

# the Clean Energy Future

study has found that Australia can readily meet its energy needs from a range of commercially proven fuels and technologies. In the study 2040 time horizon was chosen deliberately. It is long enough for almost all existing coal fired energy supply infrastructure and other less energy efficient equipment to be fully written off.

A scenario that cuts emissions by 50% includes:

- The energy generated from the combustion of **natural gas** can provide **30%** (including cogeneration) of our electricity by 2040.
- The energy released from **biomass** from agriculture and plantation forestry residues can provide **26%** (excluding cogeneration) of our electricity by 2040. In the best cases crops can help landscape repair by increasing biodiversity and reducing salinity, as well as being 'carbon neutral'.
- The energy of **wind** captured by turbines can provide **20%** of our electricity by 2040.
- The energy of flowing **water** harnessed through hydroelectric facilities can provide 7% of our electricity by 2040.
- The energy of the **sun** captured with photovoltaic and solar thermal systems can provide **5%** of our electricity by 2040.
- Energy generated by 15% **co-generation** plants was largely driven by about 13% gas and 2% biomass.

**Energy efficiency measures** implemented through cost-effective technologies in the residential, commercial and industrial sectors and government legislation can decrease power demand and emissions of up to 70% immediately. Many of them would pay for themselves in just 4 years. The economic savings from energy efficiency will be so large that they could pay for the additional costs of renewable energy.

To further develop the renewable industries, an immediate extension and expansion of the **Mandatory Renewable Energy Target** (MRET)- a carbon tax or emissions trading scheme with cap and an expansion of the electricity network, are needed.

## "A plan to cut Queensland's CO2 emissions form electricity by 2010"

[www.wwf.org.au/ourwork/climatechange/Cleanenergyfuture/](http://www.wwf.org.au/ourwork/climatechange/Cleanenergyfuture/)

was released in April 2005. It shows that an alternative energy mix together with the firm implementation of energy efficiency measures and policies could economically substitute for the present coal fired power as well as the newly proposed coal fired backup Kogan Creek power station.

The mix would consist of bio-energy, combined cycle and cogeneration fuelled with coal seam methane and wind power.

Energy efficiency measures would be

- Energy performance standards for all buildings.
- Substantial expansion of the use of solar hot water.
- 'Smart' meters and peak-load pricing to make users pay the full cost of air conditioning.
- Low-cost packages of energy efficiency measures for households.

**This way CO2 emissions could be reduced by 78% from stationary energy and create many more local jobs.**

Another report, by the Cooperative Research Centre(CRC) for Coal in Sustainable Development, claims **solar thermal technology** "is poised to play a significant role in base-load generation for Australia" and will be cost-competitive with coal within seven years."

Canberra Times, 26 May 2006  
<http://canberra.yourguide.com.au/>

The draft report, written by five CSIRO Energy Technology division scientists, was submitted to the CRC in August 2006 but has not been published. It claims a 50 sqkm area with high levels of sunlight and low cloud cover "could produce Australia's entire current power demand" using solar thermal technology.

Greens leader Senator Bob Brown said the report clearly indicated Australia should be investing in developing and commercialising new solar technologies to meet growing global demand and has **accused the Federal Government of undermining solar research by cutting back funding.**

The Trans-Mediterranean Renewable Energy Cooperation, TREC have released their study into **solar thermal energy** produced in the worlds' deserts in July 2006 [www.trecers.net](http://www.trecers.net)

1. The solar energy available in deserts is more than 700 times the present global primary energy consumption. This is far more than needed to replace fossil fuels.
2. Solar thermal power plants can store solar heat and generate solar power according to demand, also at night.
3. Technologies for power production and long-distance transmission to over 90% of world population are at hand.
4. In a solar energy co-operation technology-belt and sun-belt we can achieve energy, water and climate security and stable power production at costs of 4-8 c\$/kWh.

**Australian Solar Heat and Power Pty Ltd, who are working on solar thermal energy production are moving to America, where one US investor has just put \$42 million into the company.**

**"Australian business does not offer the risk equity we need, especially under the current climate in which the**

**Government clearly favours existing coal and nuclear options based around mineral resources.**

**The Federal Government refuses to put in place strict emissions targets, strict legislation to enforce those targets, and reliable long-term market valuations for carbon emissions avoided. We can find all of those things overseas." David Mills, the Sydney Morning Herald, January 29, 2007**



Instead Federal and State Governments are putting their money on unproven technologies, like carbon catching, geo-sequestration and nuclear power. The government could instead of coal be exporting renewable technologies. Pressure on our government is needed to implement the genuine sustainable energy solutions, which are ready now.

## Debunking myths

**“There are real low-carbon options to generating electricity, including base-load capacity, rather than nuclear power.”**

Dr. Mark Diesendorf [www.energyscience.org.au](http://www.energyscience.org.au)

The amount of energy consumed most of the time is called 'base-load'. This is punctuated by bursts of higher demand known as 'peak-load'.

A mix of renewable sources ensures a mutually supportive and stable energy supply. It include bio-energy - 30%, wind power - 20%, hot dry rock geothermal power, solar thermal electricity with heat storage in hot water or hot rocks.

**More jobs in the renewable industry than coal and uranium mining can offer**, excerpt from “the real solutions to climate change: energy efficiency and renewables”

Dr. Jim Green [www.melbourne.foe.org.au](http://www.melbourne.foe.org.au),  
[www.acfonline.org.au](http://www.acfonline.org.au)

- An increase of 10% of wind power would create about 37,000 job years in construction and up to 1,000 fulltime jobs in operation and maintenance.
- The 30% increase in bio-energy 46000 permanent rural jobs in operation and 140,000 short term construction jobs.
- According to the Photovoltaics Industry Roadmap solar electricity could provide 6,700 MW capacity by 2020, the equivalent to two 600MW nuclear power stations and would create 31,000 jobs.

## Global transition

Renewable energy could meet most of the world's energy demand by 2100 according to the UN Intergovernmental Panel on Climate Change.

In fact, China's renewable energy target is 3 times greater than its nuclear target (5%). In China is now planning to supply 15% of electricity from new renewables (excluding hydro) by 2020, compared with only 4-6% from nuclear.

Wind power and solar power are growing by 20-30% each year, compared to minimal growth in nuclear. By 2010, renewable energy is expected to add more than 100 times nuclear's capacity per year. (Rocky Mountain Institute 2005).

### GERMANY LAUNCHES ITS TRANSITION TO ALL RENEWABLES in 03/05

[www.energybulletin.net/5000.html](http://www.energybulletin.net/5000.html)

It is possible to cover the total energy demand for Germany by means of solar/ renewable sources. Subsequent German policy is governed by this premise.

### SWEDEN PLANS ON BEING THE FIRST COUNTRY IN THE WORLD TO BE FREE FROM OIL IN 2020

[www.postcarbon.org/node/1985](http://www.postcarbon.org/node/1985)

Sweden will stop using oil by 2020 and eventually the energy supply of the country will be based on renewable energy only

**AUSTRALIA** “We already have the technologies to commence rapid transition to an energy future based on renewable energy and energy efficiency, with gas playing an important transitional fuel. The barriers are not primarily technological or economic, but rather are the immense political power of vested interests.”

Dr. Mark Diesendorf, energy expert, University of NSW

“Be in no doubt: renewable energy works. Renewables now account for a quarter of the installed capacity of California, half of Norway's and three-quarters of Iceland's. It's time we joined the clean energy revolution sweeping the progressive parts of the world.”

Prof. Ian Lowe, AO, ACF President

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# Renewable energy can replace oil, coal and nuclear power

“The present world energy supply system is facing 3 basic problems:

- **limitation of fossil fuel resources,**
- **climate change by carbon dioxide emissions,**
- **insecurity by nuclear weapon competence and radioactive materials.”**

Dr. Gerhard Knies, Trans-Mediterranean Renewable Energy Cooperation, TREC.

For these reasons clean and sustainable energy production is on the rise all over the world.



## Reports for the transition to renewable and clean energy production were available to the Australian Government in 2005

The Clean Energy Future Group has released the report “**A Clean Energy Future for Australia**” in 2005 which outlines that it is absolutely possible to replace our energy production from mainly coal fired power station with a mix of clean and renewable energy by 2040. This report is a very detailed study into the technologies, economics, emission reductions, transition scenarios.

[www.wwf.org.au/ourwork/climatechange/Cleanenergyfuture/](http://www.wwf.org.au/ourwork/climatechange/Cleanenergyfuture/)