



Renewable energy and the law

1. Introduction

Climate change is happening now and WA is already beginning to feel the impacts; temperatures and sea levels are rising, rainfall patterns are changing and there are more extreme weather events. These impacts are predicted to get far worse, unless we cut our greenhouse gas emissions immediately. For further information on climate change and its impacts see Factsheet 24a: Climate Change and the Law.

The greenhouse gas emissions of Australia, and WA in particular, are the highest per capita in the world and are continuing to increase. The significant majority of Australia's emissions comes from the energy sector due to our heavy reliance on fossil fuels for energy supply and transport. The emissions from this sector continue to grow rapidly, as our energy consumption grows.

The Environmental Protection Agency (EPA) has warned that emissions will continue to grow unless there are significant shifts toward greater use of renewable energy and improvements in energy efficiency.

Currently, only 6% of Australia's energy and 2% of WA's energy comes from renewable energy sources.

Encouraging renewable energy will have additional benefits for WA where, due to its vast size and the inaccessibility of many communities, transmission and distribution of centralised fossil fuel-based electricity to the whole State is expensive, inefficient and unreliable. Renewable energy generators can assist in creating a more diversified and decentralized supply of energy.

This fact sheet will look at how legislation can encourage the uptake of renewable energy, what current developments are in Australia and how you can be a part of that process.

Although this factsheet focuses only on renewable energy, an increase in renewable energy must be complemented by improved energy efficiency, in order to reduce overall emissions. If our energy use continues to increase, the increased emissions will outweigh gains made by renewable energy.

For further information on energy efficiency legislation see Factsheet 24a: Climate Change and the Law.

2. What is 'Clean Energy' ?

2.1 Renewable energy is clean energy

Renewable energy is energy generated from natural resources that are naturally replenished. Renewable energy includes sun, wind, tides, waves, geothermal heat and hydro electricity. Unlike fossil fuel energy sources, the generation of energy from renewable sources releases very little or no greenhouse gases and is therefore considered to be a 'clean' source of energy.

For example, solar energy can be used in two different ways: as a heat source, and as a source of electricity. As a heat source, solar thermal panels on a roof can heat water. For electricity, photovoltaic solar panels can also be used to convert light into a direct current using the photoelectric effect (where electrons are emitted from matter after the absorption of energy from electromagnetic radiation from the light).

Geothermal power is energy generated by heat stored beneath the Earth's surface. Power is generated in two ways. In one method water is pumped to 3-5km underground onto hot, dry rocks, which heats up and generates steam which drives a turbine (more common in Australia). Alternatively, the hot water already exists below the surface (eg in New Zealand).

2.2 What is not clean energy (and not renewable)?

Natural gas

The State Government has recently committed to setting an 'aspirational' Cleaner Energy Target of 50% by 2010 for the South West Interconnected System (SWIS) to increase to 60 per cent by 2020. The Government's reference to 'Cleaner Energy' includes reference to natural gas in place of more carbon intensive coal.

At present WA uses natural gas for the majority of its energy needs. Natural gas is still a fossil fuel. Although it produces less carbon dioxide and particulates when burnt as compared to coal and oil, its methane content is much greater than coal, and the energy required for its extraction, distribution, transport and consumption mean that it is still a major source of greenhouse gas emissions in Australia. The rapid increase in its use is likely to overcome any greenhouse savings made.

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Clean Coal Technology or Carbon Capture and Storage

'Clean Coal', or carbon capture and storage (CCS) refers to the capturing of emissions from power stations and other facilities and storing them underground in geological formations (geosequestration). At present, there are many reasons why this technology is not considered to be truly 'clean'. It is not certain that it will ensure the permanent safe storage of CO₂ without leakage. It is an energy intensive exercise to capture, transport and store the carbon which means that it still produces a significant amount of greenhouse gas emissions. Further it is not yet certain whether it can be economically viable.

Nuclear power

Nuclear power is neither a clean nor renewable energy source. There are still many indirect emissions at every stage of the nuclear power process – eg in exploration, construction, transportation, the mining and processing of uranium, disposal of wastes, reprocessing of spent fuel rods, more transportation for reprocessing, and finally, decommissioning of the reactor.

Other difficulties with nuclear power include that there is still no solution for nuclear waste, which has with it a high risk of air and water contamination when buried. There are risks of accidents (as seen in the devastating explosion at the Chernobyl reactor in 1986), Uranium supplies are limited, and its mining is not without environmental impacts. Additionally, it is extremely expensive (it has been estimated that each reactor would cost about \$3billion, which does not take into account the cost of insurance, storage of the highly radioactive waste and its eventual decommissioning), and has the additional security risk of being connected with the proliferation of nuclear weapons.

3. Why Australia needs to support renewable energy, even with an emissions trading scheme

There are several reasons why the growth of renewable energy in Australia has been hampered to date. These impediments all need to be addressed to order to allow renewable energy to become a viable industry and to reduce emissions. The recent decision by the Federal Government to means test the solar cell subsidy, which immediately resulted in a drop in production and uptake of the solar cells, highlights the need for legislative support for these technologies.

The Federal Government has proposed to introduce an Emissions Trading Scheme (ETS) to come into effect before 2011 (see *Factsheet 24a: Climate Change and the Law*). The Federal Government has outlined some elements of the proposed design in its Green Paper on the Carbon Pollution Reduction Scheme, dated 16 July 2008. As outlined below, even with an ETS, impediments to the growth of renewable energy will remain and need to be addressed.

3.1 Externalised environmental costs

To date there has been a failure to factor in the environmental cost of high greenhouse emissions from the way electricity is generated into the price of electricity – the polluters have not had to pay for their pollution. Accordingly, there has been little incentive to invest in reducing greenhouse gas emissions and developing alternative technologies, which can often be more expensive at the outset.

If an ETS is effective, it will remedy this problem by placing a price on carbon, and ensuring that emitters pay the price for their pollution. However, it can take several years for such a scheme become established, and we need to increase our renewable energy uptake now. There are also risks in the way an ETS will be designed – for example, if permits are given out freely to assist large polluters it will reduce the incentive to find alternative forms of energy. At this stage the Federal Government's Green Paper indicates that fossil fuel energy suppliers (eg coal) and trade-exposed energy intensive industries will receive direct financial assistance under the scheme, with up to 90 per cent of permits given for free for the major emitters. Therefore, until and ETS is functioning effectively, sufficient incentives for renewable energy are required.

3.2 Subsidies to fossil fuels

Fossil fuels have a significant advantage over renewable energy production in Australia, due to the substantial direct and indirect subsidies provided by the Government. In 2005-2006, total fossil fuel subsidies total more than \$9 billion each year, 90 per cent of which were said to increase greenhouse gas emissions. In comparison, subsidies to renewable energy total about \$330 million per year.

It is not clear what level of subsidies will continue once an ETS is in place. However, as noted above, it appears that substantial assistance will be given to fossil fuel-energy suppliers, reducing the incentive to invest in renewable energy and reinforcing the need for legislative action to support the development of renewable energy.

3.3 Emerging technologies need support

Though they may have potential for being able to produce far greater quantities of energy at lower cost once established, emerging technologies are often more expensive in the short term. Examples include solar thermal and solar photovoltaics, geothermal hot dry rocks, and wave power.

In addition, there are significant expenses and risks associated with developing infrastructure and establishing renewable power plants from the ground up. This is particularly so where existing infrastructure is tailored towards the operation of centralised power plants, coupled with the limited nature of competition often present within electricity markets.

There are also inherent risks associated with investing in new technologies: companies may worry that they will not have a market for their new product if carbon-pricing policy is not maintained into the future, and banks can be wary of investing in first-time plants and can charge higher interest rates based on the apparent risk.

4. Legislation to encourage renewable energy

There are two main types of legal schemes that encourage renewable generation: a renewable energy certificates market (REC scheme) and feed-in tariffs (FIT scheme).

4.1 Renewable Energy Certificates (RECs) scheme

In this scheme, legislation sets a legally binding number of renewable energy certificates, which must be obtained by market participants (eg producers or retailers of electricity). RECs are produced by accredited sources of renewable energy. This scheme creates a market for RECs, where the cost of a certificate is set by the market (but where the amount required is set politically). The Federal Government's Mandatory Renewable Energy Target (MRET) scheme outlined below is an example of this approach. Internationally, similar schemes have been adopted in UK, Sweden, Italy, Belgium, Poland and at least 20 of the US states.

4.2 Feed-in-tariff (FIT) scheme

The other predominant type of legal scheme used to promote renewable energy is a Feed-in Tariff Scheme, which requires grid operators to connect all eligible generators of renewable energy to the grid and pay them a premium price set by the Government for the electricity produced. This price is above market rates and is set over a guaranteed period of time (eg 20 years), which creates certainty for investors. Most schemes also require grid operators to connect and purchase the electricity from the renewable energy generator as a priority, and to take on the necessary costs for upgrading the grid; and, in some cases, of the connection itself.

FIT schemes are the most common policy employed worldwide to promote renewable energy, and are currently in operation in at least 37 countries (including 18 countries within the EU) and nine states/provinces, and are under consideration in eight other US states.

4.3 Comparison of the two schemes

Studies comparing FIT schemes with REC schemes, including the Stern Review, have concluded that FIT schemes are capable of achieving larger deployment of renewable energies, and lower costs. FIT schemes have been described as "the single most effective incentive to reduce the economic barrier and encourage the uptake of renewable energy generation". They are

responsible for driving "explosive" and "rapid" growth in renewable energy capacity growth in Europe during the past 15 years. The FIT scheme in Germany has been particularly successful, making it the world's largest market for photovoltaic systems and wind energy. Germany more than doubled its national supply of renewable electricity between 2000 and 2007. It has already exceeded its 2010 target of 12.5 per cent, and is on track to supply 27 per cent of its power from renewable energy by 2020.

5. Renewable energy law in Australia

5.1 REC schemes

5.1.1 Federal Government

To date Australia has favoured using the REC scheme, but several FIT schemes are now emerging.

The Federal Government's MRET scheme has been the primary legal tool to encourage renewable energy development. In this scheme, the *Renewable Energy (Electricity) Act 2000* places a legal liability on the wholesale purchasers of electricity to surrender a certain amount of Renewable Energy Certificates (RECs) each year, which are created by accredited renewable energy generators. If liable parties do not meet an annual REC requirement, they must pay a penalty.

5.1.2 State Government REC schemes

In addition to the MRET scheme, several State Governments within Australia have implemented their own renewable energy schemes.

A REC scheme operates in Victoria, similar to the MRET, pursuant to the Victorian *Renewable Energy Act 2006* where a target is set to generate ten per cent of energy from renewable sources by 2016. The Act sets targets for renewable energy generated from renewable sources, increasing to ten per cent (274GWh) by 2016. A REC scheme is also proposed in NSW under the *Renewable Energy (NSW) Bill 2007*. The Bill, currently before Parliament, proposes mandatory renewable energy targets for electricity consumed in NSW of ten per cent by 2010 and 15 per cent by 2020, to be in force by 2008.

5.2 FIT schemes

Australia is beginning to see the emergence of some forms of state based FIT schemes in South Australia, and to a certain extent in Victoria, with bills currently under consideration in ACT and Qld.

In general, these schemes are all relatively limited by international standards. With the exception of the ACT Bill, all propose that payments be made calculated on a 'net metering' basis and have rejected the otherwise internationally-accepted model of 'gross metering'. In 'net metering' the generator is only being paid for excess renewable energy fed back into the grid after consumption, as opposed to 'gross metering' production, where owners receive the tariff for all electricity produced by their systems, and then pay retail prices for their consumption. Gross metering offers a higher return

5.3 WA renewable energy law and policy

WA does not yet have any such legislative scheme to promote renewable energy.

In his Action Statement, “Making Decisions for the Future: Climate Change” the Premier committed to setting an ‘aspirational’ Cleaner Energy Target of 50 per cent by 2010 for the South West Interconnected System (SWIS), increasing to 60 per cent by 2020, and establishing a Renewable Energy Target of 15 per cent by 2020 and 20 per cent by 2025 for the SWIS.

At the time of writing, these are still to be set down in legislation. We note that the SWIS only accounts for approximately 57 per cent of the State’s electricity and, as stated above, the Government’s ‘Cleaner Energy Target’ includes natural gas, which is still a major source of greenhouse gas emissions.

5.4 Current developments in Australian legislation and policy

5.4.1 Proposed ETS and Garnaut Climate Change Review

As stated above, the Federal Government has committed to introducing an ETS by 2010. For further information see *Factsheet 24a: Climate Change and the Law*. The Federal Government is still to provide details on what renewable energy policies and legislation will accompany an ETS.

The draft report of the Garnaut Climate Change Review released on 4 July 2008, which was commissioned by State, Territory and Federal governments, made some recommendations for the ETS and what supplementary policies will be required in addition to an ETS. The draft report:

- calls for a comprehensive review of existing policies to ensure they complement an ETS
- recommends that the Federal Government’s MRET scheme be expanded and then phased out once an ETS commences, but keeping the existing non-indexed shortfall penalty of \$40/MWh for non-compliance (which has been criticized by environmental groups as being too low to provide sufficient incentive for renewable energy production)
- recommends that a FIT scheme, based on gross metering, be considered to encourage household electricity generation from solar, due to the benefits of more distributed electricity supply.

The final Garnaut review, due in September 2008 is to provide further details of what policies it recommends.

Additionally, the Council of Australian Governments (COAG) has committed to considering a nationally consistent REC scheme and a harmonised approach to renewable energy FIT schemes at its October 2008 meeting.

5.4.2 Expanded MRET and renewable energy target design options

At present, the Federal Government is working in cooperation with the states and territories through COAG, to implement an expanded national Renewable Energy

Target (RET) that will bring together the MRET scheme and existing and proposed State and Territory targets into a single scheme.

The Federal Government has already indicated that it will extend the MRET scheme, to achieve a goal of a 20 per cent share for renewable energy in Australia’s electricity supply by 2020 (equivalent to approximately 60,000 GWh) and will then phase the scheme out by 2020-2030, once an ETS becomes operational and effective. These amendments have not yet been put into legislation.

To inform the design of the new RET scheme, the COAG Working Group on Climate Change and Water has released a consultation paper on the key design issues, ‘Design Options for the Expanded National Renewable Energy Target Scheme’.

What the Design Options paper says

In line with the Federal Government’s proposal, the paper recommends expanding the current MRET scheme commitment to 45,000 GWh to achieve 20 per cent by 2020, taking into account 15,000 GWh existing capacity. It looks to incorporate the state-based schemes of Victoria (the only other scheme which is currently in operation) and the NSW scheme (which is finalised, but currently before Parliament), and to phase out the scheme between 2020 and 2030.

Key proposals

The paper sets out two design options, both of which:

- increase annual targets up to 2030. The rate of increase will increase after 2016 (to reflect expectation of new technologies) and will then flatten out after 2024 to wind the scheme down
- will not allow existing renewable energy projects to participate in the RET scheme after 2020 (subject to transitional arrangements with the VRET scheme which are currently being considered). This is to ensure that existing technologies that have already benefited from the scheme will not flood the market. This may assist new technologies
- change the current shortfall rate of \$40, to take into account inflation (it will be set above the projected peak REC price)
- provide unlimited banking of RECS
- a scheme review in 2015
- enable solar water heaters to also create RECS (where they displace the use of energy from fossil fuels)
- enable native forest wood waste to create RECs.

The main differences between the two schemes involves the way they are phased out. The first approach proposes maintaining targets up to 2024, then reducing either the short all charge or the annual interim targets by a constant amount. The second approach reduces the annual target more gradually towards 2030. Under the first approach, there is no time limit on the eligibility of renewable energy projects to create RECs, whereas the second approach would limit the period of eligibility

to 15 years. The first option will include solar hot water heaters, however the second approach will exclude them after 2020.

6. Input and things to think about

The design options paper is seeking stakeholder input into various issues, including:

- whether the treatment of forest biomass and solar water heaters should be included as renewable energy sources. The current MRET scheme includes these sources but state schemes do not. Allowing the use of native forest as biomass (even just forest waste) under the MRET scheme has been criticised by environmental groups, due to the environmental impacts of loss of native forest. Additionally, and regardless of whether the forests are native or not, the burning of wood is not a clean technology – it still releases CO₂ and particulate pollution, the removal of trees is the removal of a carbon sink, and it provides an economic incentive to produce more wood waste, rather than encouraging energy efficiency. Environmental groups have also raised concerns about the inclusion of hydroelectricity under the MRET scheme, as it also has serious environmental consequences.
- how the scheme should be phased out. We note that the development of emerging technologies such as geothermal and wave energy are often more expensive to develop in the short term, and are not yet commercially competitive with established sources, such as wind. Emerging technologies may take five to ten years before they can generate electricity to sell RECs. To ensure that these new technologies, which can have potential to be cheaper and more substantial sources of renewable energy in the longer term have sufficient incentive to develop, they will need a scheme that allows them sufficient ‘payback’ time (eg 15-20 years). They may also require a scheme lasting longer than 2020-2030.
- what level the shortfall charged should be set (ie should it be indexed to inflation, and should it be set high enough to encourage compliance, or at a level only slightly above the maximum expected REC price). As noted above the current shortfall level of \$40 has been criticised by environmental groups for being too low to ensure compliance. ‘Make good’ provisions, requiring participants to still purchase RECs in addition to paying the shortfall, can ensure that companies comply with their requirements.

Additional items to note include:

- whether 20% by 2020 is sufficient to make the drastic cuts in emissions that are required (see *Factsheet 24a: Climate Change and the Law*). We must develop as much renewable energy capacity as fast as possible.

- whether trade-exposed electricity intensive industries will be exempted from the scheme. The Design Options paper indicates that this is being reviewed in light of the ETS. Exemptions can reduce the effectiveness of the scheme.

6.1 Opportunities to be involved

Submissions on the Design Options consultation paper are open until 30 July 2008. The final design of the national RET scheme will be presented to COAG in October 2008, following which implementing legislation will be introduced into Federal Parliament and passed by mid 2009.

In the meantime, the Federal Government is accepting submissions on its proposed ETS (or “Carbon Pollution Reduction Scheme”) until 10 September 2008, after which there will be further opportunities for writing submissions (see *Factsheet 24a: Climate Change and the Law*).

Importantly, Federal and State governments are currently considering what renewable energy legislation is required, particularly once an ETS is in place. This is an important time to get involved, and let your local representatives, State and Federal governments know what you think – see the information and action list over the page.

Information

See the Australian Government Department of Climate Change website, www.greenhouse.gov.au for information about:

- design options for Expanded National RET
- Green paper for Carbon Pollution Reduction Scheme
- Garnaut Climate Change reports, at www.garnautreview.org.au
- look out for the imminent Australian Network of Environmental Defender's Offices (ANEDO) submissions on the COAG Design Options Paper, and the Federal Government's Green paper, at www.edo.org.au

Action

- Switch to Greenpower and urge your friends, workmates etc to do the same. Greenpower is a Federal Government accreditation program that ensures that the amount of energy you use is sourced from accredited renewable energy sources (ie the sun, wind, water and waste). Even if it is not provided to you directly, it goes onto the electricity grid and stimulates investment in WA renewable energy sources (NB: This is different from 'offsets' options).
- Take energy efficiency measures at home and at work, eg:
 - turn off standby appliances
 - replace incandescent globes with compact fluorescent energy-saving globes
 - replace old water heater with gas boosted solar water heater
 - take shorter showers
 - see SEDO's 'Top 10 Energy Smart Tips for your home', and 'Simple Ways to Save Energy', at www.sedo.energy.wa.gov.au

Action

Write a submission on the COAG Design Options paper, and on the Federal Government's Green Paper on Carbon Pollution Reduction Scheme to express your view or any concerns about the Government's proposals.

If you miss the timeframe for a submission, write to your local member, State Government or Federal Government. The legislation is in a state of change—and there is a State election looming—so it's an excellent time to be heard!

Action

Lobby governments, politicians and media to set binding targets, to reduce emissions to 50% of 1990 levels by 2020 by:

- encouraging renewable energy
- encouraging and mandating energy efficiency
- introducing a price on carbon.