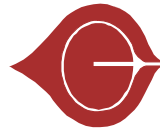


# GREENPEACE



Conservation Council  
of South Australia Inc

Tackling Climate Change Team  
GPO Box 1047  
Adelaide SA 5000

by email

## Re: Tackling Climate Change: South Australia's Draft Greenhouse Strategy

Greenpeace Australia Pacific and the Conservation Council of South Australia Inc welcome the opportunity to make a submission on South Australia's Greenhouse Strategy. We want to reiterate our support for the South Australian Government's intention to develop a Greenhouse Strategy, as well as its recent commitment to introducing climate change legislation and increasing its aspirational targets for renewable energy.

Our submission begins with some comments on the nature of the objectives in the draft Greenhouse Strategy, and follows with some more detailed discussion of two areas critical to the Greenhouse Strategy's successful delivery: the deep cuts target for 2050, energy efficiency opportunities and policies to promote the uptake of renewable energy in South Australia.

Please contact us if you would like to discuss our submission. The relevant contacts are:

Mark Wakeham on 02 9263 0352 or [mark.wakeham@au.greenpeace.org](mailto:mark.wakeham@au.greenpeace.org)

Julia Winefield on 8223 5155 or [julia.winefield@ccsa.asn.au](mailto:julia.winefield@ccsa.asn.au)

We look forward to further involvement in the development of South Australia's Greenhouse Strategy.

Yours sincerely,

A handwritten signature in red ink that reads "LWK." with a period at the end.

Mark Wakeham  
Energy campaigner  
Greenpeace Asia Pacific

A handwritten signature in black ink, appearing to read "Julia Winefield".

Julia Winefield  
Campaigner  
Conservation Council SA

29/05/06

## Section 1. Comments on the draft Greenhouse Strategy's objectives

We are disappointed that the draft Greenhouse Strategy as yet does not translate the government's clearly stated commitment to action on climate change into a comprehensive strategy that includes measurable and achievable strategic objectives. Most of the objectives read as very general statements. For the Greenhouse Strategy to deliver deep cuts to greenhouse pollution it will be important that **SMART** objectives be developed. By this we mean that the objectives for the greenhouse strategies need to be:

- **Strategic**
- **Measurable**
- **Achievable**
- **Realistic and**
- **Time-based.**

Using this approach, an objective like Objective 5.2 "to reduce the greenhouse emissions per unit of energy supply" might read "reduce the greenhouse emissions per unit of energy supply by 50% by 2015" for example. Nearly all the objectives throughout the strategy need rewriting to ensure that they are meaningful. We realise that the strategy is to be accompanied by action plans developed over coming months. However, we think it is important that the goals and strategic objectives of the state's Greenhouse Strategy are reworked in advance of action plans being developed so that it is clear what the action plans are attempting to deliver.

By way of suggesting possible strategic objectives of the Greenhouse Strategy Greenpeace and the Conservation Council of South Australia propose that the following objectives could form the backbone of the Greenhouse Strategy:

- 1) *Commit South Australia to at least 60% greenhouse gas emissions reductions by 2050 with a target of 20% by 2020 to show real progress, and call for the Federal Government to ratify the Kyoto protocol.*
- 2) *Implement state renewable energy targets of 20% by 2014<sup>1</sup> and 25% by 2020 with supporting legislation.*
- 3) *Introduce an energy efficiency and demand management fund to stabilise and then reduce residential, industrial and government electricity consumption with supporting legislation and programs.*
- 4) *Commit to setting a price on carbon by participating in a State or national Emissions Trading Scheme with emissions caps leading to 20% reduction in emissions by 2020, and/or a carbon levy.*

---

<sup>1</sup> The government's renewable energy target, originally announced in 2004, was for 15% of electricity generation to come from renewable energy by 2014. In SA government documents and announcements (including the announcement to increase this target to 20%) explanation of the target has been vague in terms of when this target should be meant. We believe the target date should be 2014 as originally intended, and that this should be explicitly stated in all further references to the SA government's aspirational renewable energy target.

- 5) *Introduce an immediate moratorium on new coal fired power generation for South Australia.*
- 6) *Increase the use of public transport, cycling and walking to 20% of weekday travel by 2015.*

We note that some of the above have been committed to in full or in part in recent months. Below we provide some additional information on what might be required to achieve the deep cuts target and a strong and growing renewable energy industry for South Australia. These are the two areas where we have done the most analysis in relation to South Australia.

## **Section 2. Deep Cuts to South Australia's greenhouse pollution**

***Suggested objective:*** Commit South Australia to at least 60% greenhouse gas emissions reductions by 2050 with a target of 20% by 2020 to show real progress, and call for the Federal Government to ratify the Kyoto protocol.

**Discussion:** Greenpeace and CCSA welcomed the announcement made in the lead-up to the election that legislation would be introduced requiring South Australia to meet 60% cuts in greenhouse pollution on 1990 levels by 2050. We have recently written to the Premier urging him to ensure that the legislation incorporates the following principles:

- **Emissions benchmark** - enshrining as a benchmark South Australia's 1990 CO<sub>2</sub> equivalent emissions. The overview paper for the government's Greenhouse Strategy "Tackling climate change" suggests that the State's CO<sub>2</sub> equivalent emissions for 1990 was 30 mega-tonnes.
- **Emissions target** - establishing a target to be achieved by 2050. In announcing the climate change legislation the South Australian government has set a target of reducing emissions by 60% of 1990 levels by 2050. This suggests that the South Australian targets for 2050 should be 18 mega-tonnes CO<sub>2</sub> equivalent.
- **Annual targets** - establishing annual targets for emissions reductions for each year until 2050. These targets might be in the order of a 1.5 % reduction in emissions each year.
- **Reporting framework** - establishing a reporting framework in which the Premier reports to Parliament annually on progress towards meeting both the annual targets and the 2050 target and outlines any necessary further policy or legislative measures to achieve future targets.
- **Sectoral targets and legislated targets for renewable energy and energy efficiency** - requires the development of sector by sector targets and plans for emissions reductions by December 2006. These sectoral targets and plans and any necessary policy mechanisms e.g. a legislated renewable energy target, would be passed by the Parliament and become regulations to South Australia's climate change legislation in early 2007.

These principles could also be included in the Greenhouse Strategy's objective around long-term cuts to greenhouse pollution. While SA now has a 2050 target we are disappointed that there is not a 2020 target, despite it being flagged in the issues papers. We believe that both annual targets and a 2020 target will be crucial signposts along the way to the 2050 target.

**Suggested objective:** Introduce an energy efficiency and demand management fund to stabilise and then reduce residential, industrial and government electricity consumption with supporting legislation and programs.

The goals of this objective would be to:

- Halt, and then reverse, the growth in electricity consumption in South Australia while maintaining affordable, reliable and environmentally responsible energy services and
- Alleviate South Australia's peak power problems by shifting demand to off-peak times, and preventing over-capitalisation in new power plants.

**Discussion:** Improving energy efficiency and stopping energy wastage is widely acknowledged as the most cost-effective way of reducing greenhouse pollution and improving energy services. Energy savings programs can reduce electricity bills substantially without affecting quality of life. In fact energy savings programs can boost economic and social well-being. A combined Australian governments' report highlighted that nationally energy efficiency savings could deliver a \$1.8 billion benefit to GDP, create around 9,000 jobs and reduce greenhouse emissions from the stationary energy sector by 9% over the next 12 years<sup>2</sup>. The Federal Government's Energy White Paper identifies that energy efficiency is expected to deliver 40% of Australia's greenhouse pollution reduction from the energy sector.

In South Australia peak demand for electricity is growing at a rapid rate, leading to South Australia's relatively high electricity costs. Higher electricity prices increase the benefits of both demand management (shifting demand to off-peak times) and energy efficiency (reducing energy use) programs.

## **Energy Efficiency**

To date the South Australian Government has undertaken some modest but useful energy efficiency programs, mainly targeting government energy use or energy use in government properties (eg public housing). As yet we have seen little in the way of cross-sectoral energy efficiency programs delivered by the State Government.

### *Suggested programs*

Stabilising energy consumption will require new programs in the household, community and industrial sectors, in addition to continuing existing SA Government programs to improve energy efficiency in the government sector including public housing<sup>3</sup>. One umbrella program that could assist in funding projects in all these areas could be an energy savings fund similar to the \$40 million per year fund recently established in NSW.

#### **1. Energy Savings Fund**

Create a \$10 million per year fund for five years to be administered by the Sustainability and Climate Change Office or Energy SA. Businesses, local government and NGOs would be invited to make submissions for funding for energy efficiency and demand

---

<sup>2</sup> 'Towards a National Framework for Energy Efficiency',  
[http://www.nfee.gov.au/images/docs/nfee\\_discussionpaper.pdf](http://www.nfee.gov.au/images/docs/nfee_discussionpaper.pdf)

<sup>3</sup> The government programs could be improved with regular public reporting of progress against targets.

management programs. The Fund would provide funding for household, community and industry projects. Applications would be assessed on their ability to deliver greenhouse gas reductions and specific social and employment objectives<sup>4</sup>. It should be noted that ETSA is already currently receiving \$4 million per year from the SA Government for demand management<sup>5</sup> - these funds could be included in the energy savings fund or additional government funding allocated.

## **2. Residential and community programs**

The following initiatives could be developed and implemented in the residential sector in addition to (and in concert with) existing policies and programs:

- Mandatory disclosure of energy performance for homes on sale or for lease to assist buyers and renters to factor in energy performance costs.
- Extending building standards to major renovations and alterations, the vast majority of building work undertaken by South Australians. Building standards need to be extended to take into account wired-in items eg halogen down-lights and air-conditioners.
- Community programs delivering home energy audits and modifications, eg installation of compact fluorescent lamps and water-saving shower-heads. These programs should begin by targeting low-income rental households and could mirror the UK Energy Efficiency Commitment (see footnote 3 for details). In SA an energy efficiency program with a focus on employment generation and skills development (through a link to existing TAFE course for builders, handypersons, electricians and plumbers), local product suppliers and manufacturers and involving the government supported housing providers (SA Housing Trust, Community and Aboriginal Housing Authorities) could deal with not only reducing energy related greenhouse emissions from the community sector but go some way to addressing other key related issues – affordability and tackling the state’s very expensive problem of household ‘peak demand’. Cool Communities, a program which ran for several years in South Australia, demonstrated that households can reduce their greenhouse pollution by 1 tonne per year while reducing electricity bills.
- Developing programs to rapidly increase the uptake of solar water heating in existing building stocks. Only 3% of SA households use solar water heating. While recent government initiatives should speed solar water heating take-up, particularly with regard to new houses, further progress needs to be made in the existing building stock.

## **3. Industry programs**

- Introduce a program like Victoria’s EPA Greenhouse Program which requires major greenhouse polluters to conduct energy audits and implement all energy efficiency actions that have a financial payback of up to three years, though we suggest a five year period for SA. The Energy Savings Fund could be a source of assistance for identifying energy savings opportunities. Such an initiative would boost the development of an energy savings industry in SA as well as deliver significant

---

<sup>4</sup>In the UK program the 'Energy Efficiency Commitment' (<http://www.defra.gov.uk/environment/energy/eec/>) a decision was made to link greenhouse reductions to fuel poverty reduction targets (the number of households needing to spend 10% or more of income on energy bills to maintain a healthily warm home) through a focus on energy efficiency for vulnerable households. The result is a highly regarded, cost effective program that has recently been doubled in scale due to its success.

<sup>5</sup>Though these funds might be better allocated by a government department at arm's length from the utility.

greenhouse pollution reductions.

- Develop 5 star building and refurbishment standards for commercial buildings. The commercial building sector is one of the fastest growing sources of greenhouse pollution nationally.
- Introduce a 'green electricians' program with professional training and accreditation, a register of 'green electricians' and a marketing campaign to inform the community that there are skilled electricians who can improve energy services and assist in delivering greenhouse benefits.
- Develop programs to support small business in saving energy. Electricity prices can be a high proportion of some small businesses' overhead costs, particularly businesses with high refrigeration and air-conditioning costs. Increasing funding for, and extending the GreenCity program beyond Adelaide, would be a useful first step.

## ***Demand management or shaving peak electricity prices***

As previously mentioned, in South Australia peak demand for electricity is growing rapidly, leading to South Australia's relatively high electricity costs. Higher electricity prices increase the benefits of both demand management and energy efficiency programs.

### *Suggested programs*

#### **1. Energy Savings Fund**

The Energy Savings Fund described previously could be the principal mechanism by which large energy users could shift their demand to off-peak or shoulder periods. The Energy Savings Fund could fund projects that achieve the greatest impact in flattening South Australia's demand profile, which over time should assist in reducing electricity prices. As part of the compulsory energy audits for major electricity users as outlined above, users could be required to identify and implement opportunities for load-shifting.

#### **2. Smart-metering for households and small businesses**

Introduce a trial smart-metering program with 1000 households and businesses participating. Smart-meters provide electricity consumers with real-time data on how much energy they are using and what it is costing them. Combined with interval pricing, it provides a powerful tool for consumers to make decisions about their behavior. Global experience in the US, Europe and Australia suggests that such information is a key factor in both improved energy use and customer satisfaction.

## ***Reducing energy use supports growth in renewables***

South Australia currently relies on burning coal and gas for nearly 90% of its electricity needs. By implementing strong energy savings programs SA could help fund the shift to clean, renewable energy sources. While renewable energy currently generally costs more than coal or gas-fired electricity production, this gap will close as renewable energy prices fall. By combining energy savings measures with the purchase of renewable energy, electricity users can neutralise this price effect and help build a

renewable energy industry which generates wealth and jobs as well as delivering greenhouse solutions. See appendix for details on jobs created by renewables.

### Section 3. A strong and growing renewable energy industry for South Australia.

**Suggested objective:** Implement a state renewable energy target of 25% by 2020 with a 20% interim target for 2014 with supporting legislation.

#### 3.1 Introduction

South Australia has embraced renewable energy with the rapid uptake of wind power. As at the end of 2005 10.7% of our electricity came from wind farms according to the SA Electricity Supply Industry Planning Council (ESIPC).<sup>6</sup> SA has also been a leader in the uptake of grid-connected photovoltaic (PV) solar power<sup>7</sup>, although solar power's contribution to electricity generation here is still relatively minor.

However with the Federal Government's Mandatory Renewable Energy Target (MRET) now fully subscribed, we will struggle to find investors to grow our renewable energy industry unless the State Government creates a legislated renewable energy target as the Victorian Government is planning to do<sup>8</sup>. We have already seen the Waterloo wind farm under threat, with renewable company Roaring 40s making a public statement that they will look to Victoria for future projects. This threatens the viability of the burgeoning wind, solar and geothermal industries in South Australia and continues SA's reliance on importing greenhouse polluting coal-fired power from Victoria.

The South Australian Government has set a target of increasing the use of renewable energy by South Australians so that it comprises 20% of total electricity consumption by 2014. Renewable energy such as wind, solar, biomass, hydro and geothermal electricity generation provides a clean, greenhouse-friendly alternative to fossil fuel based electricity supply. Renewable energy is generally less centralised and provides greater opportunities for regional employment and investment.



Figure 1- Canunda wind farm opening

Environment groups are urging the SA Government to legislate the 20% target and to add an additional legislated target of 25% by 2020. The targets could have a quota or feed-in law component for grid-connected PV electricity to create a vibrant PV industry in South Australia. This would enact thinker-in-residence Herbert Giradet's recommendation to introduce PV feed-in laws in SA to assist with our peak power demand problems.

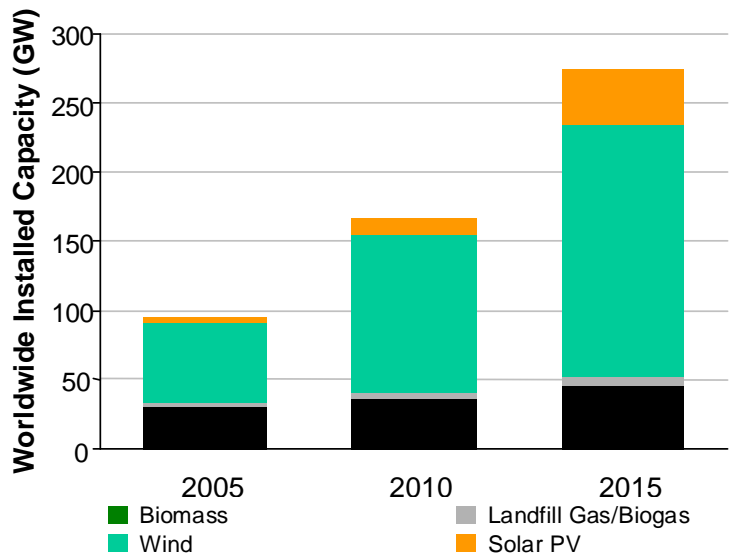
<sup>6</sup> Ministerial Council on Energy Standing Committee of Officials, Wind Energy Policy Working Group "Integrating Wind Farms into the National Electricity Market", Discussion Paper, p.47.

<sup>7</sup> As at June 2005 South Australians had installed 998 grid-connected solar power systems through the Federal Government's Photovoltaic Rebate Program, more than any other Australian state, <http://www.greenhouse.gov.au/renewable/pv/index.html>

<sup>8</sup> See [http://www.premier.vic.gov.au/newsroom/news\\_item.asp?id=705](http://www.premier.vic.gov.au/newsroom/news_item.asp?id=705)

**In the event that SA’s geothermal resources are developed, the renewable energy targets could be raised considerably.** Legislated state renewable energy targets would provide a long-term investment framework for renewable energy in South Australia, providing regional jobs and investment and climate change solutions, and establishing South Australia as a clean energy leader.

Whilst there would be a slight electricity price increase associated with the introduction of a legislated renewable energy target it would be a one-off price increase that could be justified politically by the employment, investment and environmental benefits attained that would accrue to South Australians, and offset through the implementation of energy efficiency programs. Many other nations and US states have already introduced binding renewable energy targets and are reaping the benefits of a rapidly growing renewable energy sector delivering jobs, regional investment and clean energy solutions to climate change.



*Figure 2 - Renewables are the world's fastest growing energy source and industry.*  
 Source: IEA World Energy Outlook 2004

### 3.2 South Australia’s clean energy potential: Clean energy jobs

At a time when many traditional areas of employment are shrinking and world energy systems are being revolutionised by new technologies, there is a huge opportunity for South Australia to position itself to take advantage of the extraordinary growth of renewable energy world-wide.

The renewable energy industry is the fastest growing industry in the world today and, according to the World Watch Institute, global clean energy markets are expected to surpass \$82 billion by 2010. For example, global wind power capacity has quadrupled over the past five years, growing from 7600 MW at the end of 1997 to more than 31,000 MW at the end of 2002. This represents an annual growth rate of more than 30 per cent per annum, with \$US7 billion of wind projects being built in 2002 alone. By 2020, the wind market alone is projected to result in installation of 1.2 million MW with an annual turnover of \$US 67 billion, the creation of 1.5 million jobs, and 12 billion tonnes less greenhouse gas emissions.

Renewable energy industries like solar and wind power are growing at around 30% per year annually and are among the fastest growing industries in the world. The Australian Wind Energy Association has calculated that there are existing proposals for 2092 MW of wind power in South Australia (currently SA has 388 MW of installed capacity).

**If even half of these projects were to go ahead<sup>9</sup> (and they would need a legislated renewable energy target or similar mechanism to get off the ground) they would**

<sup>9</sup>If all of these projects were developed South Australia would need to upgrade its electricity infrastructure, in particular the grid interconnectors with Victoria and New South Wales. SA would become a major electricity exporter.

**create around 1046 job years in installation and 2496 job years in operation and maintenance as well as significant numbers of manufacturing jobs - see table below.**<sup>10</sup>

South Australia would meet a 25% renewable energy target and become a major exporter of clean renewable energy to Victoria and New South Wales.

The PV industry has seen similar growth globally. The market for solar PV has grown by around 35 per cent annually for the last five years to a \$US3.5 billion market in 2001. The solar water heater industry is also growing significantly, particularly in Europe and China. As an example, sales in Europe have increased by 40% over the last few years with sales growth expected at over 20 per cent per annum into the future.

Renewable energy technologies have the potential to provide significant employment compared to traditional fossil fuel plants. For example, a recent analysis by AUSWEA found that 6.6 times more manufacturing and installation jobs are created by wind power than by coal-fired generation, and that even when operation and maintenance jobs are taken into account, twice as many total jobs are created by wind power.<sup>11</sup> It has also been found that compared to fossil fuel plants, renewable plants have a higher proportion of Australian and regional capital costs – see below. This further focuses the employment potential in areas that need it most – rural and regional Australia.<sup>12</sup>

*Figure 3 New power plants - Proportion of capital cost spent in Australia*

| <b>Plant</b>                     | <b>Australian Content</b> |
|----------------------------------|---------------------------|
| Narrogin oil mallee (biomass)    | 90%                       |
| Rocky Point bagasse cogeneration | 50%                       |
| Albany wind farm                 | 44%                       |
| AES Golden Plains gas plant      | 31%                       |
| Tarong North coal-fired plant    | 26%                       |

**3.3 Need for legislation to support renewable energy targets**

Without a policy framework that encourages long term investment in renewable energy and associated infrastructure in South Australia, the state's renewable energy industry growth will stall and our 20% aspirational target will be difficult to achieve. We will remain highly dependent on fossil fuels, further fuelling climate change which is expected to have major environmental, economic and social impacts. Moreover, given the Victorian Government's stated intention to introduce a renewable energy target, SA will lose its renewable energy leader status if the State Government doesn't introduce similar legislation.

<sup>10</sup> <http://www.auswea.com.au/auswea/downloads/windjobsmap.pdf>  
<sup>11</sup> Passey, Dr. R. (2003) *Driving Investment, Generating Jobs: Wind Energy as a Powerhouse for Rural & Regional Development in Australia*, a report commissioned by the Australian Wind Energy Association.  
<sup>12</sup> Passey, Dr R. (2004) *Creating Jobs for Australians: A summary of MRET submissions* Available at [http://www.greenpeace.org.au/climate/pdfs/create\\_jobs\\_report0104.pdf](http://www.greenpeace.org.au/climate/pdfs/create_jobs_report0104.pdf)

Legislating for a renewable energy target of 25% by 2020 would guarantee current and future investors that there will be a market for their product and will ensure the continued growth of the renewable energy industry in South Australia, as well as leading to declining prices for renewable energy technologies. In order to ensure that the South Australian renewable energy industry is the beneficiary of the legislation, a clause could be included to ensure that the renewable energy share is generated in South Australia. Given that SA will probably achieve around 15% renewable energy through MRET incentives, the real impact of an SA renewable energy target of 25% would be equivalent to increasing the renewable energy share in SA from 15% to 25% of electricity supply, ie. 10%.

A legislated renewable energy target could take a number of forms and would not need to mirror the Federal MRET scheme. A recent paper by the University of New South Wales Centre for Energy and Environmental Markets outlines possible structures for a legislated state renewable energy target. This paper can be found at:

[http://www.ceem.unsw.edu.au/documents/StateROANZSES2005\\_000.pdf](http://www.ceem.unsw.edu.au/documents/StateROANZSES2005_000.pdf)

Future geothermal electricity projects may fail to get off the ground without the policy support that would be provided by a state-based renewable energy target. Legislating for a South Australian renewable energy target would provide impetus for an upgrade of the existing electricity infrastructure to meet the needs of modern energy technologies and provide seamless connection to the National Electricity Market (NEM).

### 3.4 Costs

Greenpeace Australia Pacific and the Conservation Council of SA contracted Dr Karl Mallon from the Transition Institute to estimate the price effects of a 25% renewable energy target.<sup>13</sup> Dr Mallon's work, which is being peer-reviewed by UNSW's Centre for Energy and Environmental Markets among others, concludes that the price effect would be modest. The table below summarises the price effect until 2022 assuming  $\frac{3}{4}$  of the additional renewable energy comes from wind power and  $\frac{1}{4}$  from biomass. The table demonstrates that the maximum price effect would come in 2020 when the average household would pay \$20.18 (or 4.97%) more for their electricity than in 2005. This assumes no improvements in energy efficiency - the price effect could be reduced with any energy saving measures. This increase would be dwarfed by inflation and is far smaller than annual price increases in SA in recent years, without the investment, employment and clean energy benefits delivered by the renewable energy legislation. Importantly, as the price of renewable energy technologies falls the price effect slows and is then reversed, ie beyond 2020 electricity prices in SA would actually be reduced by the renewable energy target.

Figure 4 - Price effects of a 25% renewable energy target for SA.

| <i>Year</i> | <i>Volume of additional RE (GWh)</i> | <i>Percentage from renewables</i> | <i>Cumulative cost to consumers (including 15% grid costs)</i> | <i>Annual cumulative cost to residential consumer (\$)</i> |
|-------------|--------------------------------------|-----------------------------------|--|--|
| 2005        | 0                                    | 12.1                              | 0.00%  | 0  |
| 2006        | 158                                  | 13.1                              | 0.78%  | 2.75   |

<sup>13</sup>Mallon, K. "Briefing: The costs and savings of additional renewable energy in South Australia".

| <i>Year</i> | <i>Volume of additional RE (GWh)</i> | <i>Percentage from renewables</i> | <i>Cumulative cost to consumers (including 15% grid costs)</i> | <i>Annual cumulative cost to residential consumer (\$)</i> |
|-------------|--------------------------------------|-----------------------------------|--|--|
| 2007        | 316                                  | 14.1                              | 1.47%  | 5.27   |
| 2008        | 474                                  | 15                                | 2.09%  | 7.55   |
| 2009        | 632                                  | 16                                | 2.64%  | 9.61   |
| 2010        | 790                                  | 16.9                              | 3.11%  | 11.46  |
| 2011        | 948                                  | 17.8                              | 3.53%  | 13.1   |
| 2012        | 1106                                 | 18.7                              | 3.88%  | 14.56  |
| 2013        | 1264                                 | 19.5                              | 4.18%  | 15.83  |
| 2014        | 1422                                 | 20.3                              | 4.42%  | 16.92  |
| 2015        | 1580                                 | 21.2                              | 4.62%  | 17.85  |
| 2016        | 1738                                 | 22                                | 4.77%  | 18.61  |
| 2017        | 1896                                 | 22.7                              | 4.87%  | 19.22  |
| 2018        | 2054                                 | 23.5                              | 4.94%  | 19.68  |
| 2019        | 2212                                 | 24.3                              | 4.97%  | 20   |
| 2020        | 2370                                 | 25                                | 4.97%  | 20.18  |
| 2021        | 2528                                 | 25.7                              | 4.43%  | 18.17  |
| 2022        | 2686                                 | 26.4                              | 3.88%  | 16.09  |

### **3.5 Legalities**

Some concerns have been raised about the constitutional legality of the SA Government's developing a policy target in this area given that the Federal Government has already implemented a Mandatory Renewable Energy Target and decided against increasing the target in 2004. The Victorian Government has received advice on this issue and seems to be satisfied that there are no legal impediments to the introduction of a legislated state-based renewable energy target.

### **3.6 Who else is doing it?**

State and national governments around the world are developing renewable energy by introducing binding renewable energy targets. The Victorian Government recently announced its intention to guarantee the future of its renewable energy industries by

introducing a legislated target.<sup>14</sup> The table below shows just some of the countries and states that have adopted clean energy targets. The accompanying map summarises Renewables Portfolio Standards (renewable energy targets) of US states as at August 2005.

| Country/State                      | Renewable Energy Target |
|------------------------------------|-------------------------|
| Austria                            | 78% by 2010             |
| European Union (25 member nations) | 21% by 2010             |
| California                         | 20% by 2017             |
| Texas                              | 2880 MW by 2009         |
| Nevada                             | 15% by 2013             |
| China                              | 15% by 2020             |
| Denmark                            | 29% by 2010             |
| Portugal                           | 45.6% by 2010           |
| Spain                              | 29.4% by 2010           |
| Sweden                             | 60% by 2010             |

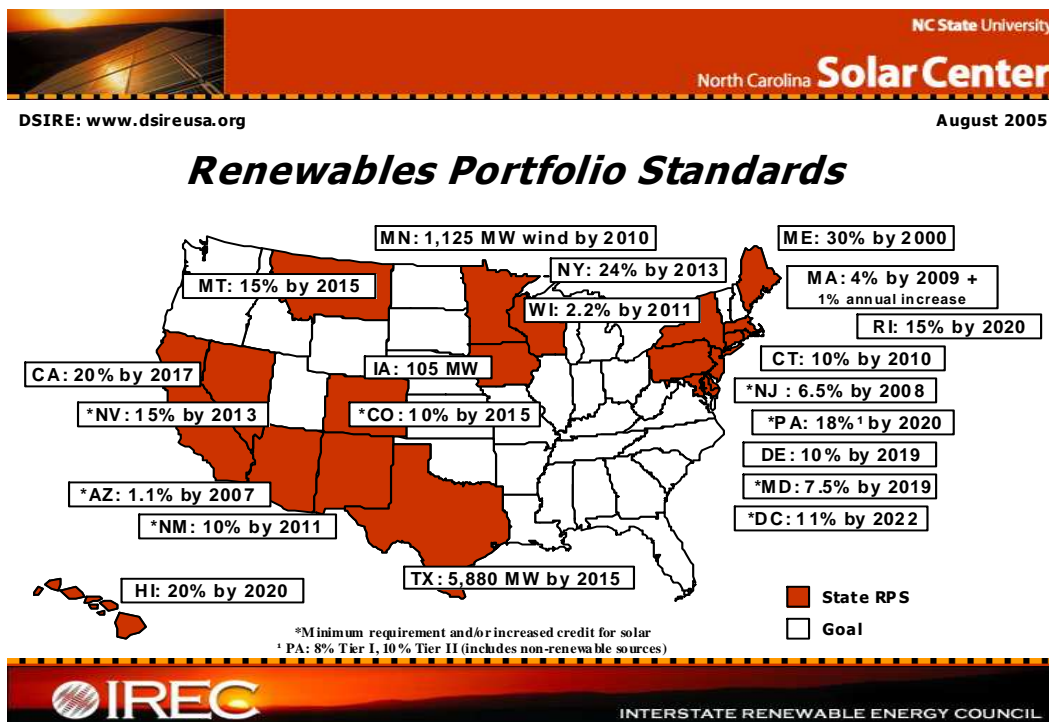


Figure 5 - US states take the lead on renewable energy targets

These states and nations have introduced renewable energy targets to stimulate industry, create jobs and begin making the shift to clean, renewable energy.

### 3.7 Conclusion

For the cost of a very minor price increase to electricity prices SA could create a renewable energy hub and manufacturing base in South Australia, generate thousands of jobs and lead the way on climate change solutions. Without a legislated renewable energy target the SA renewable energy industry, including flagship projects like the

<sup>14</sup>See [http://www.premier.vic.gov.au/newsroom/news\\_item.asp?id=705](http://www.premier.vic.gov.au/newsroom/news_item.asp?id=705)

geothermal projects in the north-east of the state, will stall, job and investment opportunities will be lost and the state will remain dependent on importing brown coal-fired electricity from Victoria.

## Appendix: Jobs from renewable energy in SA

A new international report<sup>15</sup> summarises jobs in energy production as follows:

| <b>Sector</b>               | <b>Jobs – year / TWh<br/>(fuel production and power generation)</b> |
|-----------------------------|---|
| Petroleum                   | 260   |
| Offshore oil                | 265   |
| Natural gas                 | 250   |
| Coal                        | 370   |
| Nuclear                     | 75  |
| Wood energy                 | 733 – 1067  |
| Hydro                       | 250   |
| Mini hydro                  | 120   |
| Wind                        | 918 – 2,400   |
| Bioenergy (i.e.: sugarcane) | 3,711 – 5,392   |

This report concludes that for every job in coal-fired electricity production, wind energy would create between 2.5 and 6.5 skilled jobs (depending on manufacturing location) and bioenergy between 10 and 14.5 jobs for the same amount of energy produced.

**Wind:** The Australian Wind Energy Association's Wind Energy Jobs Map<sup>16</sup> outlines that in South Australia there are current proposals for 2080 MW of wind power which could provide up to 2080 job years in installation and 4992 job-years in operation and maintenance. There is additional potential for jobs in the manufacturing and export side of the wind power industry. An Australian report has shown that wind farms create 6.6 times as many manufacturing and installation jobs as a coal-fired power plant for the same amount of energy produced<sup>17</sup>.

**Solar:** The Australian photovoltaic (PV) industry (solar electricity as opposed to solar hot water) currently employs over 1,100 Australians. The Business Council for Sustainable Energy's Photovoltaic Industry Roadmap identifies that by 2020 31,600 people could be employed in the Australian PV industry with 6740 MW of installed solar capacity, around double the current demand in South Australia. This scenario requires government leadership to begin recognising the merits of PV and remove barriers to solar electricity competing with other power sources. Solar power could help South Australia reduce peak electricity prices given that peakiest demand times correlate closely with hot, sunny days.

<sup>15</sup>Goldemberg, José, The Case for Renewable Energies, February 2004, [www.renewables2004.de/pdf/tbp/TBP01-rationale.pdf](http://www.renewables2004.de/pdf/tbp/TBP01-rationale.pdf)

<sup>16</sup><http://www.auswea.com.au/auswea/downloads/windjobsmap.pdf>

<sup>17</sup>Passey, Dr. R., Driving Investment, generating jobs: Wind Energy as a powerhouse for Regional and Rural Development in Australia, 2003, <http://www.thewind.info/downloads/jobs.pdf>