Submission to MBIE on Defining Energy Hardship

Ian McChesney

1. Have you read and understood the Privacy Statement?	YES
2. Name?	Ian McChesney
3. Email address?	Privacy of natural persons
4. Are you submitting as an individual or on behalf of an organisation?	Individual
5&6.	NA

Overview comments

Before addressing MBIE's specific questions I include here an overview highlighting key aspects of the report from my point of view. The report contains many positives which should be acknowledged:

- Bringing together, for the first time in Aotearoa, government proposals that recognise energy hardship and propose a formal definition and indicator measures – after so long, an achievement to be welcomed and not to be taken lightly;
- The definition, with its energy hardship: energy wellbeing distinction, is appropriate, flexible, and potentially empowering (although there are some qualifiers);
- The first half of the report contains some useful framing and analysis.

The issues however, if unresolved, have the potential to undermine the definition and lead to a poor monitoring and measurement regime:

- A muddled framework linking the core elements of the definition/drivers, themes, indicators and measures which results in confusing and contradictory messages about how energy hardship will be measured in terms of the quantity (i.e. numbers of HHs), the characteristics, and the depth.
- The government-centric view of indicators and monitoring – MBIE identifies the purpose of indicators/ monitoring as meeting central government needs with national level 'official' data sources. This view is extremely limiting and barely acknowledges the needs of, and contributions by, other parties.
- A very deficient assessment of potential measures - rather than starting with the question 'what would be the ideal measures' for each indicator area, the measures are dominated by those based on existing, official data. Too many proposed measures are accepted uncritically and without proper 'fitness for purpose' evaluation and testing, with too much weight seemingly given to the principle *to be internationally comparable*, rather than the more relevant *specific to the context of Aotearoa*. Most proposed measures do not appear to be have been scrutinised through cross-tabulations either with other energy hardship measures or with measures showing other aspects of hardship.

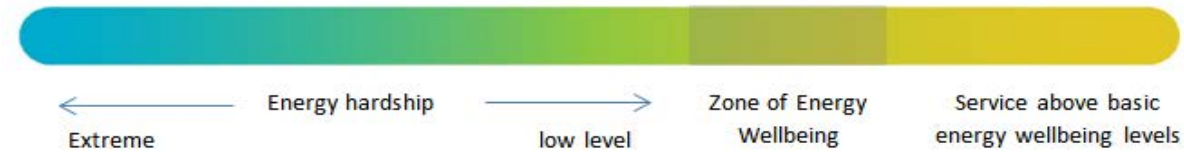
In my view many of the issues stem from a basic failure by MBIE to consistently involve stakeholders in this process from the start - to see them as 'co-designers' in this process. MBIE has erected self-imposed barriers that limit information, understanding, innovation and empowerment. As a result the report presents a one-sided view of indicators, measures and sources of information. External stakeholders with frontline involvement in this issue would have seen indicators/ measures more as active, solutions-focused tools that can be interpreted, used (and contributed to) at a local level. And this is the key point – the definition, indicators and measures are not ends in themselves – they are tools to help focus the issue towards solutions that work and are enduring. Frontline stakeholders are key partners in this solutions-based focus. I hope that the two formal groupings government has now put in place - the Energy Hardship Expert Panel, and Reference Group – will see themselves as not just arrangements to legitimise further government 'consultation' but insist on a collaborative, multi-stakeholder approach to finalise the definition, indicators and measures, and in the work beyond.

Summary of recommended actions:

1. Review the Principles (S1.7) – I suggest add *timeliness* (for primary measures), drop *be internationally comparable*, and review/amend *be measureable by available data.*

2. Reword the explanation of the definition and the relationship between energy hardship and energy wellbeing. The main point is that energy wellbeing is not the 'opposite' of energy wellbeing.

3. Consider replacing Fig 2 with this revision (or similar) in order to better visualise the relationship between energy hardship, energy wellbeing, and energy use above 'wellbeing' levels:



4. Review potential interpretations of the energy wellbeing definition, and note the danger of compromising its meaning if it is split into its component parts. Consider issuing specific guidance notes on interpretation when the final definition is published.

5. Provide a transparent set of linkages to show how indicator areas and primary measures/supporting information derives from, and supports the definition:

6. Establish a clear set of principles/rules:
    a. Rename current indicators as slightly broader 'indicator areas'; reduce number to 5-6;
    b. Require there to be at least one primary measure for each indicator area, with the primary indicators capable of being updating annually;

c. Rename and reform ‘secondary measures’ into a broader concept *of supporting information* that includes use of information from ‘informal’ non-official data sources;
d. Select indicator areas and primary measures to be the best possible representation of the energy hardship/ wellbeing definition;
e. Work through a process to identify the ‘ideal’ measures for each indicator area.

7. Abandon the government-centric view of indicators/measures; open the process to stakeholders and embrace a collaborative multi-user approach including accepting the role and value of external information.

8. Drop P1 & P2 interim primary objective measures - there is no evidence these measures are a meaningful or credible representation of energy hardship. Review the intended long-term form of P1/P2 for fitness-for-purpose and compatibility with criteria for primary indicator status.

9. Adopt an ‘enabling’ view of supporting information i.e. pertinent to energy hardship, relevant to stakeholders, timely, and meeting some basic criteria such as credibility.

10. Adopt a multi-method approach to quantify numbers of households in energy hardship, and to measure depth and ‘breadth’.

11. Adopt a more strategic approach to perceived information gaps to distinguish between priority information and ‘nice to know’ information. Talk to stakeholders operating in the frontline about information they hold that could be used as supporting information, and information that they need.
    a. Before any commitments are made to a required energy methodology MBIE should involve stakeholder/practitioners in the discussions;
    b. Include in its ToR an ability to easily apply the models in the field; and
    c. facilitate a consensus around the accuracy/data input trade-off.

12. Establish, with other stakeholders, an online *Energy Hardship Information Hub* to serve the purpose of bringing together and sharing a wide range of relevant energy hardship-related information.

Responses to MBIE's specific questions

Proposed definition for energy hardship

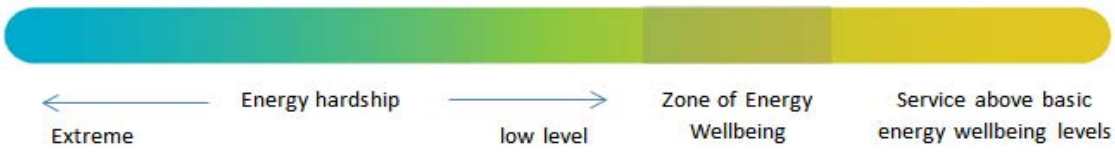
7. To what extent do you agree or disagree that the proposed definition for energy wellbeing is right for Aotearoa? Agree

8. Do you have comments on why have you chosen this answer?

Because the wording of the proposed definition is non-judgmental, inclusive, provides the positive counter-point to the negative connotations of energy hardship, and recognises that energy hardship cannot be defined by a yes:no threshold. The document sets out the reasons pretty well.

I disagree with the way the energy hardship; energy wellbeing is explained however. The explanatory text describes energy hardship as being the opposite of energy well-being, and the diagram showing the continuum states that energy hardship *"occurs at the other end of the spectrum"* from energy wellbeing. I believe these statements are incorrect. Accepting that energy hardship is scalar (e.g. it can vary from low level, occasional hardship through to deeply embedded, multiple deficiencies) households may be anywhere on that continuum, but none will be 'opposites' of energy wellbeing. I suggest that in a comparative context energy wellbeing is better depicted simply as the absence of energy hardship (whatever the level of energy hardship is).

There have been suggestions that the continuum scale be extended beyond 'energy wellbeing' to recognise states of 'over-consumption' of energy. I agree that the scale could be extended, and perhaps for completeness should be. The important point to note here is the wording of the definition in relation to the continuum. Achieving a state of energy wellbeing is defined as having an *adequacy* of energy services. Quite clearly there are a range of energy services that sit above this level. However, judgemental terms such as over-consumption should be avoided. I suggest an amendment to the diagram (Figure 2, p11) incorporating wording to explain the parts of the continuum. I would depict energy wellbeing as a zone that has a degree of flexibility, recognising that not every household's 'energy wellbeing' is necessary the same (see below).



I also question the way the components of the definition have been explained in Figure 3, p11. An important explanatory aspect of 'energy services' is missing; the fact that adequate energy services can be achieved via a high efficiency/low energy route, or a low efficiency/high energy route (and anything in between). The decisions and trade-offs involved, such as investment in energy efficiency and who pays (e.g. role of government, split incentives between landlords and tenants), is at the heart of energy hardship issues and responses.

9. To what extent do you agree or disagree with the inclusions in the proposed definition? Agree

10. Do you have any comments on what is included in the definition?

I agree with the inclusions, largely for pragmatic reasons. Historically energy use in the home is the way we have thought about energy hardship/energy poverty. This is an important enough area in its own right, has been talked about for decades, and needs a unifying definition and set of indicators in place as soon as possible.

11. To what extent do you agree or disagree with what is excluded by the definition? Agree

12. Do you have any comments on what is excluded by the definition?

It is acknowledged that energy purchased through a home energy account, or energy generated from facilities attached to the home, is undergoing rapid change as new, non-household energy uses are taken up by consumers (e.g. EVs charged from home, solar PV systems where the output may, or may not be used in the home). This will make certain data that might be used within an energy wellbeing/hardship context more unreliable in the future (e.g. household electricity purchases).

While there might be a case for considering transport energy as part of a spectrum covered by 'energy wellbeing' in the future, methodologies and concepts are currently not well developed. Trying to cover this off now will introduce unwarranted complexity and delay.

13. Do you have any further comments on the proposed definition of energy wellbeing?

I provisionally support the definition as it stands (I say provisional because I would be open to specific word changes that helped clarify the meaning; but not to change the core meaning). Because this is a descriptive definition, achieving consistent, boundary-limited interpretation while at the same time retaining the attribute of flexibility, will be critical if the definition is to retain credibility. I suggest the following could serve as the beginnings of a check list:

- Flesh out the meaning of the key phrase '*able to obtain adequate energy services to support their wellbeing*'. The report does a good job at teasing out the key components (S4) but at the same time it is important that disaggregating in this way does not result in the meaning of the totality of the phrase being distorted or lost.
- Identify and resolve 'grey' areas. I think one potential grey area might be situations where a household is achieving adequate energy services, but their wellbeing is compromised wholly or in part by income spent on energy not being available to spend on other essentials. Arguably the definition shouldn't be read this way because as long as adequate energy services are achieved a household is not in energy hardship because the energy services support these aspects of wellbeing. But the justification given for interim primary measures P1/P2 (Table 8, pC1) does potentially push the interpretation of definition beyond just the aspects of wellbeing associated with energy services. This specific issue is addressed further in response to Question 23, but I think it serves to highlight the importance of identifying and resolving potential variable interpretations of the definition.
- Select indicator areas and key measures that are the best possible representation of the energy hardship/ wellbeing definition. This is especially important for primary measures.

The subsequent framework(s), indicator areas and measures should derive directly from, and serve, the definition. For transparency it would be helpful for the final report to show these linkages. This is

how the definition can maintain its integrity. Once the definition is finalised and released I suggest it is accompanied by specific guidance notes on interpretation.

Proposed framework for energy wellbeing

14. To what extent do you agree or disagree that the framework represents the factors that influence energy wellbeing in Aotearoa? Both Agree and Disagree

15. Do you have comments on why have you chosen this answer?

The framework is good at describing/listing 'first order' influencing factors. And I agree with not weighting the factors listed, at this stage at least given that (a) our current understanding of the relative importance of particular factors is perhaps not well enough understood to the extent that we could confidently apply specific weightings, and (b) some of the measures chosen to represent these factors (Section 6) may not be particularly good proxies, so there is a danger of 'misplaced accuracy'[1]. Nevertheless, based on supportable information, the framework should be open to weighting factors in the future because this would help prioritise the most effective energy hardship responses.

Where the framework falls short is the absence of broader considerations of the contextual, socio-economic and cultural influences at play (i.e. 2nd and 3rd order influences). For example it is well known that energy hardship can often be just one aspect of broader poverty issues for households, meaning it is highly unlikely that entrenched energy hardship issues can be addressed in isolation (or with short-term 'fixes'). Overall the framework presents energy hardship/wellbeing too much within its own 'bubble'.

Acknowledging a broader framework would also would encourage consideration of relevant non-energy monitoring measures that might offer greater explanatory power for different levels of energy hardship (see later comments on measures).

Finally, S4.2.4 briefly discusses the importance of reflecting 'lived experiences'. It states that the views of stakeholders working with vulnerable communities helped shape the definition and framework (also restated in S5.4.6). This may well be, but the specifics are vague and quite opaque. The biggest disappointment is that the 3 case studies referred to in Appendix E, as valid as they are, are simply recycled from the Electricity Pricing Review from a few years earlier. Hence we are taken no further to understand up-to-date concerns such as the impact of the current housing market (e.g. escalating pressure on household costs; associated overcrowding), or broader long-standing issues such as rural poverty concerns in Northland, or the heavily interrupted supply experienced by many households using pre-payment meters (as examples – more could usefully be included). A broader range of up-to-date lived experiences, detailed through case studies, could have demonstrated (and tested) how proposed indicators/measures would be relevant to these circumstances.

16. Do you have any other comments on the proposed framework? No further comment

[1] The measure may be based on 'official' data and meet necessary statistical standards, thus giving the appearance of validity, but if it is a poor proxy for the indicator area the implied confidence in the measure will be misplaced.

Proposed indicators for energy wellbeing

17. To what extent do you agree or disagree with the proposed indicators for energy wellbeing? Disagree

18. Do you have comments on why have you chosen this answer?

In my initial comments I set out concerns at what I described as a "muddled framework" linking definition/drivers, themes, indicators and measures. Part of the issue is that all these parts of the energy wellbeing framework are separated in the report without a clear and transparent view showing the logic of the linkages and transitions between them (as mentioned in response to Q13). The graphic below illustrates the concept - details to be added; note also some wording changes from the headings used in the consultation document – these are explained in the further responses to questions:

Also I could not find in the document a clear explanation to distinguish *indicators* from *measures*, which would help understand the relationship between them.

Focusing just on Table 6.3 some of the issues are:

- While the themes pick up some key phrases from the definition, and some aspects of the Section 4 framework, it is not clear that they provide a complete picture. Some factors in the conceptual framework do not feature further in the indicators/ measures (e.g. 'service literacy'; 'household circumstances and practices').
- Some indicators are poorly stated e.g. *'a dwelling that can maintain a healthy temperature'*. Dwellings are defined in the report as being the physical structure (e.g. house) but surely this indicator is not intended to just identify passive houses (i.e. houses with the physical attributes that can autonomously maintain a healthy temperature)? Presumably this indicator is intended to cover the combined effect of the occupier, their capabilities, the heating appliances available and the physical characteristics of the dwelling they occupy? In that case this indicator is effectively reporting on the same thing as covered by the indicator *'Able to heat, wash, cook….etc.'*, with the 'able to heat' component representing the net effect of the range of influencing factors.
- While 8 energy wellbeing indicators are set out in Table 6.3, only 3 of these are reported by primary measures. If, as the document states these indicators are the "key indicators of a household's energy wellbeing" (p31) then surely they justify being regularly reported by at least one primary measure?
- The lack of primary measures for 5 indicators suggests there is an unstated priority/ hierarchy attached to certain indicators, yet this contradicts statements in S4 that there is no priority attached to the energy hardship influencing factors.

Why there is such an apparent disconnect is not clear but there might be several issues. First is the report's seeming adherence to the European Energy Poverty framework of 4 primary indicators.

Second, I suspect that some of these indicators, as valid as they might appear, struggle to rank in importance with some others. Also, some of the 8 indicators resemble the specificity of measures.

I suggest a workable solution might found through reducing the number of indicators, simplifying their form so they are described as indicator areas, and making it a requirement that all indicators must be reported by at least one primary measure. This would potentially provide a cleaner and more communicable relationship between themes, indicator areas, and measures. It would also provide a much clearer, and explicit reporting role, for primary measures. I think the current list could be reconfigured down to 5 or 6 indicator areas that justified reporting by primary measures.

Measuring energy hardship

19. We are proposing to use a set of primary and secondary measures for energy hardship. Do you support this proposal? No

20. Do you have comments on why you have chosen this answer?

I support the concept of primary and 'secondary' measures; my concern is with the way this is realised in the report. I strongly disagree with the sole central government/national level focus of this work. The needs of other parties are barely acknowledged and regarded as incidental to Central government aims (S1.6 p3). External stakeholders are seen as consultees rather than valid partners in this process. Yet, energy hardship solutions, delivered through locally through personal engagement between householders and trusted, trained practitioners/organisations, linked with other stakeholders such as electricity retailers and government agencies will continue to be the main response to energy hardship – as indeed they have for the last 2+ decades. Indicator measures relevant to these situations will likely be a mix of those that are area specific, current and actionable, along with national average measures that might serve as a comparative baseline. Also, local organisations themselves can be a valuable source of data, thus further empowering solutions to achieve energy wellbeing. Failing to see beyond national level interests in my view is a big mistake. What value is this investment in indicators/measures if it serves only one party in the collective response on energy hardship?

I urge a different conceptualisation of indicators and measures as a matter of priority (see also response to Q26), reflected in a broader and more flexible framework as follows:

Primary measures - retain primary measures, but have a clear set of rules consistent with these being the main reporting measures for each indicator area:

- At least one primary measure for each indicator area
- Select primary measures based on being the most appropriate measures to represent each indicator area. Judgement will be required as to whether existing data sources will be sufficient, or whether for some indicators new data sources will need developing
- Must be capable of being updated and reported annually
- All measures meet quality standards at the national level of reporting (e.g. either official data or that deemed reliable enough by Statistics NZ to be used in this way, and capable of being integrated into the IDI framework; meet statistical standards)

- Ideally measures should be able to be segmented to allow some level of analysis by area, sub-group characteristic etc., in order to inform and assist local initiatives (accepting that there will be some loss in accuracy because of sampling sizes etc.).

Supporting information – bring all non-primary measure information under the umbrella of 'supporting information' and split into sub-headings as follows:

- Secondary measures – largely as set out in the document re meeting quality standards but focused around supporting/helping to understand the key primary measures for each indicator area. Also more focus on sub-national breakdowns of information to help inform locally-specific needs; and
- 'Informal' information – information from non-official sources; they may be regular collections but more likely one-off, or infrequent reporting from a range of research, local government, iwi, community organisations, personal accounts/stories etc. It could include large-scale studies (such as the longitudinal Growing up in New Zealand study), and insights from specialist on-the-ground organisations. There would need to be some oversight of the information posted to ensure that it was not inaccurate or misleading.

Some further issues need to be addressed within this revised framework as follows:

The 'ideal' measures for each indicator area – MBIE has prioritised being able to measure and monitor levels of energy hardship *"as soon as possible….rather than waiting on perfect measures and data"* (p 30), consistent with the principle to *be measureable by available data* (S1.7). In my view this is a great pity because, by not going through a process to identify the 'ideal' measures (specifically for primary measures), some measures proposed are 2nd best or simply inappropriate. By ideal I mean measures that, regardless of whether they are supported by currently available data, are considered the best to represent each indicator area. This should have then led to a series of questions - (a) is the best measure able to be put in place using existing data? (b) if not, can existing data (whether currently 'official' or not) provide a 'good-enough' proxy measure? or (c) does new data need to be developed over the next 18-24 months?

Rather than carry on with a blanket 'use available data' principle MBIE should adopt a long-term, strategic approach to determine the best possible measures. Take the current opportunity to reconfigure indicator areas and rethink primary measures (see also Q26 response on data gaps).

Timeliness of information and reporting – indicator measures are invariably retrospective. Even with regularly updated data collections reporting can be 12-18 months after data is collected. In the current environment, where key variables are changing rapidly (e.g. housing costs, pressure on household expenditure) energy hardship information that might be 18 months old or later when released may be misleading. In such an environment I suggest the framework should include scope to allow estimated updates to the present day (say, using CPI, housing cost indices, wage/benefit rate indices), and potentially also allow some forward-looking scenarios.

The principle to be internationally comparable – this is one of the principles set out in S1.7. I question whether it should be a principle at all – it seems to be taking us down the road to a number of measures/approaches that are of questionable merit. Examples include measures P1/P2 (>2median energy cost/AHC income ratio (using both actual and required energy)); P10/P11 (>2median energy

cost/BHC income ratio); P12 (<0.5 median energy cost); adoption of the primary and secondary measure terminology, and using 4 primary indicators (2 objective, 2 subjective); adoption of the 'required energy' terminology (and potentially the methodology). All of these are measures used in the UK and/or EU for energy/fuel poverty.

This principle often conflicts with, and seemingly over-rides the principle *'be specific to the context of Aotearoa*'. In my view this is the opposite to the priority that should apply. For almost 2 decades we have taken an overseas definition and indicators as articles of faith. But there is no justification for this. With the proposed definition in this report, which is informed by lessons from overseas, we have shown we are perfectly capable of stepping out with an innovative, appropriate approach in Aotearoa. The same needs to apply to indicator measures. I suggest the *be internationally comparable* principle should be dropped.

21. To what extent do you agree or disagree with the proposed primary measures? Strongly disagree

22. *To what extent do you agree or disagree with the potential secondary measures?* Agree and disagree

23. Do you have any comments on the proposed primary and secondary measures?

Primary measures – I have no particular issue with primary subjective measures P3 & P4. Within a reconfigured framework of indicators, they need to be assessed for whether they are the best measures for the appropriate indicator areas – I am assuming they probably will be. As a general comment about subjective measures though I suggest that for future reporting there should be notes/guidance on accuracy and reliability (especially important for primary measures). The report makes brief mention of some issues (S5.4.2, p27) but it's unclear whether any systematic assessment has been made. For example, I'm aware that answers to questions about perceived warmth and adequacy depend on time of year the question is asked (greater concern in the winter, less concern in the summer), so it's important we understand the reliability of these primary subjective measures, and their ability/limitations to be replicated 'in the field'.

As for the choice of the primary objective measures P1 & P2. It is extremely disappointing to see these measures recycled into use, yet again. It is asserted that these measures *"most directly measure energy hardship"* (S6.3, p33), but there is absolutely no evidence provided that this is the case, either in the intended long-term form (using 'required' energy expenditure), and especially the interim form using actual energy expenditure. In fact, the assessment provided in the report for using the latter is quite the reverse, calling it *"an apparently similar but misleading solution"* (p27) – which makes its selection here, even in the interim, even more dumbfounding. My main critique of these proposed measures are:

- These are examples of 'compound' measures that combine data known to be relevant to energy hardship (e.g. AHC income; energy expenditure) into a formula with threshold(s) to determine 'eligibility'. Because compound measures are abstractions of energy hardship they need thorough testing to ensure that the formulation produces well focused and relevant results, with appropriate threshold(s). Hence before recommending an energy expenditure/income formulation for these primary measures, at a minimum I would have expected MBIE to test and compare (and report on) other functional relationships.

- In his 2011 review of the UK definition John Hills recommended against continuing with the expenditure/income ratio, and indeed, England has now moved to different a formulation (twice). Hills was critical of the twice median threshold (which was what the 10% threshold in the initial UK definition represented), describing it as *"essentially arbitrary"*[2].
- Yet, while MBIE has rejected a 10% threshold saying it *"does not fit Aotearoa's context"* (Appendix D, pD-15), it is recommending the 'essentially arbitrary' 2M threshold for P1 & P2, seemingly because it is one of the primary EU Energy Poverty indicators. I note that S6.5.2 mentions further work to investigate different relevant thresholds – this is good but given that S5.4.4 discusses the proposition that "thresholds matter" I would have expected MBIE to have already undertaken a far more searching assessment of the threshold(s) appropriate for Aotearoa. Being assured of 'intentions' is not a substitute for being able to assess well analysed options. (As an aside, calling P1 & P2 'objective' indicators, when such a key element is subjectively chosen, is actually quite misleading).
- The justification for using the interim P1 & P2 measure (Table 8, p C1) suggests it may show *"high spend on energy which may compromise other areas of wellbeing"*, and *"identifies households that are likely to be under financial pressure because of energy spend*". Of course, it may well do – the proportion of households captured by the measure (>20%) is such that the measure can probably be shown to include at some level most factors relevant to energy hardship. The key question which does not appear to have been asked is whether it is an indicator that is 'fit for purpose' – primarily is it the best measure to represent the indicator *"able to afford energy bills without borrowing or economising on other expenses"*? The report offers no evidence. Rather, the justifications are assertions, that push at the upper bounds of wishful thinking. The merits of using this measure are without foundation.

I accept that it is not reasonable to fully assess a >2M required energy threshold at the moment because the methodology and database do not yet exist. However, I would have expected to see some assessment of the formulation, based on Hills' findings and the findings of the more recent UK government report recommending the latest change to the definition in England.

With respect to other possible primary indicators I am reluctant to suggest what they should be – these decisions should come from a process of discussion and consensus around (a) indicator areas, and (b) the best measures to represent those areas. Potential measures I think could be candidates for consideration include electricity debt measures (see answer to Q26), P13; P26.

'Secondary measures' – in general I don't have too many issues with most of these measures (P10, P11 and P12 excluded). By and large they will be appropriate for their task of providing supporting information for each indicator area. I think it would be beneficial to regard these secondary measures as also giving greater ability to provide locally specific breakdowns and detailing, and being complementary to the 'informal' information suggestion put forward in this submission. Some further comments are as follows:

- Reference has been made previously to measures P10, P11, and P12 questioning their appropriateness. Measures P10/ P11 are variations of the P1/P2 >2MExp/Income ratio. They

[2] Hills, J. (2011). *Fuel Poverty: The problem and its measurement*. CASE Report 69. London: Centre for Analysis of Social Exclusion. P103.

suffer from similar issues, and as noted on pD14 some of the changes observed in applying this measure to Aotearoa in recent years cannot be ready explained. This is highly problematic for a proposed measure.

- P12, actual energy expenditure being less than half the national median, is a very blunt measure. It is likely to pick up a range of households not in energy hardship such as high energy efficiency houses, homes with onsite electricity generation (e.g. PV), and households relying on low cost/self-collected wood. That said it would be worth exploring whether this measure had any particular explanatory power for energy hardship. If it does it is likely to correlate with subjective measures indicating energy inadequacy/deprivation.
- A further consideration for these 3 measures is the future reliability of actual energy expenditure data because of the 'contamination' effect of home EV charging and home-based PV generation (as the report mentions). This is not insurmountable, but will require a more detailed, forensic assessment of energy bills and energy uses if household-only energy use and costs are to be isolated. This level of detailed dissection might only be justifiable infrequently.

Numbers of primary/secondary measures? – already answered for primary measures; at least one per indicator area; beyond that keep the total number manageable bearing in mind these will be the primary means of communicating energy hardship changes and too many main measures could be confusing. Regarding supporting information in general – I don't see a need to set limits, especially given that updates for many of these measures will only roll around every few years. The key criteria should be the usefulness of the insights the supporting information offers.

Measures that directly reflect changes in regulation and/or policy from agencies and industry – I disagree with the logic MBIE proposes in this part of the report (p37) – a view that appears not to regard the effects of responsive policy as something useful that should be captured by energy hardship measures (and yet tracking the effectiveness of policies and programmes is stated as one of the intentions of the definition/indicators (S1.5, p2). Disconnections policy/responses has historical significance in the developing awareness of energy hardship in Aotearoa following the death of an electricity dependent customer in 2007 whose supply had been disconnected. Since then I agree that disconnection rates on their own tell an incomplete (and possibly misleading) story because of the strong influence of policy and industry actions. But single measures often do not tell a coherent story on their own - they need supporting information, follow-up evidence and insights, and a well-considered narrative. Pursuing the story on disconnections from 2007 would show increased customer debt following curtailment of disconnections, followed by various strategies pursued to reduce debt for both retailers and customers, including moving some customers to pre-payment plans. This chain of events has likely contributed to energy hardship for some. In my view tracking and describing these tends over the last 1½ decade is exactly the kind of 'deep dive' assessment that a good indicator framework should be seeking and enabling.

Hence I believe it is far more useful to frame 'indicator areas' that give scope for supporting research and narrative to help explain and support primary measures(s). Broadening the scope of 'secondary measures' would enable a range of external organisations to contribute relevant data, analysis and insights. In the example above the electricity industry, budget advice services and customer narratives would all have valuable contributions to add. This example illustrates why a broader scope of

supporting information, within an 'enabling' framework, would be so valuable. By focusing on official information sources and tight statistical requirements MBIE has erected self-imposed barriers that limit information, understanding, innovation and empowerment.

24. Do you have any comments on measuring the depth of hardship?

The presentation of options (S6.6.2) is useful, and I agree that measuring the 'depth' of energy hardship would be valuable. I also agree that the logical approach would be to look at a sequencing given the energy gap methodology/data base does not currently exist in Aotearoa. A few other points on the 3 options presented are:

- 'Sum of measures' option – I caution about drawing too many conclusions regarding the observed overlap (or lack) of measures. I agree that a number of the measures tested to date show little overlap. But a significant reason for this could be that some measures are simply not good ways of indicating energy hardship, especially given the propensity for the objective measures to be some variation around the >2M (Energy exp)/Income ratio. As for the comment about greater overlap between 2 or more objective measures and subjective measures I see that this conclusion is drawn from analysis Appendix D Fig 12 & Table 10. In my view the assessment is misleading because the results are shown as percentages of unequal base sizes; thus it is impossible for the outside reader to judge whether the actual overlap (i.e. numbers, not %) are larger or not. I suspect not.
- 'DEP-17' option – the main issue I see is that while DEP-17 clearly works well with a broad-ranging concern such as child poverty where there are a range of identified contributing factors, would it be applicable to the much more focused energy hardship issue with far fewer contributing factors? I struggle to see, in reality, how it might be any better than a sum-of-measures approach. That said, I do see a lot of potential to use the DEP-17 database of material hardship to look at the inter-relationships between the hardships relating to energy hardship (e.g. putting up with feeling the cold) and other material hardships. This may add considerable explanatory power to help describe different energy hardship situations.
- 'Energy gap' option – one question to think about is what is the best unit of quantification to present the gap? The UK uses monetary units, presenting the gap as an energy cost. One issue is the potential for false impressions this may give if this is the only gap measure. For example, if the average energy gap for energy hardship in Aotearoa is calculated as $600 p.a. (say), this may be misconstrued as meaning that energy hardship can be simply 'solved' by paying this amount to affected households. But households will likely be facing multiple hardships and any additional money made available might be prioritised to other things. In reality in order that energy wellbeing adequacy is achieved bridging a $600 gap may require additional income of thousands or tens of thousands of dollars, and/or significant investment in energy efficiency, or possibly the complete replacement of a structurally unsafe and unhealthy home[3]. Presenting the gap in other ways, or as well as, (e.g. energy units, efficiency investment required) should be considered.

[3] On this last point see Gareth Cartwright presentation to Otago Energy Research Centre symposium The Challenge of Net Zero by 2050, Nov 2021.

But overall the assessment in S6.6 falls short of providing sufficient analysis to help inform feedback. Two issues the report does not address deserve further consideration:

1. The 3 'depth' options are presented as alternatives but it is not a like-to-like comparison. The two 'combining measures' options provide household numbers as an integral part of the methodology i.e. each level of 'depth' (e.g. HHs with 3 measures), is established by quantifying the number of households in energy hardship at each level. The energy hardship gap option however, which deducts actual energy cost from required energy cost for those households deemed to be in energy hardship, does not contain an integral quantification of numbers in energy hardship. In England the energy gap calculation is essentially a separate calculation applied to the base of households determined by the fuel poverty definition calculation. In Aotearoa a separate quantification methodology would need to be used prior to establish the number of households in energy hardship. Whatever quantification methodology is used must stay true to the definition – the integrity of the definition depends on how it is operationalised through the measures chosen to represent it.
2. The different ways presented for measuring 'depth' are potentially measuring different things. The 'energy gap' method quantifies the extent to which actual energy service provision falls short of required energy; the greater the gap, and greater the depth. The 'combining measures' approaches are, as the terminology implies, measures of 'breadth' of energy hardship. Assuming all the measures relate to distinctly different attributes of energy hardship the combining measures approaches indicate how broadly-based the energy hardship lived experiences are. While one may infer 'depth' as the number of indicators increase, this may not necessarily hold true. For instance a household whose primary energy hardship response is to stop space heating may show a relatively large energy gap but not register a wide breadth of hardship.

My assessment of the 3 options, with their ability to quantify, show depth or breadth is as follows:

Method	**Quantify**	**Breadth**	**Depth**
Sum of measures	✓	✓	tbd
DEP-17	✓	✓	tbd
Energy gap	**X**	**X**	✓

This assessment suggests that no single method covers all the bases. MBIE would be best to consider a multiple method approach to quantify numbers, assess breadth and depth. Fortuitously, pragmatic considerations will force this since the energy gap method is currently not available. Regardless though, a multi-method approach would seem to be complementary and beneficial overall.

Regarding the suggestion that an energy 'depth' measure could be added to the primary measures - I agree, this might be useful. But I think a distinction should be made between the primary 'attribute' measures (which are the 'building block' measures of energy hardship), and energy hardship depth/breadth measures which are consequential. Any depth/breadth primary measure should also conform to the principle suggested earlier of annual updating.

Data gaps and proposed way forward

25. Rank the following proposals in order of most important (1) to least important (4).

Not answered – wrong question and wrong options.

26. Do you have any suggestions for alternatives or changes to the proposed way forward?

General comments on sections 7 & 8 – yes, of course, our understanding of energy hardship would benefit from being informed by better data. But it shouldn't be lost sight of that the definition, indicators and measures are not an end in themselves; they are a 'means' to help reduce/eliminate energy hardship and progress towards enabling HHs to meet their energy wellbeing needs. Indicator/measures should always be serving this purposeful goal. Hence before coming up with a shopping list of data needs I think a series of questions need to be addressed (collectively) first:

- What are the information needs and why?
- Who needs this information?
- How does this additional information facilitate progress towards the end goal?
- What are the priorities (in terms of information and timing)?
- What are the alternative ways of meeting information needs?

I would expect that stakeholders would identify a range of needs – some in common and others specific to their interests, role and clients. I would hope that a vibrant, responsive and relevant framework would be able to accommodate this diversity.

Addressing these questions would, in my view, better position further data into a more purposeful and enabling framework. And, it relates to one of the main themes of this submission – indicators, monitoring and measures should not be a largely passive exercise of data collection and analysis largely to serve central government. It must also be about involving and empowering stakeholders in the community.

S7.1 Use of electricity data – It is good to see that MBIE is actively pursuing use of ICP data (S7.1.1). While most of the discussion is about consumption data there is much more that could be useful. Both the Electricity Authority and ERANZ have released useful energy hardship-related electricity data in the last 18 months including retail electricity costs, disconnections, and levels of electricity debt[4]. Customer electricity debt information may be particularly useful to develop into a key monitoring measure(s) because it is a direct, objective measure that I think will be less sensitive to future issues around electricity consumption data. I hope it can be brought into the IDI framework asap.

S7.2-7.5 Limitations and gaps in currently available data – some of the data gaps identified in these sections of the report are valid. But these data gaps do not appear to be grounded in a strategic sense of information priority – there is no clear reference back to the indicators, or assessed for their role as potential measures. Is the information 'nice to know' in the sense that it will be useful supporting information, or is it needed to fill significant gaps in the measures? I suspect this all comes back to the

[4] ERANZ, 2021. ERANZ Electricity Dashboard, May 2021: Electricity Authority, 2020: https://www.ea.govt.nz/about-us/media-and-publications/market-commentary/market-insights/covid-19-and-alert-level-effects-on-disconnections-and-debt-september-update/

lack of focus on the 'ideal measures' for each indicator area and subsequent lack of a purpose-driven approach to identifying and meeting data gaps.

A second issue comes back to MBIE's very one-dimensional focus on how information gaps can be filled, relying largely on formal surveys and new data collections consistent with the overwhelming 'official' data view. But if many of the data gaps are more in the 'nice to know', supporting information category, it is highly likely that this information is both available now, or can be collected by tapping into informal information networks and making use of the knowledge and contacts of front-line organisations. For example, knowledge on housing quality (S7.2), access to amenities and energy efficiency (S7.3), energy service literacy, managing energy use, and financial resilience and debt (S7.4), and details of specific groups and locations (S7.5) all exists in informal and semi-formal ways. It is dispersed in the community amongst support agencies, Whanau ora providers and iwi, financial services agencies, community energy providers, energy advisers, and home assessors. Not only is there a historical base of knowledge but these agencies/personnel are in contact with thousands of householders each year, so the potential exists to tap into new information. Many of these householders live in precarious situations so may well be in energy hardship themselves.

I don't underestimate the challenges in tapping into this knowledge and bringing it together in a form that meets consistent standards and is credible. Many agencies are over-stretched and simply don't have the resources to put into non-priority tasks. Nevertheless I know from personal experience the potential exists[5]. For example, across the country probably thousands of energy assessments are undertaken and recorded each year. Tens of thousands of Healthy Homes Assessments will likely be carried out each year until 2024, and aggregate data from one private service provider has already provided insights on rental quality issues to date[6]. The point is this data exists now, and is being continually added to.

There's also the issue about the reliability of the 'official' data sources (which MBIE alludes to). The 2018 Census had some major gaps, especially in the demographics where we might expect there to be higher occurrences of energy hardship. I suspect we are entering an era of increased wariness over providing information to 'official' collections (and even when provided, some of the information can be incomplete and/or misleading). So it may become a matter of necessity that some of the monitoring/ intelligence we are best to rely on is sourced in part from reputable, trusted sub-national entities working at the local level.

Finally, I must comment on the statement *"(with the data available for our proposed measures) we can understand the experience of energy hardship measures by different population groups"* (S7.5, p46). Seriously? I submit there is a vast gulf between understanding numbers in a table or narrative in a report and understanding the experience of energy hardship. That is why I urge MBIE to broaden their approach on the type and source of 'supporting information' that can usefully inform each indicator area. Bring external stakeholders and affected households into this process and work together. Understand what they can bring to the table in terms of information, insights and

[5] In 2015 work was undertaken at Community Energy Action Charitable Trust to bring together a sample database of the standardised energy assessments carried by CEA's trained energy advisers over the previous 2 years. Data analysed from 300+ assessments provided valuable insights into insulation levels, appliances, heating, lighting, hot water systems etc.

[6] Stuff, July 2021: https://www.stuff.co.nz/national/125692723/bribery-filth-and-scumlords-the-life-of-a-healthy-home-assessor

opportunity, and what they will find useful from an indicator/monitoring programme. Understand their needs. And, understand the limitations.

S8.1.1 Further analysis of data currently available – this section briefly mentions the intention to carry out further analysis building on that reported in Appendix D. However, while the assessment in Appendix D was interesting, to a large extent it was a missed opportunity because it did not take the assessment much beyond that carried out by Statistics NZ in 2017. Sometimes the analysis showed trends but was not able to offer explanations that related to real energy hardship effects. So, taking the analysis further and assessing different measures and their sensitivities, better understanding the characteristics of households experiencing more than one measure, and exploring the overlap between energy hardship and material deprivation will be good to do – they are current shortcomings. But, if MBIE does not fundamentally review and adjust indicator areas and primary measures (especially the objective primary measures) further analysis may largely be a wasted effort in my view.

S8.1.2 Modelling the energy consumption required to support wellbeing – I welcome the intention to undertake this work – it is central to giving the energy wellbeing definition meaning. The report states that discussions have been held with 'research providers' about possible methods, but is opaque on the nature of these discussions so it is not possible to know how MBIE intend to proceed.

The required energy concept (and terminology) originated in the UK and has been a part of their formal definition(s) of fuel poverty since 2001. As the report notes sitting behind the required energy quantification is a prescribed set of complex, formal calculation processes based on detailed data from house surveys and other sources. I caution however about diving into a technical process that mirrors the UK approach. Understanding and representing 'energy wellbeing' is not just about a set of technical equations. I suggest it requires the coming together of several strands of information to properly represent 'energy wellbeing' in Aotearoa e.g.:

- incorporation of health bottom lines (such as indoor temperature regimes),
- feedback from householders on what an adequate level of energy services means to them,
- feedback about 'discretionary' elements of energy services i.e. the personal choices about energy people make that form part of their concept of energy wellbeing that might otherwise be misrepresented by a formulaic, prescriptive approach, and
- objective data about the household and the dwelling they occupy.

I would see this approach respecting the diversity of household energy situations, and allowing for elements of personal agency over energy choices that don't affect health or other bottom lines. It is from this information that some kind of quantification of energy wellbeing can be developed.

One of the main problems with the UK required energy approach is its data-heavy requirement and the difficulty of replicating the calculation 'in the field'. This has been one of the reasons why historically in the UK there has been a serious disconnect between households identified through the definition as being in fuel poverty and those receiving fuel poverty assistance.

Consistent with my recommendations to bring stakeholders into this process and widen the net of supporting information I urge MBIE to include in its terms of reference for this work an ability to easily apply the models in the field. In this respect I hope that discussions with research providers will

be extended asap to energy practitioners/advisers, iwi and Whanau Ora providers who have a much broader understanding of the factors at play here. I am aware of at least one who is currently trialling an operational required energy concept in the field. MBIE should be fully aware of this work before any commitments are made to the more conventional research route.

It's important not to get hung up about the necessity for extreme accuracy and complexity. Much complexity can be hidden behind simple, tablet-based coversheets/ questionnaires, for example. Consumer NZ has effectively been operating a form of 'required electricity' calculation within their *Powerswitch* webtool for some years. With no disrespect to Powerswitch, because it is a very useful tool, it would be fair to say that its calculus trades off some level of accuracy in order to reduce input data and for user simplicity. The point is that a required energy calculation could sit anywhere along a continuum between high accuracy/high data needs[7] and low accuracy/low data needs. For the purpose of establishing robust, but adequately workable energy wellbeing estimates, what should the acceptable trade-off be? I would hope that workable, 'good enough' solutions can be found so barriers to determine energy wellbeing estimates can be minimised, and the calculation tools put into the hands of trained practitioners in the field.

Final thoughts

27. Do you have anything else you would like to mention?

Communication of energy hardship information – traditionally indicator reporting is carried out annually in a structured manner. For energy hardship reporting, given the emphasis in this submission on co-design, involvement from stakeholders, and a more dynamic inter-active role played by indicators and measures, I strongly believe communication of energy hardship information should reflect this. Clearly there would be a role for an annual 'stocktake' based around reporting on the primary measure updates, but beyond that I see the need for an ongoing, vibrant information exchange forum e.g. an online *Energy Hardship Information Hub*. I suggest communication should go further than just the written word and include (and encourage) diverse contributions including podcasts, videos, interviews….and more. It should be based on principles of accessibility, encouraging participation, objectivity and delivery of useful content. That said, it should not be a free-for-all. Content suitability and credibility should be vetted and moderated. I suggest the information hub should be run as a stand-alone site, operated and overseen by stakeholders (both central government and external stakeholders).

28. Can we publish your submission on the MBIE website? Yes

[7] Actually, high data needs are not necessarily linked to high accuracy if the wrong data is collected and used….another case of 'misplaced accuracy'.