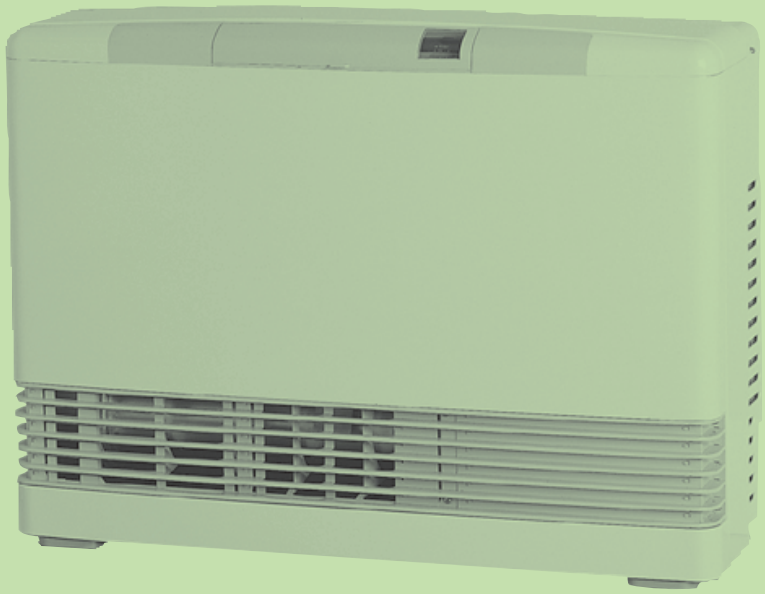
STANDBY PRODUCT PROFILE 2004/17

NOVEMBER 2004

PRODUCT PROFILE



GAS SPACE HEATERS

AUSTRALIA'S STANDBY POWER STRATEGY 2002 - 2012

AN INITIATIVE OF THE MINISTERIAL
COUNCIL ON ENERGY FORMING
PART OF THE NATIONAL
GREENHOUSE STRATEGY

Cover graphic courtesy of Rinnai

The National Appliance and Equipment Energy Efficiency Committee seeks comment on this proposal from any interested person or organisation.

Please email comments to:

energy.rating@deh.gov.au

Alternatively, hard copy comments can be mailed to:

Equipment & Appliances Team
Australian Greenhouse Office
Department of Environment and Heritage
GPO Box 787
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Comments received by 28 February 2005 will assist in determining the final form of the policy proposals taken to government.

An electronic version of this Standby Product Profile and other Profiles released for public discussion can be obtained from www.energyrating.gov.au

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PRODUCT DESCRIPTION

Gas space heaters have been available in Australia since reticulated gas was made available to the residential sector, well over thirty years ago. They are an essential part of life in the colder regions of Australia and, due to their cost effectiveness over other types of space heating, have gained an increasing market share since their introduction. Gas space heaters are generally run on natural gas but most have liquefied petroleum gas (LPG) or other gas options available. Natural gas is generally far more cost efficient than LPG but mains gas reticulation is limited to about 50% of all households in Australia (this availability varies substantially by state and region).

Most residential heaters, independent of gas type, have a gas energy rating; the higher the number of stars, the more efficient the heater. This energy rating scheme is currently operated by the Australian Gas Association. Most gas space heaters originally used a pilot light for ignition, but nearly all models now have electronic ignition, which has reduced overall gas usage. However, this means that most gas space heaters also require a connection to mains power and many consume standby power when not in use. This standby profile is limited to gas space heaters that have a connection to mains power.

Gas space heaters can have either a manual or remote controls, with timer functions, depending on model and brand. Most gas space heaters are controlled by a thermostat which limits output beyond a selected room temperature. Fixed units (e.g. ducted and wall mounted units) will also have at least one fixed control (typically wall mounted or on the unit) and they may have one or more remote controls, which are used by the user to alter the temperature of the room or to set timer functions (if applicable).

Gas space heaters consist of two main types; ducted units and non-ducted units. Each of these is described briefly below.

Ducted units consist of a central heating unit, located either in the ceiling cavity, under the floor or outside the home. The unit draws air from inside the house, warms it through a heat exchanger and then pumps the warmed air back into the home through a system of ducts, located in the ceiling or in the floor, depending on house design. The air for combustion is drawn from outside and is flued to the outside after combustion so that no combustion products enter the home. Some systems also allow zoning; giving the user control over which rooms are heated, to what temperature, during what times of the day or night. Ducted heating systems are generally viewed more favourably in colder climates, due to their large heating capacity and their ability to heat the whole house. Ducted systems generally have a higher capital and installation cost. All ducted systems use convection as the means of heating.

Non-ducted units consist of a range of types with differing heating delivery methods and associated accessories. Non-ducted types can be split into flued and unflued systems.

Flued units can have a flue installed into an existing fireplace, but as these are becoming less prevalent, other fluing options are becoming more widespread. Flues can be configured into horizontal and vertical systems. The most basic horizontal flue is an outlet through a wall directly behind the heating unit, or using an horizontal extension, through an adjacent wall. Vertical fluing is more expensive and consists of a flue pipe being run either inside the wall cavity or on the outside of the wall, to an outlet located just above the roof. Both horizontal and vertical fluing systems externally exhaust the heater combustion products to the outside.

Flued systems can also be split into balanced and unbalanced types. A balanced flue system draws air for combustion from outside the home and heat is transferred to the room via a heat exchanger. An unbalanced flue system draws air for combustion from the space which is heated which is then exhausted outside via the flue. This process creates a small negative pressure in the room as flued air has to be replaced which will draw air from other parts of the house or from outside. Flued convection heaters can be either type but radiant heaters tend to be of the unbalanced flue type.

Unflued units are where the gas combustion process takes place wholly within the room being heated. The air for combustion is drawn from the room and the combustion products are returned to the room. Typically unflued space heaters tend to be smaller capacity. Portable units are generally unflued. Unflued heaters are nominally high efficiency as all heat is returned to the room, but there are requirements for ventilation as the combustion products (water and carbon dioxide) also enter the room. There are several issues surrounding unflued units. Each State has differing regulations pertaining to the use of unflued gas space heaters.

Non ducted units can also be split into three differing heat delivery methods; convection, radiant and gas log (decorative) and combinations of these. Convection based units warm the indrawn air and then pump it into the space to be warmed. Radiant units heat panels on the face of the unit to a high temperature which then directs radiant heat energy towards the user, who generally has be to in fairly close proximity to get the benefits. Many radiant heaters also have a fan that moves air around the room as well (so called radiant/convection combination units). Gas log units use stylized ceramic logs and realistic flames to create a traditional wood fire effect. They generally have large glass faces, which allow viewing of the fire and to radiate some heat; most also have fans that help circulate the warmed air. There are flued and unflued variants of convection, radiant and gas log units on the market.

The standard AS4553-2000 (previously AG103) applies to gas space heating appliances, while the standard AS4556-2000 (previously AG106) applies to indirect gas-fired ducted air heaters. Standard AS4558-2000 (previously AG108) covers decorative gas log and other fuel effect appliances. These standards cover all requirements for gas space heaters including safety, performance and energy labelling. These standards specify that electrical standby power is to be measured and incorporated into the energy label value in mega joules (where applicable). Standby power calculations are part of a larger set of requirements, which give the gas energy rating of the appliance the overall energy usage. Electrical energy (including standby) is converted to an equivalent gas energy for the assumed usage profile.

The major issues covered by the standard AS4553 include;

- Unit design and construction
- Preliminary test instructions and information
- Gas tests (guards, leakage, consumption rate, regulators)
- Limit gas tests (carbon monoxide)
- Performance tests (including efficiency, flue temperature and operation, noise, condensation, safety, durability, controls and energy labelling)

Methods of test for each of the major performance requirements are also provided.

The standard AS4556 covers the same issues and has the same basic format as AS4553, but pertains specifically to ducted systems rather than general space heating appliances. AS4558 primarily covers performance and safety issues – any products which are intended for space heating (in the form of radiant or convected heat) also have to be certified to the requirements of AS4553.

This standby profile is limited to products that are covered by the scope of AS4553, AS4556 and/or AS4558; specifically:

- new gas space heating appliances (convectors, radiant convectors, wall furnaces) with natural draught or fan assisted combustion systems, constructed totally from new materials and components and intended for use with natural gas, town gas, liquefied petroleum gas (LPG) and tempered liquefied petroleum gas (TLP) with gas consumptions not exceeding 150 MJ/h; or
- new indirect fired ducted air heaters, constructed totally from new materials and components, intended for use with natural gas, town gas, liquefied petroleum gas (LPG) and tempered liquefied petroleum gas (TLP) with gas consumptions not exceeding 500 MJ/h; or
- decorative gas log, coal or other fuel effect fires with gas consumptions not exceeding 72 MJ/h.

CURRENT OWNERSHIP AND TRENDS

As almost 80% of Australia's households have some form of "main" space heating (ABS 4602.0), the national heating market is very competitive. While much of Australia has a mild climate, a significant proportion of Australia experiences cool to cold winters, so many consumers opt for gas heating systems that have both sufficient capacity and are cost effective where mains gas is available. Gas space heating has experienced a gradual increase in market share as the reticulated mains gas system expands. In those areas with a significant heating demand, mains gas is usually the most cost effective and convenient option. Figure 1 below shows the share of main space heater type used in Australian households. This shows that gas space heating is now the most prevalent form of "main" space heating in Australia.

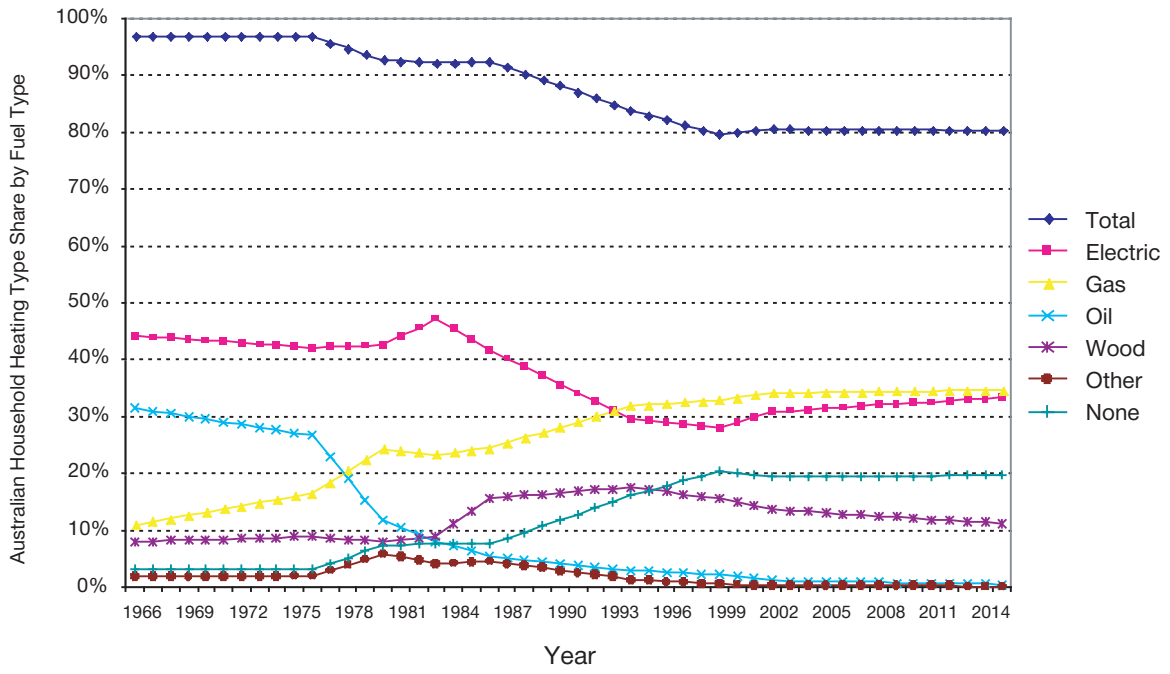
Figure 2 below shows the penetration of main gas space heaters by State. It can be seen that the States that experience colder seasons and that have established natural gas distribution networks have a higher penetration. Victoria has the largest and most extensive gas distribution system and a high heating requirement hence the high penetration of gas heating. The rapid expansion of the natural network in the ACT (which also has a high heating requirement) has resulted in rapid growth of gas space heaters in this territory. South Australia and Western Australia have milder climates but have well established gas networks in their state capitals. The gas distribution system in NSW has been expanding gradually since natural gas was connected from Moomba in 1979. Queensland has a very low heating requirement and a very limited natural gas distribution system. The Northern Territory has gas available in the major cities but the heating requirement is very low. Tasmania has a high heating requirement but there is no natural gas distribution in that state (there is a very limited amount of LPG reticulation in selected areas).

The gas share of main heating shown above only includes those households where gas is the main heating sources (includes LPG). Some households have more than one gas heater and some households that have a gas heater will use an alternative fuel for their "main" heating type, so these figures somewhat understate the stock of gas heaters.

The Australian Bureau of Statistics do not record information on the number or type of secondary heaters in use in households, so other data sources were examined. BIS Shrapnel (2002) undertake a biennial survey of households and record information on the stock of various appliances and equipment through a detailed household survey. This data provides information on the total stock of gas heaters in use in Australia, irrespective of how many heaters are present in a household or what heater type is used as the main heater in the household.

The penetration of gas heating estimated by BIS Schrapnel (2002) (38%) is higher than ABS (34%) because some households will have a gas heater which is not a main heater. In addition, some households have multiple gas heaters. For New South Wales, South Australia, Victoria and Western Australia, between 4% and 10% of households have two gas heaters. In Queensland, only about 1% of households have two heaters. In all states less than 1% of households have three or more gas heaters. An overall calculation for Australia shows about 5% of households with

FIGURE 1: AUSTRALIAN MAIN SPACE HEATING HOUSEHOLD SHARE BY FUEL TYPE



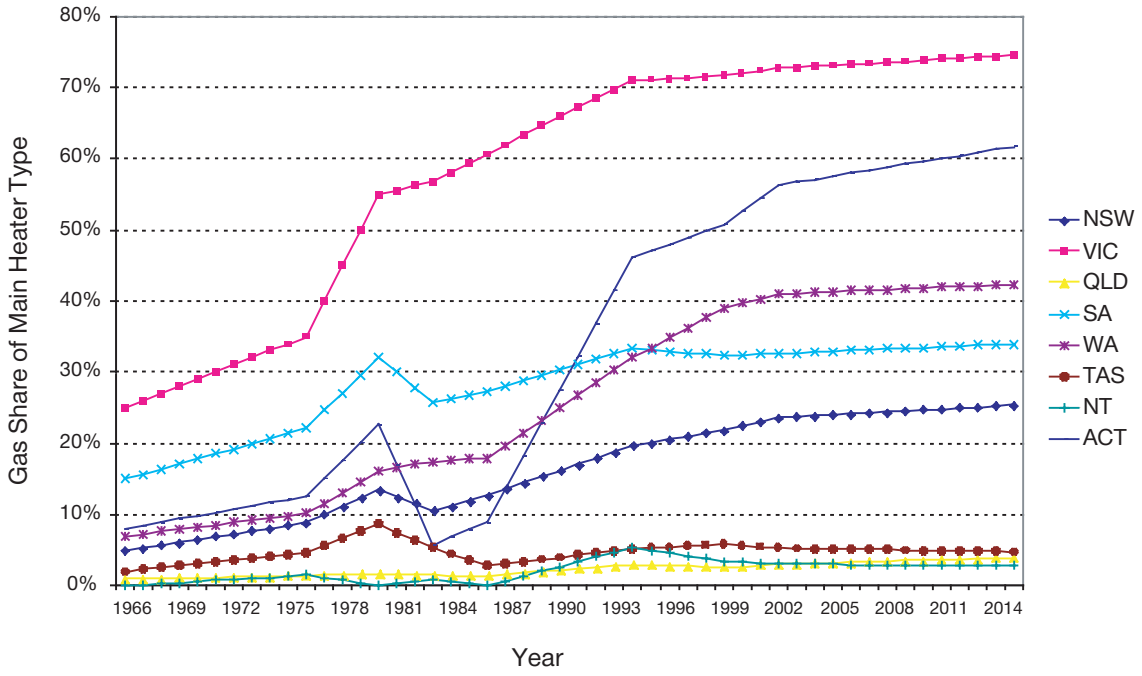
Source: Australian Bureau of Statistics reports and EES estimates beyond 2002.

gas heating have on average two heaters (ie the saturation is 1.05 for this appliance).

The estimated ownership for all gas heater types in Australia is 0.43. This gives an estimate of the total stock of gas space heaters in Australian households in 2004 as around 3.3 million. Data on the total annual sales of gas space heaters in the Australian market is rather sketchy (ABS do not collect import or manufacturing data in this level of detail), but estimates suggested that the current market is around 150,000 units per annum (BIS Shrapnel, 2004). However, this may be somewhat understated given the installed stock (or these units have an extraordinary long life). Of these new installations, about on third are ducted and the balance non-ducted. About one third of the non-ducted market are fixed while the balance are portables. The gas heater market is estimated to be worth around $250 million per annum.

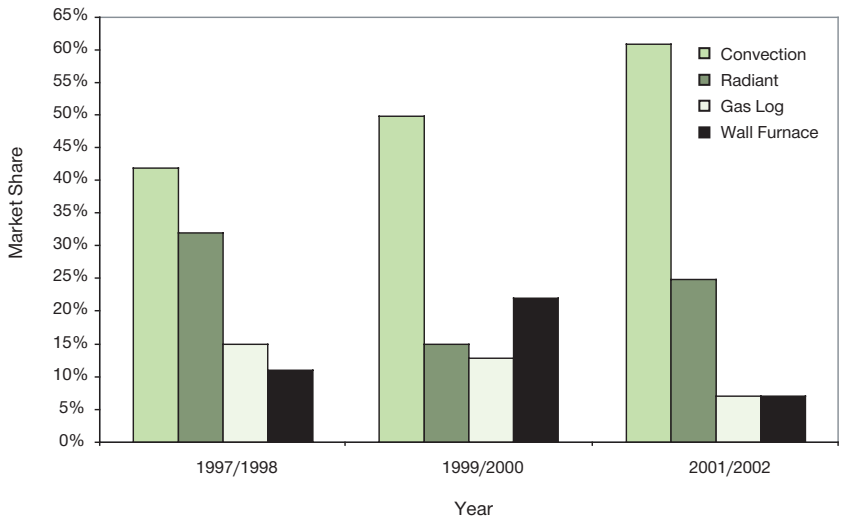
Figure 3 below shows the market share of non-ducted gas space heaters for the years 1997 to 2002. It can be seen that the market share of convection based units is steadily increasing while the sales of radiant and gas log units have fluctuated and wall furnace sales appear to be decreasing.

FIGURE 2: SHARE OF MAIN HEATER TYPE BY STATE - GAS



Source: Australian Bureau of Statistics reports and EES estimates beyond 2002.

FIGURE 3: MARKET SHARE OF NON-DUCTED GAS SPACE HEATERS



Source: BIS Shrapnel 2002

RELEVANT MODES FOR THE 'ONE WATT' POWER PLAN

Gas space heaters have several possible modes:

- On mode – the heater is operating (heating an area either by convection and/or radiation). This mode is not relevant for this standby profile.
- Post On mode – the heater's fan is operating. This mode is not relevant for this standby profile.
- Passive standby mode – where the heater is not operating, but either has a remote control and is monitoring for a signal from the remote control unit, or has a timer function.
- Off mode – where the heater is not operational and where the unit has no remote capability.

The above modes are described in more detail below.

On mode is where the heater is performing its primary task of either heating air, which is then pumped into a space, radiating heat, or a combination of the two. All gas space heaters actively cause the combustion of either natural gas or LPG. An electronic ignition system is usually used to start the process of combustion, although some systems have battery based ignitions or even manual spark based ignitions. Most units use a fan to circulate the warmed air. Ducted and convection based units require this feature as a primary function, whereas in radiant and gas log units, the fan is a secondary means of distributing heat.

Post on mode is where the heater is using its fan to dissipate residual heat, either into the room or out of the flue. This feature is found on many models, although older units may not have it. The fan automatically cuts off when the residual heat is reduced to an acceptable level. This feature is designed for safety considerations and to minimise any heat damage to controls and reduce heat stress on high temperature components.

Passive standby mode is present on all gas space heaters that use some form of remote control where a sensor (typically an FM or infra-red receiver) or a remote thermostat/control panel is powered directly or indirectly by mains power from the space heater. Timer functions may also be operational as part of this mode, causing the unit to switch on after a preset amount of time or at a preset time. Many models have a digital clock function or a temperature sensing function that is operational even when the unit appears to be off.

Off mode is present on all gas space heaters that do not have a passive standby mode but which have mains connection. These units typically have manual analogue controls and may have manually actuated mains gas ignition and manually operated fans. Standby power associated with soft touch electronic controls but where there is no timer or remote control function is classified as off mode.

Both the passive standby mode and the off mode are applicable for the One Watt Initiative. Some space heaters will have both passive standby and off mode, while others will have either passive standby or off mode.

KNOWN STANDBY DATA FOR NEW PRODUCTS

NAEEEC commissioned four store surveys of new electrical products during the period 2001 to 2004. Standby data for some 29 gas space heaters was collected during the 2004 store survey. To boost this data set and to get a more complete picture of standby for new gas space heaters, additional data was collected from stores in mid 2004. Results for both surveys have been grouped, as the data contained in them is comparable.

Both the passive standby mode and the off mode (as applicable) were measured. Table 1 below summarises the results of the 2004 surveys. The surveys found that the passive standby power consumption for the store stock of gas space heaters varied from 3.2 Watts to 9 Watts, with an average of 5.7 Watts. They also found that the off power consumption varied from 0.0 Watts to 4.9 Watts, with an average of 0.7 Watts.

TABLE 1: SUMMARY OF 2004 SURVEYS – NEW PRODUCTS

Value	Off mode n = 35	Passive standby mode n = 23
Average Value	**0.7**	**5.7**
Minimum Value	0.0	3.2
Maximum Value	4.9	9.0

Note: n is the total sample size in survey

Figure 4 opposite shows the distribution of passive standby measurements taken in the 2004 surveys. Almost all units were found to have a passive power consumption of between 3 Watts and 8 Watts.

Figure 5 opposite shows the distribution of off mode measurements taken in the 2004 surveys. Almost 85% of the units were found to have an off mode power consumption of effectively 0 Watts (less than 0.05 Watts). The other 15% of units were found to have an off mode power consumption from 2 Watts to just less than 5 Watts.

FIGURE 4: DISTRIBUTION OF PASSIVE STANDBY POWER – NEW GAS SPACE HEATERS - 2004

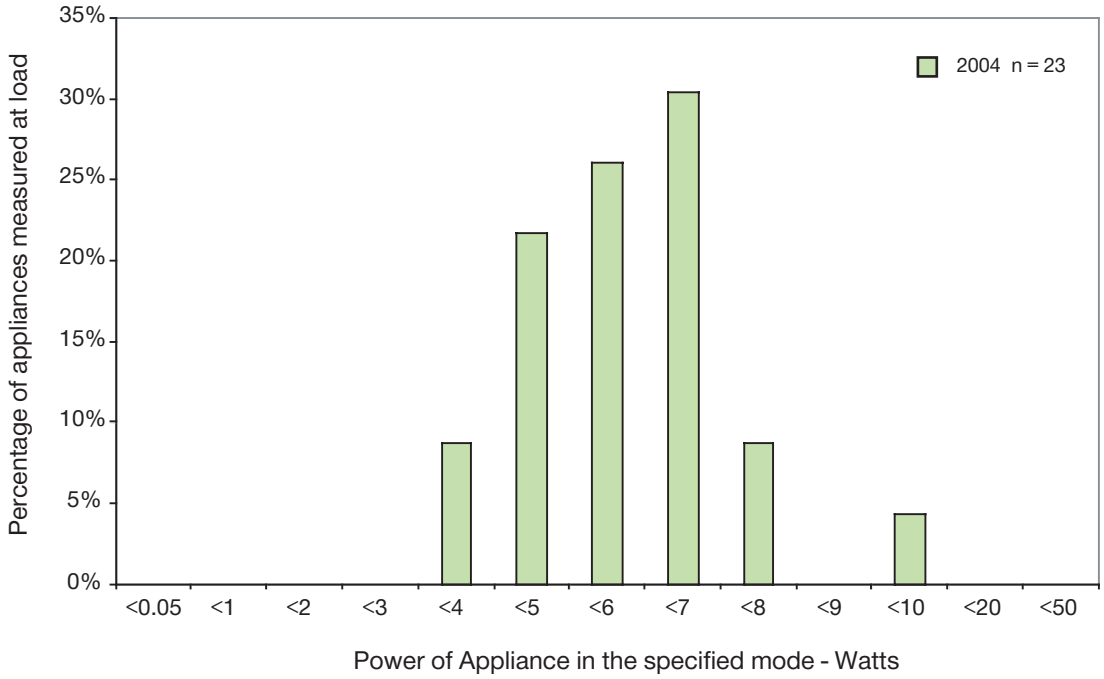


FIGURE 5: DISTRIBUTION OF OFF MODE POWER – NEW GAS SPACE HEATERS - 2004

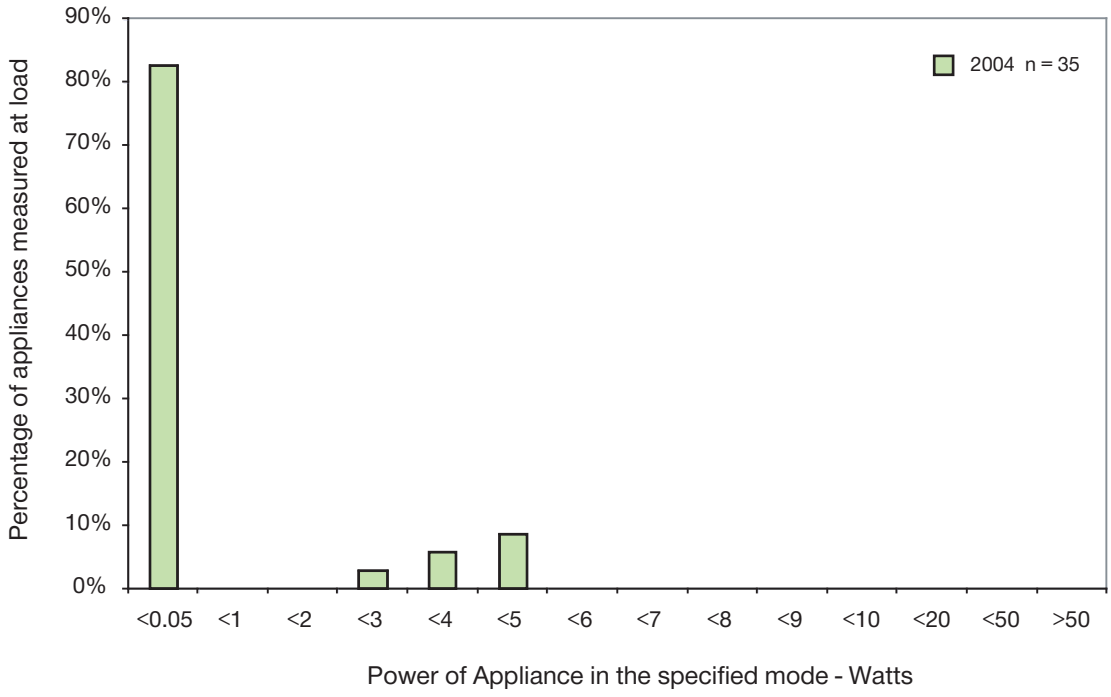


FIGURE 6: DISTRIBUTION OF COMBINED PASSIVE AND OFF MODE STANDBY POWER CONSUMPTIONS, BY UNIT TYPE – NEW 2004

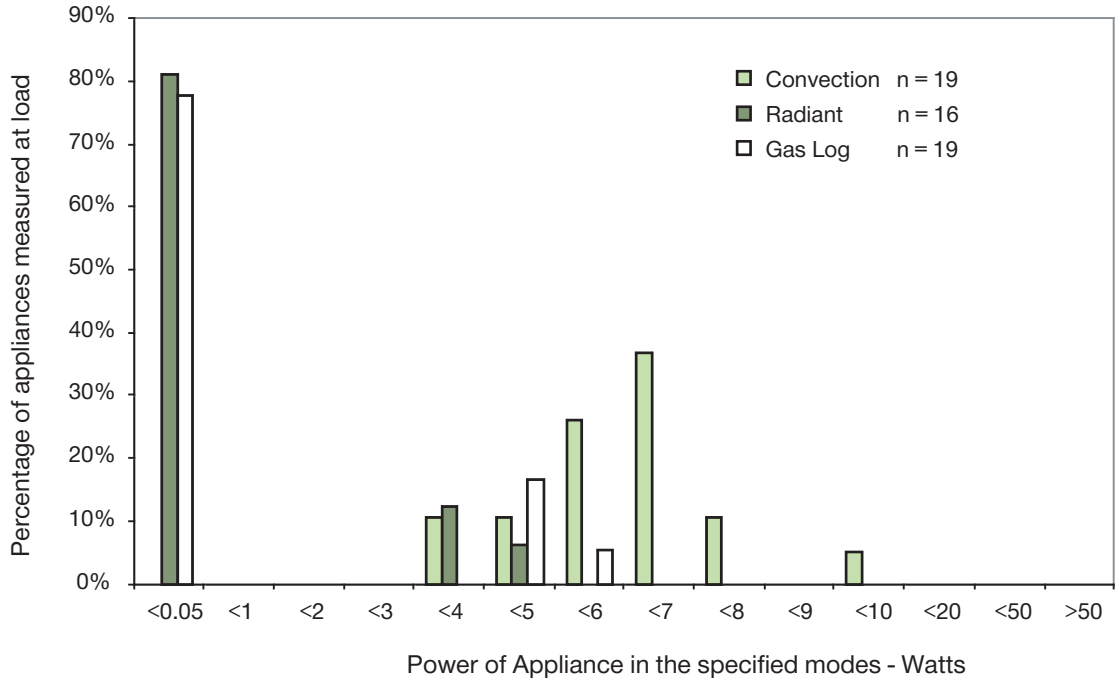


Figure 6 above shows the distribution of the combined passive standby and off mode measurements by type of unit, taken in the 2004 surveys. It can be seen that convection based units generally have higher power consumptions than both radiant and gas log units. A high percentage of radiant and gas log units (around 80%) have a power consumption effectively zero Watts in off mode. Neither the survey of retail outlets or the additional store visits were able to obtain a significant number of measurements of standby power for wall furnaces or ducted units as few appeared to be on display for sale, but it is known that these types of units form a significant part of the gas space heater market. The average standby power by heater type for new gas space heaters is shown in Table 2.

TABLE 2: SUMMARY OF 2004 SURVEY SPLIT BY HEATER TYPE – NEW

	Average Standby	N
Average Convection	6.0	19
Average Radiant	0.7	16
Average Gas Log	1.1	19

Note: n is the total sample size in survey

KNOWN STANDBY DATA FOR INSTALLED STOCK

Late in 2000 NAEEEC commissioned an intrusive household survey which undertook standby measurements in 64 households in Melbourne, Brisbane and Sydney (Harrington and Kleverlaan 2001). Although a total of 10 gas space heaters were identified during the survey, only 2 standby measurements were obtained: one with a passive standby at 4.1 Watts and one in off mode at zero Watts (different units).

In order to build a more comprehensive picture of installed stock of gas heaters, an additional household survey was conducted in mid 2004 as part of the research for this profile. This included a range of gas heater types installed in several major cities and country Victoria. A significant part of the sample was obtained during service calls for older heaters so the figures are considered reasonably representative of the stock of installed products.

The passive standby mode and off mode, as applicable, were measured during this survey. As is the case with new space heaters, in most units were found to have one mode or the other – having both modes was unusual. The survey found that the passive standby power consumption of installed gas space heaters varied from 2.3 Watts to 21.6 Watts. Table 3 below summarises the results of the 2004 household survey.

TABLE 3: SUMMARY OF 2004 HOUSEHOLD SURVEY

Value	Off Mode n=44	Passive Standby Mode n=50
Average Value	4.0	7.4
Minimum Value	0.0	2.3
Maximum Value	13.8	21.6

Note: n is the total sample size in survey

Figure 7 below shows the distribution of measurements taken in the 2004 household survey. It can be seen from Figure 7 that there is a broad range of passive power consumption; from just greater than 2 Watts to greater than 20 Watts.

FIGURE 7: DISTRIBUTION OF PASSIVE STANDBY POWER CONSUMPTION – INSTALLED STOCK 2004

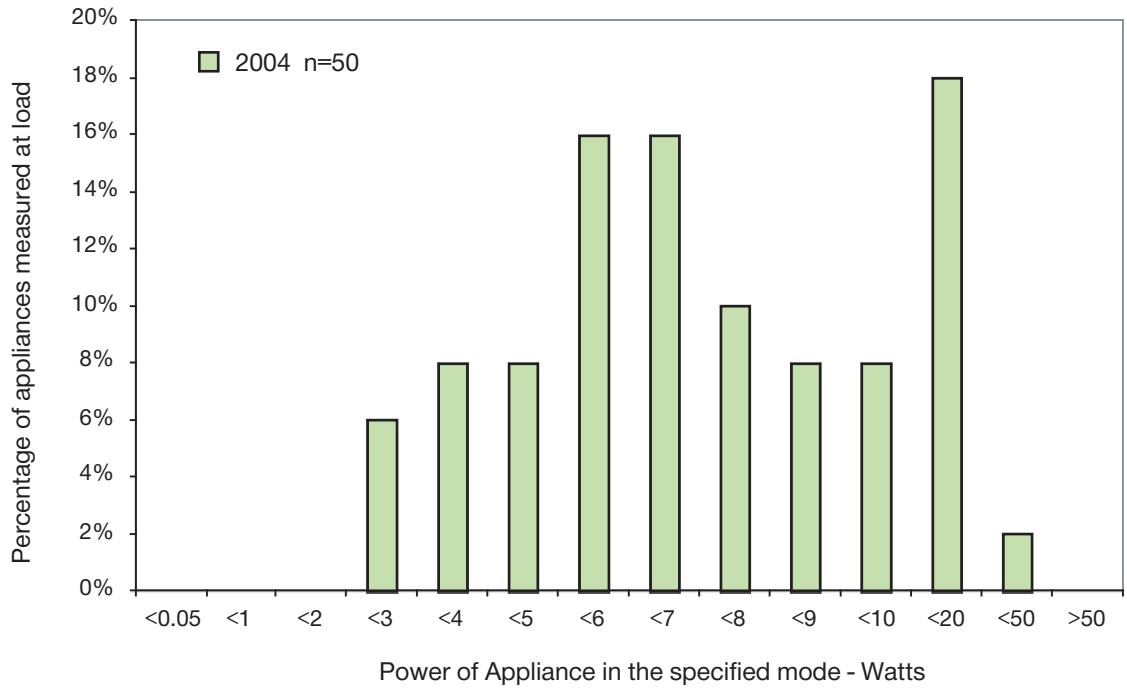


Figure 8 below shows the distribution of off mode measurements taken in the 2004 survey. Almost 48% of the units were found to have an off mode power consumption of effectively zero Watts. Around 43% of the units were found to have an off mode power consumption of between 4 Watts and 9 Watts.

Figure 9 below shows the distribution of the combined passive standby and off mode measurements by type of unit, taken in the 2004 household survey. The average standby for each type of heater is summarised in Table 4. It can be seen that convection and ducted units generally have higher power consumptions than radiant, wall furnace and gas log units. A high percentage of radiant and gas log units (100% and 87% respectively) have a passive standby or off mode power consumption of effectively zero Watts.

FIGURE 8: DISTRIBUTION OF OFF MODE STANDBY POWER CONSUMPTION – INSTALLED STOCK 2004

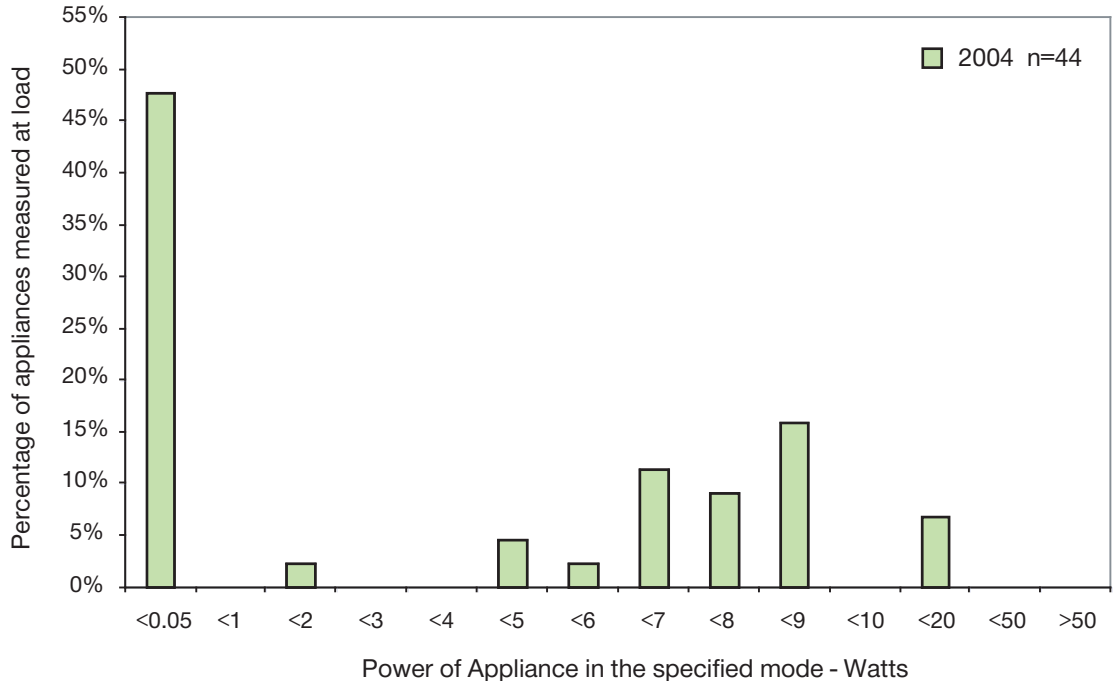


FIGURE 9: DISTRIBUTION OF COMBINED PASSIVE AND OFF MODE STANDBY POWER CONSUMPTIONS, BY UNIT TYPE – INSTALLED STOCK 2004

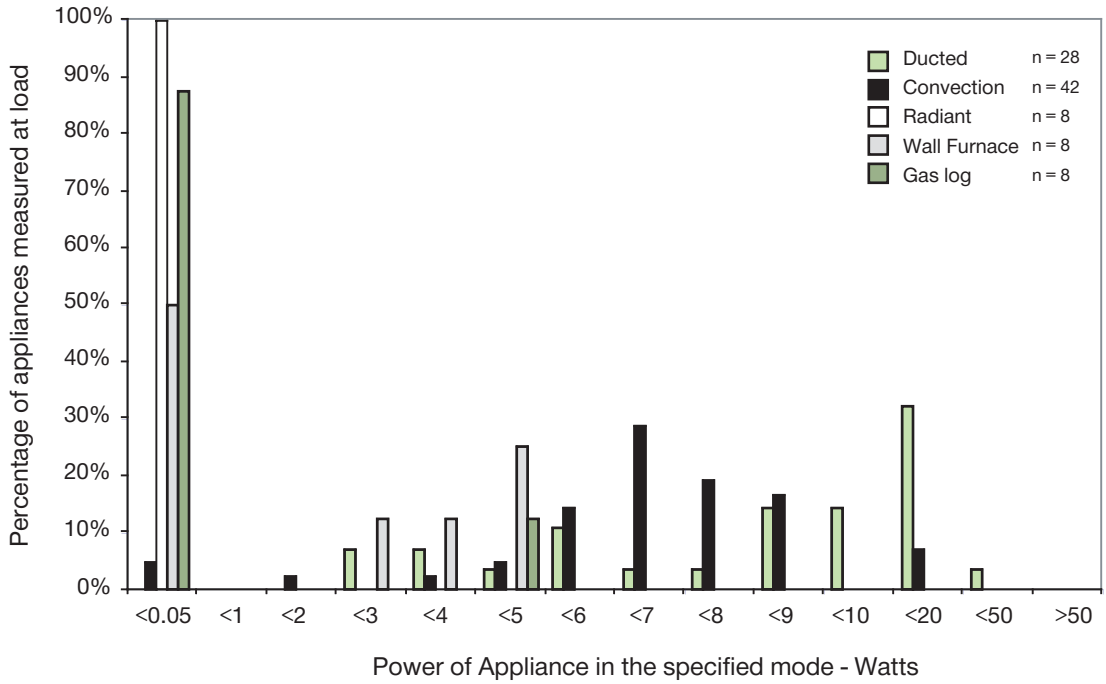


FIGURE 10: DISTRIBUTION OF STANDBY POWER BY YEAR OF INSTALLATION – INSTALLED STOCK 2004

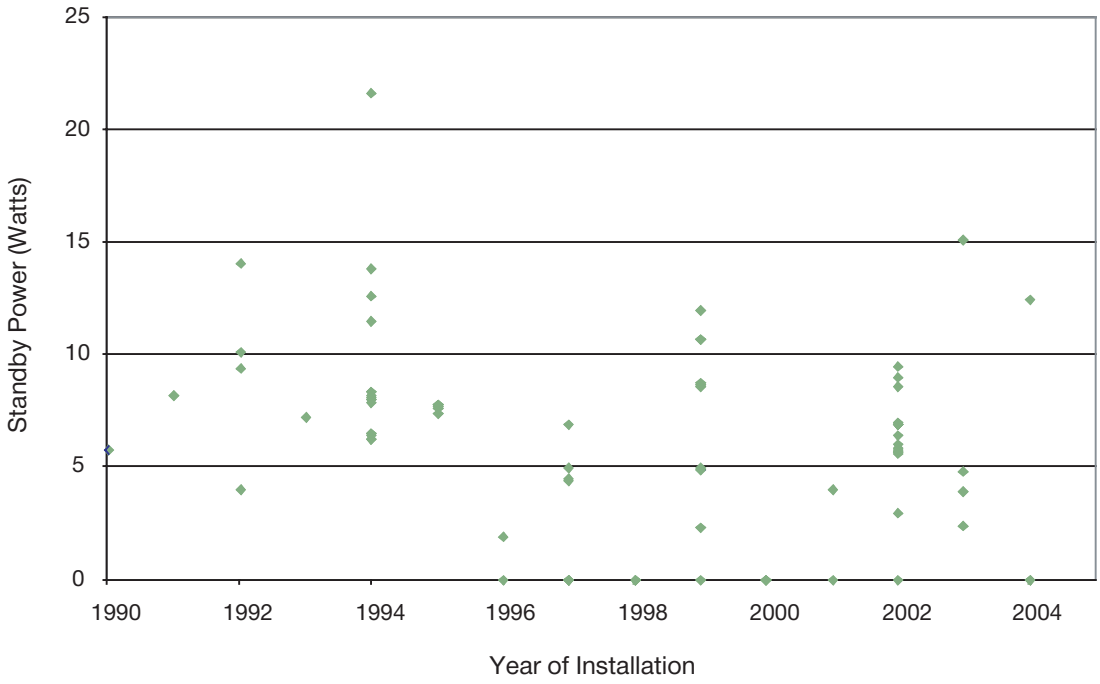


TABLE 4: SUMMARY OF 2004 HOUSEHOLD SURVEY SPLIT BY HEATER TYPE – INSTALLED STOCK

	Average Standby	n
Average Ducted	8.7	28
Average Convection	6.7	42
Average Radiant	0.0	8
Average Wall Furnace	1.8	8
Average Gas Log	0.6	8

Note: n is the total sample size in survey

The year of installation was also examined for all installed gas space heaters – there is no clear trend in the standby power consumption by age of heater, as illustrated in Figure 10.

These figures and tables illustrate several important points. Firstly, there is a very wide range of standby power present in gas space heaters. Secondly, there is no clear trend in terms of standby power over the years – a regression of the available data shows no significant trend (although individual model values in the past have been, and continue to be, highly variable). Also within different types of space heaters, there are no obvious differences in the standby of the installed stock and average new models. Convection heaters may be improving very slightly but log heaters and radiant heaters appear to be deteriorating. The limited number of new wall furnace and ducted space heater readings available suggested no obvious trend, but these were too limited to provide certainty on this point. This data generally supports the observation that standby for new models appears to be not improving to any extent.

GREENHOUSE EMISSIONS

For the purposes of estimating greenhouse emissions it has been assumed that gas space heaters are used on average for 675 hours per year; about 8% of the year. This is based on an assumed average heating task of 5 hours per day for 125 days per year. Clearly the actual use within a particular household will be a function of the heating building shell performance, the occupancy and the local climate, which varies considerably by state. However, the assumed time in non-active modes is high even under the highest likely usage profile. For the purposes of this profile it is assumed that for 92% of the year, gas space heaters are assumed to be in passive standby mode. Unlike electric space heaters, the vast majority of gas space heaters are likely to remain connected to mains power all year round, even when not in use.

A weighted average standby power was estimated for the installed stock and for new products installed each year to 2015. This was based on average standby power by product type and sales share. The sales share by type of product was estimated using BIS Shrapnel (2002) data corresponding to sales of different types of gas space heaters. The base case without the 1 Watt program was a sales weighted average new standby power which was 6 Watts and which is expected to remain constant through the analysis period.

The GHG emissions reductions potential for the proposed standby target of 1 Watt for passive standby is in the order of 38.1 kt CO_2-e pa by 2012 and 67.3 kt CO_2-e pa by 2015. These savings will continue to grow rapidly to beyond 2025 due to ongoing turnover of stock. Figure 11 shows the potential GHG emissions reduction of the program. The projected effect on total energy consumption used annually by gas space heaters based on the implementation of a 1 Watt target is shown in Figure 12.

FIGURE 11: BAU VS POLICY TARGET GHG EMISSIONS FOR GAS SPACE HEATERS

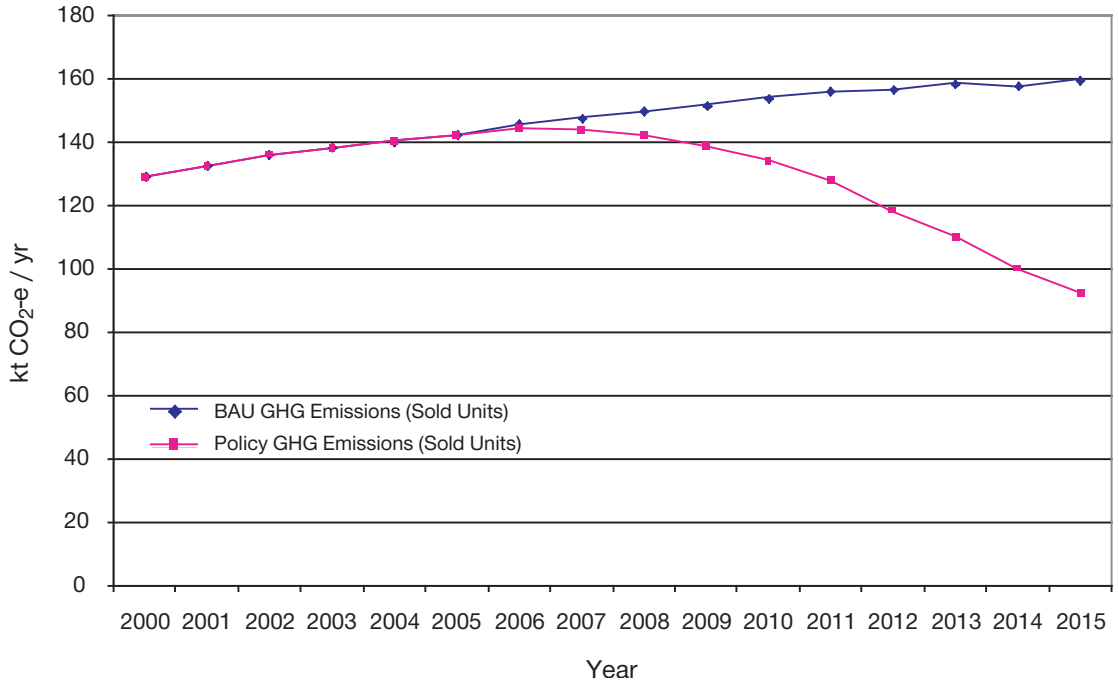
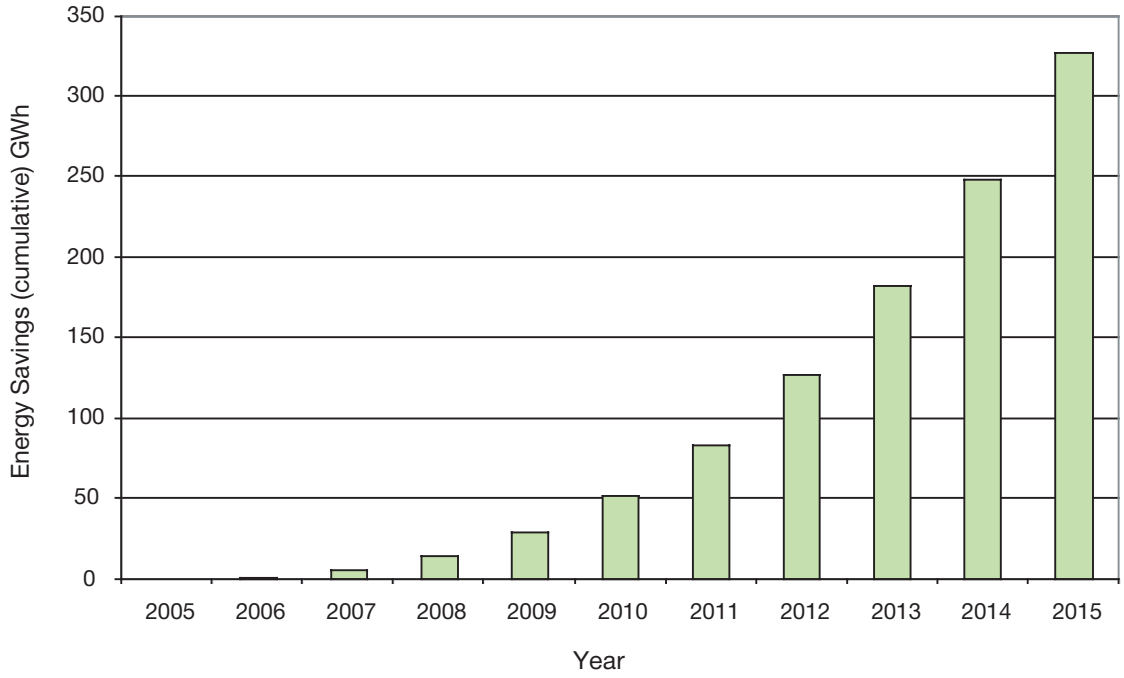


FIGURE 12: CUMULATIVE ENERGY SAVINGS FROM STANDBY TARGETS FOR GAS SPACE HEATERS



CURRENT OVERSEAS POLICIES AND TRENDS

While gas space heaters are widely regulated for energy efficiency around the world, both in terms of energy labelling and Minimum Energy Performance Standards (MEPS), none of these programs deal with the electrical standby power of these products (apart from the Australian program which includes standby power into the energy label consumption).

The Japan Industrial Association of Gas and Kerosene Appliances (JGKA) announced its voluntary control of standby power for gas and kerosene fuelled appliances in early 2004 (JGKA 2004). These voluntary targets are for JGKA member companies only. For all "direct vented type" gas heaters (these are systems that use a balanced flue system) and "vented type" gas heaters (these are systems that use an unbalanced flue system), JGKA has set a standby target value of less or equal to 3 Watts for new models. For so called "fan heaters" (these are primarily unflued radiation and/or convection gas space heaters) a standby target of less or equal to 1 Watt for new models was set. These targets were set for the Japanese fiscal year of 2008 which is from March 2008 to April 2009.

Given that a significant proportion of the space heating products and components in Australia have their origin in Japan, this target is a useful international standby benchmark for these products. However, as is the case for other products considered under the 1 Watt standby plan, it is felt that a standby power target for gas heaters is more sensibly defined as a function of the modes available on the product (e.g. off mode or passive standby mode) rather than the type of product (noting that certain modes will be more prevalent on some products than others).

GOVERNMENT TARGET

In accordance with the National Standby Strategy, NAEEEC intends to recommend to the Ministerial Council on Energy an 'interim' target. The purpose of which is to provide governments with confidence that Australian products will meet the ultimate target, of one watt in 2012. If the 'interim' target is not met in the specified year, government will commence dialogue with industry to explore other options, including the possibility of moving to Stage 2 mandatory measures.

1. INTERIM TARGET – 2008

The interim target is broadly aligned with the Japanese voluntary targets and the target year is the same as the target year for Japan.

Off Mode (W)	Passive Standby Mode (W)
< 1	< 3

This target applies to the modes specified above for gas heaters with a mains power connection (ducted and non-ducted, flued and unflued) within the scope of AS4553, AS4556 and/or AS4558 which are sold in Australia that year. NAEEEC proposes to monitor the sale of gas heaters in that year and to move toward regulation should that target not be met by a significant number of products.

2. NATIONAL STANDBY STRATEGY TARGET 2012

Off Mode (W)	Passive Standby Mode (W)
< 0.3	< 1

This target applies to the modes specified above for gas heaters with a mains power connection (ducted and non-ducted, flued and unflued) within the scope of AS4553, AS4556 and/or AS4558 which are sold in Australia that year.

The above requirements will be inserted into the relevant Australian Standard.

GOVERNMENT PROPOSALS TO ACHIEVE THIS TARGET

Government agencies intend to take the following actions to assist industry meet the standby targets for gas space heaters:

Voluntary Tool Available	Action / Rationale	Date
Government procurement list	• MCE are considering a policy of preferencing the purchase of low standby gas space heaters where available and fit for purpose. Qualifying products to be included on the government Energy Allstars procurement database.	2005/6
Australian Standard	• To communicate government expectations in the relevant Australian Standard, likely to be part of AS4553, AS4556 and/or AS4558 (as applicable) or their successors (noting that these standards will be reviewed as part of the national gas strategy).	from 2005
Top Energy Saver Award (TESAW)	• The TESAW criteria for the gas heaters will be reviewed to include maximum allowable standby criteria in addition to efficiency criteria.	2007
Annual survey	• To collect data on new gas space heaters and analyse trends. This data will be published annually.	Ongoing
Energy Rating label	• Electricity consumption of gas heaters has already been incorporated into the energy rating label requirements (in a form that is equivalent to gas energy consumed) as part of AS4553 and AS4556. Consideration may be given to showing passive standby power separately on the energy label or in published data (AGA listings or the gas efficiency website). NAEEEC will be working with the relevant Standards Committees on these issues.	Ongoing

Government will announce whether this product should be targeted for stage two intervention under the National Standby Power Strategy (involving possible regulatory intervention) or whether the abovementioned actions together with industry intervention have been successful in meeting the target at the NAEEEC Forum in the year:

2009

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