



NATIONAL APPLIANCE AND EQUIPMENT ENERGY EFFICIENCY PROGRAM

MONEY ISN'T ALL YOU'RE SAVING

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

AUSTRALIA'S STANDBY POWER STRATEGY 2002 - 2012



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November 2002

MONEY ISN'T ALL YOU'RE SAVING

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

AUSTRALIA'S STANDBY POWER STRATEGY 2002 - 2012

THIS STRATEGY AIMS TO IDENTIFY
MEASURES AGREED BY GOVERNMENTS TO
REDUCE STANDBY POWER TO LEVELS
IDENTIFIED BY GOVERNMENTS AS
ACCEPTABLE IN AUSTRALIA.

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abbreviations

Energy Star - international endorsement program which covers standby requirements for many products

IEA - International Energy Agency, based in Paris

IEC - International Electrotechnical Commission, based in Geneva

MEPS - Minimum energy performance standards (minimum energy efficiency levels)

NAEEEC - National Appliance and Equipment Energy Efficiency Committee

NAEEEP - National Appliance and Equipment Energy Efficiency Program

SAI - Standards Australia International

US EPA - United States Environmental Protection Agency



Standby power is the energy used by an appliance while it's plugged in but not actually carrying out its central function. Obviously it is often necessary to have appliances sitting dormant, but this is not always energy or cost efficient. In fact, standby power consumption generally accounts for over ten percent of Australia's household electricity usage. It costs more than \$500 million and generates more than 5 million tonnes of carbon dioxide per annum. This is equivalent to the greenhouse impact of more than 1 million cars.

Improving the efficiency with which we use energy is important to Australia's economic, social and environmental well-being. Therefore, one of the priorities of the Ministerial Council on Energy, which comprises Ministers from the Commonwealth and all States and Territories, is to improve cooperative energy efficiency activities.

In August 2000 all Australian Governments agreed to pursue efficiencies in standby power consumption and agreed to the "1 Watt" target for appliances. Australia was the first nation to publicly state that it would pursue such a target under the banner of the International Energy Agency's (IEA) standby power initiative.

The development of a ten year strategy is a further commitment by Australian Governments to stamp out unnecessary standby power used by appliances and equipment on behalf of all Australian consumers.

This Strategy is the culmination of considerable industry and community consultation. It sets out:

- a long-term plan for the measures to combat excessive standby consumption;
- the products that will be initially targeted;
- the procedure whereby standby targets will be set for various products; and sanctions that will be applied should suppliers not meet product targets.

On behalf of the Ministerial Council on Energy, I am pleased to release Australia's detailed strategy to reduce standby power over the next ten years.

A handwritten signature in black ink that reads "Ian Macfarlane". The signature is written in a cursive, flowing style.

The Hon Ian Macfarlane, MP

Chair
Ministerial Council on Energy

strategy objectives

This document sets out the long-term strategy agreed by the Ministerial Council on Energy to address excessive standby energy used by consumer appliances and equipment. The strategy:

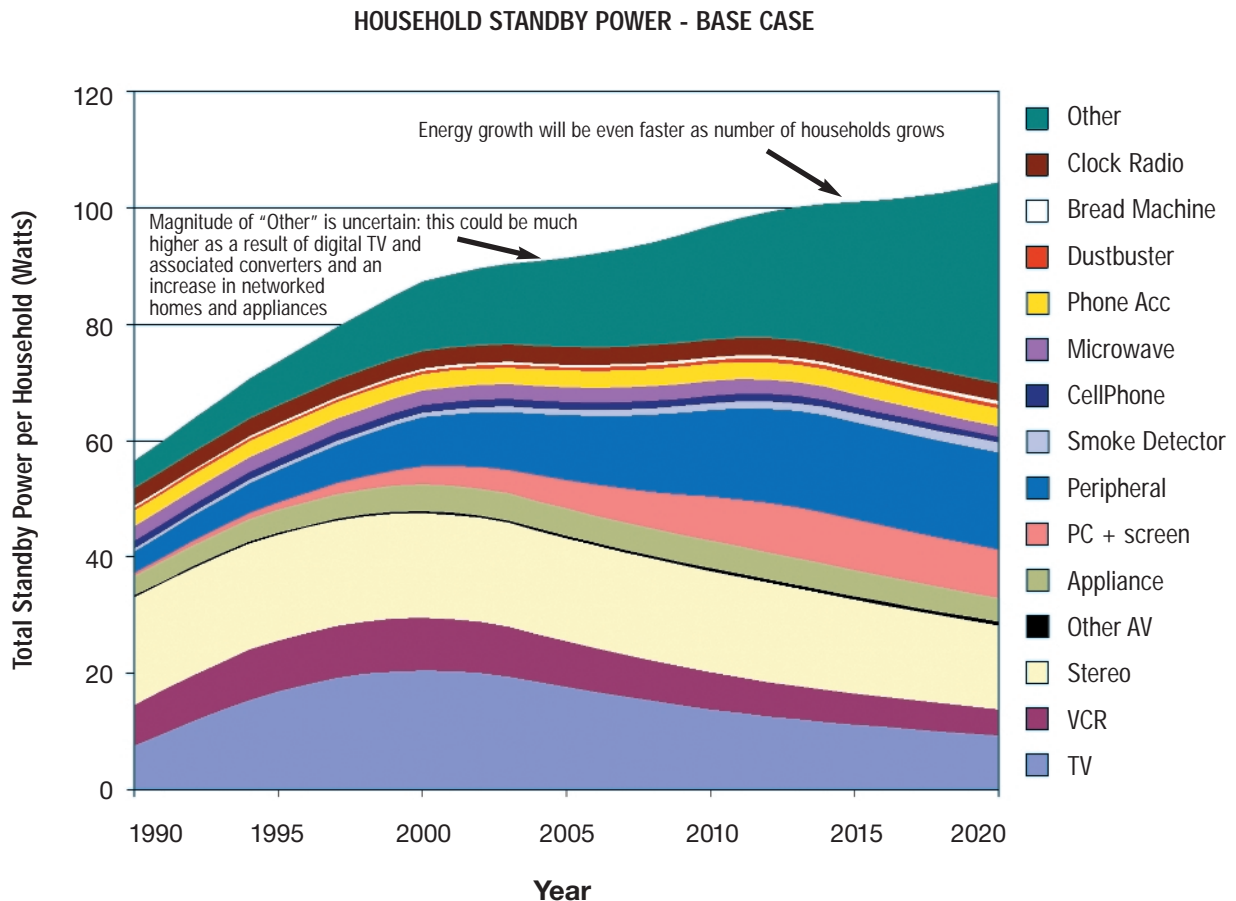
1. outlines the measures that governments will use to combat excessive standby;
2. identifies the products to be targeted in the first of three-year rolling plans under the strategy;
3. establishes the procedure whereby standby targets will be set for each of the targeted products; and
4. identifies the sanctions that will apply should suppliers not meet the targets for these products.

standby power can be a problem

Standby power is a relatively new design feature that in many cases delivers a service that consumers value. Many consumer goods are now designed in a way that means that they draw power 24 hours a day, seven days a week, every month of the year so that they can react more quickly when consumers want the product to operate. Standby becomes necessary to power certain core functions or to sense communication for those products that are waiting to provide

full services. This power is consumed not while the appliance is being fully utilised but while it awaits instruction; while it is "standing by". Some appliances also perform a continuous function that requires small amounts of continuous power.

However, in some cases, standby power serves no useful function or operates at excessive levels for the background task being performed. The International

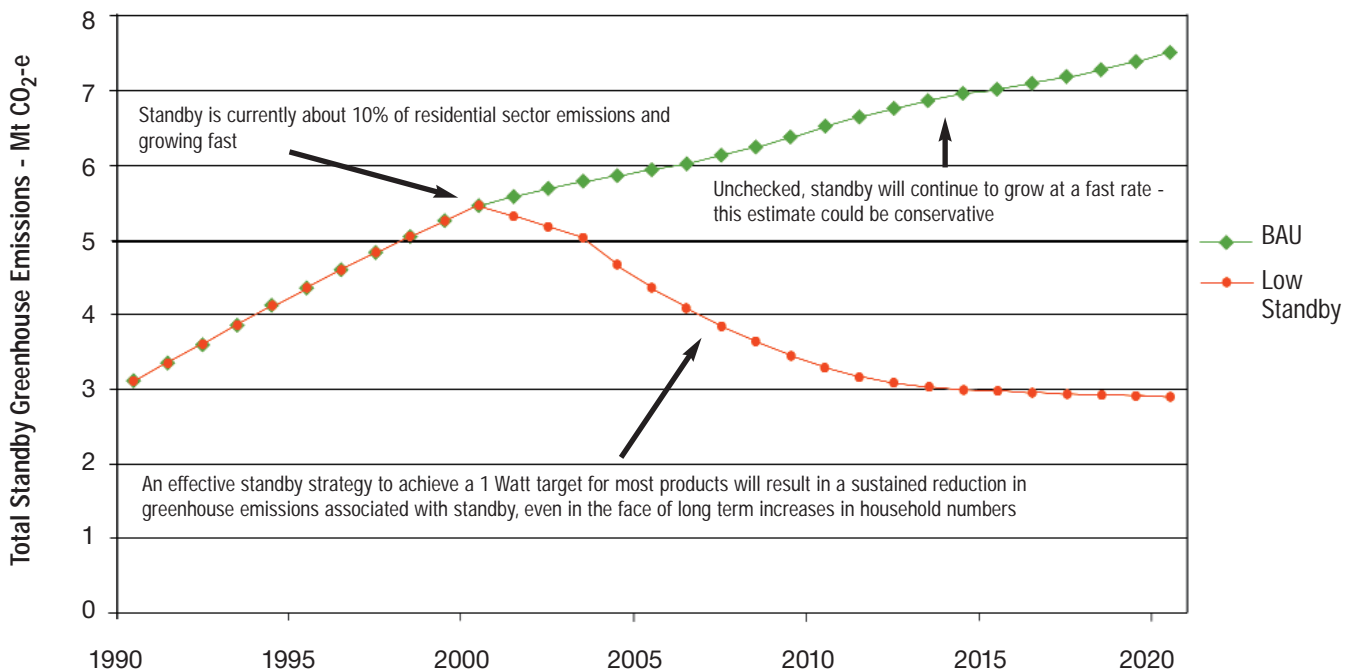


Energy Agency publication, *Things that Go Blip in the Night*, provides graphic descriptions of the size of this problem in the developed world. In Australia, expert modelling suggests excessive standby will grow dramatically in the next decades if left unchecked.

In the absence of action, standby power (the power that is used while the product awaits consumer use) is projected to exceed the combined in-use power of televisions, video cassette recorders, clothes washers, clothes dryers, and freezers in households by 2010¹.

This picture hopefully does not foretell the future, but rather what would happen in the absence of an effective strategy to combat excessive standby. In the following graph, consultants working on NAEERP project the greenhouse impact of the proposed strategy set out in this report and compared it to the "Business-as-Usual" (no action) case.

PROJECTIONS OF RESIDENTIAL STANDBY POWER



1 Data from *Study of Greenhouse Gas Emissions from the Australian Residential Building Sector to 2010*, report by Energy Efficient Strategies and others prepared for the Australian Greenhouse Office, Canberra, February 1999.

previous standby policy

Australia is not alone in recognising the serious problem posed by excessive standby to national greenhouse gas reduction and energy efficiency goals. The International Energy Agency has facilitated member nations to coordinate a common approach to this problem. It advocates that members develop long-term plans to reduce standby over time - a recommendation that Australian jurisdictions have embraced.

In August 2000, all Australian jurisdictions agreed to:

"... pursue efficiencies in standby power consumption of energy-consuming products, through support for the International Energy Agency's One-Watt program, and endorse its incorporation into the ... program of work."

Australia was the first nation to publicly state that it would pursue the 'one-watt' target under the banner of the IEA standby power initiative. This aspirational target sought to raise awareness about excessive standby amongst not only suppliers but also product purchasers. It was meant to demonstrate to suppliers both in Australia and internationally that excessive standby should be redressed through better design practice and other strategies. It was meant to demonstrate to consumers that Australian governments were acting to reduce excessive standby on their behalf.

Since Australia's announcement, other IEA member countries such as Japan and the USA have taken similar stands. For example, US President Bush released an

Executive Order in July 2001 in which he stated:

"Each [federal] agency ... shall purchase products that use no more than one watt in their standby power consuming mode."

Australia has also supported the development of the draft International Electrotechnical Commission standard defining the technical method for the measurement of standby. It will adopt this standard when the international community has completed its development. It is hoped that this standard will define the agreed method of measurement for standby for all products.

With the international effort gaining momentum, the National Appliance and Equipment Energy Efficiency Committee (NAEEEC), on behalf of the Ministerial Council on Energy, sought ideas and a response to a discussion paper consultation process in 2002. A copy of the discussion paper is available at www.energyefficient.com.au through the documents link under standby. In a process throughout 2002, government agencies consulted with stakeholders about ideas to reduce standby. This strategy is a result of that dialogue with stakeholders.

With most consumer products traded internationally, any Australian action can only be effective if in step with international endeavours. That said, Australia has been a "standard bearer" in this field and will continue to adopt actions to reduce standby to reasonable levels. It will continue to help other nations to identify and redress excessive standby power.

australia's ten year standby strategy

The Ministerial Council has resolved that Australia will expand its commitment to reducing excessive standby by formulating coordinated product-specific plans to address excessive standby over the next ten years, 2002 – 2012, within the umbrella of the IEA "One Watt" initiative.

Within this timeframe, specific product types may be identified as "at risk" of using excessive standby and will therefore be targeted for specific action. Each product will then be dealt with in potentially a two-stage action plan designed to reduce standby to levels acceptable for that product as quickly as economically viable.

product profiles

Standby "product profiles" will be developed for each product type or category. The profile will provide an overview of the product in terms of its standby characteristic (including a review of measurements that show the distribution of standby power), the purpose and functionality of their standby function, market status, ownership levels and trends in sales and product types. Product profiles will provide the initial basis for making an assessment of the need for further action in terms of reducing standby and will provide the basis for initial discussions between government and industry regarding concrete measures to reduce standby. Standby profiles essentially initiate the development of plans for each of the key products identified.

The 2002 standby discussion paper proposed a list of potential product types for consideration as candidates for specific product profiles. This list was the subject of extensive comments by many stakeholders, as was the need to adopt a flexible approach to the plan for each product, especially in the timing of when to move from stage one (voluntary measures) to stage two (mandatory measures).



The revised product list in this strategy continues to be prioritised into two classifications – 'immediate' for action in the first year of this strategy and 'subsequent' for action within the first three years of the overall strategy. The following criteria were used to determine the initial classification priority:

- high standby power consumption (particularly when this appears unnecessary to maintain functionality);
- high (or potentially high and/or growing) ownership or penetration levels of that product type; and
- wide ranges of standby levels found within differing examples of that product type, demonstrating that reducing standby is technically possible.

The following table is the schedule proposed for the release of draft Standby Profiles for those products which have been identified as being potentially problematic in terms of their standby usage.

The priority list of products is dynamic - as new products come onto the market the list will be reconsidered and possibly revised. Individual products may move from one classification priority to another depending on the performance of the relevant industry over time. The updated priority list and current product profiles for each product at 2003 can be found at: www.energyrating.gov.au under standby.

In the discussion paper, an indicative proposal on analogue televisions was used to prompt debate. Appendix A reproduces this product profile for televisions. This will form the template for the development of product profiles for other products.

Government agencies will include not only the target standby numbers for the product but also the target percentage of products sold and other performance indicators as appropriate. It is important that all stakeholders have a clear statement and understanding of the expectation for each product type. It is through meeting or not meeting these targets, benchmarks and goals that a product will be subject (or not) to further government intervention (Stage 2) in the marketing of the product.

Product Groups Prioritised for "Immediate" Action	Number of Products	Time Frame for Progressive Release of Individual Product Profiles within each Group
Information Technology Group A ¹	6	From early 2003
Entertainment Group A ²	7	From early 2003
Major Appliances Group A ³	4	From mid 2003
Small Appliances Group A ⁴	3	From mid 2003

1. Includes personal computers, PC monitors, photocopiers, printers, scanners and multi-function devices.
2. Includes analogue TVs, digital TVs, VCRs, DVDs, digital TV set top boxes and converters, pay TV set top boxes, integrated and portable stereos. A draft product profile for analogue TVs has already been released as part of the NAEEEEC Discussion Paper titled *Standby Power Consumption - A long term strategy to achieve Australia's one watt goal 2002 – 2012* and is included as Appendix A.
3. Includes clothes washers, clothes dryers, dishwashers and air conditioners.
4. Includes external power supplies, smoke detectors and microwave ovens.

Product Groups Prioritised for "Subsequent" Action	Number of Products	Time Frame for Progressive Release of Individual Product Profiles within each Group
Information Technology Group B ⁵	4	From mid 2004
Entertainment Group B ⁶	Multiple	From mid 2004
Major Appliances Group B ⁷	Multiple	From early 2005
Small Appliances Group B ⁸	Multiple	From early 2005

5. Includes fax machines, laptop computers, modems and PC speakers with separate power supply.
6. Includes separate sound system components (receivers, amplifiers, tuners, CD players and tape decks).
7. Includes water heaters (gas with mains connection), space heaters (electric & gas with mains connection), ovens and ranges (electric and gas with mains connection), cooktops (electric and gas with mains connection) and rangehoods.
8. Includes bread makers, coffee machines, security systems, electric rolladoors, networked/smart home products and motion detectors.

a staged process

All products will be dealt with through a process which potentially has two stages. This staged approach will provide the opportunity to firstly identify the products that need attention and secondly, provide industry with the opportunity to develop voluntary measures to address standby for the product, and then move to more interventionist measures (mandatory actions) if and when necessary.

Stage 1 Profiles:

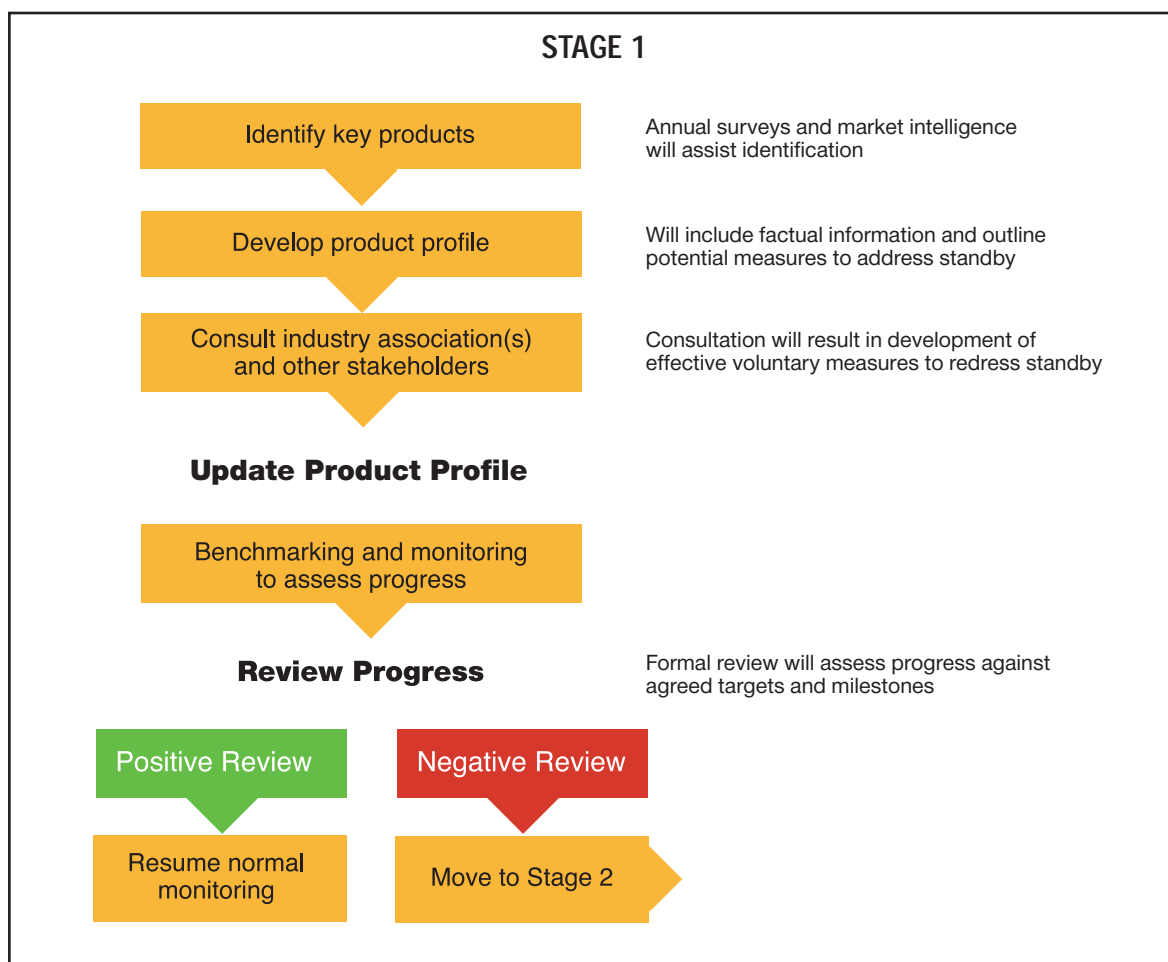
Identification of major product groups and initial actions (as short as 1 year and as long as 5 years)

All key products will have a product profile prepared which outlines its current status with respect to standby power. These will be prepared and progressively released within the first three years of the strategy (and as needed for future products). When an individual product has been identified as being "problematic", a specific standby product profile will be developed to promote consultation with key stakeholders. This profile will record the information gathered about the product (see Appendix A for an

example of the major areas of interest) and government proposals for the product.

Australian governments will announce the standby target for each product in the product profile. Generally, this target will be the Energy Star level promoted by the US Environmental Protection Agency or some other previously identified internationally accepted level (see following section on voluntary measures for more detail). The standby target will be included in the relevant Australian Standard, to ensure all stakeholders have a reasonable opportunity to become aware of the target level and compliance dates.

NAEEEC will continue benchmarking surveys each year and gather other market intelligence to monitor standby levels. The data will be used to measure improvement for each product and build on the existing data sources and analysis. This monitoring function will be assisted by industry agreements where suppliers agree to supply government agencies with standby levels for relevant products.



Where a product profile has specific measures and targets included within it, a formal review of progress will be undertaken once milestones have been reached. This analysis will draw on benchmarking data and may also necessitate collection of specific data for that measure and product. A review will generally result in either a "positive result", meaning that reasonable progress has been made to date and that the voluntary measures in place can continue as proposed, or a "negative result", meaning that insufficient progress has been made (or is unlikely to be made) and that specific mandatory measures under Stage 2 will be necessary.

Stage 1 flow chart on the previous page highlights the process.

Stage 2 Mandatory Action Plans:

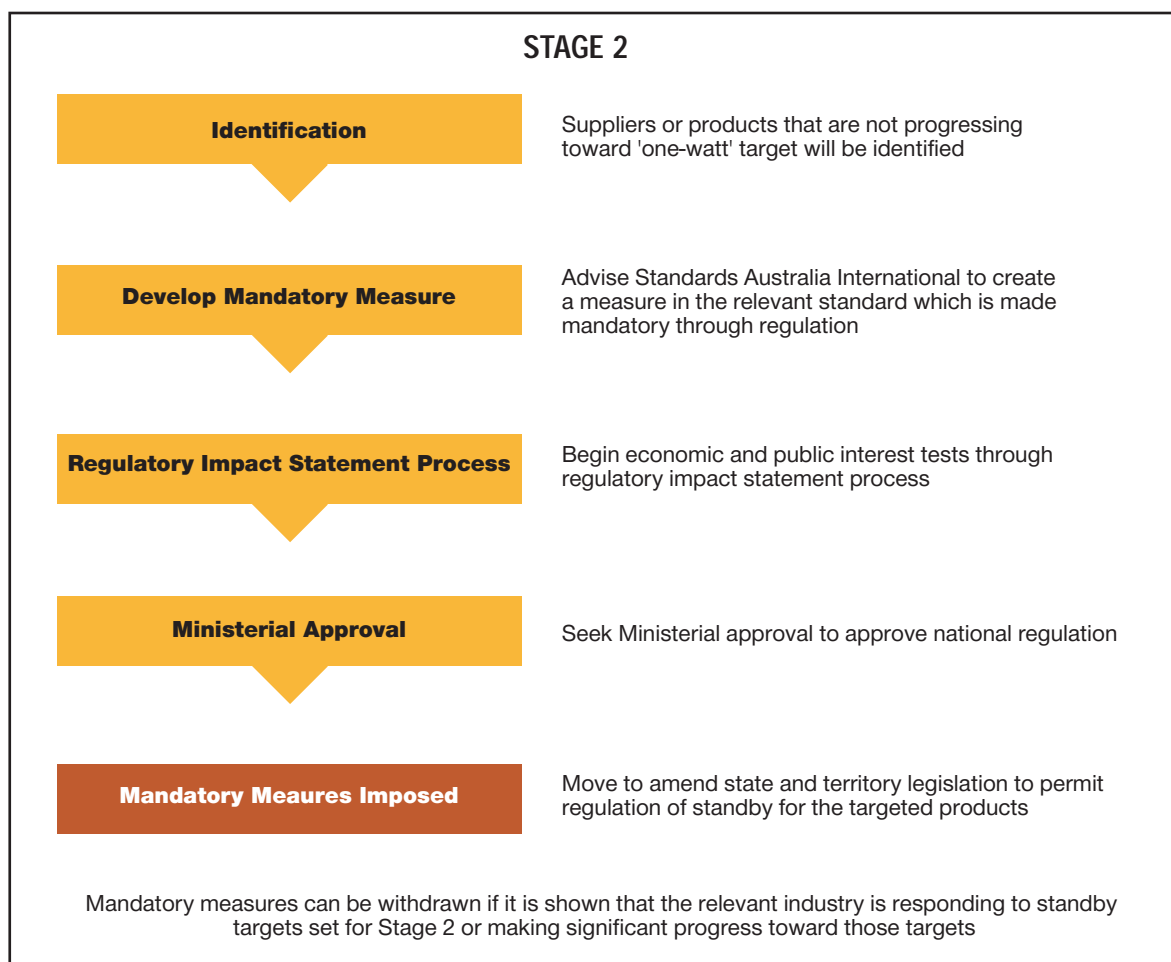
Escalating Government Action (1 to 5 year process)

Stage 2 is where action moves beyond voluntary measures and seeks to impose mandatory measures.

Government would move to regulatory intervention ONLY:

1. Where progress by voluntary measures is shown to be inadequate (ie a negative review at the end of Stage 1); or
2. The potential for excessive standby is well documented from overseas experience and that regulation appears to be warranted as a pre-emptive measure or voluntary measures are unlikely to be effective; and
3. The Ministerial Council on Energy accepts that regulation is necessary to achieve the standby target.

Any regulatory action would be subject to the usual processes of economic analyses (regulatory impact statements involving cost-benefit analysis and public consultation) and would only proceed if it is in the public interest and complies with governmental regulatory requirements. Stage 2 flow chart, below, highlights the process.



measures to address standby power

The purpose of this strategy is to clearly identify the measures that may be used for a particular product to achieve governments' standby power targets. It explains the linkages between these measures and identifies the processes for government and industry interaction. The Ministerial Council on Energy has agreed to authorise the use of a range of measures best suited to address standby for that product type. These measures cover a mix of policy tools - some of which have been used previously. Adoption of an appropriate mix will enable Australia to address the issue of reducing excessive standby power consumption.

VOLUNTARY

ENERGY STAR

ENERGY STAR is a voluntary international benchmark for energy-efficient electronic equipment. It was created by the US Environmental Protection Agency (US EPA) in 1992 and has now been adopted by several countries around the world including Australia. The program currently covers office equipment and home entertainment equipment, but the US EPA has agreed in-principle that Australia may extend this program to cover other products included in the US domestic program.

In addition to Australia, Energy Star is currently used as an endorsement label in the United States, Canada, the European Union, Japan, Taiwan and New Zealand.

More information on Energy Star can be found at: www.energystar.gov.au

This tool works by identifying "early adopting" suppliers whose products meet the specified standby target (where applicable: some Energy Star requirements for some products do not cover standby). The particular products carry the ENERGY STAR logo identifying them as amongst the most energy efficient of their type.



INDUSTRY CODES OF CONDUCT

In circumstances where a product type or group of related products are identified as a potential problem, an industry-wide voluntary agreement could be employed. The agreement would seek to focus the attention of suppliers on standby in the design of locally manufactured products or when ordering the imported product.

This type of arrangement is suitable where there is a reasonably high degree of industry cohesion for the product type and a substantial majority of the market is covered by parties to the agreement.

Brokered through a relevant industry association(s), the agreement could create expectations about the acceptable standby power use for that product. The agreement could contain potential target standby levels and link these levels to milestones during the next ten years. Industry agreements of this kind would carry requirements that participants would report standby power levels to government agencies which may be then reported publicly.

An industry awards program could be tied into this agreement that would recognise those companies that are making a substantial contribution to reducing standby power consumption.

AUSTRALIAN STANDARDS TO SPECIFY STANDBY TARGETS

Australian governments work with Standards Australia International (SAI) to use relevant Australian Standards to identify and publicise standby targets for particular products. The publication of standby targets in official Australian Standards provides a ready mechanism for communicating with industry, especially in circumstances where those suppliers are located off-shore.

NAEEEC will work with SAI to establish an agreed process to use Australian Standards in this way. This action would be based on the process already in place for major whitegood standards.

ANNUAL IN-STORE MEASUREMENT SURVEYS

Australian governments will conduct annual surveys of the standby power levels choosing a

representative "basket" of electrical products. The first survey, conducted in early 2001, tested 520 products and the second survey, conducted in February 2002, tested 640 appliances.

The main objectives of the surveys are to:

- Quantify the magnitude and range of electricity used in standby mode by new appliances and equipment offered for sale in the Australian market; and
- Compare the annual results within each product group in order to track the industry's progress in reducing standby power consumption.

The surveys provide a regular basis on which to benchmark standby power used by the products entering the marketplace from year to year. The results of the surveys are shared with suppliers and key stakeholders.

PUBLICATION OF PRODUCT STATISTICS

In addition to the annual survey already conducted by NAEEEC, where a product is identified as requiring a standby target, all suppliers of those products would be asked to provide detailed standby data, directly to government on a regular basis. Self-reporting, annual surveys and some product verification testing will provide data to measure improvements over time.

NAEEEC will produce a regular report on standby activities in Australia, recording major achievements through each year and other measures of the effectiveness of the Standby Strategy. Public information campaigns will also continue.

MANDATORY

APPLIANCE ENERGY RATING LABEL

Currently, the mandatory Energy Rating label enables consumers to compare the energy efficiency of domestic whitegoods. It also provides an incentive for manufacturers to improve the energy performance of appliances by displaying efficiency in a graphical form to potential customers.

All relevant standards will be revised by 2006 to include standby power consumption in addition to energy use measured during actual operation in the values reflected on the label. More information can be found at www.energyrating.gov.au

MINIMUM ENERGY PERFORMANCE STANDARDS (MEPS)

MEPS is a regulatory tool used to remove the right to sell products that do not meet the minimum energy efficiency levels published in the Australian Standard. This measure relies on State and Territory laws and is supported by a product registration system administered by state and territory agencies.

MEPS levels could set a cap on the maximum allowable standby power for specified modes. This approach would be most straightforward for those products that are already regulated for energy efficiency. However, it could be considered for products groups that are not currently regulated for energy efficiency if the scope and magnitude of the problem warranted such an approach.

More information can be found at: www.greenhouse.gov.au/energyefficiency/appliances/meps/

'WARNING' LABEL

An alternate approach would be to use a label to identify only those products that fail to meet government's standby targets. This option draws on experience from cigarette and hazardous goods labelling. Governments could require ONLY those suppliers who fail to meet well publicised efficiency targets to attach a mandatory label to their product should it continue to fail to meet standby power targets at the end of a formal notice period. This approach has the advantage of burdening only those suppliers that fail to meet the specified targets, rather than all stakeholders.

Mandatory measures would be subject to the necessary economic justification required of any national law-making proposal and therefore only proceed if the Ministerial Council on Energy considered the proposal in the community's best interests.

the way forward

This Strategy has the support of the Ministerial Council on Energy and all jurisdictions throughout Australia. It represents the agreed government agency process and plan to help Australia meet the challenge of managing excessive standby power. It is important to remember, however, that the measures in this Strategy are only one part of the equation. Ultimately, if standby power is to be managed responsibly, business must capitalise on the opportunity presented by the strategy and choose economically and socially responsible actions that reduce standby to acceptable levels.



appendix A: SAMPLE PROFILE

PRODUCT PROFILE



TELEVISIONS

AUSTRALIA'S STANDBY POWER STRATEGY 2002 - 2012

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



PRODUCT PROFILE – TELEVISIONS (ANALOGUE)

PRODUCT DESCRIPTION

Analogue colour televisions are currently the most common form of television used in the residential sector in Australia. They are based on the European PAL system with free to air broadcasts using VHF and UHF bands. There are also some free to air broadcasts made from satellite and various pay TV broadcasts made via microwave, satellite and cable (these usually go through a converter/decoder to produce a suitable analogue output). Most units use cathode ray tube technology, although there are some new units appearing on the market that use projection, plasma and LCD technologies.

The average size of TVs installed in Australia is 48cm (nominal diagonal measurement) and this is increasing at about 0.5cm per year.

CURRENT OWNERSHIP AND TRENDS

Colour televisions first appeared on the market in Australia in 1974 (black and white TV was introduced in Australia in 1956). The overall ownership profile for

televisions in Australia is limited with data collection on ownership sporadic. Little state data is available, so a uniform national ownership and penetration has been assumed.

In the 1960's and early 1970's, the ABS census asked households whether they owned a television. The available data suggests that television penetration probably increased linearly from 0% in 1956 (the date of introduction) to about 90% by 1975. It can safely be assumed that the average number of units per household would be limited to 1 in almost all cases until the mid 1970's so penetration would be equal to or close to ownership at that time.

In 1996, an ABS survey found some 98.9% of households had at least one TV (ABS 4172.0-1997) and also recorded some data on ownership (number of TVs per household). ABS 4602.0-1999 also recorded the penetration of TVs at 98.9% but no figures for ownership were provided.

In 2001, NAEDEC commissioned a household telephone survey recording the penetration and ownership of TVs based on a sample of 801 households. A summary of these surveys is shown in Tables 1 and 2.



TABLE 1: PENETRATION OF TELEVISION OWNERSHIP - AUSTRALIA

Year and Source	Penetration
1955	0%
1961 (census – NSW)	48%
1966 (census – NSW)	70%
1970 (census – NSW)	90%
1996 (ABS 4172.0)	98.9%
1999 (ABS 4602.0)	98.9%
2000 (NAEEEEC)	99.5%

Source: Census data re-quoted from Wilkenfeld 1989.

TABLE 2: OWNERSHIP DATA FOR TELEVISIONS - AUSTRALIA

TVs	1996 (ABS4172.0)	2000 (NAEEEEC)
None	1.1%	0.5%
1 TV	40%	38.6%
2 TVs	40%	39.4%
3 TVs	13.9%	15.3%
4 or more TVs	5%	6.2%
Ownership	1.827	1.895
Saturation	1.847	1.905

Note: 2000 NAEEEEC survey found that 4.8% households had 4 TVs and 1.4% had 5 TVs. 1996 values for ownership and saturation assume 4% with 4 TVs and 1% with 5 TVs.

A graphical overview of TV penetration and ownership trends are shown on the following page.

The average age of TVs in the stock was found to be 8 years in the 2000 telephone survey. This compares closely with an average age of 9 years in the standby measurement survey of households in the same year.

RELEVANT MODES FOR THE 'ONE-WATT' POWER PLAN

The majority of televisions in the Australian stock have three main modes: on, passive standby and off. Most new TVs have a "hard" off switch, which disconnects the mains from all electrical circuits in the TV and these have no measurable off mode power consumption. A small proportion of new units have some "off mode" power consumption. Some new TVs also appear to have no off mode (lowest power state is passive standby – unit can always be activated by a remote control), although this is still unusual.

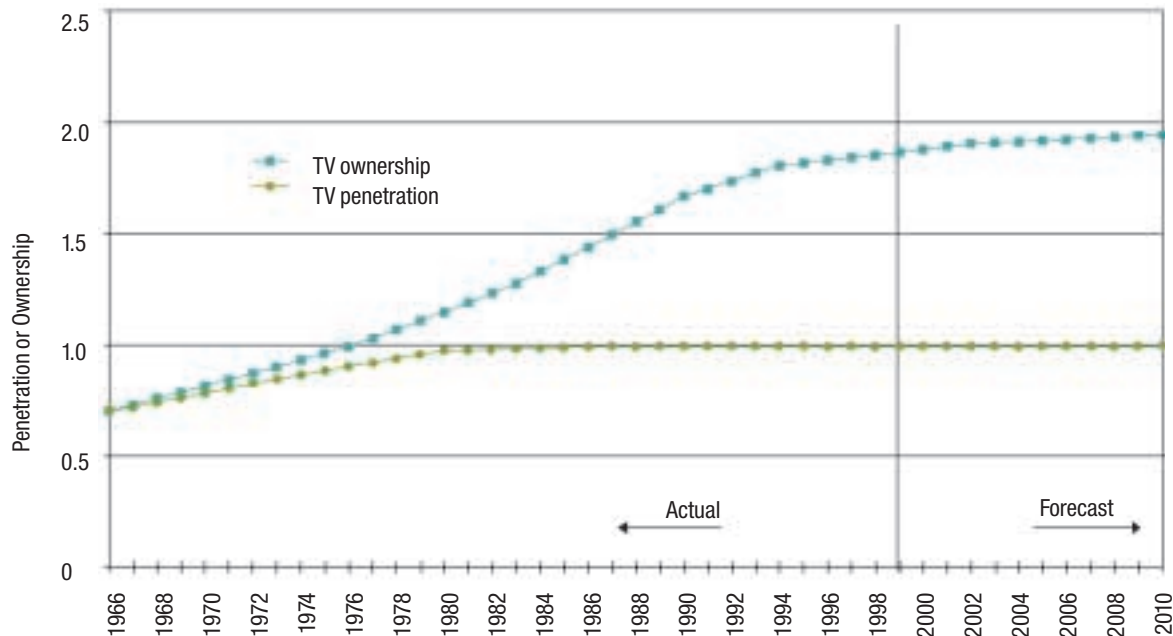
Passive standby mode (where the unit is put to sleep via a remote control) is now standard on most new televisions (more than 90% of new units). Remote controls for TVs were introduced in the late 1980's, becoming a standard feature for nearly all new TVs by the early 1990's. TVs without a remote control (ie most units sold prior to 1990) generally do not have a "standby mode" – they are either "on" or "off".

On mode is not generally relevant for the standby power plan, although the on mode power consumption and the hours of use are critical in determining total energy consumption of TVs (about 80% to 95% of total energy consumption is typically used in on mode).

The household survey conducted in late 2000 made a note of the mode that the TV was in prior to the commencement of power readings. About 40% of TVs were in passive standby mode and about 40% were off. The remaining units were either unplugged or on at the time of the survey. For energy consumption estimates, it can be assumed that about 50% of TVs will be off and 50% are in standby mode when not in use.

The telephone survey of appliance usage asked respondents to indicate the current status of their TV and if the TV was switched on, the normal way that the TV was switched off when not in use. Fifty percent of respondents turned their TV off with a remote. A further 37% turned their TV off at the unit while 13% reported switching off their TV at the switch on the wall. This correlates closely with the findings of the household survey.

FIGURE 1: TV PENETRATION AND OWNERSHIP IN AUSTRALIA



Source: EES estimates using ABS data

KNOWN STANDBY DATA FOR NEW PRODUCTS

A survey in early 2001 measured the off, passive standby and on mode of some 147 new TVs on display in major retailers in Brisbane and Sydney. A follow up survey on 113 new TVs was conducted in two large retail stores in Melbourne in early 2002. In 2001, the average sized unit on display was 63cm and similarly in 2002, the average size was 62cm. This average is significantly larger than the average installed stock (48 cm).

Both the 2001 and 2002 store surveys found that most new TVs (83% in 2000 and 62% in 2002) have no measurable power consumption in off mode (0.0 Watts). The 2001 survey found that around 10% of new TVs had some power consumption in off mode, but in all cases the measured values for new units was less than 1 Watt (most were 0.1W, average 0.25W for those with some off mode consumption). A further 7% of new products were found to have no "off mode" (ie the lowest power state is standby). In 2002, of those units

with a power consumption of greater than 0.0 in "off mode" (33% of TVs measured) all measured values were less than 1 Watt (only 4% measured greater than 0.2W).

The 2001 store survey found that the average standby power consumption for new TVs was 5.9W. However, the distribution varied from well below 1 Watt (15% of units on display) to over 10 Watts (16.2% on display). In 2002, the average standby power consumption for new TVs was 5.1W, with 24% of units measuring below 1 Watt. Given the significant number of 1 Watt models on display already, this indicates that achievement of a 1 Watt target is quite feasible within a reasonably short time period. However, of concern is the significant number of units on display with a standby power consumption of over 3 Watts. In 2001, only about 30% of units on display would qualify for the current Energy Star requirements for televisions, although in 2002, results showed that there was some improvement in the market with 45% of televisions qualifying for the Energy Star requirements.

KNOWN STANDBY DATA FOR INSTALLED STOCK (HOUSEHOLD SURVEY, 2000)

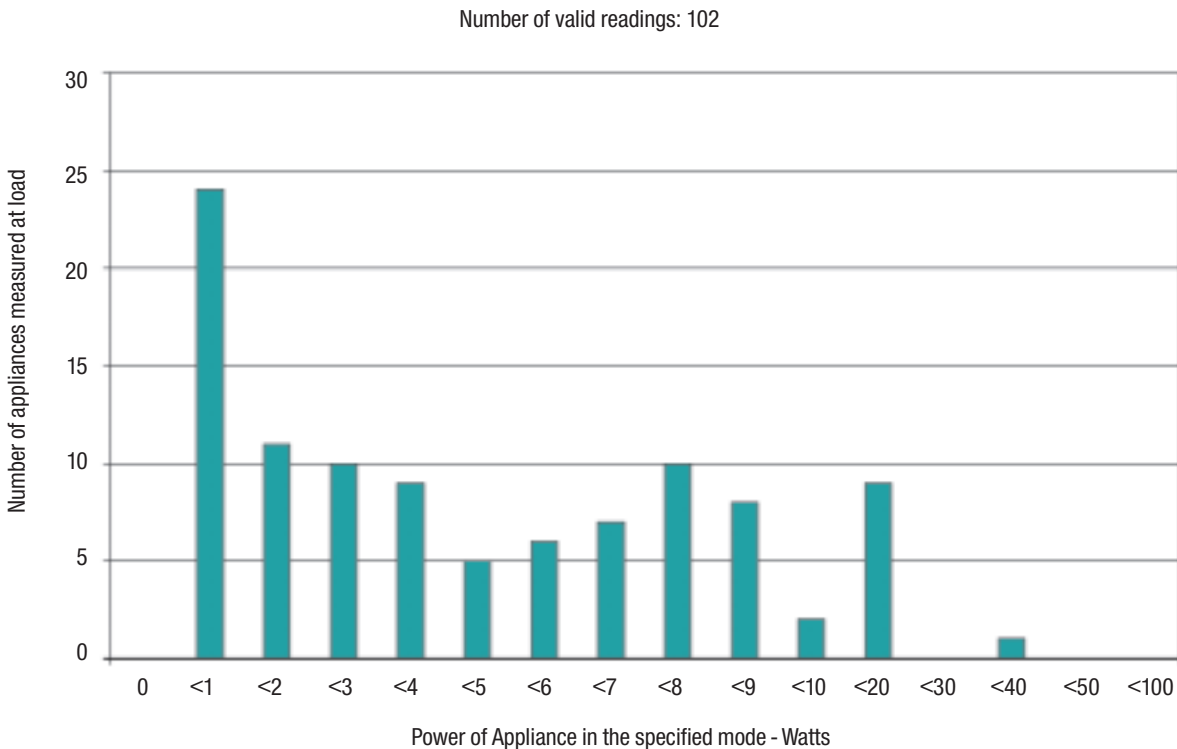
A household survey in late 2000 measured the off, standby and on mode of some 116 TVs installed in 64 households in Melbourne, Brisbane and Sydney. The average sized unit was 48cm. This survey allowed the off and standby mode power consumption to be measured as a function of the age of the television.

The household survey found that most existing TVs (88%) have no power consumption in off mode, which is a higher proportion than new televisions. Around 8% of existing TVs have some power consumption in off mode, with measured values ranging from 0.1W to

6.5W (average 2.0W for those with some off mode consumption). A further 4% of existing products were found to have no "off mode" (ie the lowest power state is standby, although a review of the data suggests that a couple of these "standby" values may in fact be "off mode" with significant power consumption).

The survey found that the average standby power consumption for all existing TVs in the stock was 9.6W, although there is an obvious improving trend from those purchased in 1990 to 2000 as shown below. With remote controls becoming standard by the early 1990's, the standby power consumption increased from essentially a base of 0 Watts in the mid 1980's to about 15 Watts in 1991. This has steadily decreased in

FIGURE 2: STORE SURVEY – DISTRIBUTION OF TV PASSIVE STANDBY POWER CONSUMPTION 2002



an almost linear fashion to 5.1 Watts in early 2002. Note that the average values from year to year vary due to the relatively small sample size for some years, although the values for 2001 and 2002 are based on relatively large store samples.

"On mode" consumption for TVs is usually quite high (typically in the range 40W to 150W depending on the size and age of the television, average installed stock of 67W, average new unit in 2002 96W for all TV types). Hours of TV watched are well documented by rating agencies – typically around 21 to 25 hours per week per household (up to 1300 hours per year). On power consumption for new and installed TVs appears to be reasonably stable at about 1.5W/cm, although the

range of power consumption for any particular size can vary by a factor of 2 or 3.

The 2000 telephone survey sought to determine the average age of each television in the household. Of those respondents who could recall the age of their televisions (respondents recalled the year of purchase for 88.2% of all TVs covered by the survey), the average age of the first television was 7.2 years (721 records); the second television was 10.9 years (427 records), the third 12.9 years (145 records), the fourth 12.4 years (39 records) and the fifth 14.3 years (7 records). The age distribution of all TVs covered by the 2000 survey is shown in Figure 4.

FIGURE 3: INTRUSIVE SURVEY – DISTRIBUTION OF TV PASSIVE STANDBY POWER CONSUMPTION BY AGE

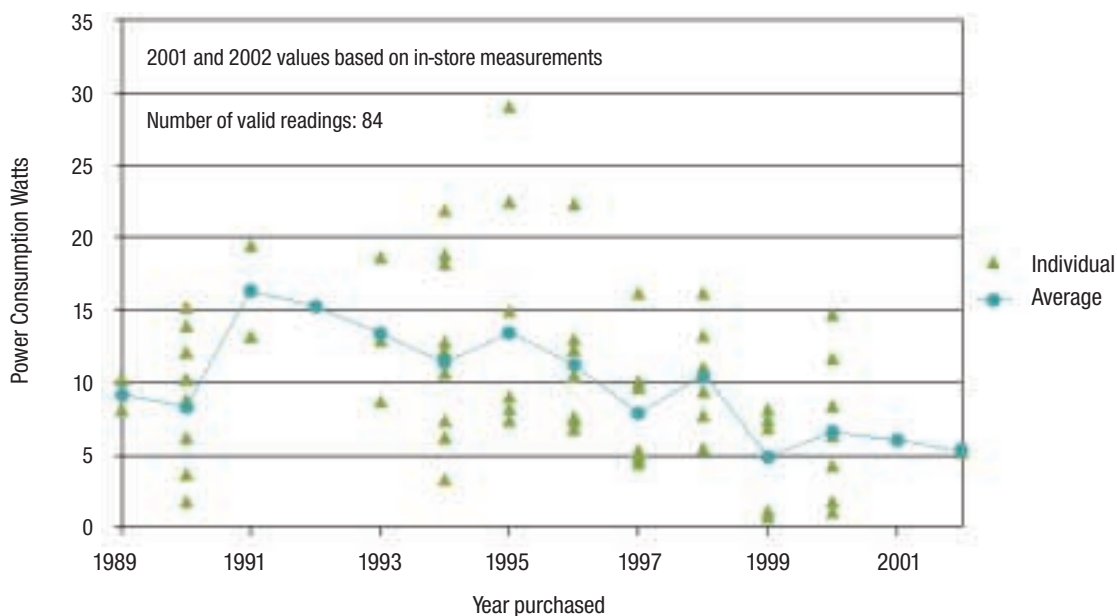
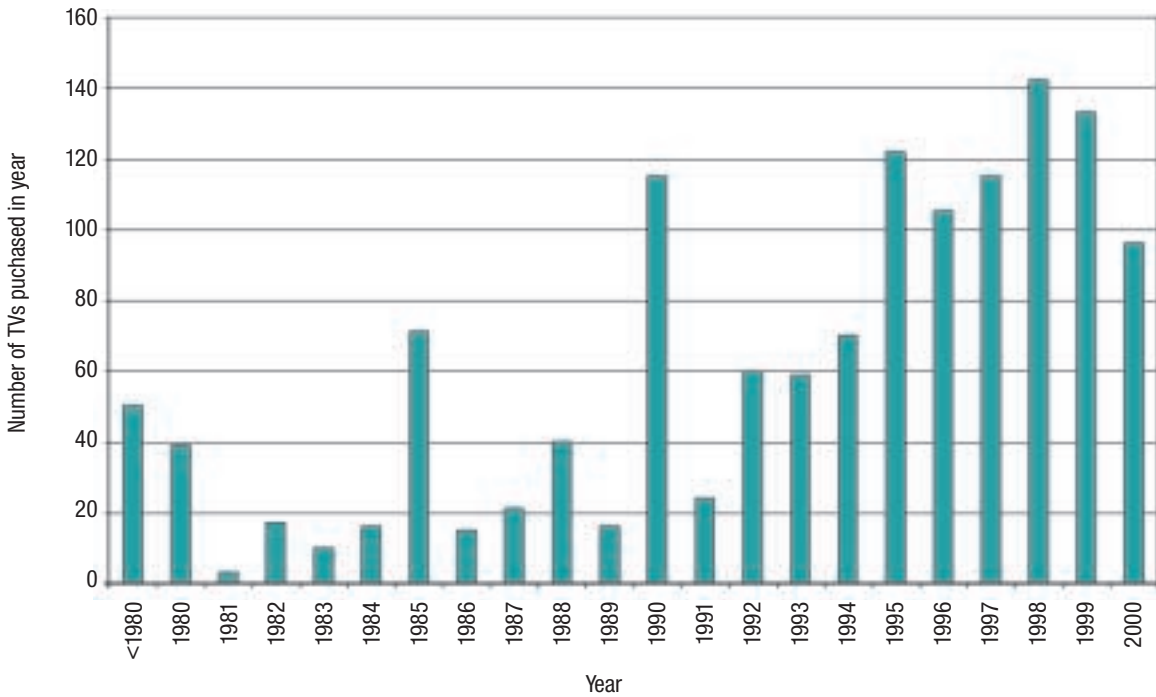


FIGURE 4: AGE DISTRIBUTION OF TVS IN STOCK - 2000



Note the higher frequency of responses of years that are multiples of 5 (eg 1985, 1990) – this age approximation appear more common for periods of > 10 years.

GOVERNMENT TARGET

NAEEEC intends to recommend to the Ministerial Council on Energy that the Australian passive standby consumption for TVs (turned off with remote control) be less than 1 Watt and off mode consumption be less

than 0.3 Watt for all products on the Australian market. This voluntary target should apply to all TVs from the date of the Ministerial decision.

The following voluntary requirements will be inserted into the relevant Australian Standard following the Ministerial decision, with an applicable date.

Product	Off mode power ¹	Passive standby mode power ²
Televisions	Less than 0.3 Watt	Less than 1.0 Watt

- Notes:
1. Lowest power when connected to the mains.
 2. When switched off using a remote control, where applicable.

NAEEEC intends to recommend that it monitor the marketplace, providing regular updates to the Ministerial Council on Energy and stakeholders until the end of 2005. After that date, NAEEEC will provide a detailed

report to the Ministerial Council on Energy advocating additional measures (should they be necessary) to meet the standby target or advising that the industry has met the standby target.

GOVERNMENT PROPOSALS TO ACHIEVE THIS TARGET

Government agencies intend to take the following actions to assist industry meet the standby targets for these televisions:

- **The Australian Standard**

NAEEEC will request the relevant Australian Standards committee to include the standby measurement and power targets in the next publication of the standard. Subject to Ministerial approval, this would be the first action within the plan.

- **Industry agreement**

NAEEEC intends to offer to establish a voluntary agreement through the Information and Communication Technologies forum within the Australian Electrical and Electronic Manufacturers' Association. This group represents suppliers of this equipment. The agreement would seek to more widely promote the standby levels and timetable for implementation. It will build on the agreements with member companies of Energy Star and identify joint opportunities to promote the Standby targets. Subject to Ministerial approval, this action could occur in early 2003.

- **Collection of Statistics**

NAEEEC intends to request television performance data from each supplier in the Australian marketplace in an agreed format. By early 2003, all companies will have been asked to contribute data for their products to a comprehensive database on standby. Public reporting will commence shortly thereafter. In the event that some suppliers do not provide this data, NAEEEC will advise the industry of the identity of those suppliers and include that supplier's products in its annual measurement surveys.

- **Compliance Status**

By 2005, NAEEEC will release a public report detailing progress by the industry towards the government standby targets and identifying proposals for the future. By mid 2006, NAEEEC will announce any additional actions sanctioned by the Ministerial Council on Energy to meet the standby target through until 2012 or withdrawing the product from monitoring because the industry has already met the standby target.

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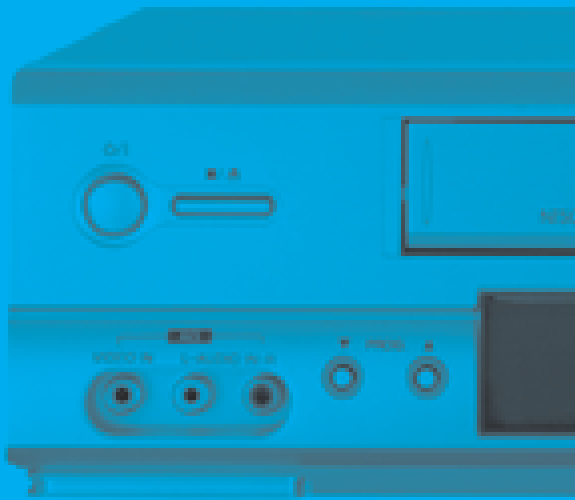
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