Department of
Environment and Conservation

Our environment, our future

2008 Kalgoorlie-Boulder Home Heating

SURVEY FINDINGS





February 2009

Department of
Environment and Conservation

Our environment, our future

2008 Kalgoorlie-Boulder Home Heating Survey Findings

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Contents

Definitions and abbreviations

BoM	Bureau of Meteorology
DEC	Department of Environment and Conservation
EPP	Environmental Protection Policy
KCGM	Kalgoorlie Consolidated Gold Mines Pty Ltd
NEPM	National Environment Protection Measure
NPI	National Pollutant Inventory
WHO	World Health Organisation
VOCs	Volatile Organic Compounds

1. Summary

The Kalgoorlie-Boulder region is a naturally dusty place due to its arid environment, limited rainfall and fine soils. Mine activity, land clearing and unsealed roads all contribute to air quality issues in the area. Solid fuel combustion for domestic heating can also be a significant contributor to overall area-based emissions such as Volatile Organic Compounds (VOCs) and particulate matter.

The 2008 Kalgoorlie-Boulder Home Heating Survey offers some insight into household wood heating behaviour and usage. The survey aimed to estimate:

- the number of wood heaters in Kalgoorlie;
- their frequency and duration of use;
- the consumption of wood used for heating; and
- the level of compliance of wood heaters in domestic households to the current Australia/New Zealand Standard (AS/NZS 4013:1999).

The survey was undertaken between September and November 2008 and involved 313 households.

The survey found that in the Kalgoorlie-Boulder region:

- 36.4 per cent of households have a wood heater;
- combustion heaters were the most popular form of wood heater;
- households possessing a wood heater consumed on average 1,362 kg of wood per annum;
- 74 per cent of wood heaters did not meet the current (AS/NZS 4013:1999) standard; and
- the majority of households use their heater in winter months (June to August) everyday for longer than eight hours.

In comparison with other similar studies, such as the 2006 Synovate Kalgoorlie Home Heating Survey[1] and the 2004 Perth Home Heating Survey[2] it was found that:

- wood heaters were more common in homes in the Kalgoorlie-Boulder region (37 per cent) than in homes in the Perth metropolitan area (25 per cent); and
- their were more compliant wood heaters present in Kalgoorlie-Boulder households although low (26 per cent), compared to results from the 2006 Synovate Kalgoorlie Home Heating Survey (18 per cent).

The findings highlight the potential to proactively reduce wood heater use through continued education, removal of unused wood heaters and making alternative heater use more attractive to the public.

[1] The Synovate Home Heating Survey consulted 200 Kalgoorlie residents in July 2006. Comparisons rather than direct conclusions can be made.

[2] The Perth Home Heating Survey surveyed 3,114 residents in three local government areas from May to September 2004. Comparisons rather than direct conclusions can be made.

2. Introduction

The Goldfields region of Western Australia is 595 kilometres east of Perth. The population base of the twin mining cities of Kalgoorlie-Boulder of more than 30,000 people is almost entirely confined within an 18sqkm area. The smaller towns of Coolgardie and Kambalda also encompass the region. Coolgardie is approximately 32kms west of Kalgoorlie and has a population of 4,000. Kambalda is 50kms south of Kalgoorlie with a population of approximately 2,700 (ABS, 2008).

The Department of Environment and Conservation (DEC) has undertaken a home heater survey in the region to investigate the:

- usage and prevalence of wood heaters;
- the types of wood heating used (open fire, conventional, or combustion);
- length and frequency of wood heater usage; and
- compliance of heaters with the current Australian and New Zealand Standard AS/NZS 4013:1999.

Preceding the 2008 Kalgoorlie-Boulder Home Heating Survey was the 2004 Perth Home Heating Survey (DEC, 2006), which was undertaken with residents in the City of Melville, City of Joondalup and Town of Kwinana. DEC also conducted a Kalgoorlie home heating survey in 2006 (Synovate, 2006). This survey found Kalgoorlie residents were likely to use a variety of heating sources with gas the most popular form of primary heating (50 per cent) in a home with wood heaters second (28 per cent) (Synovate, 2006). The National Pollutant Inventory Kalgoorlie Mining Trial[3] (Coffey, 1999) included a home heating survey to determine diffuse air emissions from domestic sources. It is hoped results from these studies can be compared where appropriate.

3. Aims

The aim of the 2008 Kalgoorlie-Boulder Home Heating Survey was to assess the potential reduction in emissions from improved management of wood heater usage and practices.

4. Survey methodology

4.1 Survey collections

The 2008 Kalgoorlie-Boulder Home Heating Survey aimed to collect a total of 50 home heating surveys from the Coolgardie and Kambalda areas and 270 from the Kalgoorlie-Boulder region.

[3] The 1999 Coffey Kalgoorlie NPI surveyed 100 households in Kalgoorlie-Boulder. Comparisons with the current survey rather than direct conclusions can be made.

The survey took place between September and November 2008. Home heating surveys (Appendix 1) were distributed via email to DEC staff in Kalgoorlie, Kalgoorlie Consolidated Gold Mines and the City of Kalgoorlie-Boulder. These were distributed internally with seven surveys being returned. Home heating surveys also were sent via mail to households with postage paid envelopes. Forty-eight survey forms were returned after the first electronic and postal mail out.

Due to insufficient responses, random telephone surveys (Appendix 2), were conducted to obtain information for the remaining number of surveys required.

For the purpose of this study, 313 valid surveys from Kalgoorlie-Boulder, Kambalda and Coolgardie were analysed. The numbers of surveys analysed from each region is shown below.

Table 1: Number of surveys analysed

	Coolgardie/Kambalda	Kalgoorlie-Boulder
No. of surveys analysed	44	269
No. of surveys required	50	270

4.2 Data reliability

The data on the compliance with the Standard AS/NZS 4013:1999 may be inaccurate due to householders not being able to accurately identify whether their heater is compliant or not. There were also slight differences in the design of the mail-out survey and the telephone survey. For the purpose of the survey it was assumed a standard 6ft x 4ft trailer load of wood was 500kg.

5 Results

5.1 Wood heating in homes

Respondents were asked if they possessed a wood heater. Of the 313 respondents 63.6 per cent (n=199) did not have a wood heater. 36.4 per cent of the population had a wood heater (n=114) this is shown below in Table 2.

Table 2: Do you have a wood heater?

Yes	36.4%
No	63.6%

5.2 Forms of wood heating

Households heated with wood were asked to indicate the type of wood heater they used. The most used forms of heating were controlled combustion (67 per cent), conventional (23 per cent) and open fires (10 per cent). One householder had both a conventional and combustion wood heater. Survey responses are presented below.

Table 3: What type of wood heater do you have?

	Coolgardie	Kambalda	Kalgoorlie-Boulder
Combustion	4	8	65
Conventional	4	2	21
Open fire	0	0	11

5.3 Wood consumption and wood heater frequency of use

This section of the home heating survey investigated wood heater usage patterns including the amount of wood consumed, compliance of wood heaters with the current standard and time, duration and frequency of wood heater use. These factors are important in determining behavioural patterns and possible avenues of change.

5.3.1 Wood use

Respondents were asked how much wood they burnt for the 2007/2008 financial year. If households were unsure of the amount of wood they used they were informed that a standard trailer load of wood was 500kg. Respondents who left this question unanswered or were still unsure of their wood consumption following prompting were not considered. Results are summarised below.

Table 4: How much wood do you consume?

	Total wood consumed (kg)	No. of respondents	Average wood consumption
Open fire	12,200	10	1,220
Conventional	39,675	24*	1,653
Combustion	89,780	70*	1,283

*One householder had a conventional and combustion heater, it was assumed his wood consumption of 3,000 kg was divided equally between the two heaters

The total amount of wood consumed in the 2007/2008 financial year from the respondents that had a wood heater was 141.7 tonnes. This represented an average of 1,362kg of wood per household that had a wood heater.

5.3.2 Compliance with current standard

Respondents were asked if their wood heater was compliant with the current Australian/New Zealand Standard AS/NZS 4013:1999. The AS/NZS 4013 includes stringent marking requirements and the requirement that a wood heater is to emit not more than four grams of particles per kilogram of wood burnt. WA regulates the sale of wood heaters under the Environmental Protection (Domestic Solid Fuel Burning Appliances and Firewood Supply) Regulations 1998. In February 2006, the regulations were amended to refer to the current Australian/New Zealand standard. The revision of the legislation clarifies requirements under the Act and authorises the enforcement of the regulations to ensure that only wood heaters compliant to the current standards are offered for sale in WA. For the purpose of this home heating survey, heaters purchased after 1999 were considered compliant with current standards.

The percentage of non-compliant and compliant heaters (n=80) for conventional and combustion heaters is shown below. Some respondents (n= 24) were not sure of the compliance of their heater or left this question unanswered.

Table 5: Is your heater compliant with the current standard?

	Compliant %	Non compliant %
Conventional heater	3.75	17.5
Combustion heater	22.5	56.25
Total	26.25	73.75

5.3.3 Months of use

Respondents were asked what months did they use their wood heater. Wood heaters were not used at all in the months from November to January. The number of households using their wood heater for each calendar month is shown below.

Table 6: Over the period of the last financial year what months did you use your heater?

Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
Coolgardie	7	8	0	0	0	0	0	0	0	0	3	8
Kambalda	8	8	0	0	0	0	0	0	0	0	1	9
Kalgoorlie-Boulder	79	67	10	3	0	0	0	1	2	8	24	76

Figure 1 below, shows the percentage of Kalgoorlie-Boulder residents heating their homes using wood fuel and the months they do this.

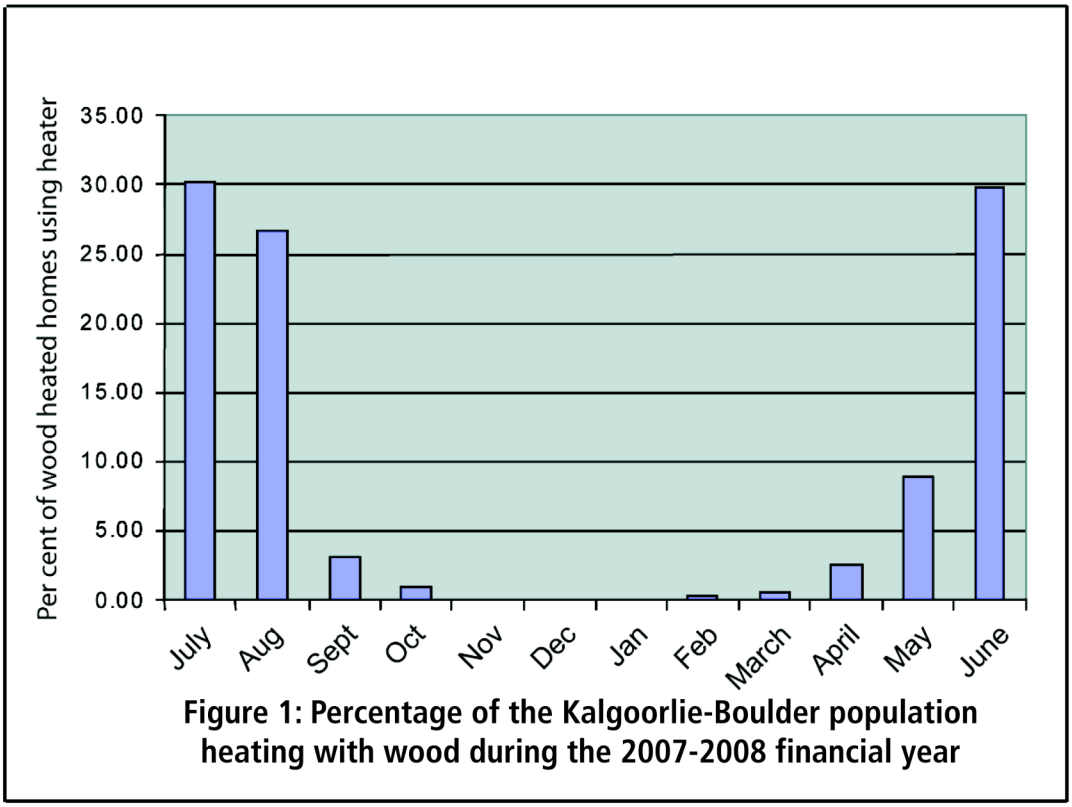

Figure 1: Percentage of the Kalgoorlie-Boulder population heating with wood during the 2007-2008 financial year

5.3.4 Frequency of use

Respondents were asked to indicate how often they operated their wood heater during the months of the year it was in use. Survey responses (n=103) are shown below.

Table 7: During months of use, how often did you use your heater?

	Everyday	Few times per week	Once per week	Once per fortnight	Once per month
Open fire	7	3	1	0	0
Conventional	10	10	0	0	0
Combustion	44	24	3	1	0

The percentage of households with a wood heater and their frequency of use is shown in Figure 2. Most households (59.2 per cent) used their wood heater everyday or at least a few times a week (35.9 per cent).

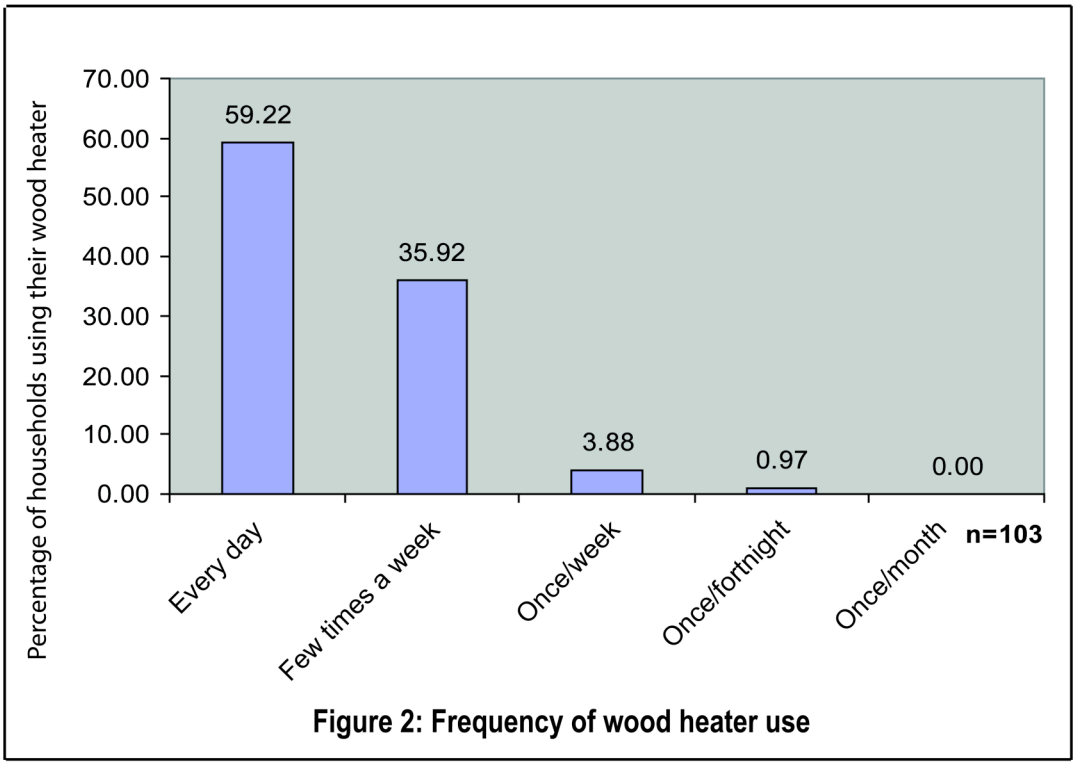

Figure 2: Frequency of wood heater use

Figure 3 shows the frequency of use in relation to the form of wood heater used in households. More than 60 per cent of households with a combustion and open fire wood heater would use it every day in the months it is in use, while households that have a conventional pot belly stove would use it every day or a few times a week.

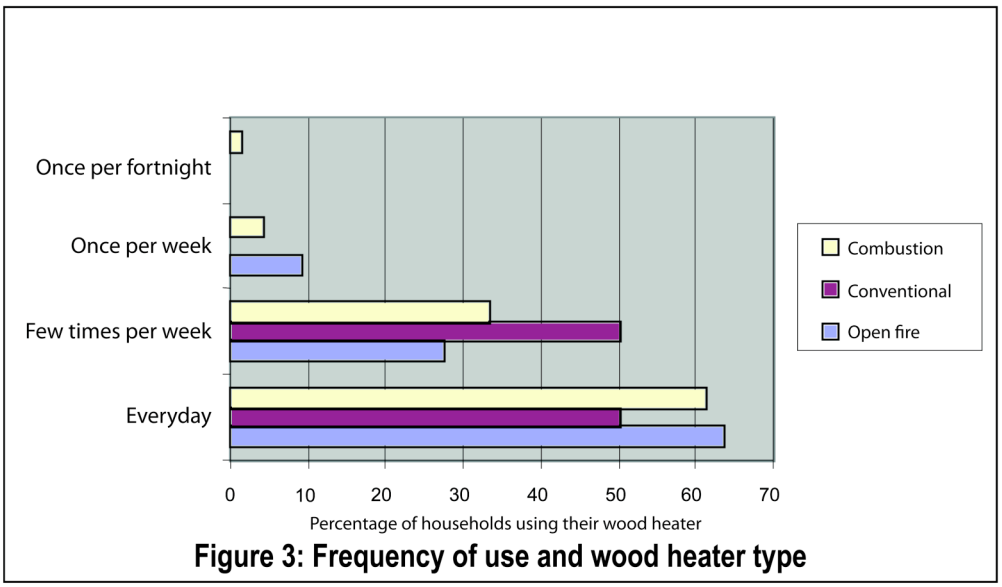

Figure 3: Frequency of use and wood heater type

5.3.5 Length of use

Respondents were asked when they did operate their wood heater, for how long was it used. Survey responses (n=104) are summarised below.

Table 8: How many hours a day do you use your heater?

	<2 hours	2-4 hours	4-6 hours	6-8 hours	>8 hours
Open fire	1	3	1	1	5
Conventional	1	8	3	3	6
Combustion	1	18	8	13	32

More than 40 per cent of households indicated they used their wood heater for more than eight hours a day. This is shown below in Figure 4.

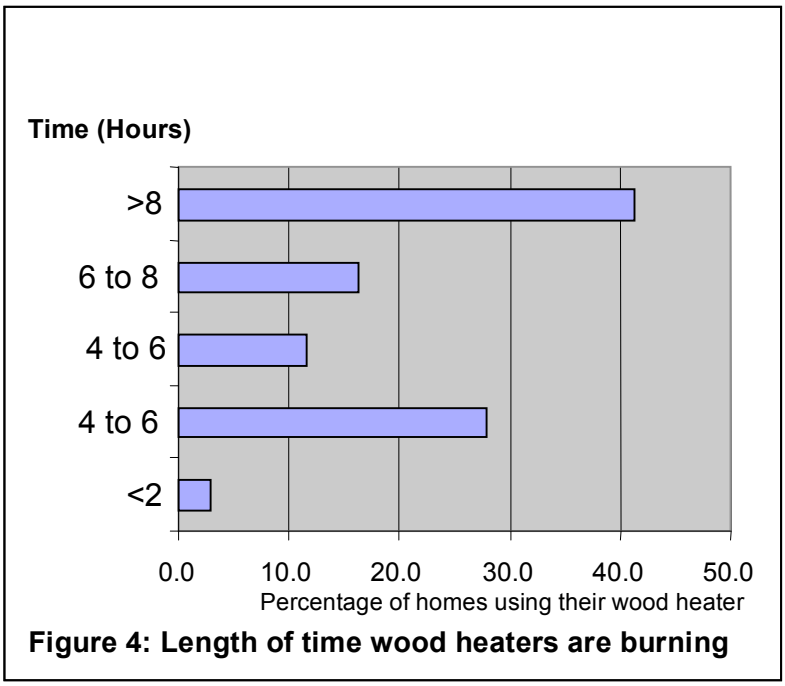

Figure 4: Length of time wood heaters are burning

6 Discussion

The significant health impact and community costs associated with domestic wood smoke heaters and fire places has been well documented (Todd, 2006).

The 2008 Kalgoorlie-Boulder Home Heating Survey offers some insight into the wood burning behaviour of households and the possible contribution of wood burning to air pollution. It also allows for a comparison with other studies such as the 2006 Synovate Kalgoorlie Home Heating Survey, the Coffey Kalgoorlie NPI Trial conducted in 1999 and the 2004 Perth Home Heating Survey where appropriate.

6.1 Wood heating

The results from the 2008 Kalgoorlie-Boulder Home Heating Survey show a decreasing trend of wood heater use in the area.

As indicated in Table 9 below, the 2008 Kalgoorlie-Boulder Home Heating Survey found 36.4 per cent of Kalgoorlie households have wood heaters in their home. This figure is down from the 47 per cent of households in the 2006 Synovate Kalgoorlie Home Heating Survey, which posed a similar question to respondents (Do you have a wood heater in the home whether it is used or not?).

Primary, secondary and tertiary sources of home heating were not considered in the 2008 Kalgoorlie-Boulder Home Heating Survey so comparisons with other studies on this aspect are difficult. The 2006 Synovate Kalgoorlie Home Heating Survey found 28 per cent of homes use wood heaters as their main (primary) source of heating (Synovate, 2006). In contrast, the 1999 Kalgoorlie NPI Study found approximately 60 per cent of households use wood heaters as their main source of heating (Coffey, 1999).

In the Perth metropolitan region, the Perth Home Heating Survey found that wood heater use in the local government areas of Joondalup (148,000 residents), Melville (91,400 residents) and Kwinana (21,000 residents) were less prevalent, only 11.2 per cent used their wood heater as their primary source of heating (DEC, 2004).

The lower levels of wood heater use in the Perth metropolitan region may be due to increased cost, difficulties collecting firewood and the Haze Reduction Initiative (Initiative 9) of the Perth Air Quality Management Plan. Actions under this initiative include wood heater replacement programs, environmental health officer training, policy development, wood heater retailer auditing, expansion of school-based education programs and haze alerts (DEC, 2007).

Table 9: Wood heater use in Kalgoorlie-Boulder: comparison of recent surveys

Study	Coffey Kalgoorlie NPI 1999	2006 Synovate Kalgoorlie Home Heating Survey	2008 Kalgoorlie Home Heating Survey	2004 Perth Home Heating Survey
% Households using their wood heaters as their main heating source	60	28	n/a	11.2
% Homes with a wood heater	n/a	47	36.4	25

The apparent decrease in the use of wood heaters in the Kalgoorlie region is most likely due to increased use of gas heaters and reverse cycle air conditioners. The 2006 Synovate Kalgoorlie Home Heating Survey found that

gas heating and ducted reverse cycle air conditioning would be the most likely alternative heating source that a household would purchase (Synovate, 2006). The Perth Home Heating Survey stated that *"...wood heater numbers have decreased in the Perth metropolitan region. This may be due to more people using reverse cycle air conditioners as they have the versatility to be used as a heater in winter and cooler in summer"* (DEC, 2006 [A]).

The 2006 Synovate Kalgoorlie Home Heating Survey found the average age of wood heaters in Kalgoorlie was 15 years with the majority of wood heaters inherited when residents moved homes. Most wood heaters have a recommended working life of 15-20 years (DEC, 2006 [A]). This suggested at the time that homes are likely to replace or be in the market for a new heater. This could account for the reduction in wood heater use seen between the relatively short time frame between the 2006 Synovate Home Heating Survey and the 2008 Kalgoorlie-Boulder Home Heating Survey.

The age of homes was not considered in the 2008 Kalgoorlie-Boulder Home Heating Survey or the 2006 Synovate Kalgoorlie Home Heating Survey. It would be expected that new homes built in the two years between studies would be more energy efficient, likely to have floor, ceiling or wall insulation and have 'modern' heating appliances such as gas heaters or reverse cycle air conditioners. This may account for some of the reduction in wood heater usage over the duration of these studies.

6.2 Forms of wood heaters

The 2008 Kalgoorlie-Boulder Home Heating Survey found slow combustion wood heaters were the most common (25 per cent) wood heater used in the Kalgoorlie-Boulder region. The Synovate Home Heating Survey found 23 per cent of homes used slow combustion heaters as their primary heating source (Synovate, 2006). In the Perth metropolitan region, slow combustion heaters were also the most popular primary wood heater in households (12.7 per cent) (DEC, 2006 [A]).

6.3 Compliance of wood heaters with Australian standards

The 2008 Kalgoorlie-Boulder Home Heating Survey found that most Kalgoorlie-Boulder wood heaters (74 per cent) would not meet the current Australian/New Zealand Standard for emissions. The survey also found that households were often unsure of the compliance of their heater or left the question unanswered because:

- they inherited the heater upon purchase or occupancy of the house and had no idea when it was purchased;
- they had no recollection of the purchase date of their heater as it was too long ago to remember; and
- they were worried about possible prosecution.

New wood heaters bought after 1999 were assumed compliant in this survey. This may be an inaccurate assumption. An audit in 2006 by DEC found a significant number of non-compliant wood heaters were being sold in metropolitan and regional areas of WA[4] (DEC, 2006[A]). A national audit of wood heaters in 2003 showed that more than 50 per cent were incorrectly labelled as compliant with the current Australian/New Zealand Standard (DEC, 2007).

The low level of compliance of wood heaters in the 2008 Kalgoorlie-Boulder Home Heating Survey is of concern. The 2006 Synovate Kalgoorlie Home Heating Survey found that Kalgoorlie-Boulder heaters were on average 15 years old. Old, poorly maintained or operated, non-compliant wood heaters are more likely to contribute to emissions in the Kalgoorlie-Boulder region.

The compliance figures of the 2008 Kalgoorlie-Boulder Home Heating Survey, although low, were more positive than previous studies. As shown below, the 2006 Synovate Kalgoorlie Home Heating Survey found 82 per cent of Kalgoorlie residents were likely to have a non-compliant heater. The Perth Home Heating Survey showed that 92.1 per cent of wood heaters were likely to be non-compliant with the Standard AS/NZS 4013:1999.

Table 10: Wood heater compliance in Kalgoorlie-Boulder and Perth.

	2006 Synovate Kalgoorlie home Heating Survey	2008 Kalgoorlie-Boulder Home Heating Survey	2004 Perth Home Heating Survey
% Non compliant heaters	82	74	92.1

The improvements are probably a result of attrition of old heaters, the auditing and enforcement of the Environmental Protection (Domestic Solid Fuel Burning Appliances and Firewood Supply) Regulations 1998 by DEC (DEC, 2006[B]) and replacement of old wood heaters with new wood heaters or alternative heating sources.

6.4 Wood consumption

The results of the 2008 Kalgoorlie-Boulder Home Heating Survey study show that the domestic consumption of wood in the Kalgoorlie region has decreased over the past nine years. In 2008, the annual average consumption of wood for a household with a wood heater was 1,362 kg (Table 11). This is lower than the estimates of the 2006 Synovate Kalgoorlie Home Heating Survey (1,480 kg) and the 1999 Coffey NPI trial (2,600 kg).

[4] A total of 29 wood heater outlets were audited in the Perth metropolitan region and 13 in the regional centres of Bunbury, Busselton, Albany, Denmark and Kalgoorlie.

Table 11: Wood consumption in Kalgoorlie-Boulder

	Coffey Kalgoorlie NPI 1999	2006 Synovate Kalgoorlie Home Heating Survey	2008 Kalgoorlie-Boulder Home Heating Survey
Av. wood heated homes wood consumption (kg)/yr	2,600	1,480	1,362

6.5 Frequency, time and duration of wood heater use

The 2008 Kalgoorlie-Boulder Home Heating Survey found that during the months of use, 59 per cent of households would use their heater everyday (Table 12). The 2006 Synovate Kalgoorlie Home Heating Survey found 73 per cent of Kalgoorlie households used their heater in winter everyday. The use of wood heaters in the Perth metropolitan area is less frequent with 31 per cent of households using their wood heater every day in winter (DEC, 2006 [A]).

Table 12: Frequency of wood heater use in Kalgoorlie-Boulder and Perth

	2006 Synovate Kalgoorlie Home Heating Survey	2008 Kalgoorlie-Boulder Home Heating Survey	2004 Perth Home Heating Survey
Everyday %	73	59	31
Few times per week %	22	36	36
Once per week %	1	4	11
Once per fortnight %	n/a	1	n/a
Once per month %	4	0	7

Kalgoorlie residents used their wood heater for longer periods than Perth residents. The percentage of households using their wood heater all night is shown in Table 13.

Table 13: Frequency of burning wood heaters in Kalgoorlie and Perth

	2006 Synovate Kalgoorlie Home Heating Survey	2004 Perth Home Heating Survey	2008 Kalgoorlie-Boulder Home Heating Survey
% burning all day and all night	21	3	n/a*
% evening only	18	73	n/a*
% all day and evening	15	6	n/a*
% evening and overnight	8	15	n/a*

*Household use in the 2008 Home Heating Survey was considered in hours of use only.

Differences between burning times would be due to a variety of factors including climatic differences, insulation in the home and use of secondary heaters. These were not considered in the 2008 Kalgoorlie-Boulder Home Heater Survey.

7. Concluding remarks

The 2008 Kalgoorlie-Boulder Home Heater Survey shows that the trend away from wood heaters in the region appears to be strong. It shows that those households with a wood heater are using them less frequently and consuming less wood.

The preferred type of heating in a home will depend on many factors. Running costs, capital cost of the heater, availability of fuels, convenience, heating load and aesthetics would all be considered by a household in keeping their existing heater or purchasing a new one (Todd, 2003).The increasingly negative public attitude regarding the environmental implications of heating with wood and the automatic controls and instant heat output of modern alternative appliances are benefits to the consumer that often outweigh the low running cost of wood heaters.

As people change heating sources over time there is the tendency to leave wood heaters undisturbed and unused. It is not known from the 2008 Kalgoorlie-Boulder Home Heating Survey how many unused wood heaters are currently in Kalgoorlie homes. The 2006 Synovate Kalgoorlie Home Heating Survey found 82 per cent of Kalgoorlie wood heaters were already in the house when the occupant moved in. It is conceivable that the current trend in wood heater use could again reverse by increases or interruptions to the gas or electricity supply (DEC, 2007). Any educational campaigns in the Kalgoorlie-Boulder region should be aimed at influencing the consumer choice away from unflued gas heaters and to the removal of wood heaters.

Despite consumer education campaigns towards alternative heating sources there will probably always be a reasonable percentage of the Kalgoorlie-Boulder population that will use wood heaters. In most regions outside large urban centres it costs less to heat with firewood purchased at market prices than with oil, propane, electric resistance heaters and wood pellets (Gulland et al, 1997). People enjoy collecting wood, and apart from the time cost to themselves, wood gathering can be an inexpensive process.

The emission standard for wood heaters (AS/NZS 4013:1999) was introduced in an attempt to reduce emissions from wood heaters through improved technology. The standard is currently under review (DEC, 2007) with the aim of making it more stringent. Audits of retailers nationally in 2003 and domestically in 2006 have raised questions about the efficacy of the standard as a means to control heater emissions. Regular auditing of retailers, although time consuming, has been found to be an effective and necessary tool in increasing the levels of compliance (DEC, 2006 [B]).

The findings of the 2008 Kalgoorlie-Boulder Home Heating Survey highlight a number of possibilities to proactively reduce and improve wood heater use in the Kalgoorlie-Boulder community through continued education and making alternative heater use more attractive.

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Appendix 1

Kalgoorlie Domestic Solid Fuel Burning Survey

From the 1st of July 2007
to the 30th of June 2008

1. **Name:**

   _____

2. **Street address & postcode**

   _____

3. **Phone number** _____

4. **Record of household solid fuel burning**

Type of Heater	Fuel Used (Wood or Coal/Briquettes)	Weight of fuel burnt (Kg/year)[1]	Compliant with AS/NZ 4013:1999 Standard[2]
Open Fire Place			
Conventional (Closed stoves that control burn time. eg. Pot belly, wood oven)			
Controlled/Slow Combustion(fan forced)			

1. 500 Kg is approximately equal to a standard 6x4 trailer load
2. If you Controlled combustion heater was bought and installed from 1999 onwards it will be compliant with the AS/NZ 4013:1999 Standard

5. **Over the period of the financial year what months do you use your heater? (Please Circle)**

2007-JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN-2008

6. **During these months of use, how often do you use your heater? (Please Circle)**
    - **Every day**
    - **Few times per week**
    - **Once per week**
    - **Once per fortnight**
    - **Once per month**

7. **For heater use, what are the average hours of use per day? (Please circle)**
    - **2 Hours or less**
    - **2-4 Hours**
    - **4-6 Hours**
    - **6-8 Hours**
    - **More then 8 Hours**

Thankyou very much,

Please return completed survey by 28 October 2008 to:

Bonny Dunlop-Heague
Environmental Officer

Air Quality Management Branch
Department of Environment and Conservation
Locked Bag 104
Bentley Delivery Centre
Western Australia, 6983
Phone: (08) 9333 7460
Fax: (08) 9333 7450
Email: bonny.dunlop-heague@dec.wa.gov.au

Appendix 2

Kalgoorlie Domestic Solid Fuel Burning Phone Survey

Do you use wood heating?

What kind? OPEN FIRE CONVENTIONAL (Pot belly) COMBUSTION

How much wood did you burn for the 07/08 financial year?

Is your combustion heater compliant with the AS/NZ 4013:1999 standard? I.e. was it bought and installed from 1999 onwards?

For that year what months did you use your heater?
2007-JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN-2008

During these months how often did you use your heater?
EVERYDAY FEWTIMES/W ONCE/W ONCE/FORTN ONCE/MONTH

When you used your heater, for how long did you use it?
<2HR 2-4HR 4-6HR 6-8HR >8HR

That was all the questions I had for you,

Thank you very much for your time and have a nice day.