

# Qualitative Study of Home Heating Choices in Masterton

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## Introduction

This report details the findings of a pilot study into the views of Masterton people regarding home heating. The qualitative survey involved thirty-eight indepth personal interviews<sup>i</sup> and was carried out over December-January 2002-03. The aim of the study was to gain an initial, detailed understanding of householders' perceptions of various methods of home heating and the reasons for their choices, preliminary to a broader investigation to be carried out later in 2003 via a nationwide telephone survey.

The Public Health Advisory Committee report of October 2002<sup>ii</sup> added to previous debate on the effect of unflued gas heaters on health and called for further research into their use. It is in this context that the study was initiated. Whilst perspectives on heating and ventilation in general were gathered, views on the use of portable unflued gas heaters were a particular focus of this survey. Masterton has been reported as having one of the highest rates of bottled gas use as fuel for heating in New Zealand (New Zealand Census 2001). This high use of bottled gas correlates strongly with use of portable unflued gas heaters, taking into account the fact that Masterton does not have a reticulated gas supply. In light of the pattern of heating use seen in this region, it was decided to conduct the pilot study in Masterton.

## Methods

The study employed cluster sampling to canvas the various views of individuals within this community with regard to decision-making about home heating. Initial interviews were conducted with key people in target groups and further contacts sought through them. Using this snowball approach, each interview led to another. Groups probed within the community included rural and urban householders, those with respiratory disease and those on below average incomes. Attempts were made to ensure a mix of ages and ethnic groups were represented across these categories.

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<sup>i</sup> All interview transcripts have been assigned a numerical code. Quotes used in this report are accompanied by the index number of the transcript from which they were sourced. Transcripts are available for viewing upon request.

<sup>ii</sup> Public Health Advisory Committee. The Health of People and Communities: The effect of environmental factors on the health of New Zealanders. Report to the Minister of Health, October 2002

Interviewees were contacted via telephone initially to obtain their consent to be involved in the study. Interviews were then conducted at their home by the researcher and taped, to be later transcribed by this same interviewer. A further information sheet was given to each interviewee prior to the commencement of interviewing (Appendix 1). A set of guideline open questions was formulated and provided the framework for each interview. Basic demographic data were also gathered (Appendix 2).

Whilst the majority of interviews were carried out as above, two were conducted by telephone and the discussion with Work and Income New Zealand staff took place at their Masterton office. These interactions were not taped but accurate notes were taken.

Overall, it was aimed to carry out between thirty and forty interviews. This limit was set bearing in mind a desire to achieve as large a sample as possible within a limited timeframe. With thirty-eight interviews included in analysis, this aim was achieved. It is unfortunate that a larger proportion of Maori people was not able to be included in this sample. Apart from this, the range of people interviewed in the study was as hoped and has provided valuable insights into the reasoning behind various home heating choices for these individuals . (See Appendix 5 for a summary of the demographic composition of the sample)

Time constraints necessitated an accelerated ethical approval procedure for this research. This involved consultation with the secretary of the Wellington Regional Ethics Committee, as a result of which formal ethical approval was deemed unnecessary given that direct questioning on health issues was omitted. Where health information was freely volunteered by interviewees, however, it was recorded and subsequently analysed. Standard informed consent protocols were applied and all identifying material has been permanently removed from study transcripts. Pseudonyms are employed where necessary in this document.

The analysis of transcripts included in this report was carried out by the same researcher who had conducted the interviews and completed the transcribing. Comments from interviewees were divided according to emergent common themes. Differences and similarities of opinion and experiences within each of these themes were explored. Discussion of these forms the basis of the rest of this report.

## Part 1: Choices

### **Perceived advantages of portable unflued gas heaters**

The portable unflued gas heater was a popular method of heating among those interviewed in this study. Used in households from all social and economic strata, their appeal seems grounded in several perceived advantages repeatedly mentioned during interviewing. The main advantages discussed in this section are: affordability, ease of use, instant heat, cleanliness and portability.

#### Affordability

Cost comparisons between the various heating fuels are discussed more fully in the section entitled “The economics of heating” but it must be stated here that, for almost all owners of gas heaters, the decision to use gas was strongly influenced by the perceived low cost of this fuel. Many of those who did not use a portable gas heater also held the view that this would be one of the cheapest forms of heating over winter, particularly if wood was not available, essentially free, from one’s own property.

For those interviewees on rural properties with access to a ready supply of ‘free’ wood, gas was the most popular option to provide additional heating. This was primarily due to perceived affordability, as a farmer explained: -

“They’re economical [gas heaters]. I think they’re much cheaper to run than an electric heater”<sup>12</sup>.

It seemed that electricity would have been the preferred heating option for some people but due to financial considerations the default path was to use an unflued gas heater instead, in response to the perceived cheaper price of this fuel.

#### The “shear ease of use” of a portable gas heater.

The majority of those interviewed saw the gas heater as an ‘easy’ option for home heating compared to the labour involved in using wood as fuel. Those who used gas heating almost unanimously gave this as a reason for their choice.

“I just know it’s nice and convenient to go down to the thing [petrol station] and get your gas, fill up your bottle and you’ve got a fire. No mess, no ash, no wood to go and get in and out... You’ve just got to turn on the switch”<sup>15</sup>.

This convenience could be attributed to electric heating methods also however, as previously explained, the majority of interviewees maintained that electricity was very expensive hence preferred gas, perceived to be the cheaper fuel option.

### Instant heat: fast and controllable

The perception of a gas heater as “excellent for instant heat” was another recurrent theme in this study, appearing in the vast majority of interviews. For example, one man spoke of the gas heater as the “fast solution”<sup>22</sup> for heating in mid-winter when his children arrived home from school. Another rural woman compared the gas heater she now uses to her previous wood fire: -

“What we like with the gas heater is I come in off the farm and I can turn it on and I’ll get instant warm”. Coming home at night to a cold, dark house “it would take quite some time to get the fire stoked up and going. This gas heater is much quicker than that”<sup>11</sup>.

The control provided by the instant switch of a gas heater ‘on’ and also ‘off’ was commonly prized and perceived as superior to that available over wood fires.

“The gas, it’s easy to control. When it’s hot you turn it off... If you get too cold, you turn it on again. You’ve got a lot more control over your temperatures”<sup>11</sup>.

This ability to control the heat from a gas heater instantly makes it well suited to heat parts of a house separate from the main living area and only used intermittently, for short periods of time. With regard to using such a heater in a separate office briefly at night, one woman said, “We might turn it on for a short while while we’re up there” as a “quick source of heat”<sup>12</sup> before turning it off and leaving again.



This perceived control also underpinned the favour of gas heaters for use by many people during the short period prior to leaving the house in the morning. In this setting there was little time to be setting a fire or use for one while away during the day.

“Barb’s got to think about lunches and kids and you don’t want to be fluffing around. That’s sort of instant and it’s there”<sup>22</sup>.

Tight control over the gas heating was mentioned as a safety bonus by several people if they were often coming and going from home. Compared to a wood fire, they could be sure the gas was off at the flick of a switch before leaving the house.

“You’re rushing out so you turn the heater off and it’s safe”<sup>32</sup>.

### Clean

When compared to using solid fuel heating, reference was often made to the perceived cleanliness of gas heating. The fact that “you don’t have to clean them [the heater]”<sup>11</sup> and that the heater didn’t tend to dirty the room (in contrast to a woodfire) appeared to be an advantage to many.

It was interesting to note, however, that one woman did expressly mention the effect of a gas heater in her parents’ home: “It looked like it had been smoking the whole time....Always all black around the different bits”. Thus, the image of gas heating is not unanimously one of ‘clean’ heat but the majority of people did perceive it to be a cleaner option than other heating methods.

### Portability

The portable nature of these heaters was also cited as an advantage by several people. A rural woman, the enthusiastic user of an unflued gas heater, explained: -

“You just roll it to wherever you happen to be and you’ve got warmth wherever you happen to be working”<sup>11</sup>.

This portability also means that a gas heater can easily move to another home with its owners while other permanent heating arrangements installed in a house are left behind. Several people mentioned taking their heater with them through multiple addresses. They can also be sold or easily passed on to friends and family. Again, several people mentioned having lent the heater to their children living

elsewhere and one interviewed family had used a gas heater friends had lent them for the winter. Thus the portability of these appliances means that they can circulate within the social network of their owners.

In discussing portability however, it should be noted that more than one interviewee reported generally keeping their gas heater in one place and not moving it. For one of these at least, this was seen to decrease the possibility of accidents with the heater.

#### In areas with no other heating

Gas heaters were mentioned by several interviewees as ideal heating for separate sleepouts, flats and other buildings with no alternative heating installed. Finances are a major factor shaping this view as to install a woodburner or flued gas fire in such places would involve major expense. Plugging in a portable electric heater was not favoured due to the perceived high cost of electricity and so the portable gas heater presents itself as the ideal heating solution for many people in this situation.

In summary, the popularity of portable unflued gas heaters is grounded in several advantages perceived to be significant by many people. Such heaters are seen as convenient due to the little labour involved in their use, the tight control of heat output that is available and their cleanliness. When this is combined with their place in the minds of interviewees as an affordable heating option, the formula behind the large attraction of the unflued gas heater becomes more clearly evident.

## **Perceived disadvantages to portable unflued gas heaters**

A typical comment made by a woman from urban Masterton, the owner of a gas heater:

“You get condensation bad in the house. And you get the smell of gas... But to me, I like gas heaters. They’re nice and hot, you know, radiant. A lot don’t go by them... because they say they’re no good for ya. They’re ok, they are. Just condensation around the place... I think it does dry the air out”<sup>17</sup>.

Despite the popularity of the unflued gas heater in Masterton over winter, several disadvantages were repeatedly attributed to them during interviewing. In this section these are discussed, from the most commonly perceived problems to those less often mentioned. The issues to be examined: smell; drying of air; production of excessive condensation; a commonly perceived solution to the prior problems, a dish of water; followed by safety concerns; limited space heated and a brief discussion of the visual appeal of the heater itself.

An examination of community views regarding the effect of unflued gas heaters on wellbeing concludes this section.

### Smell

The issue of smell and unflued gas heaters sorted those interviewed into three definite groups. First were those who found the smell strongly offensive and thus would not consider having a gas heater in their home under any circumstances. Interviewees of this opinion made up approximately one fifth of the sample.

“I just don’t like the gas smell in the house”<sup>14</sup>, said a rural woman, speaking for this group.

The second group consisted of those who used a gas heater and for whom the smell was a major disadvantage. This group encompassed the majority of unflued gas heater users. The phrase “that initial smell” was repeated consistently throughout the interviews. Some were philosophical: “It’s quite a gassy smell. But it doesn’t last long”<sup>12</sup>. Others had systems to combat it such as a dish of water (see below) and ideas about ventilation: “I think your room needs to be properly ventilated to have them”<sup>15</sup>.

A third group of people, with experience using gas heaters, denied any smell from a normally functioning heater. They were definitely in the minority. One man asserted: “ If you smell it, it was really inefficient... You’d have a problem there, ay”<sup>22</sup>. Another woman, who chose to use only an unflued gas heater, said “I’ve never noticed any smell, ever”<sup>11</sup>. She did wonder whether the fact that “there’s always fresh air through the place” contributed to the lack of any gas smell. Others spoke of a gassy smell telling them to refill their fuel bottle: “You just know when it’s getting low or empty because when you turn it off you get just that little gassy smell”<sup>4</sup>.

For the majority however, there was a definite unpleasant smell about the unflued gas heaters and some mentioned the same with the flued versions as well.

A further problem, identified by two interviewees to be associated with fumes from the gas, was the corrosion of metal. In one case “chrome things”<sup>21</sup> were perceived to be affected and in the other it was noted that “the silver gets dulled”<sup>30</sup>.

### Water produced

A young mother on a lower income explained her situation, extreme but not isolated among those interviewed and their contacts:

“Cause our house was aluminium windows and that and the condensation was just phenomenal in that house. It was shocking. And then with my daughter, she gets croup and that... and my son gets asthma as well so that was... probably the worst side effect of it [the unflued gas heater], you know?...I just used to use this...gadget thing my Mum got us... and it just sort of collected the water. Every morning I’d go through and collect it and put it in me measuring jug just to see how much I got off. At one time I got a litre just out of the three bedrooms, of water...That was quite shocking, just in one morning, you know. So yeh, I was quite disgusted”<sup>25</sup>.

About half the people interviewed mentioned, without prompting, that formation of excessive condensation was a problem with unflued gas heaters. This is due to water being released as a product of combustion of the gas, although only two interviewees referred to this specifically. One woman described her experience: -

“By the end of the day the windows can be streaming... I guess there’s moisture in the air – it doesn’t take long to build up. And it condenses and makes the wooden window frames yucky and a bit moldy sometimes”<sup>21</sup>.

Others said the amount of condensation very much depended on the build of the house, with aluminium windows maligned by almost all interviewees regardless of heating choice. One of numerous comments opposing them: -

“The worst problem I’ve got is the two aluminium windows that I would trade-in in a flash if I had the money”<sup>1</sup>.

Wooden window frames were said to “breathe” more, providing ventilation that was perceived to reduce the formation of condensation.

“Not so bad with wooden windows but aluminium ones are atrocious...Mold, wet, it’s awful”<sup>7</sup>.

Several people compared ‘gas’ heat to ‘wood’ heat and the almost unanimous opinion was that a house with a wood fire ‘feels dry’ as opposed to damp. A comment typical of these views: -

“A different heat from the gas...Very cosy and more drier. There’s no moisture coming off. It’s surprising the moisture that does come off. A lot [from unflued gas heaters]”<sup>4</sup>.

For those who said condensation was an issue requiring intervention, the methods varied from mopping up with towels every morning, to using a dish of water, to purchasing a dehumidifier. For others, simply increasing ventilation in the room was seen as sufficient: “It’s important to have the window open when you’ve got the gas fire on”<sup>21</sup>, said an elderly rural woman.

There were those however, who hadn’t noticed any increase in moisture in the room (as evidenced by increased condensation) as a result of the gas heater. For some this was put down to their use of the appliance, with comments such as: -

“We’ve never had the gas heater running for... long periods”<sup>12</sup>.

One woman went against popular opinion, stating that condensation in her home had reduced upon using the unflued gas heater: “We get less using the gas heater than when we had the open fire”<sup>11</sup>.

Another man reported condensation problems to be just as serious with electric heaters but this was a minority view.

## Dry air

The vast majority of people expressed the view that an unflued gas heater made the air dry in a room. This view was equally popular among those who acknowledged condensation to be a problem with such appliances. The description of 'dry heat' from a gas heater was often made in comparison to 'wood' heat. For example: -

"It's a better heat [burning wood]... It doesn't dry you out like a gas heater can"<sup>17</sup>.

Many believed this dryness was effectively addressed by placing a "dish of water" on top of the heater (see below). Interestingly, 'electric' heat was also frequently charged with making the air 'too dry' in a room.

A small number did not find dryness a problem at all: "Somebody said to me that I'd have to water my plants more often because of having the gas but I haven't found that"<sup>11</sup>. And another: "Possibly the gas does dry it out a bit... I don't really notice it that much"<sup>30</sup>.

## The remedy of a "dish of water"

An interesting, if somewhat tangled thread that emerged from the interviews was the "dish of water" cure-all, referred to frequently throughout discussion of the ills of gas heaters. There were several variations on what this saucer of water in the room with the unflued gas heater was supposed to achieve: -

1. help reduce the smell of gas in the room
2. help reduce condensation problems
3. help make the air less dry (for the many who said the heater 'dries out the air')
4. any combination of the above

Interviewees proffered several possible explanations regarding the mechanism behind the action of the dish of water. Little consensus between people emerged and internal consistency within the same interviewee was often poor, indicating many have ill-defined and somewhat confused views on this point. One woman was quite candid about this confusion. Having spoken about the drying of the air caused by a portable gas heater, she said: -

“I don’t know how come you get the condensation. Whether it [the heater] dries the room out so much that your breathing and everything like that causes it to stick to the windows... I have no idea why it does it. Don’t ask me!”<sup>15</sup>

The dish of water remedy appears deeply embedded in popular thinking regarding unflued gas heaters. The prevalence of phrases such as ‘Somebody said to me’ and ‘Some people say’ indicate that ideas about use of this remedy are commonly interchanged and refined within the social context of individual interviewees.

Although almost every interviewee had heard that a dish of water was able to fix any problems with a gas heater, people differed in how they responded to this claim. Only two people said directly that they thought it to be a futile practice. They shed light on the issue when discussing the ‘old kerosene heaters’. “You were dizzy all the time... They were smelly and you had to have a bowl of water on top of those ‘cause the air would dry out so much. And a lot of people now have gone from that to the gas and they’re still sticking their bowl of water on the top. But you don’t need it. You’re just making more condensation”<sup>4</sup>.

The largest group were those who had used the water at some point but were unsure of its efficacy. “I have heard of it. I don’t know whether it works... Like we tried it and sort of didn’t notice any difference”<sup>8</sup>.

Another group were very certain that this bowl of water was effective in achieving their respective aims in using it. An articulate older man summed up the views of this group. A selection of his comments follow: -

- In regard to dry air: “It’ll surprise you how much water it uses. A bowl that big with about that much water in it, in a week, half of that will be gone... It’s keeping the moisture in the air”. Speaking of a friend who doesn’t use this technique he said, “You see, that’s what puts her to sleep!... If you don’t have the bowl of water, the gas dries the air out”.
- Speaking about the unpleasant gas smell: “You can smell a wee bit of gas from it but as long as I’ve got the water on top of it, it seems to keep it away”.
- On the topic of condensation problems with gas heaters: “It stops the condensation on your windows... If you’ve got a bowl of water on it, the condensation that would form on the windows

comes into the, keeps the air circulating. No, in my place if I leave the window open while I've got it going, I don't get any condensation at all. Then when the bowl of water runs out, I do".

### Filling gas cylinders and associated safety concerns

For many people, having to take a cylinder to the petrol station to be filled was a definite disadvantage of using a portable gas heater. For rural people this involved a trip to town and attitudes regarding this differed. Some saw it as "just part of that being in town process"<sup>22</sup>, as such trips were also necessary for other supplies. Others saw it as more of a problem: "If you run out out there, you go without till the next time you come to town".

All users of gas mentioned the hassle of forgetting to refill the bottle in their heater: "Your gas bottle runs out in the middle of the night. You've got to run down the road to get gas or have two bottles"<sup>15</sup>. Several people did indeed have two bottles but one mentioned that a full LPG cylinder is "stealable"<sup>21</sup> if left out in a garage.

The physical process of filling a gas cylinder was unpleasant for several people. These were all women who had varying degrees of fear associated with using gas. One commented: -  
"I'm not that happy taking the gas bottle in the boot of the car... I'm always conscious that I've got something flammable in the back if I've got grandchildren on board"<sup>21</sup>.

For another, the refilling process, particularly transport to and from the petrol station, was so unpleasant that she now uses a mobile service: -

"Now the garages will pick them up and they fill it... and they're very good"<sup>30</sup>.

Both these women used gas in spite of this disadvantage.

For other interviewees the fear of gas (and availability of other options) was strong enough to prevent them using this fuel for heating.

"I just don't like playing with gas... Just having to go and get the bottles filled and all that, it's not my thing"<sup>1</sup>, said one woman who, in spite of this, had been forced to use gas in the past because of no cheaper alternative; she now has free wood.



Concern over the continued viability of gas supplies was also mentioned by several people. “You’d have to be quite sure that... you could get a supply”<sup>30</sup> said one woman, wary of relying completely on gas heating.

### Other safety issues

Explosions, accidental fires and burns to children were all raised by interviewees during discussion of portable gas heaters. Some people saw using gas to be safer than burning wood as the problems of sparks and logs falling out of a woodfire were avoided. Others placed their trust in yearly gas bottle checks but a few remained unimpressed with the safety of gas heaters: -

“I’m, I suppose, scared of them exploding or something like that... I’m never completely happy with a gas heater... If I had to choose, I think I’d go cold rather than use a gas heater... I’m just terrified of explosions! It’s so easy to leave a gas tap on”<sup>5</sup>.

In the minds of several interviewees, the portability of the heaters and their intense heat combined to make them “very, very effective but dangerous”<sup>1</sup>. It was reported that, “if you turn them too high they’ll throw a big flame out the front”<sup>17</sup>. Another person noted a similar effect if the heater was placed by an open window or the exhaust of a vacuum cleaner turned toward it. Drying clothes too close to these heaters was also identified as a common fire risk.

A couple of interviewees mentioned the interaction between children and the heater: -

“You’ve got to be so careful that the kids don’t stand in front of it or catch their skirt or something on that little flame... A lot of accidents happen because they’re free standing, you can have them anywhere. And the kids are running around”<sup>4</sup>.

A few people noted an automatic switch off on the heater: “If you tip it over, it’ll go out”<sup>4</sup>. Such safety features, the instructions that come with the heater (mentioned by only one interviewee) and surround guards available for purchase, all help dispel fears people have about the appliance.

A public health nurse<sup>36</sup> raised queries about these safety measures however. She said she had seen some severe burns from portable gas heaters because of their fierce, exposed flame compared to the hot bars of an electric heater. Their portability added to the danger. She reported telling lower income

mothers (who were reliant on these heaters) that their placement of the heater in the room was unsafe. A typical reply she recounted was, “He should know better. He knows it’s hot”, referring to an eighteen month old child. In her opinion, the complete surround guards are essential, available at most outlets where the heaters are sold but unfortunately too expensive for many people on lower incomes to purchase.

### Space heated

A disadvantage identified by many gas users and others was that these portable heaters only heat a limited area of a house, compared to logburners that heat throughout. As one woman put it: -  
“It only does a room... We like to heat the lot!”<sup>10</sup>

There were those however, for whom the gas heater was sufficient: -

“If I have the heater on about that much [on low], it’ll heat the whole house”<sup>17</sup>.

This was particularly the case for the elderly in small flats. The man quoted above spoke of his previous electric heater, “that wasn’t warming up the place at all. Then I went and got the gas heater and it’s 100% than what the electric was”<sup>17</sup>.

### The appearance of a portable gas heater

“It’s quite an economical form of heating but it’s... bulky and ugly!”<sup>21</sup>

The preceding quote sums up the view on portable gas heaters of the majority of those interviewed in this survey. As quoted elsewhere, “It’s much more comforting to see a fire blazing than an electric heater burning or a gas heater!”<sup>12</sup>

What they lack in character however, these gas heaters make up for in economy and intense, instant heat, among other commonly perceived benefits.

Overall, a large group of interviewees perceived portable unflued gas heaters to be a good form of heating. The disadvantages discussed in this section, especially smell, dry air and excessive condensation, were repeatedly discussed however and widely acknowledged by many gas users to be part of their heating experience.

## Effect on wellbeing

The majority of people interviewed in this study had some comment to make regarding perceived negative effects of the unflued gas heater on wellbeing. This was without any direct questioning in this area from the interviewer. Opinions and experiences were diverse. Included were those who put up with any perceived ill effects as disadvantages of an otherwise affordable heating option. There were others who had got rid of their gas heater, chose not to purchase one or limited its use because of these problems.

The 'dry' air produced by the gas heater was repeatedly accused with having an adverse effect on health. One woman said: "It's dry... A lot of people get sick, sinusy with the gas heater"<sup>14</sup>.

And another: "It's so dry, it gets really dry in the air. And I just seem to get a headache from it"<sup>8</sup>.

The 'headache' was definitely a recurrent theme. Another woman went as far as to say: -

"I wouldn't have a gas heater in my place – I get a headache just looking at one of those!"<sup>19</sup>.

Other perceived effects of the 'dry air' included a parched feeling: -

"It does take the oxygen sort of out of the air. Makes it very dry... I just sort of feel like dry lips and throat and drink!"<sup>7</sup>.

Two people referred to oxygen being 'taken out' of the air. A drying of the skin was also noted by a couple of people: "With a gas heater it does tend to dry your skin out, you know, and the fire doesn't"<sup>2</sup>.

Ventilation when using an unflued gas heater was often discussed during interviews. Around half of interviewees made special mention of the fact that they were aware of the need to have good ventilation if using such a heater. Some had quite strong ideas regarding this: -

"If you sat there with everything shut up you could die, I suppose"<sup>20</sup>.

The remaining interviewees however, did not express concern over ventilation needs with unflued gas heaters. Several stated that it would be counter-productive to let fresh air into a room when one was attempting to heat it: -

"I don't have any windows open in the winter. It's too damn cold! I'm not letting the heat go out, I'm storing it up in here"<sup>7</sup>.

The 'sort' of heat produced by the gas heater and its effects were also discussed. A typical comment: - "Gas is really dry and makes you sleepy!... You cough a lot more and you, well it just makes you go to sleep! You're not... being gased but it's sort of like a heavier heat"<sup>10</sup>.

Lethargy with the gas heating was a common complaint.

"It's far too hot... It does take the strength out of you". And again, "It makes you drowsy. It makes you lifeless. Cause when I've got my gas heater going I tend to sleep all the time"<sup>17</sup>.

Many people mentioned an influence of heating in general and unflued gas heaters in particular, on asthma. Reference was frequently made to effects on 'breathing'. For some, 'fumes' released by a portable gas heater were perceived as a problem and others focused on the moisture produced: - "I had a gas heater which I actually don't like. It's instant warmth but I do notice it makes the moisture stream down the windows and I've got one grandchild has asthma so it's sort of a last resort for me"<sup>21</sup>.

A few asthmatics said they couldn't stay in a room with a gas heater going.

"Every time we turned it on I would have an asthma attack"<sup>33</sup>.

(See "Asthma and heating" for further discussion).

Regarding its effect on wellbeing, the majority of people said they preferred the heat from a wood fire to that from gas.

"Fire heat is more better for you... more healthier", said an interviewee who used both. She voiced the misgivings of many, stating that gas was: "No good for your insides and all that... breathing it in all the time, 'cause it turns out dry"<sup>17</sup>. Thus a wood fire was seen by many people to be a healthier heating option than using an unflued gas heater.

Various perceived effects of the unflued gas heater were outlined and evidently some people saw it as the cause of much harm over winter. The mother of a child with Attention Deficit Disorder was certain that her son kept "flaring up all the time"<sup>2</sup> during the winter as a direct result of their using an unflued gas heater. Upon moving into a house with a logburner, she immediately gave the gas heater away.

A small group did emerge, however, who saw the gas heater as being positive for their health and wellbeing. A woman with rheumatoid arthritis<sup>27</sup> spoke of the need for instant, intense heat in the

morning to allow her to “move” at all. She had tried electric heating but found it unaffordable so saw the cheaper gas heater as a necessity to give her mobility for work on the cold winter mornings. In a similar way, several people spoke of the need for the elderly to keep warm over winter to prevent them becoming ill. Gas heating was seen as an easy to handle, affordable heating option and portable, able to be pulled over to where the user is sitting. It was therefore viewed by some to be important for ensuring quality of life for older or less physically active people. “They do need instant heat, cheap heat and sustainable heat”<sup>21</sup>.

In summary, whilst many interviewees maligned the unflued gas heater for having a negative impact on the wellbeing of those exposed to it, this was not the universal view of study participants. There also remained those who saw such heaters in a positive light.

## Views on dehumidifiers

The dehumidifier is increasingly seen in retail outlets however its appeal among those interviewed was variable. This appliance is promoted as a solution to excessive condensation in a house, a recognised problem with unflued gas heater use. Therefore it is of interest to note that, in this sample, few users of these heaters owned a dehumidifier.

All interviewees had heard of the dehumidifier and many had quite detailed views on its effectiveness. Under one third of participants however, actually had experience using the appliance and not all of these people currently owned a dehumidifier.

### Effectiveness

The majority of people mentioned the significant amount of water a dehumidifier is said to 'pull out' of a house, thus reducing condensation or 'dampness'. A large group were particularly impressed by this point, including the two women below, neither of whom owned a dehumidifier: -

"Apparently in some houses they could be going all day and they could empty that bottle in it... a couple of times a day!"<sup>14</sup>.

"It shows how much moisture is going through your house, really. And that's why they said everybody should have one.... The condensation, it's all going in that dehumidifier and that. So I'd say it's more healthier"<sup>17</sup>.

One owner of a dehumidifier and unflued gas heater backed up this point, saying: -

"I wish we'd had one donkey's years ago instead of having to try and get up and wipe the windows!"<sup>4</sup>

An equally significant group of people were not convinced of the effectiveness of a dehumidifier. This included several interviewees who had experience using the appliance. One woman had given her dehumidifier away: -

"Actually, I found it quite useless. It did take a lot of water out, yeh. But I found that it really didn't cut down condensation that much either"<sup>7</sup>.

Another was unimpressed with the water collected: -

“If you’re not well insulated and your windows aren’t sealed and all the rest of it, really a lot of the moisture you’re getting is what you’re drawing in from outside”<sup>24</sup>.

Some users of dehumidifiers did comment on its warming effect on their home. One man wasn’t sure however, if such an appliance was needed in Masterton: -

“We don’t use one in Masterton very much but we certainly used to use it all the time in Wainuiomata... We were pleased with it. Once the rooms are dried out they seem warmer anyway... You just sort of feel cold when you go into a damp room whereas if the dehumidifier’s been running in the house, then it felt warmer without having to put any extra heating into it, just because of the fact that you got rid of the moisture. But as I say, we don’t need it here in Masterton. It’s just not the damp area that we found Wanui was... Living in Masterton we wouldn’t go out and buy a dehumidifier I don’t think”<sup>18</sup>.

### Economic issues

Financial constraints to the use of dehumidifiers were an important issue, raised by the vast majority of interviewees. Several people said they would have used a dehumidifier if it were not for the cost. Two women who used gas heaters and were on lower incomes explained: -

“I think it would be good. A good idea. Probably what I think of is the money wise... I’d sooner spend that money on something else”<sup>8</sup>.

“I had thought about it but it’s just the expense of getting one. I have borrowed... one once... There again you’re looking at your power to run the damn thing, you know. So it’s sort of like damned if you do and damned if you don’t. It’s about me who at the end of the day, I was just so used to the condensation through winter that you sort of... have the towel on hand”<sup>25</sup>.

Another woman, also the user of a gas heater, was very enthusiastic about dehumidifiers and was looking for an opportunity to buy one: -

“I’d love one... Cause everybody says to me, oh, you want to try and get one. So I’ve been thinking of getting one put on layby at Warehouse”<sup>17</sup>.

Some users of the dehumidifier, who spoke of its benefits, found its ongoing use of electricity a problem: -

“They are marvelous! You can feel the warmth, the room warm because... the moisture’s gone... but they pull in the power of course... That’s the only problem”<sup>4</sup>, said a lower income gas heater user who had also bought a dehumidifier.

### Use of dehumidifiers in conjunction with unflued gas heaters

The association between dehumidifier use and that of unflued gas heaters was weak in this study. Whilst several people stated that a dehumidifier would be helpful when using a gas heater, due to the cited condensation problems, few users of the heaters had bought a dehumidifier. The ‘dish of water’ (described previously) was more commonly suggested as a solution for these problems. One user of a gas heater who was particularly enthusiastic about the dehumidifier said: -

“It saves your windows and everything and it stops your air drying out... If you’ve got a gas heater on they say you should have a dehumidifier... Good for the gas because as you burn the gas it sort of stops the, you know, windows [condensation] and then it’s all going to the dehumidifier”<sup>17</sup>.

### Harm

A small group of interviewees emerged who held the view that a dehumidifier was not only ineffective but also potentially harmful. Their main objection was that the indoor air would become too dry. One elderly woman summed up these concerns: -

“We need the moisture in the air. Not excessive but in the air we need the moisture to be comfortable... It [dehumidifier] would be the last thing I’d go and buy”<sup>5</sup>.

Other interviewees lodged objections to the dehumidifier including two who made mention of the noise produced and one who disliked the space taken up in a room. Another woman was particularly outspoken in her dislike of dehumidifiers: -

“I cannot understand why people have dehumidifiers... All I can think of is I always have fresh flowers in there and I think, what’s it going to take the water out of my vase! Where is that water coming from? It’s very strange... I keep thinking it’d strip the water out of my vase. Where else would you



get it?... Oh, I've got a lot of people telling me, 'You must have one. You'd be surprised how much water comes'. I said, 'But children with asthma are put in the shower. Children with asthma go in the shower when they're having an attack. They don't have the water dragged out of their room to make them breath better. That would bring on an asthma attack, I should think, if you're going to be that dry!' I can't figure it out"<sup>19</sup>.

From the interviews conducted, it can be concluded that community opinion is divided regarding the benefits of owning a dehumidifier. Ownership of this appliance was not common among the sampled group. All those surveyed, however, had heard of the dehumidifier or knew of someone who used one. Several instances of unflued gas heater use coupled with use of a dehumidifier were mentioned but the majority of users of these heaters had not bought such an appliance.

## Views on wood as fuel for heating

Wood was a popular fuel for heating among those interviewed in this study. There is a plentiful supply of firewood in the Wairarapa and many interviewees had fireplaces in their homes. Whilst there were many positive views expressed regarding the effective heating and ambiance created by a wood fire, these were balanced by equally numerous complaints regarding its disadvantages. These views are discussed below. Please refer to the section 'The economics of heating' for a more thorough discussion of the perceived affordability of wood as a heating fuel.

### Availability of wood to the rural community

Wood is readily available on many rural properties around Masterton and is thus used for heating by the majority of rural people. Storms often fell trees, drought kills others and it is common to have a 'wood lot' on one's property for the express purpose of providing fuel for home heating. For many, wood is essentially a free fuel but does require considerable labour to collect.

"I know farmers and they've got trees and I've got trees – it's an obvious choice"<sup>22</sup>, said one rural man.

Another stated: "You can get the wood for nothing out here"<sup>13</sup>.

### *Different views on labour required*

Producing firewood, an energy and time consuming process, was approached differently by various members of the rural community.

- Some people accepted it as part of rural life and were ambivalent to the work involved: -  
"It's so simple. It's nothing... It's just heating!... If you're cutting wood, you're only cleaning something up"<sup>13</sup>.  
"You do it over time... We've got a woodshed full out there now"<sup>10</sup>.
- The majority accepted the necessity of firewood production but placed more emphasis on the associated inconvenience. Repeated mention was made of the large amount of work involved and the need to be organised well in advance to allow time for drying of the wood. Several people noted the physical fitness required for the task, an elderly woman saying: "You need a man to cut it for you!"<sup>21</sup>

- It must be stated that a minority of people saw the labour involved as a burden. A few interviewees particularly mentioned the time consumed in having to chop up small pieces of wood for coal ranges. As would be expected, most people preferred logburners that take large logs.

One household involved in the study had gone so far as to remove their fireplace and use a portable unflued gas heater instead: -

“It’s the time that it takes to cut it down, cut it up, dry it, stack it. As far as that goes, the cost of gas is minimal... My husband works long hours and it’s another weekend taken up week after week getting firewood and that didn’t appeal... Oh, it used to be enjoyable. You get past that!”<sup>11</sup>

The general feeling of interviewees from the rural community, regarding the task of firewood production, was encapsulated in the following quote: -

“If you’re fit and able why not do something! There’s plenty of wood around. Just a bit of energy to go and get it!”<sup>14</sup>

### Disadvantages of burning wood

Apart from the labour required to produce firewood, the majority of interviewees identified other parts of the process of using wood for heating that were time and energy consuming. Increased dust indoors and vacuuming required around the hearth, blackened ceilings and walls, ashes to clear out and the task of going out on a cold night to bring in more wood, were all repeatedly mentioned. In almost every interview conducted, contrast was drawn with the ease of flicking a switch on an electric or gas fueled heater.

A woman on a lower income gave a particularly colourful but accurate description of these complaints:

“Lugging the wood in and out makes your house messy; having to clean the ash out every day is a pain in the #; when it won’t light it’s frustrating and the expense of buying wood when you have to... Everything’s got a coating of ash on it. It’s hideous! The curtains are black by the end of the season and you get huge finger loads [of dust] off the tv and that”<sup>1</sup>.

Most others were more philosophical: -

“I guess that’s part of having a fire. It’s all part of the daily chore!”<sup>14</sup>

“I really don’t notice it all that much”<sup>10</sup>, said a rural woman who, like the interviewee previously quoted, saw the upkeep of the fire as just part of regular cleaning.

Several elderly people and those with illness or injury, mentioned the difficulty of handling the firewood. For example: -

“I’ve had spinal surgery and I find it quite hard to be out there chopping wood and carrying it in”<sup>3</sup>.

There were several interviewees however, who had help from more able bodied family members or homehelp workers to carry the wood. A couple of women, who had difficulty going out at night to bring in wood, mentioned stocking up a box of wood inside during the day to solve this problem.

Bringing in insects on the wood was mentioned by a few people.

“Sometimes you get spiders which I hate”<sup>21</sup>, said one woman. Another mentioned that her children were no longer willing to help bring the wood in: -

“There’s all sort of bugs. I have put my hand on the odd weta”<sup>25</sup>.

Time taken to heat the house was another commonly mentioned disadvantage to using wood for heating. A few people used a supplementary, quick heating source while the fire warmed the room more slowly. For the majority of wood users however, this delay was simply an accepted part of having a fire.

“You might have warmth within half an hour, depending on what you start your fire with”<sup>14</sup>, explained one woman.

Given the time involved, the majority of wood users saw setting a fire as only worth undertaking if one was to be in the house for several hours. This meant that many used a quick heating source in the morning (an unflued gas heater or electric heater) and left the fire to be lit in the evening.

“If I’m going out say ten or half past of a morning and I want heat in the house for a couple of hours, I just put that [gas heater] on and it’s ready for breakfast and tidying up and I just switch it off and put it away. And when I come home, that might be four in the afternoon, well I just put a match to the fire”<sup>30</sup>.

Despite all the disadvantages previously discussed, the majority of those interviewed with a fireplace in their house, burnt wood. The reasons behind this choice included the effectiveness, character and for some, affordability of using wood as heating fuel.

“The end result would be worth that bit of inconvenience”<sup>12</sup>, commented a farmer.

Some people even had a sense of nostalgia about the upkeep of a fire. This view was held particularly among retired interviewees.

“I don’t have any problems. And I love lighting fires. I really enjoy mucking with fires”<sup>19</sup>.

### Comparison between enclosed and open fires

Almost unanimously, those interviewed saw enclosed fires to be the most efficient way of burning wood. The most commonly praised attribute of these fires was that, “It heats the whole house”<sup>10</sup>. Interestingly, it was noted by several people that this heat may be too intense. One such comment: - “If I left the wood fire on, I’d have all the doors and windows open - even in the coldest weather - because the room gets too hot for me”<sup>11</sup>.

The majority of enclosed fire users interviewed were very satisfied with their mode of heating: - “This is the best thing we ever put in, the logburner”<sup>13</sup>.

The main advantages mentioned were the good heat produced and efficient use of wood. Several people also referred to the ‘character’ of the fire and the possibility of cooking using the hot plate on top. A retired urban woman spoke for many saying: -

“You can have two pieces of wood on it and it’s putting out a good heat whereas if you had an open fire with two pieces of wood on it, you would be shivering in your shoes! It heats the water, I can cook on it and you can see the flames, the hot ashes and it’s cosy”<sup>24</sup>.

In contrast to enclosed fires, the open fire as a heating option was held in poor regard. Some interviewees went as far as to declare them, “terrible things”<sup>22</sup>. The majority however, expressed their respect for the ‘character’ of an open fire.

“I like seeing the fire... but it loses half its warmth up the chimney, where you get all of this [from a logburner]”<sup>13</sup>.

Several interviewees saw open fires as good ‘for show’ but “no competition”<sup>10</sup> for enclosed fires.

Many people had experiences of using open fires for heating historically and the majority of these were negative. A comment typical of this group was made by a farmer who is currently very happy with her enclosed fire: -

“We used to have to all hunch around it [open fire] to be warm. But this one here [enclosed]... we can be in different places around the house and there’s still warmth”<sup>10</sup>.

A few others associated the open fire with an unpleasant draft and having a cold back. One elderly woman held another view, saying she thought the draft created provided “good ventilation in a house”<sup>21</sup> that was not available with modern enclosed fires. Another said that the enjoyment of an open fire outweighed any disadvantages and people should “put a jersey on”<sup>26</sup> if getting a cold back. These were, however, minority views.

Interviewees opposed to open fires also commonly made reference to safety concerns and increased dirt in the room when comparing them to enclosed fires. The fear of sparks, logs falling out and potential chimney fires were mentioned as reasons for preferring the enclosed version.

Reduced smoke emission from the enclosed fire compared to the open fire was also cited by some to be an advantage. Interestingly, the majority of interviewees did not mention such environmental concerns as an influence on their heating choice.

Coal ranges (with wood as the main fuel) were a less popular method of heating but still used in some rural homesteads. A degree of nostalgia was associated with their use, as evidenced by this quote from an elderly farmer: -

“There’s nothing nicer than you get a cold winter’s day and you lock yourself in the kitchen with a coal range going and start baking”<sup>13</sup>.

Most of the people who fondly mentioned coal ranges, however, had since changed heating method and only one urban woman mentioned a desire to install a new Agar stove in the house.

Despite evidence that most people preferred enclosed fires to open ones, it must be said that several interviewees did use open fires and potbelly-style burners. Only one, however, listed an open fire as their first choice for home heating.

## Dependability

Dependability was perceived to be an important quality of wood as a fuel, especially for the rural community, regardless of how it was burnt. “If there’s ever a crisis or an emergency the fire will go... All the others [electricity and gas] are dependent on other things that might not be there”<sup>15</sup>, said one forward thinking woman. Others mentioned power cuts in rural areas. By burning wood, “you could still keep warm regardless”, said a farmer, who saw wood burning as “essential”<sup>12</sup>. The hot plate on an enclosed fire or coal range was also perceived as useful to cook on in such circumstances.

Overall, burning wood held a definite attraction for many people interviewed. Almost every person spoke of their enjoyment of the atmosphere created by a fire in a room during winter. The attributes most commonly mentioned were the sight of moving flames and embers and the smell of the wood as it burned.

“It looks cheerful and comforting and warm”<sup>7</sup>, said one woman, reiterating comments made by many others.

When discussing burning wood for heating, an emotive response was triggered from several people, indicative of the depth of feeling around this subject. An elderly woman resolutely stated: -

“There are people who care about fires and I’m one of them!”<sup>19</sup>.

## Views on electricity as fuel for heating

Heaters of various descriptions powered by electricity are commonplace in many homes. They range from basic bar heaters to sophisticated heat pump units and underfloor heating.

The views of those interviewed regarding the cost of using these appliances are covered in the section “The economics of heating”. Some other comments about electric heaters are covered here.

A summary of the views of the majority of people regarding the advantages of an electric heater would include the ease of its use, instant heat produced and its cleanliness, all particularly in comparison to burning wood or coal. The portability of some electric heaters was also mentioned by several people. Overall, the unanimous view of those interviewed was that using electricity was one of the most convenient ways to heat a house. For many, it was likened to the convenience of using a portable gas heater.

The main disadvantage of electric heaters was perceived to be the high cost of the fuel and is discussed elsewhere. In regard to other disadvantages, several interviewees mentioned that the heat produced by a portable electric heater did not fully warm a room or linger after the heater was switched off. “It doesn’t keep things warm... The room never gets as warm as with the fire”<sup>1</sup>, was the comment of one woman, comparing an electric fan heater to her logburner.

Three people also mentioned that electric heaters do not produce as much heat as their gas fired equivalents.

Contrary to the above complaints, two other interviewees said that the electric heater warmed their sitting rooms very well. Opinion on the effectiveness of portable electric heaters is thus varied. Other electric heating, mainly electrically powered underfloor heating, central heating and heat pumps, were mentioned by a small number of interviewees. They were seen to be effective by the majority of these people.

The type of heat produced by electric heating was widely discussed, with many of those interviewed making mention of the drying effect of their appliance on the air in a room. Several described this in a positive light, as lack of dampness, but many others found this drying uncomfortable. A typical comment taken from an elderly woman: -



“My personal feeling with electric heating is it’s dry. Anytime I’ve ever used electric heaters, I’ve always put a bowl of water in the room”<sup>5</sup>.

Placing some water in the room with the heater was commonly perceived as a solution to this ‘dryness’ but most did not employ this method. The symptoms interviewees associated with this dry air were headache, dry skin and dry throat.

Some positive comments were made however, comparing the heat from an unflued gas heater and an electric heater. This was particularly from people who had mentioned indoor air quality problems with unflued gas heaters. One woman in particular had this to say: -

“It’s a different sort of heat. It’s a comfortable heat... The gas heater is fierce and the electric one’s not”<sup>17</sup>.

The safety of the various designs of portable electric heater was another issue on which opinions were divided within the study group. Although this was not mentioned by most interviewees, some had firm views. On one extreme were people who expressed concerns over young children being burnt by bar heaters and the fire danger if these were placed too close to furniture or knocked over. On the other extreme were those for whom an electric oil column heater was seen to be a safe heating option for use overnight or in a child’s room.

The electric heater was not generally seen as a major contributor to condensation over winter. Many saw condensation to be contributed to by all forms of heating. One elderly man and his housekeeper did however, make the following comments when discussing his electric heater and use of the ‘dish of water’ remedy previously mentioned: -

Housekeeper: “When he had his electric heater going, ... condensation all over the place ‘cause you didn’t have [the dish of] water with it... But with the gas heater and the big plate of water, he doesn’t have that now”.

Elderly man: “With the electric one you can avoid that [condensation] if you put the water in front of it”<sup>17</sup>.

To conclude, electricity was seen by the majority of the people interviewed in this study to be a very convenient fuel for heating. However, a large proportion chose not to use it due to the perceived high cost. An unpleasant drying effect on the air, experienced by many, and inability to fully heat a room

were also commonly mentioned disadvantages of portable electric heaters (the most commonly used of the electric heating methods). The interviewees were divided as to the safety of such appliances.

## **Environmental impact of home heating**

The impact of the various heating methods on the environment was mentioned by fewer than half of people interviewed in this study. For several, however, such concerns were an important factor molding their views on heating and for a smaller group, these opinions directly influenced the heating methods chosen.

### Emissions

Emissions from burning wood for heating were commonly discussed by those interviewees concerned for the environment. For some, any method of burning wood, including enclosed fires, was seen to be potentially harmful. The following comment came from a woman of this view: -

“I know it’s causing pollution though so there’ll come a time when we won’t be allowed them... It’s getting to be a problem because of us being in a valley. It sits, it doesn’t go up... I must admit, there are times when you’re going out and you think, ‘Phew, all that smoke!’”<sup>7</sup>.

An “inversion layer”<sup>18</sup> forming over the valley was mentioned by a separate interviewee.

Another woman saw enclosed fires as a problem also but living in the rural area said: -

“Way out in the country, with a good wind, I think it [smoke] disperses”<sup>21</sup>.

This was typical of the attitude of several people who had some awareness of the potential for problems with emissions from their fires but did not see it as a major concern at present. One man said: -

“I can’t say I’ve ever noticed it bad in Masterton”<sup>18</sup>.

A larger number of people interviewed perceived open fires to be a more serious environmental risk than the enclosed versions. An urban man explained: -

“I think the main thing is your pollution... Because an open fire is about 7% efficient... 93% of the heat... goes straight up the chimney and goes out and pollutes the air!”<sup>26</sup>

Having outlined these concerns over burning wood for heating, it should be noted that only one interviewee said she would choose against using a woodfire on these grounds. This was an urban,

Maori woman who made an interesting but isolated comment regarding the appeal of gas heating for her: -

“The change to gas also made me feel better ‘cause I’m aware of the land. I would feel that I wasn’t destroying trees... Although I suppose that [burning gas] has an ecological hurt on the land as well but to me the trees are important so I’d be saving a tree!”<sup>32</sup>

### The impact of coal

Several users of wood for heating made specific mention of the fact that they did not burn coal on their fires and perceived this as a positive action. Two interviewees made particular comments regarding this solid fuel. One was a lower income man who relied solely on a pot-belly fire for his heating, which he described as very inefficient.

“That’s why I partly burn coal on it, coal and wood, cause the coal gives out more heat... I have to burn coal which I don’t agree with terribly”. He explained that coal produced a lot more ash than wood and, “It’s a pretty bad pollutant... puts out lots of smoke”<sup>23</sup>.

A woman, who grew up with coal heating, said: “The heat was incredible from coal fires. Just wonderful. But the pollution was terrible! I just wouldn’t [burn coal] on principle now. ‘Cause of what it does to the atmosphere, I just wouldn’t do it”<sup>3</sup>.

### Renewable resources

A desire to use renewable resources was expressed by several interviewees. Electricity and wood were both mentioned in this category. A rural man used this in his case for cheaper electricity prices: - “People should be encouraged to use electricity because it’s a renewable, non-polluting energy source”<sup>22</sup>.

Two people perceived electricity as an environmentally respectful energy source for heating. A rural woman commented: -

“It’s far more economical and eco-friendly... You have to think about it [environmental impact]. There are a few generations to come!”<sup>10</sup>

Having discussed concerns raised by interviewees regarding the effects of their heating on the environment, it is important to note that a far smaller number actually chose their heating method on the basis of these issues. Financial constraints hindered several people's ability to use methods which they perceived to be more 'eco-friendly'. An interest in solar power was mentioned by a number, with one household having planned to install such a system but finding it financially untenable. The perceived high cost of electricity was also a barrier to using this so-called environmentally friendly fuel. Regarding coal and open fireplaces as particular pollutants, the prohibitive expense of installing an enclosed fire meant not only did some people continue using less efficient methods but the burning of coal, a fuel seen as more pollutant, was deemed unavoidable. Thus despite some community concern over the effects of common heating methods on the environment and ideas for improvement, other factors prevented the translation of these into practical choices for the perceived more sustainable use of resources.

## **Part 2: The economics of heating**

### **Comparison between heating fuels**

The stratification of heating fuels according to affordability is complicated by the fact that there are multiple definitions of 'cheap' heating. As one interviewee put it, "There are so many other things that come into the expense of running [heating]. And that is the size of the room, the strength of the heater,...the duration of its use"<sup>6</sup>. Essentially, the most cost effective heating system will be unique to each household. That is, whilst an electric heat pump may be 215% efficient and thus classed as 'cheap' heating by one homeowner, the large initial outlay required may make it prohibitively expensive for another. Bearing this in mind, however, some general views regarding the affordability of the various fuels were uncovered during interviewing and a discussion of them follows.

#### Electricity

There was no doubt in the minds of the vast majority of those interviewed that electricity was the most expensive fuel for home heating. There were endless comments from owners of electric heaters being used only rarely or not at all: -

"It was the expense. It was huge, my bill"<sup>8</sup>, said one woman who has stopped using electric heating at all.

An unemployed father used his fan heater, "Only in the mornings when the kids get up, that sort of thing. If the fire was out and it was extra, you know, horrible they might use it for half an hour or so. Probably used it ten times at the most, over the winter"<sup>23</sup>.

A lot of anger over the high cost of electricity was expressed, particularly by the many people who mentioned the higher cost in the local area compared to elsewhere in the country. The following quotes illustrate this view: -

"Wairarapa's the most expensive electricity in the country. It's ridiculous! They reckon it's because they've got to supply the rural area and that. But when you're on your own you just can't afford it. It's ridiculous... It takes me all my time to survive on what we get, mate! Once upon a time it wouldn't have worried me but now it does"<sup>7</sup>.

“It’d be nice if the electric companies weren’t as pricey and as much of a rip off. I mean, the Wairarapa’s got the worst electricity prices in the country and they’re hideous compared to the States, you know, where they burn wood chips and things... to create power. I mean, we’ve got hydro power! I don’t see any good reason for it to be expensive”<sup>1</sup>.

“My power bill just for me was about \$140 a month... That’s with not having the nightstore up too high either. And with doing a lot of cooking on that [logburner] with no other electric heating... This having the power so high here is a real pain in the ass... Somebody’s making too much out of our power... Somewhere along the line, somebody is”<sup>24</sup>.

In certain circumstances, however, people on lower incomes did choose to use electric heaters, as illustrated below: -

“If I’m going to use it, I try to do it at night [lower rates]. I mean of course, there are days when I’ll do it in the day if it’s that real cold! You know, I mean bugger the power!”<sup>2</sup>

“I have to admit, with the dogs I bought one of those oil column heaters... and I’d just put it on low, just to keep the chill off the house so that they didn’t freeze”<sup>1</sup>.

An older woman, who used a nightstore electric heater supplemented by a ‘panel heater’ or wrapping up in blankets as needed, spoke about the need for electric heating for older people and those less fit to handle wood and carry gas bottles: -

“But electricity is so expensive – what do you do? Old people by themselves can’t get out and cut wood. And one pension doesn’t cover loads and loads of firewood anyway. So I don’t know what you would do [other than use electricity]. Unless, some people have gas.... But I’m not sure of.... well, I’m scared of gas, put it that way.” The disadvantage of electric heaters was “paying out for the power. But you can’t do a thing about that. It’s just going up every year. But no, I like it very much. It’s clean and tidy and you don’t have to worry about a thing”.

The wood bought and chopped by her brother-in-law for his fire would be cheaper but “he can get out and cut it, you know what I mean? Whereas I couldn’t. Besides, all this last couple of years I’ve had a broken arm. So electricity is much more handier... To comes down to who you are, who you know and who will help!”<sup>9</sup>

## Wood

Different perspectives were expressed on the cost of wood compared to electricity and gas because access to it varies. Most people with wood on their property or available from elsewhere essentially free, obviously found this to be the cheapest fuel for heating over winter.

“I’ve got firewood so I utilise that as a cost saving measure. Although it creates more work”<sup>6</sup>.

In comparing wood and gas use, there were those who thought filling cylinders for unflued gas heaters could add up to become expensive over winter so believed that “wood would work out cheaper”<sup>2</sup>.

An important cost consideration in the minds of most people was the efficiency with which the wood was burnt.

“Depends how much wood you burn and how efficient your woodburner is, really. ‘Cause ours eats a lot and I’ve got friends who can put a couple of logs on and it will go all night”<sup>1</sup>.

Many lower income people made comments similar to the following: -

“It’s [the logburner] basically crap but yeh. It’s an old one that needs replacing but financially that’s not gonna happen this year!... It’s not very effective ‘cause of course, most of the heat goes straight up the chimney”<sup>1</sup>.

“It’s not a very good one, that one [potbelly]... Heat wise for the house, it’s pretty inefficient... If I had any money I’d replace it with a decent woodburner”<sup>23</sup>.

The cost of installing new and more cost-effective enclosed fires however, was out of reach for many of those interviewed.

A large proportion of those interviewed who burnt wood for heating also had a wetback on their fireplace. These were well regarded, seen to enhance the cost-effectiveness of wood as a home heating fuel via lowering of the hot water power bill. Substantial electricity savings could therefore be made at the same time as space heating.

“With the wetback... it actually gets cheaper for me over winter to heat the house because I’m not paying twenty bucks a month on hot water”<sup>22</sup>, said a rural man with wood freely available on his property.



As discussed above, many saw wood as the cheapest fuel for heating, all be it labour intensive. There were others living in urban Masterton, however, who commented on the high cost of buying firewood. “Wood’s expensive though, wood’s very expensive”<sup>4</sup>, was a sentiment echoed repeatedly.

Rural interviewees, whilst enjoying the benefits of ‘free’ wood off their land, also perceived wood to be expensive if bought from elsewhere: -

“If you had to buy it the way we burn wood, you’d need to be a multi-millionaire, I think!”<sup>13</sup>

They often mentioned the situation of urban dwellers, for instance: -

“If you’ve got to spend two, three, four hundred to buy wood and then you’ve got to make sure it’s dry.... You know, you go out and spend that much on heating, you’ve still got to eat!... It’s quite expensive really, isn’t it, to keep warm?”<sup>14</sup>

An urban woman questioned whether wood was, in reality, any cheaper than the supposedly costly electricity: “Gas I think would be the cheapest. Then the wood and then the power... It could be a toss up between the wood and the power because if you’re paying \$140 a cord and you need three cord for the winter... whether your power bill would go up by over \$400 in the winter months, that could be iffy”<sup>24</sup>.

## Gas

Burning gas in an unflued gas heater was universally seen as a cheap heating option, especially in comparison to electricity, but opinions were divided as to how it compared to wood fuel. As explained above, there are those people for whom wood is more cheaply available than for others and this influences their appraisal of gas heating costs.

Among those who saw the gas heater as the cheapest heating option, the control over spending on heating costs offered by gas seemed to be a major factor in its popularity.

“It’s about the cheapest form of heating because you pay as you go which makes a big difference”<sup>24</sup>.

“I think your gas is more economical probably because you’re paying... a bit at a time... ‘Cause you can just get a little bit as you go, fill your tank as you go”<sup>4</sup>.

Several interviewees also appreciated the fact that they knew roughly how long the gas bottle would last once filled, again assisting budgeting.

“I pay, is it fifteen dollars to get it filled a week... I would say the gas was the cheapest”<sup>8</sup>.

(See Case Study also)

Special promotions run by petrol stations (where cylinders have to be taken to be filled) encouraged the common perception that unflued gas heaters were an economical form of heating.

“I think it’s quite cheap and I have a card so... after ten bottles you get one free. Something free is always a drawcard!”<sup>21</sup>

The initial cost of an unflued gas heater is also insignificant when compared to the outlay for installation of an enclosed fire, hence the attraction to gas when a fireplace is not already present in a house.

“The only reason I hadn’t got a fireplace in was I couldn’t afford it, that was the only thing. So I stuck with gas till the chance come that I could get one in”<sup>4</sup>.

Whilst some householders were able to state categorically that “the gas heater is cheaper for us than any other method”<sup>31</sup>, there were others who were not so sure.

“Gas and wood would come out about equal I’d say, in price... The little cylinders I suppose could work out a little bit more expensive because they don’t last that long... Depending on how long you do use them, of course... Whereas compared to a log on the fire that burns and the embers are still throwing out heat”<sup>7</sup>.

Payments for gas can be made in small installments throughout the winter as opposed to several “bigish payments” for wood. In spite of this, a small group of lower income interviewees made particular mention of the burden of purchasing gas. For example: -

“Well, you’re looking at now, it’s \$14 to fill up your cylinders, you know. So it’s quite a lot of money. It’s two jugs of beer, you know, if you want to look at it that way!”<sup>25</sup>

In summary, views on the affordability of various heating fuels were seen to vary markedly depending on the unique situation of a given interviewee. A common perception of electricity as an expensive fuel in comparison to wood and gas was apparent, however. Gas as a cheaper alternative than wood, especially for urban people, was another view that emerged from the interviews in this study.

## **Dealing with the issue of heating costs over winter – maximising warmth whilst minimising cost**

For many interviewees, the added expense of heating costs over winter stretched the household budget and made prudent use of heating important. Several strategies were mentioned in interviews to help achieve economy but also adequate heating. The most commonly mentioned of these are discussed in this section.

A common practice among those interviewed was to **shut off parts of a house** and concentrate activities in one warmed area. This was particularly mentioned in discussion of older houses with little insulation and without the open plan layout of modern homes, which allows warm air to spread more easily throughout.

“I have a door that closes half the house off. So we heat this half of the house and the bedrooms and that stay cold. So at night when we go to bed we just open up that door and then whatever residual heat... sort of wafts through”<sup>1</sup>.

The mode of heating used influenced this practice. An efficient logburner was said to be able to spread warmth throughout a house, whilst those using portable electric or gas heaters more often found it necessary to heat a smaller enclosed area.

“I think it’s what we’re told, you warm up where you are. You’re not going to warm up a room you’re not going to use... I think with your fire, you could open a door for the heat to go through there [the rest of the house] which you really couldn’t with... a gas [heater]”<sup>4</sup>.

This raises a concern regarding the use of unflued gas heaters without appropriate ventilation (See also Case Study). Speaking about her gas heater, one interviewee recognised this, saying: -

“In the wintertime I just have those two [doors] shut off. That probably doesn’t help why I get so headachy [with the heater] but it’s just for heat is important for us. I like to keep warm. And then as we get warm, then I’ll open those doors and shut off another”<sup>8</sup>.

**Spacing out heating expenditure** by making fuel purchases in advance, was mentioned by a couple of people. This requires organisation however.

“I do an automatic payment and I’m going to keep the same payment going through the summer as I did for winter and hope that I can build up a bit, yeh, to have it there to help over the winter”, said a woman who struggles to keep up with heating costs over winter. Later, referring to the fact that this season will be the last of her ‘free’ wood supply, she said: -

“Actually, I should maybe buy in a cord of wood and have it so I don’t have to buy too much next year”<sup>24</sup>.

The woman quoted above also mentioned another interesting strategy for dealing with heating costs and the effect of the cold on her emphysema. Whilst a couple of people had joked about travelling to a warmer climate during the winter, she was the only person interviewed who has actually planned to do so.

“My daughter and son-in-law said about going back up to Whangarei maybe in ... May or June. And if I go away then, that’ll save a bit on the wood and the power”<sup>24</sup>.

Several people interviewed used a **base of cheap heating** and added to this as required, as a strategy to minimise heating costs. The most common ‘extra’ heating, sparingly used, was an electric heater. One woman spoke of using a similar approach with her wood by mixing good wood with cheaper wood.

“These days you’ve got mill wood [cheap wood scraps sold from the local timber mill] and things like that, which helps. It’s cheaper... And if you mix it with the other wood...”<sup>2</sup>.

Having a higher proportion of the ‘better’ wood was identified by this mother to be a way to increase the warmth of her family’s home in the future.

Purely **rationing the use of heating fuel** was another common strategy for making ends meet during winter.

Another mother from urban Masterton, struggling to find work said, “You just learn to keep it on two. You never put your gas heater on three. Or one, you know, varying on the temperature outside. I suppose any sign of a bit of a flame makes you feel warm anyway. There’s a bit of a psychological thing going on there”<sup>25</sup>.

In terms of rationing the use of heating, several parents interviewed identified the heating needs of their children as being of greater importance than their own. Three cases for illustration: - Speaking about keeping a house “warm for kids” one grandmother said, “If you’ve got toddlers you’ve got to have a warm house for them crawling around on floors and things. Kids coming home from school in these southerlys have got to come into a warm house, to try to keep down colds and things... It’s nice to be in a warm house, to get them dried in front of a warm fire after a bath and that. If you’ve only got yourself to worry about you put on an extra jersey and wrap a blanket round you!”<sup>7</sup>.

A father with shared custody of his children said that he can’t afford to run the heating all the time during winter. When asked when were the times that he chose to use it, he replied, “When my kids are here basically. Tried to make it warm enough for them. If they weren’t there then I didn’t have it going”<sup>23</sup>.

A mother of school aged children spoke of the use of her gas heater: “I would turn the heater off in the daytime and save it for night... for the kids, the children when they’re home... I use the heating then so that they’re not cold. You know, so that it lasts for the week, the gas....There was one stage where it would last me less than that. Cause I’d keep it on at night, when it’s cold for them. I’d leave it on all the time”<sup>8</sup>.

Many people interviewed made mention of the fitness of their house for winter, particularly pointing out the importance of good **insulation**. Many were aware of the lack of such insulation in their home and some had plans for improvement. This was seen as a way to maximise heating of a room by holding onto what had already been paid for and produced by their heating method.

“It takes a bit to warm the place up when it’s really cold. Cause there are other things wrong with this house. Like there’s nothing underneath the floor. And ... some of the boards have got gaps... and you can get air coming up, even though the ceiling’s insulated. So it takes quite a bit to warm up”<sup>23</sup>.

“Ideally having good insulation within the home so that the heat or warmth is retained, curtaining and insulation of any sort, is helpful. That would help in both keeping the costs down and also in retaining heat in the room”<sup>6</sup>.

Another said, “First of all insulation is a must I think... It’s making the most of the heat that you can generate”<sup>5</sup>.

In the same way, first priority for controlling heating bills for another woman was to: “Make sure that all my windows are closed, doors and drapes drawn, to keep the heat in”. When asked about practices with her unflued gas heater, she replied, “I don’t have any windows open in the winter. It’s too damn cold – I’m not letting the heat go out, I’m storing it up in here”<sup>7</sup>.

A good summary of this point was made by a rural householder: “I think before people think about heating they should look at the house and see if they can eliminate the loss of heat or... keep the heat in... It’s not just the heating of the house, it’s the insulation of the house [that is important]”<sup>15</sup>.

The above discussion has focused on methods to maximise the heating available within sometimes very tight household budgets. Acknowledgment needs to be made, however, of the reality that no heating was the cheapest option of all<sup>i</sup> for several interviewees. Other needs may make higher claim to money available.

An elderly lady spoke of “those awful, awful, awful cold snaps” in the middle of winter. “If I’m by myself, I get into bed or wrap myself up in a rug or like as I said, put the heater on... If I’m not doing anything special it’s cheaper to get into bed or just wrap yourself up on the sofa here, you know... It’s a bit difficult. But you just have to keep on watching every penny and just hoping that you make out... I’ve heard about other people having to do that [wrap up rather than use a heater] but never thought I’d come down to it”<sup>9</sup>.

When asked how he dealt with the financial aspect of keeping warm last winter, one man replied: - “Got cold. Basically. I can’t afford to run it all the time. So a lot of the time I just got cold. Used hot water bottles, extra clothes”.

Wood was his primary fuel for heating and the amount he paid for this over winter was discussed: - “I ran out, kept on running out. Probably ... should have cost me more”. Overall he sighed and said, “Could have done with a lot more heating”<sup>23</sup>.

Unfortunately the truth is, he is undoubtedly not the only person in this predicament in Masterton over winter.

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<sup>i</sup> Interestingly only around half the interviewees mentioned putting extra clothes on when asked about keeping warm over winter. Maybe this was so obvious that it went unsaid. The most direct comment made on this issue was as follows: - “Obviously you put warmer clothes on. You don’t expect to, middle of winter, sit around in shirt sleeves. Common sense is to put some clothes on first”<sup>26</sup>.

## **Income and heating – Case Study**

Heating a house comes at a price. While some budgets are able to more easily accommodate the added expenditure that keeping a house warm over winter demands, for others this is not the case. The realities of living on a low income mean that heating has to compete with other important needs, all tugging on a household purse that in many cases, cannot cover them all sufficiently. Mandy<sup>3</sup>, a solo mother on a benefit who used a portable unflued gas heater on loan from friends, eloquently explained her situation, typical of many family groups in Masterton over winter. This section contains a summary of her comments.

### FUEL CHOICE

“I prefer wood... because it heats right through the house and it’s the sort of heat that goes right around you and keeps you warm. The gas heater basically was because I ran out of firewood and it was the expense, I just couldn’t afford to buy a cord of wood. Whereas with the gas heater, you know, it’s \$14 or something to fill it and so, yeh, I was managing like that... That was the main reason [for using an unflued gas heater], was because of cost”.

The wetback on Mandy’s logburner was a help as it lowered the electricity bill for water heating but obviously could only work when the fire was on. As a result of not being able to afford wood, therefore, she was forced to use the gas heater for space heating and revert to paying for electricity for hot water.

The prohibitive cost of firewood was mentioned several times during this interview: “They reckon the average home usually has to buy in five cord every winter. Well, I haven’t cause I always run out of firewood sort of around July and then have no money to buy more!”

Mandy deemed using electricity for heating as untenable. “[The gas heater] is far better than an electric heater I feel that, yeh. The gas is a lot nicer to have. It heated a lot better. And cheaper. Definitely cheaper. I had used a panel heater before I got the loan of the gas heater... but boy, it made a difference to the power bill! And the heat from that was terrible”.

When ranking the cost of the various fuels, Mandy saw the portable unflued gas heater as the most affordable: -

“I don’t know if it works out cheaper but it’s easier to manage, the gas heater. Yeh, for someone like myself who is on a benefit... and well, I have a part-time job but I’m still, I struggle. And I think someone in my position, a gas heater, you know roughly how long it’s gonna last, you know. And so... you only need that \$14 aside... To me, it lasted over a week... So I’d say low income people probably, yeh, gas heaters are a really good idea”.

“I think electricity would be the dearest. So I’d say gas first, firewood, you know, second and electricity would be my third one... the most expensive”.

### Tackling the costs of heating

Mandy employed various measures to ration the heat she produced: -

“What I normally do is I’ll keep the doors... closed so that I’m only heating the living room, the dining room and the kitchen. And the bedrooms are like icechambers... And so doing it that way, I can have the fire turned down low, have the damper down low and use less wood. And that’s what I’ve done because I know that I’m just going to power through the firewood if I have it on high and heat the whole house. So it’s extra duvets on our beds!... It’s freezing, it is really freezing”.

Keeping heating expenditure to a minimum via isolating areas to warm does pose ventilation problems though: -

“But really with the gas heater, you’ve pretty much got it in the one room with the doors closed because the heat doesn’t spread that far I’ve found. Not in a house like this anyway... But that’s with it switched on low so that we’re not powering through the gas! If you had it on high it’d be fine, it would heat right through but then you’d be filling it up twice a week”.

An important issue here is ventilation with the gas. As a cost saving measure, it is being used sparingly and closed up in a room to conserve heat. This is directly contrary to health warnings required to accompany the sale of gas heaters, advising good ventilation when using the appliance. This advice is not without reason, as Mandy has experienced: -

“You tend to get a little bit headachy sometimes. If you’ve been in the room with it for too long”.

On the issue of ventilation, Mandy drew a contrast with that possible when using the enclosed fire: -

“Because it puts out so much heat you’re able to have a window open a little bit for ventilation. And the room didn’t get drafty or cool down, you know. So much better, logfires, I think, for maximum heat out of it... [With the portable gas heater] you would have felt the draft”.



### The cost of dehumidifiers

While some people would consider using a dehumidifier to solve condensation problems during the winter (added to by unflued gas heaters), for Mandy this was unrealistic due to the associated expense:-

“I’ll never get one because they cost so much to buy. I’d say one of the advantages of it is that you wouldn’t get the moldy, damp smelling... because I definitely get dampness in clothes. And maybe that’s where the dehumidifier may help, I don’t know. But I’ll never own one so I’m not worried about it! I would rather invest in a really good gas fire [flued, imitation log style]... I’d rather have warmth and take care of it [dampness] that way... I think that would cancel out damp. Like I say, you can always have windows open a little bit with the logfire without cooling down. So you’ve got ventilation as well”.

### Priorities

As also mentioned by other interviewees, there were times when Mandy deemed heating so important that she used it regardless of the cost: -

“I do use electric blankets. Can’t get into a cold bed. So I switch them off as soon as we get in... I wouldn’t have a clue how they affect the power bill... But I don’t care because I would die without one! Cause I’ve had [a number of health problems] so I ache if I get cold so I’ve got no choice. I have to. I cope the best I can”.

In general however, cost rather than desired temperature was the major determinant of Mandy’s heating use: -

“See, it’s all about cost with me. Other people, it doesn’t matter, I suppose. But with me everything is to do with cost. You know, being able to earn enough money for food you’ve got to.. you know? It’s really hard but eating is more important than heating! For us anyway. Elderly people it might be different. But I suffer. I have to say I suffer every winter when my firewood runs out, yeh. But I’ve got no choice. Got to do the best you can”.

### Overall feelings about home heating

When asked how she felt overall about the heating of her home last winter, this was Mandy’s response:

“I suffered, definitely... I’ve decided that I will move into a smaller place... where you can have every door open, logburner in the middle and heat the whole thing!... In a house like this, every winter I suffer from the cold. And it’s mainly, it’s more to do with finances [than the house]... So if I was able to afford that five cord per winter then we would never be cold. I’d have it, the fire, on full and I’d have doors open and the house being heated, you know”.

What would Mandy choose “if finances didn’t come into it?”: -

“If I had the choice, I would have a gas heater but the ones that look like logburners [flued]. I think they are ideal because I’ve been into a house that’s had one. I felt totally warm, there’s no dirt... no having to hurt your back chopping wood, carrying it in... But I just haven’t got the money to have one installed”.

The flued gas heater was a common choice for ideal heating among those interviewed.

When asked for her final comments, this was what came to mind for Mandy: -

“You definitely need heating in, definitely in this place anyway. I just feel very sorry for elderly people because I know that a lot of them really, really struggle with the heating issue. And a lot of them sit in bed to stay warm and I really feel for them because I’ve kind of experienced it and I wouldn’t like to be that age and have it.”

“I think overall the whole lot should be cheaper. It should be much cheaper...But people have to earn a living I suppose. Woodsellers and so on. Electricity is the one that I feel is just far too high. The cost of electricity. And that’s where I think about elderly people ‘cause most of them are in flats that don’t have fires so they only have electricity. And I think it’s very, very, unfair”.

These sentiments regarding the elderly and anger over perceived high electricity costs were shared by many interviewees. After the tape stopped rolling, Mandy continued to make some interesting comments, particularly related to the cost of electricity.

“We live in a country with hydrodams; it piddles with rain – why can’t we get affordable electricity? I don’t know how people are going to cope if electricity increases any more, especially the elderly and low income people... They’ve [the authorities] got to do something. And then they wonder why people burn down their houses with candles!”

Mandy also had some insights to share about dealing with Work and Income New Zealand.

“I don’t even bother to go to WINZ about it [heating costs] anymore. You’ve just about got to get down on your knees and beg to get them to help with firewood costs. You need to get so many forms – from the doctor to say my son has asthma; from the pharmacy to say how much the medicine costs; quotes from the firewood place... I just suffer, go without, shiver!”

(See “WINZ: Assistance with heating costs” for further discussion)

Mandy was a particularly articulate lower income woman from urban Masterton. The views expressed during her interview and detailed in this case study were representative of those held by other lower income interviewees. Her comments here are therefore valuable for gaining a better understanding of the perspective of this important group on the issue of home heating.

## **Work and Income New Zealand: Assistance with heating costs**

Several personal interviews and printed material from the Masterton Work and Income New Zealand (WINZ) office are the basis of the following information on help available with heating costs to those on lower incomes.

As heating is classed as an 'everyday need' ie one that everyone has to address, there is no specific support to assist people with heating costs. The only exceptions to this rule are provision for the Disability Allowance to be paid to cover extra heating costs due to illness and for heating to be classed as an essential need under a Special Need Grant, on a case by case basis.

For the Disability Allowance to be paid, the individual must have verified additional and ongoing heating costs directly related to their disability (of at least six months duration). This means WINZ will only cover "costs over and above the normal power consumption of similar-sized households in the area at the same time of year"<sup>i</sup>. If gas or wood are used instead, this average electricity cost is still used to calculate the allowance entitlement.

Helping those with illness afford extra heating may seem to be a good idea but it fails to take into account the fact that lower income people with disability may not be able to afford the "normal" cost of heating at the outset. Therefore they are in no position to create "additional" costs. It also fails to address the fact that people not supported by the Disability Allowance but living at unhealthy temperatures over winter due to inability to afford heating, could become ill as a result and eventually add to the many already requiring support. It seems a more preventative strategy is needed.

Whilst it is laudable to help those with disability afford extra heating, from the interviews carried out it seems the assumption that low income people can meet the average electricity bill of other householders in Masterton is misguided. Affording this basic amount of heating is a problem for some people. The setting of the 'normal usage' level by the electricity companies, with no upper limit set by WINZ, is a potential flaw in this system. There were some households interviewed on higher incomes who used electricity liberally for heating over winter. Their electricity bills could push up the average

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<sup>i</sup> Disability Allowance: Power, Gas and Heating. WINZ Computerised staff information directory

household level and thus make this baseline out of touch with what would be realistic for those on lower incomes.

With no cap on electricity prices, those claiming the Allowance are at the mercy of the electricity companies to set the level their entitlement. If prices rise significantly and claimants can't keep up with the increase, it may effectively produce a drop in the level of subsidy, as illustrated in the example below.

Example:

Average householder's electricity bill	\$100	Price rise of \$20	\$120
Disabled person's electricity bill	\$120		\$140
Disability Allowance	\$20		\$20

*But* if the disabled person cannot afford to completely meet the new average electricity cost of \$120 then, for instance: -

	Disabled person's electricity bill	\$115
Disability Allowance		\$0 (\$115 - \$120 = -\$5)

The other form of assistance available from WINZ is a one off grant to help meet acute heating needs. Similar to the food grant system, this is designed as emergency cover to be decided on a case by case basis. Case studies given by the WINZ staff interviewed included a repayable loan made to avert disconnection of electricity or a grant toward heating costs for a child with acute illness.

During interviewing of householders, only one person mentioned help from WINZ with heating costs. This was Mandy (see Case Study) who found it such a harrowing process she said she "didn't bother"<sup>3</sup> again. The asthmatics interviewed would certainly have been eligible for the Disability Allowance but none mentioned this assistance. Whether they would all have been able to meet the payments for 'normal' electricity consumption and thus receive a supplement, is questionable. Thus the access to information about support available and the limited nature of that support are disappointing. The onus seems to lie with primary health care services and other community workers to point clients toward their entitlements.

Two public health workers interviewed in Masterton made interesting comments related to WINZ and heating costs. One, a public health nurse, said that in the mid 1990s she was able to get \$80 subsidies for her asthmatic patients to replace their unflued gas heaters with portable electric ones, better for their asthma control. This subsidy has since been removed. She mentioned that her clients often got into difficulty with high electricity bills when they made the change: “It was devastating for people. They liked it nice and warm so it [the electric heater] was hard to turn off”<sup>36</sup>. This overspending was prevented by using gas cylinders which, once empty, could only be filled if money was available.

Another comment was made by a maori health worker<sup>37</sup> concerned at the high rate of unflued gas heater use by her people. She said that WINZ encouraged the use of these heaters, promoting them as a cheap option for those struggling to cover heating costs. When WINZ staff were interviewed, they said that clients were free to choose their preferred heating method, “whatever suits them”<sup>38</sup>. Heating needs are dealt with on a case by case basis and it would seem that though office policy may not explicitly support these heaters, individual Case Managers would be free to give advice on the heating options they perceived to be cheaper.

Overall, Work and Income New Zealand provides limited assistance with heating costs for those on lower incomes. The awareness of available support appeared to be low within the group interviewed in this study. Some provision is made, however, for those in urgent need of help with short term heating costs and people with increased costs due to chronic medical conditions.

## Part 3: Impact on Health and Wellbeing

### **Unflued gas heaters and asthma – community views and experiences of asthmatics**

A typical comment: “I found with the gas... it just seems harder to breath... It seems a thicker air, even though you can’t see air... I suppose the gas heater, it seems to be more dense... With the open fire it’s still dry but it’s clearer, it’s nice... I can bear that more than the gas”<sup>8</sup>.

The October 2002 Public Health Advisory Committee report on “The effect of environmental factors on the health of New Zealanders”<sup>i</sup> stated that unvented gas appliances were associated with “exacerbation of respiratory conditions” and can contribute to “wheezing and breathing problems especially in people with asthma”. With this as background, some mainly unsolicited comments from asthmatics with experience using unvented gas heaters are discussed in this section.

#### The effects of wood verses gas fuel

The comparison between the ‘sort’ of heat given off by burning wood and burning gas was made by several interviewees: -

“I had a gas for years and it served its purpose [affordability] at that time but I always wanted a logfire and it’s a different heat, a better heat... It doesn’t make you sort of so tired... When the grandkids come sometimes they get a bit of asthma from the gas. Sometimes it gets a bit of asthma... It’s the fumes... They get a bit wheezy. And I’ve got a brother-in-law that doesn’t get asthma at all but when he goes to his sister’s place, ‘cause that’s all she has is gas, he said... he can’t stand the gas round there... I just find the fire’s a better air for me”<sup>4</sup>.

Others reiterated this point: “In the air, it’s just better to breath”<sup>8</sup> and “It’s a good heat too for your kids if they’ve got asthma and things”<sup>2</sup>.

Another spoke of the air with the gas heater being, “A bit more chokey... clogged up”<sup>17</sup>.

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<sup>i</sup> Public Health Advisory Committee. The Health of People and Communities: The effect of environment factors on the health of New Zealanders. Report to the Minister of Health, October 2002.

## Condensation

The problem of excessive condensation produced by unflued gas heaters (leading to mold growth and contributing to respiratory disease) was appreciated by many people, especially in relation to the health of children: -

“The back of their furniture [user of gas heater] is starting to go moldy because of all the dampness and no wonder the children are sick! So they’ve bought a dehumidifier and it’s just the house... But it just shows you the effect it [dampness] has on your health. And that’s why a lot of people get asthma”<sup>14</sup>.

“Kids with asthmas and excemas, you know, those allergy type things, often the humidity... the wetness of the house, the dampness could be something that causes it”<sup>15</sup>.

“Cause our house was aluminium windows and that and the condensation was just phenomenal in that house. It was shocking. And then with my daughter, she gets croup and that... and my son gets asthma as well... that was probably the worst side effect of it [having to use an unflued gas heater], you know?”<sup>25</sup>

One solution to the problem of excessive condensation is the use of dehumidifiers. This was picked up by several people interviewed. The mother of an asthmatic son said, “I think they’d be a good idea for asthmatics... but I couldn’t afford one... Asthmatics are worse certain parts of the country... and it depends on housing and that... I think condensation plays a big part. So in that respect, how it’s meant to draw out all the moisture in the air, yeh, they’d be really good”<sup>2</sup>.

Interestingly, one man referred to a regional difference in dampness of houses, saying he rarely used his dehumidifier in Masterton as it’s “just not the damp area that we found Wainui to be”. Following on from this, he noted, “The actual atmosphere in the Wairarapa here is so much better than what it was in Wainuiomata. I’m sure there must be more asthmas and respiratory problems in Wainuiomata than ever here. We always had the problem of moldy sort of wardrobes... Up here [Masterton], no problem. So it must be healthier living in the Wairarapa”<sup>18</sup>.



### Gas vapour and ‘fumes’

Various householders mentioned the smell of gas and build up of ‘fumes’ in a room where an unflued gas heater was in operation. Several people saw this smell as being a trigger for their asthma attacks. “I do prefer a window open a wee bit when I’ve got it [the heater] on. If there are any strong smells it sort of sets my asthma off, a trigger. A hint of too much smell from the gas and I start coughing. I do have to be really careful with smells... Even air fresheners and things”<sup>31</sup>.

A cautious attitude regarding gas combustion products was shared by several interviewees: -

“I had a gas heater which I actually don’t like... I’ve got one grandchild has asthma and so it’s sort of a last resort for me...I don’t really know [how it effects him] but I’m very careful about what’s pumped out into the atmosphere for him. He’s not bad but it’s just something I’m very conscious of”<sup>21</sup>.

These people were concerned about ventilation in a room with an unflued gas heater. There were equally other asthmatics who either did not mention ventilation or spoke of keeping the heater “pretty much in the one room with the doors closed”<sup>3</sup>. This practice is understandable given the desire to conserve heat but is of concern.

### Drying of the air

An association between the unflued gas heater, excessive drying of the air and asthma was recounted repeatedly in the interviews. For example: -

“I think it can [adversely affect asthmatics]. You must have water on the top to moisten the air a bit... It dries my lungs out and I’ve got to get out to where it’s cooler”<sup>17</sup>.

While still holding that the excessive drying of the gas heater exacerbates asthma, many people contrasted this with the ‘good’ dryness of a wood fire, seen to remove the dampness associated with asthma from a room.

“I like using the logburner with the kids health and that because it’s gonna be a dry air... no moisture in it, which is what I’m looking forward to [in the change from gas to wood fuel]”<sup>25</sup>.

## Wide spectrum of opinion

Despite the above issues being commonly raised by the interviewees, concern over them varied. At one extreme were those like a severe asthmatic who could not comfortably remain in a room with an unflued gas heater operating. The majority of asthmatics however, used their gas heater regardless, either putting up with noticeable ill effects or, for a small number, not perceiving a problem at all. “I can’t in all honesty say it affects my asthma”<sup>31</sup>, said one woman (from whom the above quote about gas smell as an asthma trigger is taken). A mother, who saw “no choice” but to use a portable gas heater, said in regard to condensation produced, “A lot of people feel it affects their health and all sorts of things... I don’t think so. I’m not sure! I have one son that’s asthmatic and I don’t see that it’s any different summer and winter”<sup>3</sup>.

The effect of unflued gas heaters seems to be discussed widely within the lay community, given the frequency of reported comments and advice passed on from friends of interviewees. As one elderly woman put it, “Some say yes, some say no”<sup>17</sup> regarding adverse effects from unflued gas heaters.

The driving force behind the popularity of unflued gas heaters, despite adverse effects experienced by their asthmatic users, was captured succinctly by a Masterton woman. Having recently been to an asthma conference which mentioned these heaters, she said: -

“It’s not really very good for asthmatics but it’s about the cheapest form of heating ‘cause you pay as you go which makes a big difference. You know, some people can’t come up with \$150 for a load of wood. And you need about three lots of it in winter”<sup>24</sup>.

The perception expressed by a group of interviewees was that some heat, even ‘unhealthy’ heat, is better than none at all.

## **The role of heating in general and asthma**

With regard to asthma and heating, several asthmatics spoke of breathlessness caused by being too hot either in the summer months or with excessive heating of a house in winter. One woman labelled gas

heating as a major culprit, in line with other people's comments about heat from portable gas heaters being very fierce.

"When I'm not quite so well, I'll lie back and go to sleep and wake up and I'm worse off than ever. And that's because of the gas heater. I go to sleep you see. And no one here to turn it off... You get over heated in your body".

This woman noted that the logfire and sun could have a similar effect and put it down to her 'system': "I'm very hotblooded!"<sup>17</sup>.

Another woman was particularly interested in central heating to help her cope with her asthma during the summer months by keeping the temperature cool.

"In summertime, I find that's the biggest disadvantage because in the winter you can pack up an extra jersey or put an extra log on the fire but in summer... you can't get away from the heat"<sup>30</sup>.

Others spoke of problems with the exertion associated with bringing in wood for their fire. Several had other more able-bodied people to do this task for them but even so, problems could arise. An interviewee with emphysema was prepared for this situation: -

"So I always have firelighters just in case I can't get out to get the kindling or anything"<sup>24</sup>.

Having oxygen tanks at home could also complicate heating during winter: -

"If I have to go onto oxygen all the time it could be a bit tricky... Remembering to take the oxygen off when you open the door [of the logburner] and keeping the oxygen away from it... Even now I've found myself some nights, I'm going to open the door and I've still got it on!"<sup>24</sup>

Chilling temperatures overnight caused problems for several of the asthmatics interviewed. One used an electric nightstore heater and thought that this might have saved her from contracting pneumonia during the winter: "It just keeps the chill off overnight"<sup>24</sup>.

Two others spoke of using oil column electric heaters overnight to keep the chill away.

"I'm a climate asthma, like when it's really cold and damp that's when I get it, generally. So like, I'd wake up in the morning and be coughing and wheezy in the bedroom so... come out, light the fire, then I'd be alright. Like when it's really, really, really cold I'll take the oil heater into the bedroom... like if it's really bitter cold and damp, to prevent waking up all wheezy"<sup>1</sup>.

The oil column heater was used by several of the asthmatics interviewed and was seen in a positive light.

“I got an oil column heater for him [asthmatic son] and that was a lovely heat... Because he needed, it had to be a moderate heat... It wasn't too dry and it wasn't damp. There was no condensation in the air. It just, it took the chill off everything”<sup>2</sup>.

In spite of perceived benefits, many people on lower incomes, including the women quoted above, stated that electricity was “way too costly”<sup>1</sup>. A typical comment: -

“I had the nightstore put in and it jumped my power bill very, very high and I'm not really sure if I can afford to run it again next winter. But it did help a lot and I hardly used the gas heating [previously needed as a 'boost' in the mornings]”<sup>24</sup>.

For those with greater financial security allowing more freedom of choice, the control of their asthma had a major bearing on the method and degree to which they heated their home.

“It's mainly if I'm comfortable and can breath. That's really what I get to looking for, you know? So you can sort of carry on a bit longer and manage”<sup>30</sup>.

Although being cold over winter has a negative impact on the health of all individuals, those with chronic respiratory disease are at increased risk. Being on a lower income compounds this problem through presenting a barrier to healthy heating choices over winter. This dilemma was portrayed in multiple interviews. The people may have been different but the story was familiar.

“I'll just have to cut down on some other things. I don't quite know what yet. I mean it is quite important really that we do keep warm... in the winter. For all of, you know, for asthmatics and for emphysema, otherwise you just lose your breath and it's just bad. The cold air... it can make things very difficult, you know. So you are supposed to really keep your houses reasonably warm”<sup>24</sup>.

## General perspectives on heating

### Heating and wellbeing

Several interviewees mentioned the importance of healthy heating over winter for maintenance of wellbeing. These comments mostly came from women over fifty and covered several different situations.

### *Vulnerable groups*

Meeting the heating needs of children, the sick and elderly were seen by several of these women to be especially important, exceeding the requirements of the average person.

“We have mother-in-law [elderly] come as well and it’s quite important really to have a warm house. And you don’t know what’s going to happen to yourself over winter. You could be laid up or whatever so you need something [for heating]”<sup>14</sup>.

“I could crank it [the heating] up if the grand children came and I thought it needed to be more spread through the house”<sup>21</sup>.

“When Richard was sick here after he’d had the operation... I’d had the heater going practically day and night. My bill was astronomical!”<sup>5</sup>

“They [the elderly] freeze because they’re too frightened to put the heater on... And that’s how they get sick, isn’t it? They wouldn’t be so sick [if affordable heating was available]”<sup>4</sup>.

But when several older women described their heating situation, they were of the opinion that they did not want or need extra heating. On the contrary, it was other groups who did. One older woman summed this view up well: -

“It [the heating] was adequate for me. But if it was a family and they’re running in and out and all over, I think they’d feel the cold more”<sup>9</sup>.

It would seem that people interviewed commonly downplayed their own heating needs, focussing on the perceived greater needs of other groups.

### *Physical activity*

Being active was noted by several people, especially this older group of women, to be an important consideration for keeping warm over winter.

“[I stay warm] by keeping active – I walk a lot and exercise and try to keep my circulation up to scratch”<sup>21</sup>.

“If I’m working around I’m warm enough. If you’re active... If you’re moving then you’re moving the air as well and it doesn’t get so cold”<sup>5</sup>.

“I’d rather get up and do something [than use a heater]. I’m not very often sitting around. Don’t have time to get cold!”<sup>11</sup>

### *Extremes of temperature*

Several women interviewed, mostly over the age of fifty, mentioned the negative effect of heating a house too much. Extreme changes in temperature were seen by these people to be harmful.

“I honestly don’t think that this house is heated to the high degree of those woodburners. I suspect it’s healthier, the way I have it”<sup>19</sup>.

“If this house isn’t as warm as some homes keep them, then I haven’t got that extreme change of temperatures.. And I feel that that keeps me free of colds more”<sup>30</sup>.

“I think people get sick cause they go from a really heated environment inside all the time and go out in the cold. They’ve got those extremes of temperature”<sup>1</sup>.

Another older woman saw virtue, moral and physical, in keeping a bit cold over winter: -

“I think we tend to be overheated and I like to keep my own thermostat working well... I think a bit of cold is good for you. I think people are soft now. It [a cooler temperature] keeps you alive and stimulated. Keeps your systems working”<sup>21</sup>.

A younger woman on a lower income reiterated this point, in regard to her past heating experiences: -

“I think you get immune to the cold a bit. You don’t realise until you have that [logburner] and then you get quite soft”<sup>2</sup>.

Notably, whilst the group of people above were concerned with being too hot, another group were represented who strongly objected to being too cold. This group included a rural woman who said: -

“I would actually hate to go to a cold house!”<sup>14</sup>

Another interviewee, from urban Masterton, spoke of the importance of heat to her: -

“It’s very important. I can’t move without heat! I can’t live. I feel ill in a cold house. I just ache, I crunch my body up and I’m miserable when I’m cold. Really miserable!... I’ve always needed warmth, heat”<sup>27</sup>.

One interview included a mother and daughter who, interestingly, were of opposing opinions regarding the ideal ambient temperature. They described themselves as ‘cold blooded’ and ‘hot blooded’ in relation to heating. Whilst one preferred little warmth, the other enjoyed a large amount, heating her sitting room such that visitors often found it uncomfortable: “It drives everybody out!”<sup>17</sup>

Thus, a wide divergence of views within the community regarding heating was observed. The majority of people interviewed occupied the middle ground, however, and used heating as a broad term, not expressing a strong preference for either end of the temperature scale.

### Priorities: heating and cost

Financial considerations for lower income people have been discussed elsewhere. Two elderly women on high incomes brought a different perspective to the issue. Both with health needs (one heart disease, the other severe asthma) and nearing their final years, they expressed that paying for heating was major priority for them. One said: -

“I’ve got to the stage where money doesn’t really bother me. I think what suits me comes first”<sup>19</sup>.

The other woman spoke of choosing easy to manage heating, regardless of expense, in order to maintain her health and thus her independence.

“I’m in my eighties so if I didn’t have comfort here I’d have to go into care and I don’t want to do that. I want to be here and manage for myself... So that would sort of count against the cost”<sup>21</sup>.

This was in direct contrast to the views of several other interviewees, across age and income groups. Two explicitly stated that heating was not a major priority for them and others implied this through statements such as: -

“I’ve got other things to spend my money on”<sup>23</sup>.

## Conclusion

The aim of this study was to gain a better understanding of the reasoning behind the heating choices of individuals in Masterton, especially in regard to portable unflued gas heaters. By probing perceptions of the various methods of heating, as expressed during interviewing, a clearer understanding has emerged of the factors most important in determining these choices.

### Choice of fuel

In this study, the primary factor found to inform people's heating choices was perceived affordability. Almost universally, using electricity was seen to be the most expensive method of heating. Except for a few people on higher incomes, the majority avoided using electricity as much as possible because of its perceived high cost. Interviewees often expressed anger when discussing electricity pricing, many stating that electricity would be the preferred method of heating for their home (being 'clean' and 'convenient') if it were not for its prohibitive cost.

There were two distinct views among interviewees regarding the affordability of wood. Being an agricultural town, there is a large group living in the Masterton area with access to 'free' wood from rural properties. For these people, wood was a cheap option and an attractive alternative to electricity. For others however, the cost of buying wood turned them against relying on this fuel for heating.

Gas presented as the most viable fuel option for many householders, particularly those on lower incomes. The portable unflued gas heater was well entrenched in the minds of the vast majority of those interviewed as the most affordable choice for heating. Its appeal amongst interviewees stemmed largely from its status as such.

Convenience of use was another important quality by which heating methods were judged. It is here that the unflued gas heater sealed its popularity. Electricity, as described above, may be convenient but is disqualified due to cost in the minds and pockets of many people. Wood as fuel, whilst cheap for some, was repeatedly criticised for the labour involved in its use. The easy flick of a switch to produce instant heat with a gas heater was preferred by many people.



The main perceived disadvantages of the gas heater, mentioned repeatedly by its opponents and proponents alike, were the smell of gas, drying of the air and excessive condensation produced. For several of those who could afford alternative heating options, these were a deterrent even the convenience of using gas could not negate. But for those for whom the choice for gas heating had been made in the harsh light of a tight budget, these ill-effects were nuisances to be rationalised or dealt with as best as possible if they were to have the house temperatures they desired. Here enters the ubiquitous remedy of the dish of water.

It could be presumed that with the above disadvantages to the unflued gas heater, only those on very limited incomes would be forced begrudgingly to use such an appliance. However this was not the case. Several people of middle income chose to use a gas heater also. Some users downplayed any problems, saying the smell did not last long or condensation was a problem with all heating and aluminium windows were the real cause. For others however, a dish of water placed in the room with the heater was ‘the universal panacea’, giving them peace of mind that whatever the problem with the heater, they were doing all they could to solve it. This was an unexpected finding but does help shed light on how lower income people especially, who perceived little choice but to use these gas heaters, tackled the perceived negative effects that accompanied them. In this way, the disadvantages of the unflued gas heater were at least addressed, if not removed and did not prevent it from being a popular heating choice.

The majority of people used more than one method of heating at different times over winter. For example, even if wood was chosen for heating because of its other benefits (namely good heat output, ambiance and for some, hot water from a wetback), a gas heater was often a valued additional heating source for use when the fire was not lit or in rooms separate from its warmth.

It should also be noted however, that heating methods existing in the house when residence was taken up had a large influence on what was used.

“It wasn’t a matter of choice, it was just there so we used it!”<sup>13</sup>

Another pertinent consideration when discussing the issue of choice of heating method is that the cheapest choice of heating is to have no heating at all. A small group of people spoke of being colder over winter than they would have liked due to not being able to afford enough heating.

## Dehumidifiers

A supplementary question to that of heating choice explored the views of interviewees regarding dehumidifiers. This was particularly since they are promoted as a means of removing the excess water in a room that is often a problem with unflued gas heater use. Interestingly, few people owned this appliance and even those with condensation problems were not sure whether a dehumidifier would be worth investing in. Again, financial barriers were cited as the main reason for these ambivalent or negative views. Both the cost of initial purchase and the perceived high price of the electricity to run a dehumidifier were noted.

## Health and wellbeing

Given the fact that direct questioning on the impact of heating on health and wellbeing was not undertaken (due to ethical considerations), it was interesting to note the large number of comments volunteered on this subject and the depth and complexity of the views expressed.

Several people (both asthmatics and non-asthmatics) mentioned the adverse effects of unflued gas heaters on asthma. The main foci of discussion were around smell, the dry air and the dampness produced by the heater. There were a few interviewees who reported not using a gas heater because of their asthma and others who said they used one but were aware of and monitored its effects. This was not unexpected as it is known that the combustion products that build up in a room when the heater is in operation can exacerbate breathlessness. What was interesting was the number of asthmatics who either used or had used such an unflued gas heater with little concern for adverse effects. They seemed either unaware of any ill-effects or had come to accept the fact that, 'The air is harder to breath with the gas heater on'. The only reason such people would use the heater in spite of these difficulties is if another factor took higher priority in the decision. In this case, affordability was the issue in question. Several asthmatics were faced with a choice between two undesirable options: either going cold or using the gas heater over winter and experiencing the negative consequences. Not surprisingly, many such people chose to use the gas heater and have therefore learnt to adapt to any resulting ill-effects.

Several interesting comments were made by interviewees on other issues relating to wellbeing and heating. The importance of a warm house for the elderly, children and the sick was mentioned by several people. It seemed to be a common perception that these more vulnerable groups needed to be kept warm in order to be healthy over winter.

Another commonly held perception, especially among older interviewees, was that extreme changes in temperature were bad for the body and predisposed those who experienced them to sickness through the winter months. With this in mind, several people talked of not heating their houses 'excessively'. This was of interest as it had been expected that complaints regarding home heating would have primarily concerned being too cold over winter.

The issue of damp housing impacting negatively on wellbeing was also a common theme, mentioned by many people. It was interesting to note however, that few perceived that they had a problem regarding this issue. Many of the houses in Masterton are of wooden construction and residents, especially in the more historic buildings with little insulation, commonly spoke of their house being 'vented' even if their gas heater was not. Here reference was being made to the drafts that came through their home and which they felt kept any fumes and dampness under control.

Assessment of the knowledge among interviewees regarding the need for ventilation when using an unflued gas heater was an important observation in this study. There were some who made explicit mention of the unflued nature of the portable gas heater and its implications for ventilation needs. Others implied a degree of such knowledge but there was a significant group who were not so well informed. These were the people who spoke of shutting their gas heater up in an enclosed area of their home to maximise temperature gain. Unable to afford to heat the whole house, it seemed to make sense to make sure as little heat as possible was lost from the area that was heated. Some saw no problem with this practise, whilst a few others mentioned their preferred option of being able to leave connecting doors open. Obviously this lack of ventilation in some homes should be of concern to public health workers as the need for adequate ventilation when using unflued gas appliances is widely accepted.

## Opinions

The depth and detail of information shared by each interviewee was impressive, an insight into the complex matrix of reasoning and experience behind each individual's preferences. Information had been gleaned from a variety of sources, particularly the media and social contacts of interviewees.

One woman captured this point: -

"I'm in tune with my own body and what bothers it, you know. You get your information from many sources and you stick with what you believe works, whether there's a scientific basis to it or not!"<sup>31</sup>

Whilst some general themes have been explored in this report, the reality is that each individual interviewee had their own unique set of circumstances and preferences to accommodate these.

Researchers may be in a position to advise as to 'better' ways to heat a home but in the end, every one of the interviewees, like people elsewhere, tries to do their best according to the knowledge and means available to them. It has been a privilege to hear these interviewees share their experiences, as each one of them is the real expert on the realities of heating their home over winter. It will only be by respecting and attempting to understand these viewpoints that meaningful assistance will be formulated to help individuals in our community achieve healthy heating in their homes over winter.



## Appendix One

This information sheet was printed on Department of Public Health letterhead and distributed to all participants in the study.

### Qualitative Study of Indoor Heating Choices in Masterton *Information Sheet*

Thank you for your interest in this study.

The Housing and Health Research Programme, He Kainga Oranga, at the Wellington School of Medicine and Health Sciences is investigating home heating in New Zealand. A pilot study is currently being undertaken in Masterton as part of this work.

The objective of the local study is to find out from Masterton people how they heat their homes over winter and what influences these choices. Masterton has been chosen as Census data show that a large proportion of householders here use bottled gas and/or wood as fuels for heating. These are two forms of heating in which the research group is especially interested.

The study is being carried out by a local medical student, Sarah Dunn, who is interviewing participants about their experiences with heating.

Confidentiality is assured, with no names being taken and any tape-recorded interviews heard by the researchers only, then destroyed. Results from the survey will be used to help better understand New Zealanders' perspectives on heating and develop questions for a nationwide telephone survey planned for 2003.

Thank you, once again, for your interest and participation.

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[www.wnmeds.ac.nz/healthyhousing.html](http://www.wnmeds.ac.nz/healthyhousing.html)

## Appendix Two

### Interview guide

Introduction and consent (provide Information Sheet)

Cover: Sarah Dunn, medical student doing some research with Wellington School of Medicine, interested in the heating Masterton people used in their homes over last winter, would I be able to speak with someone over 18 who can speak for the household? 10mins to talk with me about how you heated your home over last winter?

Decisions re heating

Could you tell me about any heating you used in your home last winter?

1. Main form and any 2.unflued gas heating or 3. open fire use

Why did you choose this/these options? [What are the advantages and disadvantages of these forms of heating for you?]

Whatever interviewee brings up (ie what comes to their mind first).

(There are a lot of bottled gas heaters without chimneys and/or open fires used in Masterton. What do you think of these options? Adv/disad.

(If householder hasn't got unflued gas heating and/or an open fire)

Economics

Keeping a house warm can be comfortable but also pricy. How did you tackle this issue last winter?

Looking at the way the individual has done their unique cost-benefit analysis. Helper question: "How did you balance between the temperature you wanted and the cost of getting it?"

Thinking again about cost... What do you think are the most expensive ways and also the cheapest ways to heat your home?

If open fires and unflued gas heaters not mentioned, ask, "Where would you fit open fires and bottled gas heaters in this scale?"

Observations

Thinking now about the actual effects of your heating.... What changes did you notice in your house when you used the heating?

(Could have already been covered in adv/disad. Q)  
Cover: size and speed of temp change, any other disadvantages? [water issues (condensation, 'dampness', 'humidity' etc), noise (eg fan heaters), smell (eg gas), dirt (eg soot), other (eg dry eyes with fan heater)]

Turning now to another appliance used in some homes – dehumidifiers. Do you have any thoughts on them? Cost, practicality, usefulness (what do they achieve and do they achieve it?)

Satisfaction/Feelings

Overall, how did you feel about the heating of your home last winter?

Open, whatever comes!

Now, let's use our imagination for a minute. If you didn't have to pay anything for heating next winter ie heating is free, how would heat your house?

Hypothetical scenario to try to tease out what people really would like/believe regarding 'the best' heating, by removing income constraints.

Back to reality, what are your thoughts on what you'll do for heating this coming winter?

Screening to check for any changes planned

Was there anything else you would like to add?

To conclude, I've got a few questions about yourself I'd like to ask. Is that ok?

Census question: which of these are ever used to heat the dwelling: none, electricity, mains gas (?), bottled gas (with and without chimney), wood, coal, solar heating, other (eg kerosene)

Age (bands: under 20, 20-30, 30-40...)

Gender M/F

Which ethnic group/s do you belong to? NZ European, Maori, Samoan, Cook Is Maori, Tongan, Niuean, Chinese, Indian, Other

Urban or rural? (RD)

Approx. when was your home built? (Before or after 1977)

How many bedrooms does your house have?

Do you own or rent the house or other?

Community services card Y/N decline to state



## Appendix Three

### Demographic data collected from study group

Note: several interviews included the comments of more than one person thus the number of people tallied is not equal to the number of interviews conducted or the number of separate households surveyed

<u>Question</u>	<u>Number of people</u>
Fuels ever used for heating in winter	Bottled gas: unflued, 22 flued, 2 Wood: 30 Electricity: 22 Coal: 2
Age (years)	30-39: 4 40-49: 5 50-59: 8 60-69: 6 70-79: 4 80-89: 4
Gender	Male: 7 Female: 32
Ethnic group/s	New Zealand European: 36 Maori: 5 Samoan: 1
Location of dwelling	Urban: 27 Rural: 8
Approximate date of construction	1880-1900: 2 1901-1920: 5 1921-1959: 9 1960-79: 11 1980-1989: 5 1990-2000: 4 Specified as prior to 1977: 6
Number of bedrooms	1: 1 2: 5 3: 21 4: 9 5: 2
Home ownership	Owns the property: 34 Renting the property: 7
Community Services Card	Yes: 20 No: 18

## Appendix Four

### **Ideal method of heating**

Interviewees were asked what their ideal heating would be for ‘next winter’ if they could have whatever they wanted and would not have to pay for installation or running costs. This was to examine views on heating methods if differences in cost were taken out of consideration.

<b>Interviewee</b>	<b>Bottled gas</b>	<b>Electricity</b>	<b>Wood</b>
1			Enclosed fire
2		Portable as needed	Enclosed fire
3	Flued gas		
4		Underfloor electric (plus vents into other rooms)	
5			Enclosed fire
6		Electric heaters mainly	Wood fire for ‘looks’
7			Enclosed fire
8		(Showed interest in solar electricity)	Open fire
9		Nightstore plus portable heaters	
10		Solar powered underfloor electric	Second option: heated water through radiators
11	Unflued gas (plus double glazed windows)		
12		Underfloor electric	
13			Enclosed fire
14			Enclosed fire
15	Flued gas		Wood fire
16	Unflued gas		Enclosed fire
17: person 1 person 2 person 3	Unflued gas Unflued gas Unflued gas	Portable electric Portable electric	Enclosed fire Enclosed fire
18	Flued gas		
19		Portable electric	‘Jetmaster’ wood fire
20		Underfloor electric	Agar coal range
21			Enclosed fire
22		Solar generated	

23	Unflued gas (plus carpeting and insulation)		Enclosed fire
24	Flued gas		
25	Flued gas		or Enclosed fire
26		Heat pump	
27	Flued gas	or Underfloor or 'Oil column' electric	
28	Flued gas		
29		Central heating	
30		Considering central heating and nightstore	Enclosed fire
31	Not specified		
32	Unflued gas		
33		Heat pump	Enclosed fire
34		Heat pump	
35		Nightstore heater	
<b>Total (from 36 stated preferences)</b>	14	19	20

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