



# Energy hardship severity

Applying 17 of the proposed MBIE indicators

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# Energy hardship or fuel/energy poverty?



There is no international consensus on defining, measuring, and even naming the issue. **This heterogeneity affects:**

- How energy hardship is perceived, and
- What types of interventions can eradicate it.

**Examining the relationships between the MBIE energy hardship indicators and other household variables can:**

- **Improve the understanding of the issue, and**
- **Strengthen eradication programmes in Aotearoa.**

# Research goals



Finding the most relevant variables that either contribute to or are a result of energy hardship is essential to **identify affected households and propose specific interventions.**

The relationships will be defined as causes or consequences according to the literature. The effect of individual indicators on energy hardship severity will also be analysed.



# MBIE indicators

17 indicators proposed by MBIE (2021) were used:

1. Put up with *feeling cold* to keep costs down a lot;
2. No home access to *computer or internet*;
3. Could not pay electricity, gas, rates, or water *bills on time* (more than once);
4. Unable to afford *unexpected expense* without borrowing;
5. Cannot afford to keep the dwelling *adequately warm*;
6. Using (or having used) *prepayment metering*;
7. No *heating* type used;
8. Not heating *own bedroom* in winter;
9. Not heating *children's bedroom* in winter;
10. Not heating *main living room* in winter;
11. Trouble *heating accommodation* and/or keeping it warm in winter;
12. Use of unsafe substitute heating methods (*portable gas heater*);
13. Lacking one or more *basic amenities*;
14. Housing *repairs needed* – major;
15. *Mould* larger than an A4 – Always;
16. *Damp* - Always;
17. Can see *breath indoors* in winter.

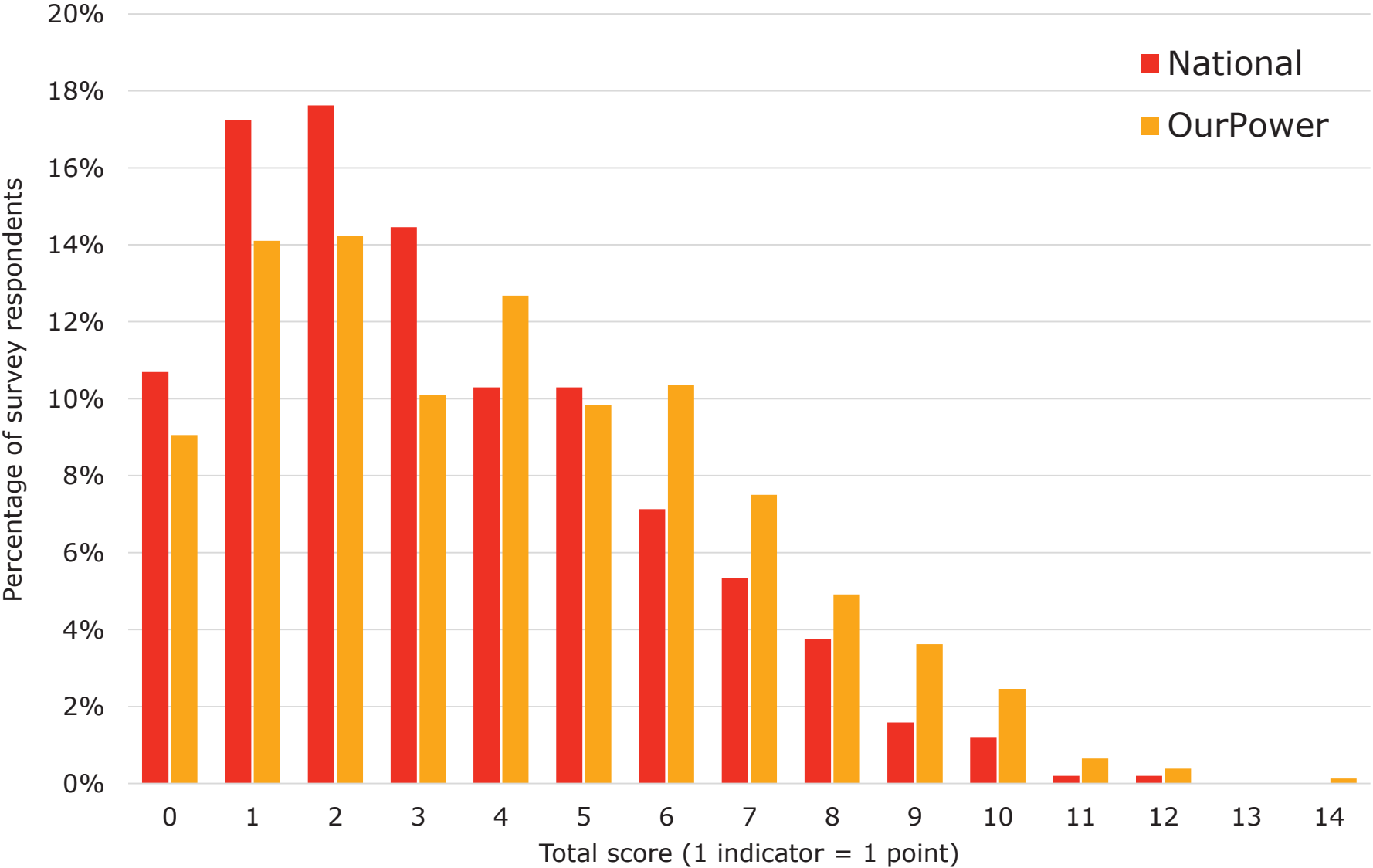
# Survey



**Survey questions were based on those indicators, in addition to sociodemographic characteristics and energy consumption variables.**

- 773 customers of the Waikato electricity retailer OurPower responded to our survey.
- Additionally, 505 NZ residents also responded to the survey as nationally-representative sample.
- Some respondents could obtain different rewards from OurPower, Northpower, Habitat for Humanity, and Orion.

# Energy hardship point score distribution





# Main findings

**Respondents of the OurPower survey presented higher scores of energy hardship compared to the nationally representative survey.**

Survey	Median score	Average score	CI of average (95%)	Standard deviation
<b>OurPower</b>	4.0	4.0	3.78 to 4.17	2.8
<b>National</b>	3.0	3.3	3.08 to 3.51	2.5
<b>National</b> (Waikato)	3.0	3.5	2.70 to 4.23	2.8
<b>National</b> (Auckland)	3.0	3.4	3.05 to 3.74	2.2

OurPower is a cheaper electricity retailer that targets low-income households in the Waikato region.



# Main findings

***Is your home always adequately warm during winter?*** was the most relevant question (T-test) relating to energy hardship scores for the OurPower survey, being the second most relevant for the nationally representative survey.

Answer	OurPower			
	n (%)	Median score	P-value	Effect size
Yes	45%	2.00	< 0.00001	1.84
No, due to financial reasons	35%	6.00	< 0.00001	1.52
Answer	National			
	n (%)	Median score	P-value	Effect size
Yes	59%	2.00	< 0.00001	1.79
No, due to financial reasons	25%	6.00	< 0.00001	1.64



# Main findings



Selecting *In winter, my home gets cold enough that I can see breath indoors* was the most relevant variable (T-test) for energy hardship scores in the national survey, and the 5<sup>th</sup> for the OurPower survey.

Survey	n (%)	Median score	P-value	Effect size
OurPower	26%	7.00	< 0.00001	1.56
National	17%	7.00	< 0.00001	1.86

# Main findings



Selecting *Put up with feeling cold often* to keep costs down was the 2<sup>nd</sup> most relevant variable (T-test) for energy hardship scores in the OurPower survey, and the 3<sup>rd</sup> for the national survey.

Survey	n (%)	Median score	P-value	Effect size
OurPower	38%	6.00	< 0.00001	1.74
National	30%	5.00	< 0.00001	1.69

# Conclusions



- **Indicators relating to cold perception should be prioritised when simplifying the measurement of energy hardship.**
- **Low-income households are more likely to rent, have poor housing insulation, have health issues, and be in food insecurity – all those conditions being strongly connected to energy hardship.**
- **Ensuring safe, warm, and dry homes for all has economic, environmental, health, and social benefits.**

# Next steps



- **Doing follow-up surveys with households and organisations** to understand the impact of current energy hardship actions;
- **Developing intervention suggestions** to maximise the impact of the programmes in different scales and timeframes.