to be underheated. Additionally, damp homes require more energy to heat	A dry and well-ventilated home
Trouble heating accommodation and or/keeping it warm in winter	Stats NZ HES	Indicative of quality of dwelling as it is unlikely to be energy efficient and more costly to heat/cool and maintain at a healthy temperature	A dwelling that can maintain a healthy temperature

3 Background

In April 2018, the Minister of Energy and Resources commissioned an independent review into New Zealand's electricity market. This was because electricity prices, especially for residential consumers, increased faster than inflation for many years, putting pressure on household budgets. In comparison, prices faced by commercial and industrial customers remained relatively flat.

The 2018–19 Electricity Price Review was unique as it addressed the need for electricity prices to be fair and affordable, not just efficient, or competitive. Another novel element was the review's focus on the consumers' point of view and their say in the direction of the sector.

The Electricity Price Review also considered how to future proof the sector and its governance structures to help ensure the electricity sector functions well during New Zealand's transition away from carbon-based fuels – a consideration that will become increasingly important as electricity meets more of New Zealand's energy needs, and as new technologies are adopted.

3.1 Final Electricity Price Review recommendation and Government response

The Electricity Price Review was delivered to the Minister of Energy and Resources in May 2019. It contains 32 recommendations related to consumers, industry, regulation, and technology. The Government announced its response to the Review in October 2019.

The Electricity Price Review recommended that the Ministry of Business, Innovation and Employment should develop a clear and generally accepted definition of energy hardship and determine what statistics should be gathered to monitor changes in energy hardship levels. In doing so, it should:

- work with Statistics NZ and other agencies
- draw on relevant reports and research
- consult New Zealand and overseas experts on energy hardship
- liaise with the cross-sector energy hardship group.

The Electricity Price Review also recommended that the definition include a set of indicators (such as income, housing quality and age of occupants) that contribute to energy hardship and that are recorded and monitored, along with other important statistics such as disconnections for non-payment and self-disconnections by those on pre-payment meters.

Without these measures, and without regular monitoring, the Electricity Price Review considered it would be difficult to establish the scale of the problem or the success of various policies targeting the problem. It would also be difficult to implement some of the Electricity Price Review's other recommendations (such as more financial help and community-level support for those in energy hardship) without a definition and accompanying measures.

4 We sought feedback on our proposed ways to define and measure energy hardship

MBIE was tasked by the Cabinet Economic Development Committee on 25 September 2019 to explore a framework for measuring and monitoring energy hardship in New Zealand. To inform this, we engaged with a range of stakeholders and subject matter experts including other agencies, the energy industry, researchers, Māori interest groups, and community organisations to develop a proposed definition and conceptual framework of energy wellbeing. We also undertook analysis of selected measures of energy hardship using Stats NZ's Integrated Data Infrastructure, specifically using the Household Economic Survey (HES).

Between November and December 2021, MBIE consulted on a proposed definition of energy wellbeing and a supporting conceptual framework. We supported our consultation with public webinars and wānanga to capture Te Ao Māori perspectives, and we commissioned Haemata Limited to undertake a report on *Māori Perspectives on Energy Wellbeing*.

We received submissions from 63 stakeholders representing a range of backgrounds including individuals, community organisations, energy industry participants, and organisations that identified as iwi, hapū, or Māori.

4.1 We used a mixed methods approach to submission collection and analysis

Throughout the development process, we held individual meetings with stakeholders to discuss and refine our proposals. We used a mixed methods approach to submissions collection and analysis:

- Our primary method was a survey questionnaire which had a range of questions around the definition, framework, and proposed measures. This survey included open-ended text fields where submitters could elaborate on their responses. We also allowed email responses to the questionnaire.
- We also recognised that this approach did not suit every person or organisation. Therefore, we developed a separate approach for consultation with Māori, running a series of wānanga for Māori and iwi.
- Additionally, we held a series of information session webinars to promote the consultation and gather feedback.

4.2 We heard from a variety of individuals and organisations

We received 47 submissions via the online consultation survey and 16 written responses via email, to make a total of 63 submissions.

Submissions came from a variety of groups including registered charities and non-governmental organisations. We also received submissions from energy sector participants, such as retailers and electricity distribution businesses. Three submissions came from organisations that identified as iwi, hapū or Māori organisations. Approximately one third of submissions were made by individuals. Where participants have agreed, their submissions are available on the MBIE website. In this document we have quoted from submissions we have permission to publish and referenced the name of the submitter.

5 We released a definition for energy wellbeing in June 2022

While defining energy hardship, it became clear that we need to move away from a 'deficit framing' (i.e. defining the problem) towards an aspirational perspective (i.e. defining the solution). That is why MBIE developed a definition of energy wellbeing, and alongside it, a framework 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.*

In contrast, energy hardship is the opposite of energy wellbeing: when individuals, households and whānau *are not* able to obtain adequate energy services to support their wellbeing in their home or kāinga.

For more information see the webpage on defining energy hardship.

5.1 Our definition is supported by a conceptual framework

This framework contains a range of factors that interact with and contribute to energy wellbeing. People and their dwelling are at the centre of the framework. Figure 1 provides a visual representation of the framework.

Factors can interact with each other in many ways, so individual households may experience energy hardship differently. However, this framework 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.

Figure 1: *Conceptual framework of energy wellbeing*

6 Stakeholders broadly agreed with proposed indicators

During consultation we proposed a range of key aspects of energy wellbeing and measures of energy hardship. We found submitters broadly agreed with the proposed indicators and measures.

The remainder of this section outlines some of the key findings from our consultation.

6.1 Submitters recommended differentiation between indicators and measures

We noticed some confusion between the indicators of energy wellbeing and the proposed measures of energy hardship. Some comments made by submitters on the indicators were directed at the measures of energy hardship. There was some concern that not all aspects of the framework were adequately covered in the indicators.

Submitters suggested that we should clarify the linkages between the definition of energy hardship, the accompanying framework, indicators of energy wellbeing, and measures of energy hardship.

6.2 Further work is required on expenditure-based measures including developing a 'required household energy model'

While there was strong support for the need to have a suite of measures to reflect the various aspects of energy hardship and household circumstances, we received mixed feedback on the specific measures proposed for measuring and tracking energy hardship. Submissions suggested a single measure was not able to adequately capture the levels of energy hardship in New Zealand and the diverse characteristics of households experiencing energy hardship.

MBIE presented expenditure-based measures as interim measures until work is undertaken to understand how much energy households require and how this compares to actual energy use. Examples of expenditure-based measures include:

- Households spending twice the national median proportion of household income on domestic energy costs.
- Households spending 10 per cent of more of their income on domestic energy before and after costs.

Several submitters (including subject matter experts) cautioned against using expenditure-based measures of energy hardship, as actual energy expenditure is an unreliable indicator of the level of energy service that a household or whānau requires to support their wellbeing.

Subject matter experts recommended undertaking further work to improve the reliability and robustness of expenditure-based measures. MBIE agrees that further work is required and will continue to engage with subject matter experts on this.

A few experts commented that a measure of 'required household energy' was essential, as energy expenditure compared with income on its own was misleading. A 'required household energy model' would help us understand how much energy households require and how this compares to actual energy use, rather than solely looking at actual energy use and expenditure which can be misleading when viewed in isolation.

6.3 Both communities and policy makers need this measure and definitions

One theme that emerged from the consultation was the need to involve the community energy sector more closely.

- FinCap suggested that we should focus on community engagement *by "including focus groups with financial mentors and other community workers who interact with whānau experiencing energy hardship"*.
- Some organisations, such as Community Energy Network (CEN), FinCap and BRANZ suggested that MBIE work more closely to develop a codesign, cross-sector approach to measuring energy hardship. Ideally this would include a range of qualitative and quantitative information collected from community-based organisations who are routinely collecting data as part surveys, and home energy checks and visits.
- Submitters suggested that indicators could be tested with practitioners such as community-based certified Home Performance Advisors, and the Community Energy Network.

6.4 We should focus more on household demographics and vulnerability

Several submitters raised the issue that household needs and circumstances should be made more explicit in the framework. They believed that renters were particularly more vulnerable and had less opportunity to be able to change their circumstances. For example, Beacon recommended measures capturing issues of tenure security.

6.5 More analysis was required to better understand the measures

We published initial analysis alongside the proposals, with plans to complete more analysis once the feedback from public consultation had been considered. Feedback from submitters showed that further analysis is required to better understand how well the different measures work to measure energy hardship to make final recommendations.

A few submitters wrote that more analysis and critical evaluation needs to be done to assess them, and that it would be easier to comment on the different measures if more results and analysis of them were available.

6.6 We received suggestions on additional data sources to consider as measures of energy hardship

Some submitters deemed energy prices to be a key measure of energy hardship and thought measures of energy prices should be constructed to be considered alongside other measures. Other submitters thought that measuring both energy prices and household incomes were essential elements of energy affordability.

We heard from a few submitters that rates of electricity disconnections are an important measure of energy hardship, and from a range of submitters that they should be measured. However, these need to be analysed alongside measures such as if a household puts up with feeling cold a lot. This is because rates of electricity disconnection masks underheating and rationing behaviour.

There were also some conflicting views on whether rates of pre-pay usage should be used as a measure of energy hardship. We received feedback that prepay is a product designed to alleviate

hardship, and that a measure of prepay self-disconnection rates would be more valuable (ie when pre-pay customers run out of credit and do not top-up).

A few submitters recommended that we should include information on debt collection arising from late payment of energy bills.

6.7 Stakeholders suggested a range of additional measures

Some submissions emphasised the importance of measures around the quality of the house. BRANZ recommended that *"measures of housing standard (quality/condition and energy performance/efficiency) should be primary. Addressing the poor quality and energy performance of our housing stock is critical for improving (energy) wellbeing"*.

Submitters also suggested that a healthy indoor temperature range should be defined in the measures.

We proposed identifying a few 'Energy Hardship Related Indicators' in addition to official measures of energy hardship.

Several submitters also thought that it would be useful to include housing-related health issues as secondary indicators. Submitters suggested a number of sources for these measures, including self-rated health measures from surveys such as the General Social Survey (eg number of sick days, colds and flu), and respiratory illness hospital admissions. Submitters also suggested that MBIE use information from the evaluation around the Healthy Homes Initiative.

Many submitters saw health as both a driver for higher energy needs, and as a factor which is detrimentally affected energy hardship. Submitters were also concerned that energy hardship may increase functional crowding (where people crowd together in one room to save on heating) which contributes to the spread of infectious diseases.

Other measures suggested include:

- energy expenditure before, as well as after housing costs
- measures of underspending
- more self-reported measures within primary measures (e.g. when a household missed paying utility bills on time, and when they were unable to heat adequately)
- electricity disconnections, both for non-payment and self-disconnections by consumers on pre-pay plans
- measures using non-official data sources such as energy assessments
- lived experiences of people in energy hardship to help understand the full picture
- ability to cool a house (which will become increasingly important because of global warming)
- income adequacy and the budget trade-offs that households face.

6.8 We may need fewer indicators

Some submitters suggested we consider fewer indicators, and that some of the proposed indicators were repetitive and could be combined into one.

Ian McChesney suggested that reducing the number of indicators could help by providing a transparent linkage between the definition, framework, indicators, and measures (as discussed above)

One submitter argued that if there was wide agreement across sector that spend on energy is not a useful measure of energy hardship then these types of measures should not be considered. Other

submitters wanted a commitment made to review and revise these measures as soon as is practicable.

Submitters also noted the limitations of our measures, which we presented alongside the measures themselves in our Discussion Document. For instance, we heard concerns about the seasonality of expenditure on energy (households may struggle in winter but this may not be captured in the measures), the inclusion of capital-rich but income-poor households in hardship, and a need for required energy spend to validate the measures.

6.9 Proposed data sources and quality will be critical

Some submitters raised concerns about data timeliness and level of granularity.

One submitter noted that Stats NZ's General Social Survey is a valuable source of information but that the housing and physical environment supplement was too infrequent and suggested it be asked more often than every six years. Ian McChesney suggested that core primary indicators should be at least annual due to the frequency at which some of the factors affecting household's energy situation are changing.

We heard from multiple submitters about the importance of granular demographic and geographic breakdowns in the final measures. Some suggested that greater sample sizes are needed for some current surveys. The IEA's User TCP suggested we investigate the following demographic breakdowns: *"age, race/ethnicity, gender, carer status (e.g. single parent, caring for elderly or disabled), education, tenure, rural/urban, literacy and language competence, even though I appreciate how hard it is to get that granular data from the HES Expenditure survey"*.

Some concerns were raised that using measures of self-reported housing quality may underestimate the extent of housing issues.

6.10 We may need to consider other data sources

Our proposed measures of energy hardship used official data sources that are nationally representative, since Government data sources enable reliable, national statistics. We received feedback from many submitters who would like us to consider data from other sources. We also heard recommendations on the importance of continuing to collect stories about lived experience to augment these statistics.

A few submitters did not agree that only data available now should be considered. It was suggested we take it back to the fundamental issue of what the 'ideal' measures are, and then examine these to see what potential data and information sources could be used to construct these measures.

Many submitters, including Māori organisations, expressed the need for qualitative data around the lived experience of energy hardship. This viewpoint was also expressed by BRANZ who noted this could *"provide deeper insight into the stories and experiences of those living in or vulnerable to energy hardship".*

Several non-official data sources were suggested, including from Non-Government Organisations and retailers.

Some submitters thought that we should explore using some of the data from community organisations (such as community energy networks) to help measure energy hardship. BRANZ submitted that *"a wide range of organisations routinely collect data on housing",* and there should be provision of tools and consistency for data collection. This could help alleviate the burden on

individual organisations, improve efficiency and cost-effectiveness, whilst also providing consistent data and information that can inform our understanding of energy hardship across Aotearoa.

Submitters also suggested that we explore energy retailers as a possible source of useful data. Some submitters referred to data that retailers already collect, like disconnections and household debt levels, while one suggested that retailers could collect data on energy needs, housing quality, and heating appliances from consumers when they sign-up.

6.11 Measuring the depth of energy hardship is also important

Of the 30 submissions that commented on the potential for a depth measure, 8 explicitly commented that a depth measure would be good to pursue, 13 did not state that they were supportive but suggested ideas for developing one, and 5 said they did not think a depth measure was necessary or were unsure.

BRANZ cautioned against adding unnecessary complexity and stressed that it was important that a depth measure *"have merit and practical application".* They suggested critically examining the UK's depth measure as an example.

Of the potential approaches discussed in the Discussion Document, some submitters preferred an 'energy gap' type measure that looks into how much more energy a household needs, while others preferred a more 'suite of measures' approach.

Ian McChesney thought it would be useful to explore all approaches and measure the effectiveness of each. He also suggested that an energy 'depth' measure could be useful if added to the primary measures. FinCap suggested that we should focus on community engagement for the development of a depth measure *"including focus groups with financial mentors and other community workers who interact with whānau experiencing energy hardship."*

Another submitter questioned what the outcome of identifying an energy hardship gap would be, and how it would change things for those experiencing hardship.

7 We undertook targeted consultation with Māori submitters

We engaged with various iwi and Māori representatives while developing the definition and framework, and during consultation. While developing the definition and framework we held a series of wānanga with various whānau from both rural and urban areas, as well as some Māori researchers and data experts. We thank those who gave their time to participate in the survey and the wānanga.

The wānanga focused on understanding the lived experiences of energy hardship as well as asking for feedback on the definition, framework, and proposed indicators. Haemata, a Māori organisation that specialises in policy advice and cultural capability, facilitated the wānanga. Haemata has produced a report detailing the wānanga and key insights which has been published alongside a summary of submissions on the MBIE website. This section includes a summary of feedback from both the survey and the wānanga.

7.1 Māori submitters have shown us how to strengthen our Te Ao Māori lens

While supporting the concept of energy wellbeing generally, much of our feedback from Māori suggested that we look at wellbeing through a Te Ao Māori lens. This feedback came through clearly in our wānanga series. The themes that emerged included the importance of energy wellbeing within the Māori context, with energy represented through mauri or the lifeforce that it supports. We heard how energy wellbeing enables manaakitanga, as *"[i]t enables us to have guests (manuhiri). We are able to warm our whare and make a cup of tea"*. For Māori, energy wellbeing is also not just about prices, bills, and support. It is also about rangatiratanga, mana, the role of Māori, partnership, and the control of power in the system.

Māori submitters suggested we could better incorporate cultural concepts, including Māori wellbeing approaches like the Te Whare Tapa Whā model, or the wellbeing compass that is contained in the Te Tatau o Te Arawa Housing Development.

7.2 We need to further incorporate Te Ao Māori perspectives into our definition and measures

We received a range of responses from the three submissions from Iwi/Māori organisations. Concerns raised included:

- Te Rūnanga o Ngāi Tahu said they needed further information on *"what the definition of 'adequate' is, as it will differ from person to person"*
- whether transport should be included – especially with the increase in EVs
- the need to explicitly incorporate Māori models around health.
- the ability to access and afford energy, in particular *"the consistency and quality of supply"*.

There were mixed opinions on proposed measures and data sources. The Māori wellbeing measurement experts we spoke to in the wānanga thought that we should make sure to use as much of existing data as possible to avoid the burden on Māori communities. However, one submitter thought we should look at what the ideal data would be and collect that rather than focus on what sources are available.

Some submitters commented that they would like clearer measurement of household wellbeing in relationship to energy hardship and wellbeing. Wellbeing should take into account the Māori model of health, Te Whare Tapa Whā, which includes taha tinana (physical health), taha hinegaro (mental and emotional wellbeing), taha whānau (social wellbeing) and taha wairua (spiritual wellbeing).

For Māori, understanding the lived experience and the impact of energy hardship on the lives of whānau was key. This should sit alongside the indicators based on government surveys and other data sources.

We received feedback that information should be accessible and useful for Māori to enable decision-making and resource allocation, as well as considering Māori Data Sovereignty. The submission from Te Rūnanga o Ngāi Tahu stated that if there was any data on *"energy hardship within the Ngāi Tahu takiwā it is important that Te Rūnanga has access to this information, to help inform our decision making in supporting Ngāi Tahu whānui"*.

There is a need to consider tino rangatiratanga and mana motuhake when looking at energy wellbeing. For participants in the wānanga it was important that Māori perspectives are realised in the definition and measures of energy hardship, but also that Māori should help drive some of the energy solutions. This includes improving housing and insulation, energy literacy, and encouraging Māori energy providers.

8 Recommended measures of energy hardship

8.1 We finalised the definition of energy wellbeing and its accompanying framework in June 2022

During the consultation process, we received strong support for the proposed definition of energy wellbeing and its accompanying framework from stakeholders. We finalised both the definition and framework with minimal changes.

The framework is a flexible, living document and as a result it may evolve time as further research, analysis, and engagement is undertaken to deepen our understanding of energy hardship in New Zealand.

8.2 We have acknowledged most of the recommendations on the measures from the consultation process

We received strong support for suite of measures from stakeholders, especially given the complex nature of factors that contribute to energy hardship.

One key recommendation that we have taken on board is on the use of non-expenditure measures. We will initially focus on non-expenditure-based measures from Stats NZ's HES, such measuring the proportion of households that put up with feeling cold a lot. This is because expenditure-based measures of energy hardship were not supported by several submitters due to the points raised in Section 6.2.

We also acknowledge that the definition and measures need to work both for both policy makers and for community organisations. A national suite of measures and framework are a starting point for many communities who operate in the energy wellbeing space, and definition measures provide an opportunity for co-design for organisations working at the community level. These can also be used in their interventions and programs.

In addition, we implemented the suggestion that certain demographic profiles need to be considered when analysing measures of energy hardship, such as Māori, Pasifika, renters, and other 'at-risk' communities.

8.3 Ongoing consultation on embedding Te Ao Māori into the framework and measures

A strong theme that came through from wānanga is the desire to see measures that matter to Māori. These include manaakitanga, mauri, mana motuhake, and rangatiratanga. Additionally, we heard the need to improve energy literacy with Māori communities. We acknowledge the need for ongoing consultation as we add measures to embed Te Ao Māori and explore using Te Kupenga survey which measures Māori cultural wellbeing.

8.4 Several suggestions require further work before being addressed

Some submitters deemed energy prices to be a key measure of energy hardship and thought measures of energy prices should be constructed to be considered alongside expenditure-based measures. However, a few subject matter experts commented that a measure of 'required household energy' was essential to have alongside expenditure-based measures. This is because

energy expenditure compared with income on its own was misleading. These issues are further outlined in Section 6.3.

We acknowledge that having a 'required household energy' model is important to understand the depth of energy hardship. However, significant work and coordination is required between government agencies and community groups to achieve this.

Energy hardship is currently part of the government's Data Investment Plan (DIP)[1] as a priority area. This will support further engagement with the energy industry, community organisations, Māori, and others to explore how their information can be used to better understand and measures energy hardship.

8.5 We are proposing an initial suite of energy hardship measures

After receiving feedback and considering the feasibility of the proposed measures using currently available data, MBIE has developed an initial suite of measures to publish as outlined in Table 1. These measures are non-expenditure-based and will be analysed along with key household characteristics such as ethnicity and tenure where possible.

We heard from submitters that there should be clearer linkages between the indicators of energy wellbeing and energy hardship. We also noticed some confusion between the indicators of energy wellbeing and the proposed measures of energy hardship. Some comments made by submitters on the indicators were directed at the measures of energy hardship. We acknowledge that the language used requires clarifying. Therefore, we decided to switch from using "indicators" to "aspect" of energy wellbeing.

Table 1: *Measures of energy hardship and how it links with aspects of energy wellbeing*

Measure of energy hardship	Data source	What this shows	Aspect of energy wellbeing
Could not pay electricity, gas rates, or water bills on time more than once in the last 12 months	Stats NZ HES	Households that have been unable to pay bills on time are likely to be at risk of disconnection	Able to afford energy bills without borrowing or economising on other expenses
Cannot afford to keep dwelling adequately warm	Stats NZ HES	Direct measure of energy hardship as shows energy rationing and the ability of the household to pay for heating	Able to wash, clean, cook, and heat/cool as required to stay comfortable (without economising on other necessities)
Put up with feeling cold a lot to keep costs down	Stats NZ HES	Direct measure of energy hardship as shows energy rationing	

[1] The Data Investment Plan (led by Stats NZ) is a prioritised plan to guide government investment in data, to support a more co-ordinated and systematic approach to data investment across the government data system.

Measure of energy hardship	Data source	What this shows	Aspect of energy wellbeing
Dampness and/or mould a major problem	Stats NZ HES	Indicates poor housing quality and internal environment – such a dwelling is likely to be underheated. Additionally, damp homes require more energy to heat	A dry and well-ventilated home
Trouble heating accommodation and or/keeping it warm in winter	Stats NZ HES	Indicative of quality of dwelling as it is unlikely to be energy efficient and more costly to heat/cool and maintain at a healthy temperature	A dwelling that can maintain a healthy temperature

9 Opportunities exist to further develop our evidence base

There is an opportunity to further engage with the energy industry, community organisations, Māori, and others to explore how their information can be used to better understand and measure energy hardship in New Zealand. This is supported by the inclusion of energy hardship as a priority area for investment in the Data Investment Plan.

MBIE will continue to support researchers and organisations in their work to model required energy. It is important to note that a significant amount of data and effort is needed for this.

In addition to working on annual releases of energy hardship measures, further work must be done to refine these measures and consider additional measures that should be added to the suite.

Our investigation into energy hardship using non-expenditure-based measures has highlighted the disparity between groups, particularly between people living in owner-occupied and non-owner-occupied housing and between ethnic groups. It also suggests some improvement since 2013, at least for the total population.

9.1 We will explore opportunities to further develop an evidence base on required energy use

Several submitters were cautious of expenditure-based measures of energy hardship because they do not reflect how much energy households require to support their wellbeing. We will continue to work with researchers and agencies on developing appropriate expenditure-based measures on energy hardship.

There is also an opportunity to further engage with the energy industry, community organisations, Māori, and others to explore how their information can be used to better understand and measure energy hardship in New Zealand. This is supported by the inclusion of energy hardship as a priority area for investment in the Data Investment Plan.

MBIE will continue to support researchers and organisations in their work to model required household energy. It is important to note that a significant amount of data and coordination across agencies is needed for this.

Insights from Household Energy End-Use Project (HEEP2) report and Māori and Public Housing Renewable Fund could provide an alternative data source, although it is not expected to be available within the next two years.