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Mr Neil Byron
Commissioner, Energy Efficiency Inquiry
Productivity Commission
LB2 Collins Street East
MELBOURNE VIC 8003

Dear Mr Byron

Please find enclosed the South Australian Government's initial submission to the Productivity Commission's inquiry into energy efficiency.

Attachment 1 of this submission provides a response to the Commission's request for basic information on existing and recent energy efficiency programs operating in South Australia. This request was made in a letter from Assistant Commissioner Mr Paul Belin to Mr John Denlay, Energy SA, dated 28 October 2004.

Should you require any further information on this submission, please contact Mr Martin Brine, Director, Federal/State Relations, Cabinet Office on 08 8226 2704 or Brine.martin@saugov.sa.gov.au.

Yours sincerely

HON PATRICK CONLON MP
MINISTER FOR ENERGY

January 2005

**PRODUCTIVITY COMMISSION
INQUIRY INTO THE ECONOMIC AND ENVIRONMENTAL POTENTIAL
OFFERED BY ENERGY EFFICIENCY**

A SUBMISSION BY THE SOUTH AUSTRALIAN GOVERNMENT

1. Introduction

The South Australian Government welcomes the opportunity to contribute to the Commission's inquiry into energy efficiency.

This submission brings together information on existing programs and resources that directly relate to the Inquiry's terms of reference. These are presented under three broad categories:

- Section 2: A summary of existing energy efficiency programs
- Section 3: Case studies of government energy efficiency initiatives
- Section 4: An annotated bibliography of relevant references

This submission includes three attachments:

- Attachment 1 provides a response to the Commission's request for basic information on 'existing and recent' energy efficiency programs operating in South Australia.
- Attachment 2 is a report on the stakeholder contributions from the South Australian consultation workshop for the National Framework for Energy Efficiency. Whilst these contributions have been distilled into the national Stakeholder Report, they are included here to present the specific issues raised by South Australian stakeholders.
- Attachment 3 is a summary of the Government's response to a South Australian Task Force that inquired into demand side management. It presents the key recommendations of Task Force and the Government's response.

2. Summary of existing energy efficiency programs

Table 1 provides a summary of South Australian Government programs that contribute to improving energy efficiency. The focus of the table is on describing barriers to energy efficiency and the rationale for government intervention. Further details of programs are provided in Attachment 1.

Table 1: SA Government programs that improve energy efficiency

Program See Att. 1 for further details	<i>Barriers overcome</i>	Rational for government intervention
Mandatory 4 Star energy performance for new homes (5 Star from May 2006)	Split incentives (developers have little incentive to implement energy efficiency measures and designs). Perception that investment in energy efficiency has low and delayed returns.	To reduce greenhouse gas emissions and minimise peak electricity loads.
Building Tune Up program	Lack of awareness of building energy use and limited information on building energy performance relative to other buildings.	To reduce greenhouse gas emissions.
WERIC (Eco-renovation home in Whyalla)	Public perception that investment in energy efficiency has low and delayed returns.	To demonstrate and promote the benefits and practical nature of energy efficiency measures to the general public.
Demo home (completed in 2004)	Public perception that investment in energy efficiency has low and delayed returns.	To demonstrate and promote the benefits and practical nature of energy efficiency measures to the general public.
SAHT Environmental Management Framework	Capital and financial constraints limiting the investment. Split incentives (tenants have little incentives to make capital investments).	To reduce costs to low income households. To reduce greenhouse gas emissions.
Solar Hot Water Heater Rebates	Capital and financial constraints limiting the investment in solar hot water systems, due to the relatively high upfront cost.	To reduce greenhouse gas emissions. To support the renewable energy industry.
National Appliance and Equipment Energy Efficiency Program	Weak energy market price signals and limited energy use information and feedback data to consumers to enable them to make informed decisions on energy use.	To reduce greenhouse gas emissions.
One watt standby purchasing policy	Limited energy use information and feedback data to consumers to enable them to make informed decisions on energy use.	To reduce greenhouse gas emissions. To lead market transformation in high efficiency appliances.
Government Energy Management	Lack of consistency of energy efficiency policies across different portfolios. Inconsistent public reporting and accountability of government energy consumption and energy efficiency achievements.	To reduce energy costs and greenhouse gas emissions from public sector operations. To provide leadership in addressing climate change issues.

Energy Services Industry Development	Business are not aware of the benefits the energy services industry can provide them.	To foster an effective local energy services industry.
Business energy efficiency opportunity identification programs	Business perception that the potential for energy efficiency within their operations is limited. Information on energy efficiency options is either not available or not provided to decision makers when investment decisions are being made.	To reduce greenhouse gas emissions. To improve South Australian businesses' competitiveness.
Eco-efficiency program	Business perception that the potential for energy efficiency within their operations is limited. Information on energy efficiency options is either not available or not provided to decision makers when investment decisions are being made.	To reduce greenhouse gas emissions. To improve South Australian businesses' competitiveness.
Energy Efficiency Program for Low income households	Lack of community awareness about the costs and benefits of energy efficiency. Access to cost effective energy efficiency expertise due to high service and transaction costs (relative to savings) for households.	To provide financial relief to low-income households following increases in electricity prices. To reduce greenhouse gas emissions. To develop a local home energy services industry.
Energy Friends	Access to cost effective energy efficiency expertise due to high service and transaction costs (relative to savings) for households.	To reduce greenhouse gas emissions. To develop a local home energy services industry.
Energy SA Advisory Service	Difficulties in accessing and sourcing appropriate independent information on energy efficiency.	To promote and facilitate the efficient and safe use of energy in households, small business, government departments, local governments and primary and secondary schools.
Schools program	Lack of community awareness about the costs and benefits of energy efficiency.	To provide knowledge to students to help raise the level of energy efficiency awareness.
Reach for the Stars	Lack of awareness on the benefits of energy efficiency in relation to the operation of appliances in house holds.	To reduce greenhouse gas emissions.
Local government support	Lack of sufficient knowledge and information within local government operations to effectively identify and implement energy efficiency measures.	To reduce greenhouse gas emissions.
Remote area energy efficiency rebate scheme	Lack of awareness of the costs and benefits of energy efficiency. Difficulties in accessing and sourcing appropriate information on energy efficiency. Customers do not face the true cost of production (Govt subsidised) and have less incentive to save energy.	To reduce costs to government of the Remote Area Electricity Supply scheme. To reduce greenhouse gas emissions.

Use of compressed natural gas and biodiesel in the public transport vehicle fleet	Limited knowledge about the suitability of alternative fuels to the operation of fleets of vehicles.	To reduce local air pollution and greenhouse gas emissions. To reduce operating costs of the public transport vehicle fleet.
Establishment of a Vehicle Emissions Testing Facility	Limited knowledge about pollution levels generated by motor vehicles. Limited knowledge about increased fuel consumption and emissions of poorly maintained vehicles.	To reduce local air pollution and greenhouse gas emissions. To increase motor vehicle efficiency through improved maintenance.
Establishment of a Smoky Vehicle Program	Limited knowledge about the impact of smoky vehicles on the community's amenity.	To reduce local air pollution and greenhouse gas emissions. To increase motor vehicle efficiency through improved maintenance.
TraverSmart SA	Limited knowledge about the impacts of transport on the environment. Limited knowledge about passenger transport options regarding travel modes, environmental and health impacts.	To reduce greenhouse gas emissions and local air pollution. To reduce demand on the road infrastructure. To motivate increased use of public transport, cycling and walking.
Installation of LED Equipped Traffic Lights	Limited knowledge about energy savings associated with more efficient lighting technologies.	To reduce energy costs and greenhouse gas emissions.

3. Case studies of SOUTH AUSTRALIAN government energy efficiency initiatives

3.1 Government Energy Efficiency Action Plan

3.1.1 North Terrace Arts Precinct:

Significant benefits from the application of creative energy management thinking have been demonstrated in a partnership between Arts SA, DAIS Facility Management group, Transfield Services, Air Con Serve and Energy SA. Arts SA, along with the Art Gallery of South Australia and Artlab, agreed to trial an energy conservation project at the North Terrace Arts Precinct, which was delivered as a Pilot Project for one of the components of the Government's Energy Management Action Plan.

A number of preventative maintenance activities were identified and implemented with outstanding results in both the Art Gallery and the Natural Science building. Most activities identified were associated with controls on air conditioning systems.

Further collaboration between DAIS, Arts SA, Energy SA and a Facility Management Contractor, has resulted in the implementation of number of additional measures that use the "Shaw" method, developed by Adelaide University, to dehumidify fresh air intake and modify the way the air conditioning plant is operated and maintained resulting in significant reductions in energy consumption at the Art Gallery buildings.

Prior to investing in energy efficiency, the Art Gallery had an annual energy cost of \$380,000. A capital investment of \$240,000 in preventative maintenance, variable speed drives and the Shaw method has reduced these costs by \$100,000 per annum.

3.1.2 Lyell McEwin Hospital Redevelopment:

Stage One is one of the largest projects undertaken by Government in the last decade, with capital value of \$87.4million for replacing around 75% of the former hospital facility. The Department of Human Services established an ambitious energy use target of 918MJ/m² (23% less than a benchmark figure of 1312 MJ/m²) as part of an overall ESD design strategy. To achieve this, the following design features have been incorporated:

- Saw tooth roofing for daylight access and penetration
- Heat recovery systems
- High efficiency chillers and motors
- High performance glazing
- Solar hot water
- Lighting controls

3.1.3 Transport SA Energy Performance Contract (EPC):

Transport SA's Walkerville headquarters - a 19,000 square metre, 8-storey building - is the site of South Australia's first EPC. The EPC contract's capital value is \$980,000 and will deliver guaranteed energy and maintenance savings of \$183,000 per annum, against baseline energy expenditure of \$400,000 per annum.

The contract works include a lighting refurbishment, optimisation of air conditioning controls and water conservation measures. Construction activities on the EPC were completed in July 2004.

3.1.4 Transport SA Traffic Signals Upgrade

Transport SA operates traffic signals at 425 intersections and 299 pedestrian crossings across South Australia. These contribute to over 16% of TSA's total energy consumption.

Installation of light emitting diode (LED) equipped traffic signals to replace the traditional globe equipped units is expected to reduce greenhouse gas emissions and energy consumption by up to 8% and result in an annual saving of \$0.85 million.

The \$5.6 million investment is expected to be recouped over a period of approximately 7 years.

3.1.5 Sturt Police Station

DAIS Building Maintenance Services in conjunction with SAPOL, Energy SA and Air Con Serve reviewed the Sturt Police Station regarding its energy performance and proposed and implemented a suite of energy improvement initiatives including:

- De-lamping
- Building Management System and air conditioning changes
- Installation of a Light Eco System.

Monitoring of energy usage over the period of six months since implementation of the strategies has demonstrated reductions in energy consumption of 20%. Annual savings of around \$16,800 give this project a 13-month payback period.

3.1.6 Environmental School Design

Two examples of DAIS managed project for the Department of Education and Children's Services (DECS) have set new benchmarks for environmental school design.

The Playford Primary School: The design incorporates 25 ecologically sustainable development initiatives, including:

- Passive design measures such as correct building orientation, window design to maximise daylight whilst shading direct summer sunlight, high levels of roof insulation, light coloured materials to reflect summer heat and rammed earth walls to provide thermal mass.
- High efficiency lighting and control systems that operate only when natural light is inadequate
- Heating, cooling and ventilation systems linked to vents and flues to enhance natural ventilation and reduce the need for air conditioning.

Mawson Lakes School: A focus on building management systems to conserve energy and to offer an interactive educational tool for students.

Both projects have won the Royal Australian Institute of Architects (SA Chapter) award for Sustainable Buildings (Playford in 2003, Mawson Lakes 2004) and the latter project has won the National Award for Sustainable Buildings (2004).

3.1.7 Education Centre Refurbishment

The principles of Government's Energy Efficiency Action Plan have been applied during the design of the Education Centre Refurbishment Project. The following initiatives will reduce energy consumption by an estimated total of 15% whilst occupation of the building will increase by about a further 250 people:

- Replacement of light fittings to low loss electronic ballasts
- Upgrade of controls of supply air
- Upgrade of air conditioning controls for after hours use
- Upgrade of economy cycle and cooling plant

The estimated energy savings for each of the above initiatives are:

- Lighting - 30% of consumption (600 000 kwh)
- Air conditioning - 10% of consumption (350 000 kwh)

3.2 Business programs

3.2.1 The BASEline program

The BASEline program is a collaboration between the State Government, Adelaide City Council and the University of South Australia. Thirty small businesses in the city are participating in energy assessments and action plans with the aim of reducing their energy use, greenhouse gas emissions and costs.

The results from the first 19 of the 30 energy audits show the potential to reduce energy use by an average of 10% with an average payback of 3.3 years (including the audit costs). Examples of energy saving opportunities identified include:

- Removing excess fluorescent tubes (payback of 0.1 years) and ballasts (payback of 1.9 years)
- Adjusting lighting switch groups (payback of 0.3 years)
- Installing occupancy detectors (payback of 4.3 years)
- Repairs to air conditioning equipment (payback of 2.3 years)

When implemented, many of these measures should reduce the maximum electrical demand of these businesses, as well as ongoing energy consumption and greenhouse gas emissions.

3.2.2 Eco-efficiency program

The Environmental Protection Authority has published a range of case studies as part of its **Eco-efficiency program**. An eco-efficiency audit of Yalumba Winery's Salisbury site, while having no specific recommendations for the operations at the Salisbury site, identified a number of opportunities for the company's refrigeration supplier (White Refrigeration) to improve energy efficiency. Estimated energy cost savings to Yalumba's refrigeration system of \$30,000 per year were identified.

3.3 Buildings programs

3.3.1 Energy efficient homes

All new homes and home extensions built in South Australia must be designed and constructed to achieve efficient use of energy for heating and cooling. The technical requirements for energy efficiency are set out in the Building Code of Australia (BCA) - Volume 2 (Housing Provisions).

Homes that incorporate sound environmental design principals—like wall and ceiling insulation, northerly orientation and internal and external shading of windows and walls in summer—have the potential to save residents over \$2 a week in heating and cooling bills alone.

3.4 Community partnerships

3.4.1 The Riverland Energy & Water Friends

The Riverland Energy & Water Friends project was an initiative of the former South Australian Department for Business Manufacturing and Trade (DBMT), Ms Karlene Maywald MP, Member for Chaffey, and the Riverland Energy Reference Group. It was a community level project – combining with existing ‘Energy Friends’ initiative of Energy SA and the ‘Cool Communities’ program at the Conservation Council of SA funded by the Australian Greenhouse Office. The project ran from June to December 2003.

The project delivered 224 home energy and water audits and distributed 220 AAA showerheads, 440 CFLs, 220 draught excluders and various water conservation items.

The funding provided to the project was \$40,000. For this, the direct energy and water savings are valued at \$11,500 per year. A conservative estimate of the savings that may have been achieved from the advice provided by the audits would increase this figure to over \$13,000. This gives a simple payback of 3 years and one month.

These estimates do not include the environmental benefits of saving nearly 4 million litres of water and around 180 tonnes of carbon dioxide equivalent greenhouse gases.

3.4.2 The Remote Area Energy Efficiency Rebate (RAEER) Program

The Remote Area Energy Efficiency Rebate (RAEER) Program involved Energy SA selling subsidised compact fluorescent light (CFL) globes to communities in remote South Australia, including the 13 communities that are part of the Remote Area Electricity Supply (RAES) Scheme. Through RAES, the Government subsidises the cost of electricity to participating remote communities.

Overall, 2750 CFLs were sold at subsidised prices. For a net cost to Government of \$30,000, the program has been estimated to deliver:

- \$274,000 total savings to the participating households over the life of the globes, equating to a net present value of \$206,000 (\$99.50 per globe on reduced electricity costs and reduced purchase of incandescent globes (over the life of each globe)).
- \$299,000 total reduction in RAES subsidies over the life of the globes, equating to a net present value of \$212,000 (\$109 per globe on reduced RAES subsidies (over the life of each globe)).
- 1165 tonnes CO_{2e} of greenhouse gas savings over the life of the globes

3.4.3 Solar Hot Water Rebate Scheme

The Solar Hot Water Rebate Scheme provides rebates to installations that meet the necessary eligibility criteria. To date over 6,500 domestic solar hot water installations have taken advantage of the scheme. Assuming an average saving on running costs of \$118 per annum for each installation, this will result in \$767,000 in savings every year for the life of the systems.

In most cases installations are able to take advantage of funding available through the trading of Renewable Energy Certificates (RECS). Without the State Government rebate, but including funding through RECs (internalising the cost of a negative externality), solar hot water systems have a simple pay back period of approximately 10 years when compared to a standard off-peak electric hot water system. Considering that solar systems have an expected life of approximately 15 years these systems are already cost effective. The State Government rebate helps domestic consumers overcome the barrier of higher upfront costs and reduce the pay back period to approximately 5 years, by making available up to \$700 to put towards the cost of the unit.

4. Annotated bibliography of relevant references

The South Australian Government has produced, or been involved in developing a range of resources that relate closely to the Terms of Reference of the Commission's Inquiry. To assist the Commission in accessing and utilising these resources, an annotated bibliography is provided below. References are grouped according to the Commission's five terms of reference.

4.1 Term of Reference 1: Costs and benefits from energy efficiency improvements

4.1.1 Energy Efficiency Potential in South Australia
available at: www.sustainable.energy.sa.gov.au
(www.sustainable.energy.sa.gov.au/pages/general/pdf/sa_ee_potential.pdf)

Based on a range of overseas and national studies and programs, this report identifies a potential for cost-effective energy efficiency in South Australia of 20% over a 20-year period. These savings would be driven by a little over \$1 billion of cost-effective private sector investment. It is also estimated that this level of energy efficiency could create between 850 and 2700 net new jobs.

4.1.2 National Framework for Energy Efficiency
consultants reports available at:
www.seav.vic.gov.au/energy_efficiency/NFEE/index.asp

The SA Government participates, through the Ministerial Council on Energy, in the development of the National Framework for Energy Efficiency (NFEE).

In-depth technical and economic modelling and analysis has been undertaken by a number of consultants to support the development of the NFEE. The modelling has followed a three-step process:

- Step 1 estimates the technical energy productivity improvement potentials for the residential, commercial and industrial sectors
- Step 2 models the costs of implementing measures to achieve the technical potential derived in Step 1, and models the annual energy and cost savings
- Step 3a models the broader economic benefits of realising the energy productivity improvement potential of a number of scenarios
- Step 3b models the impacts on the energy sector of increased energy productivity

The consultants' reports are available for downloading at the NFEE web site.

4.2 Term of Reference 2: Existing and recent energy efficiency programs

4.2.1 Attachment 1 provides up-to-date basic information on existing and recent South Australian Government energy efficiency programs.

4.2.2 Electricity Demand-Side Measures Task Force Final Report
available at: www.sustainable.energy.sa.gov.au
(www.sustainable.energy.sa.gov.au/pages/programs/dsm/elec_dsm/outputs/outputs.htm)

Part B Section 4.2 of the Task Force's report, which was published in April 2003, provides a review of energy efficiency programs in South Australia. Programs are grouped under:

- Government programs and advisory services
- The Government's Energy Efficiency Action Plan
- Building related initiatives
- Australian Greenhouse Office and community initiatives
- Energy performance standards.

4.2.3 Energy Efficiency Action Plan

Plan and annual reports available at: www.sustainable.energy.sa.gov.au
(www.sustainable.energy.sa.gov.au/pages/programs/government/state/state.htm)

DAIS documents are available at: www.buildingmanagement.sa.gov.au.

The Energy Efficiency Action Plan (EEAP) has been prepared in accordance with Measure 3.1 of the National Greenhouse Strategy (1998) for Governments to "develop and implement an action plan to reduce emissions". As part of the EEAP, the Government publishes annual energy use reports.

The Department for Administrative and Information Services (DAIS) delivers elements of the Government's Energy Efficiency Action Plan through:

- Guide note for Energy Efficiency Action Plan Consultant Compliance (information to consultants tendering for or providing services on government building projects)
- Guide note for Energy Efficiency Action Plan Government Agency Compliance (information to Government Agencies developing briefs for building projects)
- Reference to the EEAP in Guide notes for Ecologically Sustainable Development (Planning, Design & Delivery) of new buildings and Sustainment of Existing Buildings)
- Preventive maintenance practices introduced through government's Facilities Management Contract
- Energy Management Guidelines – a guide to reduce operating costs and environmental impacts from government buildings
- Incorporation of EEAP requirements into the Public Works Committee of the Parliament of South Australia's User Guide (available at: www.parliament.sa.gov.au/committees/committee.asp?doCmd=show&intID=43)

4.2.4 TravelSmart SA

Information available at:

www.transport.sa.gov.au/environment/travelsmartsa/index.asp

This web site provides information on this travel demand management program.

4.3 Term of Reference 3:

Barriers and impediments to improved energy efficiency

4.3.1 National Framework for Energy Efficiency

Discussion Paper, national Stakeholder Report and non-confidential written submissions available at: www.seav.vic.gov.au/energy_efficiency/NFEE/index.asp

The *Discussion Paper* "Towards a National Framework for Energy Efficiency—Issues and Challenges" identified a range of barriers to energy efficiency and sought stakeholder feedback on these. The *Stakeholder Consultation Report* is a synthesis of the responses to the Discussion Paper. This provides details of the key barriers to energy efficiency identified by stakeholders.

As part of this consultation process, the South Australian Government convened a stakeholder consultation forum. The *report of this forum* is provided at Attachment 2. This report formed part of the material used to produce the national Stakeholder Consultation Report.

4.3.2 Electricity Demand-Side Measures Task Force Final Report

available at: www.sustainable.energy.sa.gov.au

(www.sustainable.energy.sa.gov.au/pages/programs/dsm/elec_dsm/outputs/outputs.htm)

Part B Section 5.4 identifies and discusses key business sector barriers to demand management and energy efficiency:

- Energy is non-core – lack of focus
- Perceptions of poor financial returns
- Knowledge
- Business uncertainty
- Landlord-tenant relationship.

Part B Section 6.4 identifies and discusses key residential sector barriers to demand management and energy efficiency:

- Attitude and behavioural
- Economic
- Technical
- Electricity industry and government issues

Part B Section 7.4 discusses barriers to demand management and energy efficiency in schools.

4.4 Term of Reference 4:

The potential for cost-effective energy efficiency improvements

4.4.1 National Framework for Energy Efficiency

MCE Communiqué and consultant reports available via:

www.seav.vic.gov.au/energy_efficiency/NFEE/index.asp

On 27 August 2004, the Ministerial Council on Energy (MCE) agreed to implement nine policy packages that form Stage One of the NFEE. These cover:

- Residential buildings
- Commercial buildings
- Commercial/industrial energy efficiency
- Government energy efficiency
- Appliance & equipment energy efficiency
- Trade and professional training & accreditation
- Commercial/industrial sector capacity building
- General consumer awareness
- Finance sector awareness

As stated in the attachment to the meeting's communiqué, Stage One measures have the potential to result in an increase in GDP of around \$400 million per year.

This potential is built on the energy efficiency potential studies undertaken as part of the NFEE:

- NFEE: Energy Efficiency Improvement Potential Case Studies – Industrial Sector
- Energy Efficiency Improvement in the Commercial Sub-Sectors

- Energy efficiency improvement potential case studies, residential water heating
- Energy efficiency improvement in the residential sector

4.5 Term of Reference 5: Policy options for energy efficiency improvements

4.5.1 South Australia's Strategic Plan

Available at: <http://www.stateplan.sa.gov.au/home.php>

On 29 March 2004, the Premier released South Australia's Strategic Plan consisting of 79 ambitious but achievable targets that allow South Australians to benchmark or measure our progress over time. The key targets that relate, either directly or indirectly to energy efficiency are:

- Reduce energy consumption in Government buildings by 25% within 10 years and lead Australia in wind and solar power generation within 10 years.
- Achieve the Kyoto target during the first commitment period (2008 - 12).
- Reduce our ecological footprint to reduce the impact of human settlements and activities within 10 years. Actions will include:
 - increasing energy efficiency of dwellings by 10% within 10 years, by such means as the introduction of a five-star energy requirement for new houses by May 2006.

4.5.2 Government Response to the Electricity Demand-Side Measures Task Force Final Report

Available at: www.sustainable.energy.sa.gov.au

(www.sustainable.energy.sa.gov.au/pages/programs/dsm/elec_dsm/govt_response.htm)

In its final report, the Electricity Demand Side Measures Task Force made twenty-four individual recommendations grouped under the headings of Government Policy and Legislation, National Issues, Regulation and Licensing, and Programs.

The Government has provided, in its Response Report, a response to each of the Task Force's recommendation. A summary of the Government response is provided at Attachment 3.

4.5.3 Creating a Sustainable Adelaide

Available at: www.thinkers.sa.gov.au/images/Girardet_final_report.pdf

The Government's Thinkers in Residence program brings world-leading thinkers to live and work in Adelaide to assist in the strategic development and promotion of South Australia. The first Thinker in Residence, Herbert Girardet focused on making Adelaide a green city. His final report, "Creating a Sustainable Adelaide", included a chapter on energy efficiency, which included the following recommendations:

- Make the efficient use of energy by all sectors a key focus of government policy
- Make it clear to the property sector that the government will only lease energy efficient office buildings
- Modify building codes to make sustainable building practice the norm, if possible working in conjunction with other Australian State governments
- Create exemplary projects to demonstrate the benefits of green architecture

4.5.4 National Framework for Energy Efficiency

Consultants reports available via:

www.seav.vic.gov.au/energy_efficiency/NFEE/index.asp

As part of the development of the NFEE two consultant reports have been prepared on the potential impacts of a national energy efficiency target.

4.5.5 Draft Transport Plan

Available at: www.dtup.sa.gov.au/transport_plan

The South Australian Draft Transport Plan applies the Government' economic, social and environmental objectives to the transport sector by mapping out an approach for the next 15 years. It incorporates aspects such as fuel efficiency, energy efficient driver practices, energy efficiencies to be derived from the promotion of mode shifts to walking, cycling and public transport and less private vehicle use, energy efficiency from improved traffic management, and from encouraging a shift in freight transport from road to sea and rail. The draft Plan was released for public consultation in 2003, and a final combined land use and transport plan can be expected around mid-2005.

Attachment 1

Stocktake of SA Government energy efficiency programs

Program name: Mandatory 4 Star energy performance homes (5 Star from May 2006)
Administered by: Planning SA
Start date and status (i.e. end date or ongoing): 1 January 2003. Ongoing
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): Housing Industry and Owner-builders.
Description: From 1 January 2003, all new homes and home extensions built in South Australia must be designed and constructed to achieve efficient use of energy for heating and cooling. The technical requirements for energy efficiency are set out in the Building Code of Australia (BCA) - Volume 2 (Housing Provisions). To assess a home's energy efficiency, designers, builders or building surveyors can refer to the 'deemed-to-satisfy' requirements in the <i>Building Code of Australia</i> (BCA) or the <i>South Australian Housing Code</i> (SAHC). Alternatively, homes can be rated using computer-based energy rating systems (such as the NatHERS or FirstRate). Using these systems, a 4 or 5-star rated home is considered energy efficient. For more information see: www.planning.sa.gov.au/energyefficiency/index.html
Standards for residential apartments and commercial buildings are being developed through the Australian Buildings Code Board.
What are the objectives of the program? <ul style="list-style-type: none">○ To reduce greenhouse gas emissions○ To minimise peak electricity loads○ To reduce end-user heating and cooling costs.
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Standards
What is the name of any relevant regulation? <p>Energy efficiency requirements for housing are set out in the <i>Building Code of Australia</i> (BCA) and the <i>South Australian Housing Code</i> (SAHC). There are a number of design criteria that will need to be considered, such as orientation, solar access, sun-shading, insulation, ventilation and draught-proofing.</p>
Has the program been evaluated? YES/NO If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.) <p>Modelling has estimated that homes that meet these requirements have the potential to save residents over \$2 a week in heating and cooling bills alone. Homes with these features also produce less greenhouse gas emissions than poorly designed homes and provide comfortable conditions throughout the year with less supplementary heating and cooling.</p>
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO If yes, how has it been coordinated? <p>Through the Australian Building Code Board</p>

Program name: Building Tune Up program
Administered by: South Australian Government and Adelaide City Council through the Capital City Committee's Green City program.
Start date and status (i.e. end date or ongoing): October 2003. Due for completion in end of 2005.
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): Private and Government CBD office building owners and operators.
Description: Aimed to improve the environmental performance of ten CBD office buildings by having them undertake monitored improvements to achieve a one star Australian Building Greenhouse Rating (ABGR) improvement. Three Government buildings and seven private sector buildings are participating in the project with one of the buildings undergoing an unofficial ABGR rating. Each building has also undergone an assessment of water use and received a rating under the National Australian Buildings Environment Rating Scheme (NABERS).
What are the objectives of the program? The project is designed as a pilot to demonstrate cost effective opportunities to improve the energy and water efficiency of commercial office buildings and to reduce greenhouse gas emissions from the city of Adelaide.
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])?
What is the name of any relevant regulation? The program is designed to provide information to the property industry of the advantages to improvements in their bases building energy and water performance. This program is now backed by the Premier's media release announcing a preference for new Government leases to those buildings that achieve a 5 star energy rating.
Has the program been evaluated? YES/NO If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.) Performance will be verified after modifications have been made. Overall, improving the performance of the 10 buildings by one rating increment each would: <ul style="list-style-type: none"> • Reduce energy consumption by 6,616 MWh per annum - deliver savings of around \$ 840,000 each year from energy bills • Reduce greenhouse emissions by 6,294 tonnes of CO2 each year, a 24% reduction • Result in water bill savings of \$36,750 each year
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO If yes, how has it been coordinated? It aligns with the Government's Energy Efficiency Action Plan.

Program name: WERIC (Eco-Renovation Home in Whyalla)
Administered by: South Australian Housing Trust, Whyalla City Council and Energy SA.
Start date and status (i.e. end date or ongoing): Commenced July 2001 and is due to operate until the end of 2006.
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): Whyalla residences and visitors, and through the web.
Description: The project involves the retro-fit of one 'double unit', with one unit operating as an information centre open to the public. The Centre is staffed throughout the week and is open to the public for several hours a week. Information is available about the retro fit, and the energy and water use is monitored and this information is available through the website. More information is available at: www.sustainable.energy.sa.gov.au/pages/advisory/residential/house_design/display_homes/weric.htm
What are the objectives of the program? The program is intended to demonstrate how existing housing can be improved in terms of its energy efficiency and 'Green' credentials.
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Demonstration and information
What is the name of any relevant regulation?
Has the program been evaluated? YES/NO If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.) Monitoring of house performance and web based dissemination of this information is ongoing.
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO If yes, how has it been coordinated? The programs complement other energy efficiency information programs provided by Energy SA..

Program name: Demonstration home SA Energy Home at Northfield.
Administered by: Jennings, Energy SA, ETSA and AGL
Start date and status (i.e. end date or ongoing): Project began in 2001, house was opened in 2002, and was closed and sold in 2004.
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): The House was open for inspection to all.
Description: A standard A V Jennings three bedroom house was retrofitted with energy efficient appliances, high levels of insulation to walls and ceilings (prior to mandatory legislation) and other initiatives. The garage was converted into a display area that allowed the presentation of a range of energy efficiency products and associated information brochures. The project allowed the public to walk through a house that demonstrated energy efficient aspects that were available to them, that also offered a source of technical information about these products and services.
What are the objectives of the program? To provide a staffed demonstration house for the public that demonstrated energy saving techniques for their own houses.
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Information provision and demonstration
What is the name of any relevant regulation?
Has the program been evaluated? YES/NO If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.) No
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO If yes, how has it been coordinated? The programs complement other energy efficiency information programs provided by Energy SA..

Program name: South Australian Housing Trust Environmental Management Framework
Administered by: South Australian Housing Trust
Start date and status (i.e. end date or ongoing): Ongoing
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): Tenants of SAHT properties.
<p>Description:</p> <p>Through its Environmental Management Framework, the SAHT is actively developing and promoting programs and initiatives in line with broader government directions in energy efficiency. Key initiatives include:</p> <ul style="list-style-type: none"> • addressing environmental sustainability, energy efficiency and greening of new developments • linking with other government departments to develop and implement awareness programs for SAHT tenants on how to reduce energy use • continuing the installation of solar hot water units on a selection of properties at SAHT development sites • collaborating with the University of SA in the development of a low cost, low energy, roof integrated solar heating system • constructing new properties with a minimum four star energy rating • renovating and upgrading existing housing stock to improve energy efficiency e.g. through the installation of insulation, • compiling a database of properties where the SAHT provides landlord power – information gathered will be used to identify opportunities to create energy efficiencies.
<p>What are the objectives of the program?</p> <p>A major objective of the SAHT in implementing these initiatives is to place its clients in energy efficient housing which they can afford to run</p>
<p>What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])?</p> <p>Direct delivery of energy efficiency improvements</p>
<p>What is the name of any relevant regulation?</p>
<p>Has the program been evaluated? YES/NO</p> <p>If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)</p> <p>Yes (individual initiatives). Conclusions were that tenants were strongly supportive.</p>
<p>Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO</p> <p>If yes, how has it been coordinated?</p> <p>There are strong links with the EPA and Energy SA. All new housing is built in to the mandatory four-star standard.</p>

Program name: Solar Hot Water Heater Rebates
Administered by: Energy SA
Start date and status (i.e. end date or ongoing): Commenced July 2001. Funding available to 2008.
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): Householders
Description: This scheme provides South Australian households with access to rebates of up to \$700 for installations of solar hot water systems that meet certain eligibility criteria. More details are available at: http://www.sustainable.energy.sa.gov.au/pages/advisory/rebates/rebates.htm
What are the objectives of the program? The SA State Government's Solar Hot Water Rebate Scheme has been introduced to promote sustainability and reduce greenhouse gas emissions associated with water heating. The program addresses the barrier of capital and financial constraints limiting the investment in solar hot water systems, due to the relatively high upfront cost.
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Financial incentive
What is the name of any relevant regulation?
Has the program been evaluated? YES/NO If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.) Based on the number of rebates provided from July 2001 to the end of September 2004, it is estimated that the program has delivered the following total annual financial, energy and greenhouse gas benefits to participating households: Financial: \$767,000 Energy reduction: 3,000 GJ CO2-e: 10,000 T
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO If yes, how has it been coordinated? No

Program name: National Appliance and Equipment Energy Efficiency Program
Administered by: National Appliance and Equipment Energy Efficiency Committee (NAEEEC)
Start date and status (i.e. end date or ongoing): National end-use energy efficiency scheme commenced in 1992. Ongoing
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): Energy consuming appliance industry and consumers.
Description: The development and implementation of national minimum energy performance standards and electrical appliance energy labelling of a range of appliances.
What are the objectives of the program? Reductions in greenhouse gas emissions
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? National minimum energy performance standards and electrical appliance energy labelling.
What is the name of any relevant regulation? Electrical Products Act (2000)
Has the program been evaluated? YES/NO Yes If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.) The national web site http://www.energyrating.gov.au/ provides details of regulatory impact statements and program evaluation.
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO Yes If yes, how has it been coordinated? The Office of the Technical Regulator represents South Australia on the NAEEEC. The program is an initiative of the Ministerial Council on Energy forming part of the National Greenhouse Strategy.

Program name: One watt standby purchasing policy
Administered by: Ministerial Council on Energy
Start date and status (i.e. end date or ongoing): 2004. Ongoing.
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): Energy consuming appliance and equipment industry, Government.
Description: At the Ministerial Council on Energy meeting on 27 August 2004, Ministers agreed to develop, by December 2004, a database of low standby power and high efficiency appliances to guide government purchasing decisions. This will provide one step in improving the energy efficiency of government operations.
What are the objectives of the program? <ul style="list-style-type: none"> • Improve the energy efficiency of Government operations. • Stimulate the demand for energy efficient appliances and equipment
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Information
What is the name of any relevant regulation?
Has the program been evaluated? YES/NO If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.) Still at implementation stage
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO If yes, how has it been coordinated? The Minister for Energy represents South Australia on the Ministerial Council on Energy.

Program name: Government Energy Management
Administered by: Reference Group chaired by the Department of the Premier and Cabinet. Executive support provided by Energy SA.
Start date and status (i.e. end date or ongoing): The Government's Energy Efficiency Action Plan was launched on 3rd May 2002. The SA Government has operated an energy management program since 1985 and an energy efficiency targets program over the period 1998–2001.
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): Government
Description: Implementation of the Government's Energy Efficiency Action Plan, which includes actions relating to energy management, building, office equipment, vehicles and verification and reporting.
The Action Plan is available at: www.sustainable.energy.sa.gov.au
<p>What are the objectives of the program?</p> <ul style="list-style-type: none"> • To reduce energy use, energy costs and greenhouse gas emissions from public sector operations. • To maintain a comprehensive inventory of greenhouse gas emissions from public sector operations. • To provide leadership in addressing climate change issues. <p>Through the Action Plan the Government has set a target of 15% reduction in energy use in government buildings by 2010 (based on 2000/01 levels). As part of the South Australian Strategic Plan, the Government has extended this target to 25% by 2014.</p> <p>The Government will also give preference for all new Government office leases to those buildings that meet at least five-star energy rating from July 2006.</p>
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])?
What is the name of any relevant regulation? Government targets and annual reporting.
<p>Has the program been evaluated? YES/NO</p> <p>If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)</p> <p>Annual energy use reports are independently verified. The SA Government Energy Use Annual Report 2002/03 is available at www.sustainable.energy.sa.gov.au.</p>
<p>Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO Yes</p> <p>If yes, how has it been coordinated? The action plan has been developed in accordance with the National Greenhouse Strategy Measure 3.1. South Australia participates in the Government Energy Management Committee, which reports to the Energy Efficiency Working Group of the Ministerial Council on Energy.</p>

Program name: Energy Services Industry Development
Administered by: Energy SA
Start date and status (i.e. end date or ongoing): Ongoing
<p>Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]):</p> <ul style="list-style-type: none"> ○ Senior representatives of organisations that own or manage Businesses, Commercial Buildings ○ Senior representatives of and State & Local Government Agencies ○ Industry Stakeholders such as Distribution Network Service Providers, Regulators, Code Administrators and Planning Authorities. ○ Interested members of the public
<p>Description:</p> <p>Development of the energy services industry through an annual Energy Efficiency Conference and Trade Fair. The inaugural Trade Fair was held in 2003. The 2004 Trade Fair is being presented in partnership with AIRAH, Business SA and the Property Council of Australia. This event is the premier forum for energy services industry development in the commercial, industrial and residential sectors in South Australia. Attendees will have the opportunity to explore the trade booths to learn about specific energy efficiency related products and services.</p>
<p>What are the objectives of the program?</p> <ul style="list-style-type: none"> ○ To allow companies involved in the energy services industry and potential customers in the commercial, industrial and domestic sectors the opportunity to exchange information. ○ To highlight the key issues of relevance to the energy services industry such that attendees are up to date and informed, and appreciate where the industry can add value.
<p>What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Information provision and promotion</p>
<p>What is the name of any relevant regulation?</p>
<p>Has the program been evaluated? YES/NO If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)</p> <p>Participants of the 2003 Trade Fair were surveyed as a means of improving the 2004 event.</p>
<p>Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO Yes If yes, how has it been coordinated?</p> <p>The Trade Fair is coordinated with the Government Energy Management Program – with energy managers from government agencies encouraged to attend.</p>

Program name: Business energy efficiency opportunity identification programs
Administered by: Energy SA
Start date and status (i.e. end date or ongoing): Ongoing
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): <ul style="list-style-type: none"> ○ Small to medium businesses ○ Government agencies
Description: BASEline program which is a collaboration between the State Government, Adelaide City Council and the University of South Australia. Thirty cafes, retailers, restaurants and other businesses in the city are participating in energy assessments and action plans with the aim of reducing their energy use, greenhouse gas emissions and costs.
What are the objectives of the program? Reduce greenhouse gas emissions Improve SA business competitiveness
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Incentives of subsidised energy opportunity assessments.
What is the name of any relevant regulation?
Has the program been evaluated? YES/NO: Results of energy audits have been evaluated. If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.) The results from the first 19 of the 30 energy audits show the potential to reduce energy use by an average of 10% with an average payback of 3.3 years (including the audit costs). Examples of energy saving opportunities identified include: <ul style="list-style-type: none"> • Removing excess fluorescent tubes (payback of 0.1 years) and ballasts (payback of 1.9 years) • Adjusting lighting switch groups (payback of 0.3 years). • Installing occupancy detectors (payback of 4.3 years) • Repairs to air conditioning equipment (payback of 2.3 years).
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO If yes, how has it been coordinated? The program is part of the suite of business and government energy efficiency programs delivered by Energy SA.

Program name: Eco-efficiency program
Administered by: Environment Protection Authority
Start date and status (i.e. end date or ongoing): July 1998 - Ongoing
Target audience (commercial, industrial, householders, consumers, government, energy generation, energy networks, other [please specify]): Small Businesses
Description: The program involves the provision of information, voluntary agreements and assistance of money and expertise in demonstration projects (most recently, as part of a Greening the Supply Chain project)
What are the objectives of the program? Promote the benefits of eco-efficiency to small business and to provide tools for implementing eco-efficiency changes
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? What is the name of any relevant regulation? The objects of the Environment Protection Act, 1993 include promotion of the principles of ecologically sustainable development, promotion of industry and community education on protection and enhancement of the environment, and responsibility and powers to require persons engaged in polluting activities to make environmental improvements.
Has the program been evaluated? YES/NO If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.) An overall evaluation of the program has not been undertaken. However, evaluation forms are given out to participants at the end of each workshop to gather information on course content. From collation of this information, 95% of participants increased their awareness of environmental issues by attending the workshops. Also follow-up evaluation forms are sent out to participants two months after they have completed the workshop. Information is collected to see if participants have been able to lessen their impact on the environment. A snapshot study from participants indicated that 60% of respondents were able to make changes to processes and practices to lessen environmental impacts.
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO If yes, how has it been coordinated? EPA has recently revised the focus and structure of its Pollution Prevention and Waste Branch as Industry Sustainability Branch. One of the goals is better co-ordination of the eco-efficiency program (that incorporates an emphasis on energy efficiency) and EPA's contribution to the State Greenhouse Plan, which is still under development. Energy efficiency has been an important issue that has been included in workshop content. In 2003, the EPA worked with the City of Unley, Business SA and Energy SA to deliver two joint workshops for small business in the Unley region. Both were well attended by approximately thirty participants in each workshop.

Program name: Energy Efficiency Program for Low income households
Administered by: Energy SA
Start date and status (i.e. end date or ongoing): January 2004. to December 2005
Target audience Low income South Australian households
<p>Description: The South Australian Government's Energy Efficiency Program for Low-Income Households delivers energy efficiency services in collaboration with six community based welfare organisations. The Program includes;</p> <ul style="list-style-type: none"> ○ 10,000 home energy checks (or audits) and retrofits ○ A scheme to 'buy-back' inefficient fridges and freezers ○ Interest free loans to purchase energy efficient appliances and energy saving products. <p>More information is available at: www.sustainable.energy.sa.gov.au.htm.</p>
<p>What are the objectives of the program? The aim of the Program is to help low-income households reduce energy use and costs without reducing their comfort.</p>
<p>What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Incentives and information provision</p> <p>What is the name of any relevant regulation?</p>
<p>Has the program been evaluated? No – due late 2005/early 2006 If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)</p>
<p>Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES/NO If yes, how has it been coordinated? The Energy Efficiency Program for Low income households is coordinated with the Energy Friends program (for more information see: www.sustainable.energy.sa.gov.au).</p>

Program name: Energy Friends
Administered by: Energy SA
Start date and status (i.e. end date or ongoing): Commenced 2002. Ongoing
Target audience Householders, consumers.
Description: Energy Friends is a partnership program of the South Australian Government delivered through Energy SA. Community groups that sign up to the Energy Friends program can receive training and practical resources to allow their members to undertake grass-roots energy action in their local community.
What are the objectives of the program? The aim of the program is to reduce energy use and costs without reducing comfort and raise awareness of energy management at home.
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Information provision, voluntary arrangements
What is the name of any relevant regulation?
Has the program been evaluated? Evaluation will be undertaken in the first half of 2005. If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES If yes, how has it been coordinated? The Energy Friends program has been incorporated and coordinated with the Energy Efficiency Program for Low income households.

Program name: Energy SA Advisory Service
Administered by: Energy SA
Start date and status (i.e. end date or ongoing): Ongoing
Target audience SA Community – householders, businesses, schools, local govt etc
Description: Energy SA runs the Energy Advisory Services program. Advisory and information services are provided primarily through staffed visitor centres, call centre operators, the Energy SA web site, literature distribution, seminar/workshop presentations. Web based energy efficiency advice is available at www.energy.sa.gov.au/home/index.htm
What are the objectives of the program? To provide clear independent information and advice, and resources where appropriate, to motivate the target audience to implement sound sustainable energy practices.
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Information provision
What is the name of any relevant regulation?
Has the program been evaluated? Not in a rigorous formal sense. Quantitative assumptions are made about what action the recipient will take and the resultant energy related consumption, financial and greenhouse gas emission changes. If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? NO If yes, how has it been coordinated? Module 4.18 National Greenhouse Strategy

Program name: Schools program
Administered by: Energy SA
Start date and status (i.e. end date or ongoing): Jan 2000. Ongoing
Target audience: Primary & secondary school teachers & students
Description: This program involves development of a sustainable energy focus in school curriculum and field demonstrations utilising the Energy SA solar powered caravan and trailer.
What are the objectives of the program? The aim of the program is to provide easy to understand and valuable resources for teachers to use in their sustainable energy curriculum to raise awareness of energy efficiency and sustainable energy generation.
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Information provision
What is the name of any relevant regulation?
Has the program been evaluated? No If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES If yes, how has it been coordinated? An element of the Schools Program has incorporated the Energy Friends program.

Program name: Reach for the Stars
Administered by: Energy SA
Start date and status (i.e. end date or ongoing): Sept 02. Ongoing.
Target audience: In general the SA residential community and specifically the energy appliance retailers
Description: The program is designed to raise industry and consumer awareness of the Energy Rating label and the benefits that ensue from the sale of high efficiency appliances.
What are the objectives of the program? <ul style="list-style-type: none"> • Reduce energy costs and greenhouse gas emissions associated with the use of energy labelled appliances in South Australia • Increase the promotion and sale of high efficiency appliances
What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Information provision What is the name of any relevant regulation?
Has the program been evaluated? No If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? NO If yes, how has it been coordinated? Reach for the Stars is run in other jurisdictions and complements the work of the National Appliance and Equipment Energy Efficiency Program.

Program name: Local government support
Administered by: Energy SA
Start date and status (i.e. end date or ongoing): January 2002. Ongoing
Target audience: Local Governments, and residential, commercial and industrial sectors via Local Government.
<p>Description:</p> <p>The Local Government Support Program offers assistance to South Australian Local Governments to implement sustainable energy initiatives, both within their own operations and within their communities. Assistance includes:</p> <ul style="list-style-type: none"> ○ Maintaining a point of contact between Energy SA and Local Governments. ○ Providing an energy information and advisory service to Council Staff ○ Promoting Energy Performance Contracts and other Energy Management Tools ○ Arranging seminars on energy efficiency topics, such as energy performance contracts, buildings and street lighting ○ Assisting in the delivery of staff training, switch off campaigns and other sustainable energy initiatives related to Council operations ○ Partnering in Council driven Community initiatives, such as the Save Water and Power (SWaP) Show
<p>What are the objectives of the program?</p> <p>Assist local government</p> <ul style="list-style-type: none"> - in reducing their own energy use, energy bills and greenhouse gas emissions through the implementation of sustainable energy initiatives. - in reducing energy use, energy bills and greenhouse gas emissions within their municipality through the delivery of energy efficiency policies and programs to local businesses and households.
<p>What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Information provision</p>
<p>What is the name of any relevant regulation?</p>
<p>Has the program been evaluated? No</p> <p>If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)</p>
<p>Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? NO</p> <p>If yes, how has it been coordinated?</p> <p>However, this program evolved out of a 12-month position that was funded the Australian Greenhouse Office from February 2001, designed at providing an Energy Management Advisory Service to South Australian Governments participating in the Cities for Climate Protection™ Program.</p>

Program name: Remote area energy efficiency rebate scheme
Administered by: Energy SA
Start date and status (i.e. end date or ongoing): February 02 – May 03
Target audience: Off-grid communities, homes and businesses in regional and remote South Australia.
Description: Promotion of energy efficiency in remote areas through targeted rebate programs. Specifically a rebate on compact fluorescent lamps and insulation for residential dwellings.
<p>What are the objectives of the program?</p> <p>Assist off-grid communities in regional and remote South Australia reduce</p> <ul style="list-style-type: none"> • energy use • energy costs • greenhouse gas emissions (from diesel or gas generators) <p>Reduce Government expenditure on electricity subsidies provided to communities participating in the Remote Area Energy Scheme (RAES).</p>
<p>What policy instruments does the program use (for example, financial incentives/penalties, information provision, regulation [including legislation, regulation, standards, voluntary arrangements etc])? Financial incentives in combination with some information provision.</p>
<p>What is the name of any relevant regulation?</p>
<p>Has the program been evaluated? Sales of light globes were recorded. Evaluation of outcomes was based on estimates of benefits based on these sales.</p> <p>If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)</p> <p>For net costs to Government of \$30,000, the program is estimated to deliver:</p> <ul style="list-style-type: none"> • \$274,000 of savings to participating households – over the expected life of the globes. • \$299,000 reductions in RAES subsidies - over the expected life of the globes. • 1165 tonnes of greenhouse gas emission reductions - over the expected life of the globes.
<p>Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES</p> <p>If yes, how has it been coordinated? Yes, delivered in consultation with the South Australian Remote Areas Energy Supply Program.</p>

Program name: Clean Fuel Strategy for Public Transport
Administered by: Office of Public Transport
Start date and status (i.e. end date or ongoing): On-going
Target audience: Community, transport businesses.
Description: Internal program aimed at demonstrating use of alternative fuels such as compressed natural gas and biodiesel in public transport vehicles.
What are the objectives of the program? To utilise fuels and vehicle technologies that result in lower externality costs (including those related to greenhouse emissions and pollution) and overall reduction in whole-of-life operational costs.
What policy instruments does the program use? Provision of information and education.
What is the name of any relevant regulation?
Has the program been evaluated? No If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.)
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? YES If yes, how has it been coordinated? Yes, financial support has been received from the Australian Greenhouse Office for the purchase of natural gas powered buses.

Program name: TravelSmart SA
Administered by: SA Department of Transport and Urban Planning
Start date and status (i.e. end date or ongoing): Ongoing
Target audience: Broad Community – particularly through schools, workplaces and households.
Description: TravelSmart SA is a program aimed at encouraging voluntary travel behaviour change.
What are the objectives of the program? To achieve significant greenhouse gas emissions reductions (and therefore energy reductions) by realising travel behaviour change and a shift in societal values to more efficient car use and increased walking, cycling and public transport use.
What policy instruments does the program use? <ul style="list-style-type: none"> ➤ <i>Behavioural</i>– involves directly engaging individuals and households by providing personalised information on realistic and achievable alternative travel options. ➤ <i>Education/Information</i>– involves educating and raising awareness of the impacts of various travel options and promoting alternative travel behaviours.
What is the name of any relevant regulation? N/A
Has the program been evaluated? Yes If yes, what were the conclusions? (Please supply a copy of the evaluation if one is available.) Various activity components, in particular pilot projects, of the program have been evaluated such as walking school bus and households interventions – however at this stage, these evaluations are not available for dissemination. Analysis of information of earlier pilot programs conducted in Perth, Adelaide and Brisbane indicates a range of highly favourable benefit cost ratios (2:1 to 44:1). Analysis of the change in greenhouse gas emissions (and therefore energy consumption) resulting from these programs indicated a range of emission reductions ranging from 3% to 19%.
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? Yes If yes, how has it been coordinated? This program has close links with similar programs in other states through the Travel Demand Management Network. There is also a coordinated National Travel Behaviour Change Program involving five jurisdictions of which South Australia is a member and this program is partly funded by the Australian Greenhouse Office, Greenhouse Gas Abatement Program (GGAP).

Program name: Installation of LED Equipped Traffic Signals
Administered by: Transport SA, Department of Transport and Urban Planning
Start date and status (i.e. end date or ongoing): Ongoing
Target audience: Internal Program
Description: Program involves replacement of traffic signals equipped with traditional globes with energy efficient light emitting diodes (LEDs).
What are the objectives of the program? To achieve energy and greenhouse gas emissions reductions in the operation of traffic signals across the Adelaide metropolitan area.
What policy instruments does the program use? N/A What is the name of any relevant regulation? N/A
Has the program been evaluated? YES If yes, what were the conclusions? The program results in an 8% reduction in greenhouse gas emissions. The LED technology replaces signal lanterns that have been targeted for replacement at the end of their useful lives. The savings from LED globes are estimated at \$0.85m pa due to lower energy consumption and decreased maintenance costs. These savings would recoup the \$5.6m investment in 7 years.
Is this program coordinated with other energy efficiency and greenhouse programs in your jurisdiction or at a national level? NO If yes, how has it been coordinated?

Attachment 2

SA NFEE Consultation Workshop 1:30pm – 4:30pm Tuesday 17 February 2004 level 7, 101 Grenfell St, Adelaide

Attendees:

Sector	Name	Organisation	Email
Consultant	David Low	ECS	d.low@ecsaustralia.com
Consultant	Desmond Wyatt	Wyatt & Associates	wyattassoc@chariot.net.au
Consultant	Jake Bugden	Sustainable Focus	jake@sustainablefocus.com.au
Consultant	Monica Oliphant	Individual	oliphant@senet.com.au
Consultant	Steve Pullen	Uni SA	stephen.pullen@unisa.edu.au
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General Session

Barriers and issues:

- Government:
 - Lack of Government leadership – lack of government action on climate change stalls big business actions.
 - Absence of national reporting and monitoring
 - Whilst some governments have targets for their own internal energy use, there is a lack of Government-set energy efficiency, peak demand and greenhouse gas targets for the broader community.
 - Lack of benchmarking of Government assets.
 - The threat of regulation tends to be a key driver for participation in voluntary programs. Further, such programs tend to focus on “numbers” rather than “outcomes”.
- Financial:
 - **Disagree** that in some instances higher hurdle rate is an issue
 - Take or pay clauses hinder the uptake of EE projects, even for businesses committed to energy efficiency (eg participants in government programs).
 - Energy retailers are finding that businesses prefer a lower upfront cost to a bundled service that includes energy efficiency.
 - Energy cost can be small percentage of total costs and do not include externalities
 - Tariff structure signals
 - Lack of R&D incentives and support for technical EE innovation
 - Limited capital within companies, the availability of capital for energy efficiency can vary widely across industry sectors and between individual businesses. For example in one large manufacturer, one-year payback is acceptable whilst four year is “laughed at”.
 - Need for companies to stay internationally competitive
 - Multiple barriers to cogeneration – cost of financing, operating costs, sharing of benefits to customer.
- Cultural/organisational barriers
 - Attitude of general public: success in our society is often measured by level of consumption
 - EE not a core business imperative
 - Need more than just information on EE in order to initiate behavioural change
 - Internal communications can hinder the progress of EE initiatives
 - Swinging media focus can affect public inaction/action
 - Confusion and doubt from the market
- Information

- Lack of data on energy use (eg within a business) makes it difficult to present a strong case to decision makers on the need for action or to motivate energy users to change practices.
- Lack of certainty of the payback period for an EE initiative makes it harder to access capital.
- There is the potential for businesses to promote their energy saving achievements, though this is being limited by a lack of 3rd party accreditation on monitoring and reporting.
- Can be negative effects of metering – over a short time period the energy costs seem low

Policy/program suggestions:

- Government
 - Govt, as the largest tenant should insist on leasing only 4 or 5 star ABGRS buildings.
 - Make greater use of climate action partnerships and bilaterals
 - Use international research eg the extensive work undertaken in the IEA's DSM program.
 - Govt EE target
- Residential
 - Work with schools and universities to raise EE profile
 - Much tighter MEPs for residential buildings
 - Real time metering – though this needs to be done well to motivate positive energy efficiency responses.
 - Community based social marketing.
- Commercial/Industrial
 - Facilitate SMEs to identify and implement EE measures; need to have the right payback periods and fit into the business's priorities
 - Work with the CEO to improve the chance of an EE project getting approved; this can be particularly effective for SMEs
 - Facilitate reliable data collection to improve EE proposals
 - External Financing including a low-interest loan fund for business.
 - Use EE achievements for marketing
 - Much tighter MEPs for commercial buildings
 - Infra-red aerial photos as an innovative means of identifying which businesses are energy wasters.
 - Regular EE case studies in the business pages of newspapers
 - Mandatory audits and implementation (like Vic EPA). Victoria also offers incentives to business
- Cross-cutting
 - Address peak demand issues including poor load factors in new homes with efficient appliances but ducted air-conditioning. Look for synergies with peak DSM and EE
 - Schemes such as the UK Energy Efficiency Commitment. Whilst energy retailers incur costs in meeting targets, the benefits to customers and society far outweigh costs.
 - Integrate EE and Environmental measures/policies: need to balance energy efficiency and the use of greenhouse gases, eg the coolant in highly efficient fridges
 - Legislate only to overcome market barriers – need to do the research, such as Vic study that demonstrates benefits of going from 4 to 5 stars for housing.
 - National EE target and greenhouse and peak demand reduction targets – with possibly different targets for industry and residential
 - Trading scheme (like NGACs, Greenhouse Friendly). By creating a cost for carbon, these schemes significantly improve the cash flow for energy efficiency projects. However, also need small CO2 savings trading to fund small projects (currently NSW Benchmark Scheme accreditation costs are a barrier to small CO2 savings).
 - Address EE and Infrastructure together, this includes capturing the cost savings from deferring augmentation of electricity networks.
 - Energy retailers should offer incentives to customers to look at energy savings.
 - Tariffs – need to have a base (essential) level of energy affordable. Higher energy used charged at higher rates.

Residential Sector Discussion

Barriers and issues:

- Architects/ designers often have good knowledge on EE, but market pressuring limited EE design expectations
- Social Equity aspects - standard (flat) billing is an inequitable way to price for peak power costs

Policy/program suggestions:

- Awareness raising and motivating energy saving actions:
 - Community based social marketing – moving beyond just providing information to engaging householders. Should utilise existing and local networks. Influence householder as a means of influencing their business activities
 - Programs to address perceptions and attitudes, eg what is acceptable/unacceptable – eg 20° thermostat setting in summer
 - Integrate EE into community level programs, need to demonstrate benefits
- Tariffs
 - Base consumption (deemed amount) then higher tariff rates beyond that
 - Challenge of introducing this into a deregulated market. May rely on voluntary initiatives of retailers
 - Include more cost-reflective network charges in residential tariffs.
- Increase energy use measurement to better understand the energy use across different sub-sectors and to develop better targeted programs
- Houses:
 - Address peak DSM as well as EE, eg poor house design creates a peakier load
 - Better consideration of thermal mass as a means of reducing the need for active cooling systems.
 - Need house rating scheme to look at not only overall energy performance, but to include specific consideration of summer and winter performance.
 - Expand MEPS for housing construction
- Appliances
 - Tougher MEPS for air-conditioning. Eg for split systems SA has typical coefficients of performance of 2.5 whilst Japan is aiming for 6 and the US average is 5
 - Expand MEPS for appliances
 - Mandate solar water heaters, heat pumps and high efficiency gas
 - Need to consider lifecycle costing
- Concentrate on market failures

Commercial/Industry Sector Discussion

Barriers and issues:

- Energy services industry
 - Consultancy fees
 - Lack of auditing expertise
 - Limited audits being done
 - Usually a knowledge/experience gap between energy audit and implementation
 - Poor past experience
- Lack of incentives
- Implementation of some EE measures can affect the potential for implementation of the next. Risk is that taking the easy options (typically short paybacks) can then make it difficult to implement the more difficult options (typically with longer paybacks).
- Risk/uncertainty of actions (esp in manufacturing). Implementing EE actions can disrupt processes and require new and untried technologies. These risks increase the internal rate of return barrier
- Gap in communication between engineering and CFOs
- Energy services provision not core business. This decreases the priority of EE actions and means that the risk is unknown
- High transaction costs, eg in NGAC

Policy/program suggestions:

- Standards/accreditation for energy auditors.
- Publicise EE success stories and case studies to reduce perception of risk
- Incentives:
 - Incentives need to increase.

- This could include sharing of risk between govt and industry
 - Introduce incentives targeted at building/construction stage
 - EE in curriculum of professionals and vocational development
 - Engage CEOs and CFOs on EE; this could then increase capital allowances for EE projects
 - Use promotion of workplace safety as a model: reporting, responsibility to CEO, regulation
 - Reporting/disclosure of energy use, involve energy retailers for data provision
- Reduce transaction costs for trading schemes

Attachment 3

www.sustainable.energy.sa.gov.au/pages/programs/dsm/elec_dsm/pdf/summary_statement_final.pdf

SUMMARY STATEMENT ON THE GOVERNMENT'S RESPONSE TO THE ELECTRICITY DEMAND SIDE MEASURES TASK FORCE FINAL REPORT

June 2003

The South Australian Government acknowledges the Electricity Demand Side Measures Task Force for its valuable and informative report that addresses key issues regarding increasing electricity peak demand in South Australia and the related impact on electricity costs. Each of the Task Force's recommendations has been considered and will be addressed in some way taking into account current Government budget constraints and broader policy objectives. The report will continue to inform Government policy on demand side management issues.

The Task Force made twenty-four individual recommendations grouped under the headings of:

- Government Policy and Legislation
- National Issues
- Regulation and Licensing
- Programs

The Government's response to each group of recommendations is summarised below.

Government policy and legislation

The Task Force's key recommendation was for the establishment of a distinct Sustainable Energy Body (SEB). The Government has adopted an alternative approach in reviewing Energy SA and deciding on a merger with the Office of Minerals and Energy Resources to consolidate PIRSA's energy supply and demand responsibilities into one Division. The review of Energy SA was consistent with the Government's election commitments.

One role of the proposed SEB was to facilitate business and community input on sustainable energy issues. The Government will seek community and business input on sustainable energy issues through an appropriate advisory mechanism.

The Government will also:

- develop a comprehensive sustainable energy policy for South Australia;
- continue to support the development of national minimum energy performance standards for commercial buildings;
- investigate options for more stringent energy efficiency standards for residential buildings; and
- investigate options for the disclosure of energy performance of buildings when for sale or rent.

National issues

The Government will:

- examine opportunities to lobby the Commonwealth Government for tax incentives for demand side management investment;
- support the introduction of national minimum performance standards for domestic air conditioners; and
- continue to raise demand side management issues at the National Electricity Market Minister's Forum.

Regulation and licensing

One of the key recommendations from the Task Force was for Energy SA to investigate an appropriate energy retailer demand side management scheme for SA.

The Government will progress this recommendation. Such schemes internationally have been instigated through legislation and/or energy retailer licence conditions.

Examples include public benefit funds established in twenty-three States in the US, where funding is collected as a surcharge on bills; and the UK energy efficiency commitment, where energy retailers are required to meet energy saving targets by delivering cost effective and quantifiable energy efficiency programs to customers.

An important feature of the UK program is the leveraging of funds from other sources, such as equipment manufacturers and Local Government.

The Government will also:

- refer the following matters to the Essential Services Commission:
 - the provision of greenhouse gas emissions data on customer accounts;
 - a program of checks on off-peak meter timers;
 - a review of distributor cost recovery mechanisms to promote demand side management;
 - the importance of considering demand management benefits of interval metering as part of work being undertaken to inform the 2005 Electricity Distribution Price Review; and
- continue to support processes that ensure ETSA Utilities considers demand side management options.

Programs

Since the Task Force's report was released in June 2002 Energy SA has implemented some aspects of the program recommendations within existing budget constraints, including:

- a summer cooling promotional campaign during the 2002/03 summer;
- the Reach for the Stars energy rating labelling education and promotional program; and
- development and implementation of Energy Friends – a community based home energy audit program – in collaboration with a number of community based organisations and AGL.

The Government will also:

- undertake a targeted summer cooling campaign during the 2003/04 summer, that builds on the 2002/03 campaign;
- prepare proposals for a comprehensive suite of home energy efficiency programs, including further development of the Energy Friends program, to be considered in the 2004/05 budget process;
- review the potential to extend the business demand side management programs;
- investigate options for a business demand side management loan fund and alternative mechanisms;
- continue to develop best practice guidelines for demand side management for different industry sectors;
- investigate opportunities for expanding sustainable energy education programs;
- and
- prepare a research proposal that considers how to monitor the performance of key sustainable energy programs.