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THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

HOUSE OF REPRESENTATIVES

**RENEWABLE ENERGY (ELECTRICITY) BILL
RENEWABLE ENERGY (ELECTRICITY) (CHARGE) BILL**

COMBINED EXPLANATORY MEMORANDUM

(Circulated by Authority of the Minister for the Environment and Heritage,
Senator the Hon Robert Murray Hill)

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RENEWABLE ENERGY (ELECTRICITY) BILL 2000

EXPLANATORY MEMORANDUM

GENERAL OUTLINE

This Bill implements a commitment to introduce a mandatory target for the uptake of renewable energy in power supplies in order to contribute towards the reduction of Australia's greenhouse gas emissions.

The Bill will essentially:

- establish a requirement for wholesale purchasers and notional wholesale purchasers of electricity (liable entities) to purchase additional renewable energy, substantiated through holding renewable energy certificates. This is achieved through determining that certain relevant acquisitions of electricity (based on a point in the electricity acquisition chain) will attract a liability of a *renewable energy certificate charge*;
- establish a regulatory framework for parties able to create renewable energy certificates for their electricity generation which may be traded (eligible entities). These are used to avoid or reduce the amount of a charge that liable entities must pay;
- establish a Renewable Energy Regulator to oversee the scheme;
- establish reporting requirement to record and report, to the Regulator, liabilities incurred under the legislation and the surrendering of certificates to meet those liabilities; and
- establish the authority for some administrative details, definitions and guidelines to be prescribed by regulation.

The key elements of the Bill are:

Renewable Energy Certificates (Part 2)

'Renewable energy certificates' can be created by registered parties operating accredited power stations. Accredited power stations must produce some of their output from eligible renewable energy fuel sources and meet any of the eligibility requirements prescribed in regulations. Fossil fuels and waste products derived from fossil fuels are not to be prescribed as eligible energy sources. Electricity generated from these sources will not be eligible for renewable energy certificates.

The certificate is the 'currency' for the purposes of the legislative scheme and is equal to 1 megawatt hour (MWh) of electricity generated by an accredited power station and available at the relevant measurement point (to be prescribed in regulation).

Certificates will be electronic and will be traceable to the point of origin by the unique identification code allocated to each certificate.

Each individual power station will, on accreditation, be given its own 1997 eligible renewable power baseline and separate identification code. Power stations will have to produce more than their 1997 baseline level in order to be eligible to produce renewable energy certificates. Baselines for new power stations may be nil.

Generators of renewable energy must submit annual reports to the Regulator, outlining their total electricity generation, the component which was generated from renewables and the amount of renewable energy certificates created throughout the year.

Some installations of solar water heaters will be eligible for renewable energy certificates. Only eligible installations from 1 January 2001 (the commencement of the right to create renewable energy certificates) will be able to claim certificates.

Renewable energy certificates must be registered with the Regulator to be valid and be able to be used against a liability.

Acquisition of electricity (Part 3)

This part establishes an individual wholesale purchaser's liability under the scheme on the basis of transactions in the exchange of electricity known as 'relevant acquisition' (a wholesale acquisition, or a notional wholesale acquisition). The acquiring person is known as the 'liable entity'. A wholesale purchase of electricity is the purchase of electricity from someone who did not themselves have to purchase it. The liability under this legislation is on the person making a purchase at that point. However, in States operating within the National Electricity Market, wholesale sales to the National Electricity Market Management Company, who conducts the financial settlement for electricity sales, are not relevant acquisitions under this legislation.

As a general principle, the liability provision will work as follows:

- an electricity retailer buys electricity (eg through the power grid) from a generator of electricity. This is a relevant acquisition by the electricity retailer. In this transaction, the generator (seller of the electricity) is not the liable entity as they did not themselves previously purchase the electricity.
- an end user buys electricity from a retailer. This is not a relevant acquisition by the end user. In this transaction, the retailer (seller of the electricity) had previously purchased electricity (for example from a generator of electricity through the power grid), so the end user is making a purchase from someone who has already purchased the electricity.
- These general principles will not apply in all circumstances. Note that provisions regarding 'notional wholesale acquisitions' mean that a relevant acquisition can occur within the one company selling directly to end users who are not registered under the National Electricity Code.

Self-generators meeting the specified exclusion criteria are not liable under this measure.

Renewable energy certificate charge (Part 4)

The legislation places the liability for the renewable energy certificate charge on those parties making *relevant acquisitions* of electricity. The charge becomes payable when a liable entity has a certificate shortfall (ie insufficient certificates to cover their liability).

However, no charge will be payable if the shortfall is less than 10% of the amount of certificates a liable entity was required to hold in the year. In these instances, the shortfall will not be extinguished, but will be rolled over to the following year's liability, increasing the number of certificates that will need to be held in the following year. If the shortfall, in a given year, is outside the 10% leeway, a renewable energy certificate charge will be payable on the entire shortfall.

The renewable power percentage will be the mechanism used to determine how many certificates are required to be surrendered to meet each liable party's liability. The renewable power percentage will rise as the interim targets rise.

Statements and Assessments (Part 5)

Requirements are established to record and report, to the Regulator, liabilities incurred under the legislation and the surrendering of certificates to meet those liabilities.

Renewable Energy Regulator and Office of the Renewable Energy Regulator (Part 14)

This part establishes the Regulator required to administer the scheme. The Regulator will be appointed by the Minister for Environment and Heritage.

The Regulator will be supported in their role by the Office of the Renewable Energy Regulator.

FINANCIAL IMPACT STATEMENT

The Renewable Energy (Electricity) Act 2000 will require the establishment of a Regulator. This will cost \$6.5m over the first four years, with expected ongoing running costs of approximately \$1.5m per year until the scheme ceases to operate at the end of 2020.

REGULATION IMPACT STATEMENT FOR THE MANDATORY TARGET FOR THE UPTAKE OF RENEWABLE ENERGY IN POWER SUPPLIES

Prepared by the Australian Greenhouse Office
September 1999

Introduction

Under the Kyoto Protocol to the United Nations Framework Convention on Climate Change (agreed in December 1997 and signed by Australia on 29 April 1998), Australia is potentially committed to a target for national greenhouse gas emissions of 8% above 1990 levels by 2008-2012¹. This represents about a 30% reduction against current business-as-usual projections of greenhouse gas emissions for this period. While Australia faces a challenging task in meeting this initial target, the issue of greenhouse gas emissions reduction is expected to be ongoing far beyond the current commitment period, with the real potential that we will face further, and stricter, targets in the future.

In order for Australia to contribute towards globally abating greenhouse gases and to assist us in meeting our agreed Kyoto targets, the Prime Minister announced a range of greenhouse response measures on 20 November 1997. The initiatives outlined in the Prime Minister's *Safeguarding the Future: Australia's Response to Climate Change* statement, included a number of measures directed at reducing emissions from the electricity sector, one of Australia's major contributors to greenhouse gas emissions.

In this statement, the Prime Minister announced a mandatory target for the uptake of renewable energy in power supplies. The Prime Minister stated:

Targets will be set for the inclusion of renewable energy in electricity generation by the year 2010. Electricity retailers and other large electricity buyers will be legally required to source an additional 2 per cent of their electricity from renewable or specified waste-product energy sources by 2010 (including through direct investment in alternative renewable energy sources such as solar water heaters). This will accelerate the uptake of renewable energy in grid-based power applications and provide an ongoing base for commercially competitive renewable energy. The program will also contribute to the development of internationally competitive industries which could participate effectively in the burgeoning Asian energy market.

Implementation planning for this measure is nearly complete. An assessment of the possible implementation options for this measure is the subject of this RIS.

The Commonwealth is supporting a range of other direct emissions reductions programs, or demand management programs, for the electricity sector which are not discussed in this RIS.

¹ *Kyoto Protocol to the United National Framework Convention on Climate Change*, December 1997, Annex B.

1. Statement of the Problem

The balance of scientific opinion supports the view that there has been a discernible anthropogenic influence on the Earth's climate, as a result of increasing concentrations of greenhouse gases in the atmosphere. The Governments of developing nations consider this issue of enough concern to warrant global action to arrest greenhouse gas emissions growth.

Without further action, Australia's total emissions are expected to grow by around 28% from 1990 to 2010. The 1997 National Greenhouse Gas Inventory indicates that, using comparable best available methods, total net emissions in 1990 (excluding land clearing) were 389 Mt compared with 431 Mt in 1997 (11% higher than in 1990). This represents, by 1997, an already higher level of emissions than our agreed emissions cap for 2008-2012. It is therefore essential that the Government implement policies which can firstly curb our emissions growth and then support reductions by the first Kyoto commitment period.

Electricity generation is currently the largest single contributor to Australia's greenhouse gas emissions, at 35.4% (152 Mt) of total emissions². In the period 1990-96, emissions from electricity generation grew by 14% (18.2 Mt)³. In 1996-97 alone, emissions growth from electricity and heat production activities has been recorded at 3.6%.⁴ Australia's electricity consumption is also projected to grow by 1.7% a year to 2014-15⁵. As a result, electricity generation is expected to account for 41% of emissions in 2009-10⁶. Further emission increases are expected in the future, based on projections that coal will continue to be used as a fuel source.

Renewable energy sources are very low emitters of greenhouse gases and a wide range of technology/resource combinations are currently commercially viable in the Australian context. Increasing the contribution of renewables in the electricity supply mix therefore represents a technologically sound method of reducing greenhouse gas emissions from the electricity sector. However, renewables are at present generally more expensive than conventional fossil-fuel based generation and as a result contribute only around 10.5% of our total electricity supply.

There is no existing legislation currently in place which directs the electricity supply industry to reduce its emissions⁷, or derive more energy from low greenhouse gas emitting sources, and it is unlikely that significant reduction action will occur without strong Commonwealth direction.

² AGO, 1997 National Greenhouse Gas Inventory

³ AGO, 1997 National Greenhouse Gas Inventory.

⁴ AGO, 1997 National Greenhouse Gas Inventory.

⁵ Bush et al, *Australian Energy Market Development and Projections to 2014-15*, page 54, Australian Bureau of Agriculture and Research Economics, 1999.

⁶ ABARE 1997 Projections

⁷ Noting that NSW has included an emissions reduction requirement for electricity retailers in that State, although there are no penalties for non-compliance under this scheme.

2. Objectives

A key program within the Government's greenhouse response is the introduction of a mandatory target for the uptake of renewable energy in power supplies._

Specific objectives of the renewable energy target are, by 2010:

- to accelerate the uptake of renewable energy in grid-based applications, so as to reduce greenhouse gas emissions;
- as part of the broader strategic package to stimulate renewables, provide an on-going base for the development of commercially competitive renewable energy; and
- to contribute to the development of internationally competitive industries which could participate effectively in the burgeoning Asian energy market.

As agreed by the Prime Minister in May 1999, over the 2010-2020 period, the contribution of renewables achieved in 2010 will be required to be maintained (in GWh terms).

The renewables target is primarily a long-term greenhouse response measure achieved through development of industry capacity, although it will generate direct greenhouse emission reductions in the medium term. As there is the potential for substantial emissions reductions to be required from the electricity sector in the future, occurring at the same time as growing electricity demand, a shift towards renewables will be particularly important for the electricity generation sector. However, if Australia is to position itself to cost-effectively reduce emissions in the long run by increased use of renewables, action will be required now.

In considering implementation mechanisms for this measure, the Government has directed the Renewables Target Working Group (RTWG) to present the most cost effective and market-based approach possible⁸.

⁸ Terms of Reference, Renewables Target Working Group, RTWG Final Report, May 1999, Appendix 1. The RTWG is a technical working group established by the Greenhouse Energy Group to identify implementation options for this measure.

Guide to Parts A-C of the RIS

This RIS covers three sub-issues related to the 2% renewables target. Each of these sub-issues is dealt with separately (below), as follows:

- Part A deals with the possible coverage of self-generators under the 2% target as liable parties.
- Part B covers the inclusion or exclusion of waste coal mine gas as an eligible waste product energy source under the 2% target.
- Part C covers the main implementation options for implementing the 2% target.

Each part contains sections on *Options, Impact Analysis, Consultation* and *Conclusions and Preferred Options* section in relation to the sub-issue covered in that part.

The two sub-issues covered in Parts A and B do not affect the intent of the measure, but may impact on the scope of the 2% target. They are thus relevant to Options 2-4 in Part C.

Part A – Self-generation issue

A3. Self-generation: Issues and Options

The Prime Minister's Statement specifies that this measure will cover electricity retailers and other large buyers. However self-generators do not 'buy' their electricity and could therefore be considered to be excluded from coverage under the measure. Debate as to the likely inclusion or exclusion of self-generators is continuing.

The 2% target could address the issue of self-generation through the following options:

- extend coverage to include self-generation (ie parties would be liable for fossil fuel based electricity generation above a specified size cutoff); or
- exclude self-generation from coverage under the measure.

A4. Self-generation: Impact Analysis

Self-generation currently represents between 4%-5% of generated electricity, with up to 75% of this electricity being consumed internally (that is, by the self-generating business itself). Currently, 64% of self-generators use either gas, waste gas, landfill gas or bagasse fired cogeneration. The remaining 36% use a combination of black coal; coal/gas; diesel; distillate; distillate/fuel; fuel oil; gas/fuel oil; and jet fuel/gas.

If self-generators are included in the 2% renewables measure, the current contribution of renewables to the total electricity mix is 10.7%. This measure will require that this contribution rises to 12.7% by 2010. Should self-generators be excluded from the measure, the baseline is 10.5%, with a corresponding target in 2010 of 12.5%. The inclusion or exclusion of self-generators represents a difference in the size of the 2010

target of 100 GWh, based on a projected total electricity demand in 2010 of 205,000 GWh⁹.

The Redding Energy Management analysis of the renewable energy industry's response to the 2% target (discussed in Attachment B) has assumed that the target represents 9,700 GWh in 2010, with no assumptions made as to the inclusion or exclusion of self-generators. However, 9,700 GWh could be considered to be the upper estimate of the likely size of the target and therefore could be considered as representative of a scenario which includes self-generation. Based on the highest cost, last contributing generation technology, excluding self-generators could potentially reduce the generation cost of the measure by around \$8m in 2010¹⁰.

A rough estimate of the likely reduction in emissions savings as a result of excluding self-generators could be between 0.059Mt to 0.076Mt in 2010 (based on displacing a mix of gas-based generation or a mix of coal and gas in 2010 respectively). This represents only a small proportion of the total Kyoto emissions reduction requirements. The costs of achieving these additional emissions reductions, should self-generators not be included in the measure, would be related to the emissions abatement action chosen by each business and are not possible to predict with any certainty. If this abatement action was to occur under emissions trading, at an estimated price of \$30 per tonne of CO₂, this could potentially add an additional \$1.8 million - \$2.3 million to the costs of emissions trading.

If self-generators were included under the measure, the costs of meeting the target would be spread more widely, with only marginal increases in the total size of the measure. However, should self-generators not be included, they will face a competitive advantage over other companies in their industry which purchase their electricity through a retailer. This will impact most markedly on the aluminium industry, where four smelters purchase electricity and the remaining two self-generate. Within the aluminium smelting sector, this could represent a substantial disadvantage to some producers. However, the self-generating smelters would not be as subject to international competitiveness concerns. As the data regarding electricity use and input costs is highly commercially confidential, only limited aggregate data is available and it is not possible to separately identify the size of the competitive disadvantage that would be faced by the exempt smelters.

A5. Self-generation: Consultation

A list of organisations consulted in developing implementation options for this measure appears at Attachment A and includes industry, environmental and consumer groups and the general public.

⁹ Calculations: 10.7% of current liable electricity consumption equals 16,555 GWh. 12.7% of projected 2010 consumption equals 26,035 GWh. This represents a 9,480 GWh increase to meet the measure. 10.5% current liable electricity consumption equals 16,245 GWh. 12.5% of projected 2010 consumption equals 25,625 GWh. This equals a 9,380 GWh increase to meet the target. The difference between the size of targets is therefore 100 GWh.

¹⁰ Estimated using the Redding Report's scenario analysis tool and reducing the target size by 100 GWh, predominantly by reducing the contribution of small hydro.

There is no clear split in opinion on the self-generation issue. Feedback on this point has been mixed, with support for both the inclusion and exclusion of self-generators. As the exclusion of self-generators could represent a loophole in the measure and places a greater burden on the remaining liable parties, support has been expressed for the inclusion of self-generators by the electricity supply sector's peak body and members of the general public.

The Australian Cogeneration Association, which represents a number of self-generators, would prefer that self-generators were excluded.

There is also mixed opinion on this issue among the States/Territories.

The Australian Aluminium Council, while preferring their sector to be exempt from the measure, has noted the potential problems which would arise when a proportion of their members were covered and were in direct competition with producers who were not required to comply with this measure.

A6. Self-generation: Conclusion

The exclusion of self-generators represents a small reduction in the size of the target (100 GWh) and the amount of emissions reduction achieved (0.06Mt), a relatively small (\$8 million) decrease in the costs of the measure but increases the potential for discrimination between business in a number of industry sectors.

There are strong arguments for both the inclusion and exclusion of self-generators under this measure. It could be argued that the measure would operate more effectively, and achieve greater greenhouse gas reductions, if it was targeted at the consumption of electricity and not the purchase of electricity. However, the exclusion of self-generators could be considered as supporting the development of self-generation, of which a substantial proportion uses more efficient cogeneration technologies and the less greenhouse intense fuels of natural gas or renewables.

The AGO supports the inclusion of self-generators.

Part B – The Waste Coal Mine Gas Issue

B3. WCMG: Issues and Options

Several stakeholders have argued that waste coal mine gas (WCMG) should be eligible under the measure as a specified waste, in keeping with the Prime Minister's statement that this target was to be met by "renewable or specified waste-product energy sources".

Waste coal mine gas refers to the methane released from coal seams during, or in association with, the coal mining process. Waste coal mine gas can occur as low concentration methane, of less than 1.2% concentration or medium concentration methane, with up to 85% concentration.

Waste coal mine gas is a fossil fuel and is not a renewable source.

There are three possible approaches to addressing the waste coal mine gas issue, including:

- include waste coal mine gas as a specified waste product energy source;
- exclude waste coal mine gas from eligibility as a specified waste product energy source; or
- exclude waste coal mine gas from the 2% measure but support a reduction in the emissions from coal mines through an alternative targeted program.

B4. WCMG: Impact Analysis

Inclusion of WCMG

Studies indicate that the inclusion of waste coal mine gas could potentially reduce the cost of the measure by 2.5% by producing 8% of the electricity required to meet the 2% renewables target. Based on generation costs of those technologies contributing to the measure (for the dual slope linear phasing approach), this could represent a reduction in energy generation costs of approximately \$6 million in 2010.

As a proportion of Australia's WCMG resources have the potential to be used to generate electricity at a cost which is lower than most renewable sources, the impact of its inclusion will be to displace higher cost renewables which would otherwise have contributed towards achievement of the target and which require the most assistance to become economically viable.

As generating electricity from waste coal mine gas is currently less expensive than renewables, the revenue from any subsidy to renewables (as required under implementation options 2-4 discussed in Part B of the RIS), should it be included, would represent a windfall gain.

Exclusion of WCMG

Exclusion of waste coal mine gas would result in foregoing the above but support the inclusion of more renewable energy in the 2% target.

Exclusion of WCMG and establishment of a targeted program

Were generating electricity from the WCMG not included, there would be other ways of reducing the global warming potential of the emissions from coal mines, such as flaring. Through flaring, the methane emissions are converted to carbon dioxide. As methane has 21 times the global warming potential of carbon dioxide, this represents a substantial greenhouse gain through this simple approach.

However, without action by the government to stimulate a reduction in waste coal mine gas emissions, it is unlikely that substantial actions will be taken in this area.

The greenhouse benefits of generating electricity from WCMG, above the flaring option, are estimated to increase emissions reductions from 1.6 – 3.2Mt savings by flaring to 6.8-8.9Mt savings through generation, but at substantial additional costs. Additional gains through generation are achieved as the electricity generated by utilising the WCMG not only reduces the global warming potential of the fugitive emissions but also displaces electricity which would need to be generated from other (predominantly) fossil fuels. Energy Strategies Pty Ltd report that the cost per tonne of CO₂ avoided for flaring is \$0.40 but the costs of abating fugitive emissions from coal mines would rise to \$4.20 or \$3.20 per tonne (at an electricity price of 2.4c/kWh) for gas engines or gas turbines generation technologies respectively (currently the most commercially proven technologies available for generating electricity from gas). An electricity price of 2.4c/kWh has been chosen as being most representative of electricity pool prices at the present time.

B5. WCMG: Consultation

Renewable energy industry representatives and the general public are strongly opposed to the inclusion of waste coal mine gas under the measure. There is also strong concern that the inclusion of one fossil fuel could provide a precedent for further fossil fuels to be eligible throughout the life of the program.

Industry representatives and the coal industry are strongly in favour of the inclusion of waste coal mine gas on the grounds that it offers sizeable greenhouse gas reductions, that it meets the industry development objective of this measure and that it offers potential cost reductions for the 2% measure.

B6. WCMG: Conclusion

The inclusion of WCMG would result in a smaller amount of renewables being supported under the 2% target and forego the possibility of achieving these emissions reductions at a lower cost under an alternative approach.

It could be argued that the higher cost renewable technologies which will be displaced by the inclusion of waste coal mine gas are the ones which require the most assistance

and that displacing them by including a fossil fuel source would undermine the credibility of the measure and introduce a precedent for the inclusion of other fossil fuels. A reduced contribution by renewables to this measure will also mean that the measure's objectives to stimulate a renewable energy industry may be met to a lesser extent.

However, reductions in costs can be achieved through the inclusion of this fuel source.

While the inclusion of WCMG under the measure has the potential to reduce the costs of the 2% target, it may not be the most cost effective approach to reducing emissions from coal mines. As electricity generation from WCMG is currently close to being economically viable, the additional revenue that would be required to bridge the gap between generation costs and market revenue may be much smaller than for renewables. As such, the revenue gained from any subsidy available under Options 2-4, should WCMG be included under the 2% target, may actually be substantially higher than that required to bring WCMG into the market, making this an economically inefficient way of reducing greenhouse gas emissions. This would also represent a windfall gain to the WCMG generators. Emissions reductions from the coal mining sector can be achieved at lower cost through pursuing other approaches, outside the scope of the 2% renewables target.

Based on the concerns that inclusion in the 2% renewables target may be an economically inefficient method of supporting the capture of fugitive emissions from Australian coal mines, a targeted support program is being proposed by the Australian Greenhouse Office.

Part C. Implementation Mechanisms

C3. Implementation: Options

There are a number of possible approaches to securing an increased contribution from renewables in electricity generation. They range from a status quo, “no-regrets” approach to a range of different possible implementation options under the Government’s mandatory renewables target.

Broad approaches to increasing the level of renewables in our electricity supply include:

1. allow the market to determine the contribution of renewables through take-up of voluntary programs;
2. introduce a production subsidy for renewables generators funded by a fixed levy on all electricity users;
3. develop a tradeable certificates market to support a legal requirement for individuals to contribute to an increase in the amount of renewables in the electricity supply mix; or
4. establish a centralised purchaser of renewable energy to meet the target, funded by either:
 - a levy on electricity users; or
 - government.

Each of these options are dealt with in turn.

Option 1 **Allow the market to determine the contribution of renewables through take-up of voluntary programs**

This option represents the status quo. It involves no specific government action other than to allow programs for the voluntary up-take of renewables, that have already commenced or have been agreed to, to take effect.

Electricity consumers are becoming increasingly aware of the environmental impacts of fossil-fuel based electricity generation and are slowly demanding higher levels of production of electricity from renewable energy sources. Green Power is one existing program which meets these needs.

Green Power is a voluntary program whereby consumers, both domestic and commercial, agree to pay an additional premium on their electricity purchases in order to guarantee that electricity from accredited renewable electricity generators is dispatched into the electricity grid. Depending on the Green Power product offered by an electricity retailer, consumers can choose to source between 5% and 100% of their electricity needs through accredited ‘green’ products, with varying premiums depending on the volume and type of Green Power sourced.

The Sustainable Energy Development Authority (SEDA) of New South Wales has recently developed, in consultation with States and Territories, National Accreditation Guidelines for Green Power products. The aim of the *National Green Power Accreditation Program* is to facilitate the installation of new ‘green’ electricity

generators, with a view to reducing greenhouse gas emissions. It will do this by increasing consumer awareness of, and confidence in, products provided by Green Power Retailers, thereby promoting their successful market entry and penetration¹¹. The National Green Power Accreditation Program is based on the successful, predominantly NSW-based, Green Power program introduced by SEDA in 1997.

However, Green Power is not the only support mechanism for renewable energy. More than \$60 million has been provided over five years for renewable energy industry development activities including the:

- Renewable Energy Showcase:
 - a \$10 million program supporting and promoting a few leading edge and strategically important renewable energy projects that:
 - : have strong commercial potential;
 - : are technically proven;
 - : demonstrate the potential for large-scale widespread application;
 - : offer the prospect of significant abatement of greenhouse gas emissions over the longer term; and
 - : make a substantial contribution to building the capacity of Australia's renewable energy industry.
- Renewable Energy Commercialisation Program:
 - a 5 year \$30 million competitive grants program, supporting the demonstration and commercialisation of innovative renewable energy equipment, technologies, systems and processes.
- Renewable Energy Equity Fund:
 - providing venture capital for small innovative renewable energy companies, including companies who are commercialising direct or enabling renewable energy technologies and services, as long as there is an innovative development being commercialised. The Government will provide almost \$20 million for REEF. A private sector fund manager will arrange for matching funds to be provided on a 2:1 basis.

Additionally, the Government has recently announced the establishment of a number of new programs, commencing from the 2000/01 financial year. Programs focussing on household Photovoltaic (PV) system grants, an additional boost to the commercialisation of renewables and grants to support the conversion of diesel generation to renewables in remote areas will attract \$233m over four years.

Option 2 Introduce a production subsidy for renewables generators funded by a fixed levy on all electricity users

Under this approach, the Government would impose a levy on all electricity consumers to fund a subsidy paid to producers of new renewable energy. The cost of the levy to each class of customer could be either fixed or variable. New renewable generation such as that arising from the operation of eligible generation assets

¹¹ National GreenPower Accreditation Program, Accreditation Document, p3.

commencing commercial operation on or after 1 January 1997, or eligible fossil fuel electricity displacement activities (solar water heaters) installed from the commencement of the measure (planned for 2001) would be eligible. Only increases in output from existing renewable energy generation assets, above a statistically representative baseline, would receive the subsidy.

Parties would contract for the generation of electricity through existing electricity market processes, at agreed market prices. These parties would then be able to seek the flat-rate subsidy from the Government.

The subsidy would be made available for all new renewable energy, meeting the subsidy criteria, which was generated and consumed in each subsidy period. The government would need to raise awareness of the subsidy's role in encouraging an increase in the use of renewable energy, aiming to get as close as practicable to the 2% target, for this approach to be effective.

The levy would be based on the quantity of electricity sold and could be collected either as a flat rate levy per unit of electricity (ie a \$/MWh levy) or on a set increase in the price of electricity (ie x% increase above retail price).

The subsidy would need to be set at a level sufficient to fund increasing amounts of renewable energy. The subsidy level would be set in advance and producers of renewable energy would determine if the subsidy was sufficient to make the generation of renewable energy commercially viable. If insufficient renewable energy was generated as a result, the subsidy level would need to be increased in future periods to ensure that greater levels of generating capacity was drawn in to the market. Increases in the levy value would be phased in.

If more renewable energy were generated and sought the subsidy than could be funded by the pool of funds collected through the levy, additional funds may need to be collected to make up for any budget shortfall and/or the subsidy level could possibly be lowered in future periods, to draw in lesser quantities of renewables.

Option 3 **Develop a tradeable certificates market to support a legal requirement for retailers/buyers to increase the amount of renewables sourced**

Under this approach, electricity retailers and other large buyers of electricity (liable parties) would be individually liable for meeting their obligations to increase the amount of electricity they source from renewable energies. This approach would be highly market driven, with the market determining the renewable energies which are supported in order to meet the target.

The requirement to increase the contribution of renewables based electricity generation would be gradually phased in over the period 2001-2010, with a number of enforceable interim targets.

Liable parties would be required to demonstrate that they were meeting their obligations by holding increasing amounts of renewable energy certificates. Renewable energy certificates would be earned by eligible parties on the basis of

accredited renewable energy generation. This would only apply to new renewables generation as defined in Option 2.

The interaction of liable parties seeking renewable energy certificates from eligible parties, in order to avoid a financial penalty greater than the cost of compliance, would form the guaranteed market for renewable energy generators.

Under this implementation approach, a Regulator would need to be established to ensure that the measure is being complied with by all liable parties and to undertake a number of critical administrative functions to support achievement of the measure.

Sub-option: unweighted certificates versus a weighted certificates portfolio

It would be possible to direct the uptake of certain types of renewable energy through the establishment of a portfolio, where liable parties are required to meet a certain proportion of their liability by supporting specified renewable energy technologies. For example, it would be possible to specify that 10% of the target had to be met from photovoltaics (PVs) (which are one of the highest cost renewables and likely to respond only marginally to a broad, non-directive target).

One approach under this sub-option would be to set the portfolio and retain an equal 'value' for each renewable energy certificate, irrespective of the greenhouse impact or other considerations of the renewable energy source. Liable parties would then need to seek the same value certificates from different renewable energy generators.

A further option would be to support the higher cost, higher technology value-adding technologies by allowing weighted certificates to be generated for the electricity they produce. For example, a MWh of biomass based electricity may receive 1 renewable energy certificate, however a MWh of PV based electricity could receive 2 certificates.

Option 4 **Establish a centralised purchaser of renewable energy funded by either: a levy on electricity users; or government**

Under this approach, a centralised purchaser would need to be established in order to seek sufficient new renewable energy to meet the target, created from the operation of new renewable generation assets as in Options 2 and 3. The centralised purchaser would achieve this through setting targets for the purchase of renewable energy, achieved through a process of seeking tenders for renewable energy from renewable electricity generators at set periods. This process would most probably only be conducted every 2 years, as more frequent tendering rounds are not likely to be administratively feasible. This approach would differ from Option 2 in that the centralised purchaser would take some role in the electricity market in essentially contracting for the dispatch of electricity.

Through this tendering process, the centralised purchaser would select the combination of lowest cost options that would meet a ramping renewables target and then develop long term contracts with renewable electricity generators to secure investments. Based on the annual targets, and long term contracts, the renewables target would reach the required level by 2010.

The objective of the selection process would be to fill tranches at minimum cost while allowing differing commissioning years for new projects. This is a similar process to the United Kingdom's Non Fossil Fuel Obligation (NFFO).

Funding for the renewable energy would be sourced from either a levy on electricity users or from the Government.

Levy on electricity users

Under this approach, all electricity users would pay a levy based on their annual electricity consumption. This would be collected by the electricity retailer and passed to the centralised purchaser. The levy could be uniformly or differentially allocated to different classes of customer at the discretion of the electricity retailer. The value of the levy would be increased over the period of the measure, to ensure that increasing quantities of renewables-based electricity could be purchased.

Government funding

Alternatively, the same outcome could be obtained through the Commonwealth funding the purchase of sufficient renewable electricity over the period 2001-2010 to meet the target. This could be achieved either through higher taxes to collect sufficient revenue, through a redirection of the existing revenue base, or through a reduction in the budget surplus.

C4. Implementation: Impact Analysis

This section assesses the advantages and disadvantages of the options for increasing the contribution of renewables in the electricity supply mix.

Option 1 Allow the market to determine the contribution of renewables through take-up of voluntary programs

SEDA predicts that under the National Green Power scheme, take-up rates could increase rapidly, with possibly 2,200 GWh of renewable energy sourced from Green Power by 2001-02 (or 1,500 GWh of new renewable generation), assuming 5% of customers sourced 100% Green Power.

Based on these figures, it is expected that this program alone will not substantially raise the volume of renewable electricity in the market. Rather, it may accelerate introduction of renewables generation to meet growing Green Power demand, but a return to a lower growth rate can be expected once the Green Power market is saturated.

ABARE estimates that renewables growth potential will be limited to 3,000GWh between 1996-97 and 2014-15 without other measures, which represents a projected growth rate of 0.95% per annum over this period. However, the total proportional share of renewables will fall over this same period, as fossil fuel consumption grows at a faster rate.

Current average fossil electricity wholesale costs lie in the range of \$30/MWh to \$40/MWh¹². Generation costs for renewables are, in most instances, well outside this range. Redding Energy Management, in a report to the Australian Greenhouse Office of January 1999, estimates that mid-range costs for individual renewable energy technologies in 2000 could be as in Table 1.

Table 1: Potential Generation Costs of Renewable Technologies

Renewable Energy Source	Projected Average Generation Cost \$/MWh - Year 2000
Hydro (large)	80
Hydro (small)	70
Wind	100
Solar PV (grid connected)	400
Solar thermal	215
Bagasse cogeneration	60
Black liquor	105
Wood waste	90
Energy crops	140
Crop waste	140
Food and Agricultural wet waste	115
Landfill gas	72.5
MSW Combustion	115
Sewage gas	75
Geothermal – aquifer	105
Tidal	115
PV and PV Hybrid RAPS	475
Wind and wind-hybrid RAPS	275
Micro hydro RAPS	160
Solar hot water	51.5

As this approach seeks to encourage an increased voluntary take up of renewables, the costs will be borne only by those individuals, businesses or government agencies who feel that they are in a position to afford higher electricity tariffs. This will mean that the burden of meeting this element of the country’s greenhouse response is unevenly distributed through the economy. It also could mean that all other sectors of the economy will need to take greater emissions reduction action in order to compensate for the growing emissions from the electricity sector.

This option could be considered, though, as placing no additional burden on the economy as all increases in purchases of renewables-based electricity will be voluntary and will be borne by those wishing to pay.

The cost of the renewables (per MWh) to the voluntary participants under this approach may be higher than under other Options, as many Green Power providers (electricity retailers) will choose to draw from more expensive renewable

¹² Allen Consulting Group, McLennan Magasanik Associates, *Energy Market Reform and Greenhouse Gas Emission Reductions*, March 1999, p27, Table 3.2.

technologies than they may otherwise have chosen in order to meet their obligations under a much larger target. Most Green Power schemes utilise a portfolio of technologies (some of which are high cost), focus on visible renewables (such as wind and PV, which are also high cost) and do not capture sufficient customer base to support economies of scale. Additionally, a lower cost renewables alternative, cofiring renewables with fossil fuels, is disallowed under Green Power.

As all participating jurisdictions have endorsed the National Green Power Accreditation Guidelines and agreed that the New South Wales Sustainable Energy Development Authority shall act as project manager in the interim, there should be a limited impact on the role of existing regulatory authorities in providing access to Green Power. All participating jurisdictions have agreed to partly fund the project manager function.

Under this option, it is likely that those renewable energy project proponents with projects which are very near to being commercial or have a particular 'promotional' value will benefit. However, voluntary Green Power purchasers will bear the financial burden of purchasing renewable electricity.

Common impacts to Options 2 - 4

For the purposes of this RIS, an assumption has made that implementation Options 2-4 will all result in 9,000-10,000 GWh of new renewable energy being generated (to cover possible different growth rates in electricity consumption by 2010), and that the costs of this electricity will be roughly the same. All implementation options are likely to achieve between 4 to 5.5 Mt of CO₂ savings in 2010, depending on the greenhouse intensity of the fuels displaced. As such, this is an important measure for Australia in achieving our Kyoto targets.

The actual price per unit of electricity responding to this target will be difficult to predict, as it will be based on a complex interaction between the generation costs of the technologies responding to meet the target, their expected secondary income streams and other price influencers. Attachment B outlines the results of a number of modelling exercises which have examined possible financial and economic impacts of increasing renewables in Australia's electricity supply by 2%, based on projections of increased generation costs. However, the actual cost of the measure (taking into account other factors which will influence the selling price of the renewable electricity) has not, as yet, been accurately quantified.

Nevertheless, based on the projected additional generation costs incurred as a result of achieving an additional 2% of electricity from renewable sources of \$110-\$250 million in 2010 (discussed further in Attachment B), costs per tonne of CO₂ abated could be in the range of \$18 to \$45/tonne. This is similar to the range of costs predicted under an emissions trading regime. However, these cost estimates have been disputed by industry as being too low. They pointed to other cost estimates which suggest the energy purchased costs could be approximately \$500m in 2010 and the costs of CO₂ abated at up to \$90 per tonne. The supporting analysis behind these estimates has not been made available for detailed consideration by the Government.

As the costs of meeting the measure are difficult to predict, the value of the levy (or value of certificates) required to raise sufficient funds to purchase the required electricity is also difficult to determine. However, a range of levy scenarios, which would raise sufficient funds to cover a variety of possible outcomes, is presented for information. The source of this funding is the element that varies between Options.

For the two Options involving a levy based on a flat rate or percentage increase formula, a range of possible levy values is presented below, all based on 179,000 GWh (rounded) total generation in 1997/98.

\$/MWh levy on all electricity	Funds raised (millions of \$)	% inc. above electricity price*	Funds raised (millions of \$)
5	895.0	5	768.8
4	716.0	4	615.0
3	537.0	3	461.3
2	358.0	2	307.5
1	197.0	1	163.8

* based on average price of 8.59c/kWh in 1997/98 as reported by Electricity Supply Association of Australia.

That said, a number of separate modelling exercises have been completed in order to identify the likely financial and economic impacts of the measure. These are discussed in detail in Attachment B and are summarised below.

The measure will result in approximately 9,000 GWh of new renewable energy in 2010. Projections on the likely technology mix which would respond to the target, under a least cost approach, indicate that Australian content could be as high as 75%-85%. Investment in the renewable energy industry could be around \$1.8 billion over the period and result in new employment opportunities. Overall, the studies have shown that the impacts would be moderate and not long lasting. Electricity prices can be expected to increase by up to 2.4% over the 2005-06 to 2009-10 period. Those sectors using large amounts of electricity will be impacted upon to a greater extent than those that do not.

It is expected that businesses facing higher input costs as a result of complying with this measure will be able to recover costs through an increase in the price of their product because the cost increase will be reasonably uniform. However, there may be some reduction in the competitiveness of Australian products to the extent that imports do not face similar cost increasing measures in their country of origin. Where a local businesses' ability to pass on costs is constrained, the costs of compliance would result in a decrease in profits.

As a result of the boost to the renewables industry through supporting the multiple objectives of the measure and its creation of a market for renewable energy, it is expected that an emerging industry sector with international importance and export potential, will be developed. It is possible that the broad scale commercialisation of renewable energy technologies would also assist the renewables industry to increase its international competitiveness and reduce costs.

Overall, this measure will assist in meeting our Kyoto obligations. Direct benefits will also accrue to renewable energy project proponents with consultancy data suggesting that between 75% and 85% Australian content can be achieved under this implementation approach.

Option 2 **Establish a production subsidy for renewables generators funded by a fixed levy on all electricity users**

This approach will collect a set amount of revenue but support an uncertain amount of renewable electricity, providing less certainty that the necessary greenhouse benefits from this measure will be achieved. Administration costs will be low.

Under this option, all users of electricity would be directly affected as they would be required to pay a levy based on their actual electricity consumption. This would then be used by the Government to subsidise the production of renewable energy and fund any price differential between renewables generation and conventional fossil fuel-based generation. The cost of the levy for each customer could be determined by the levy's collector (ie it could be uniformly or differentially allocated to different customer classes).

The Government effectively plays the role of a distributor of funds under this approach and takes no role in the physical side of the electricity market transaction. This may be easily administered through existing bodies or agencies. This approach would not be likely to impact upon existing regulatory arrangements and may be easily built in to the existing taxation arrangements.

The risk of achievement or non-achievement of the target (through setting the subsidy at an appropriate level) would be predominantly borne by Government under this approach. As all eligible renewables generation would receive the subsidy, it may be possible that the Government supports a very high level of generation (greater than the target level), which could be considered as financially disadvantaging the electricity users who pay the levy, but of major benefit to the renewables industry. Alternatively, an insufficient subsidy value could result in a shortfall in renewable energy generation occurring, which, while it would place less of a financial burden on the electricity consumer, would not contribute as much towards meeting our Kyoto commitments. The ability to vary the levy over time may reduce the risk that the target level would not be achieved.

Costs and benefits

If a fixed levy were applied, the impact on the economy, over and above those discussed above, would relate to the distributional split of electricity consumption in Australia. The Australian Bureau of Agriculture and Resource Economics report the following consumption patterns for electricity in Australia. As can be seen, the majority of electricity is consumed in the manufacturing (predominantly metal products) and domestic sectors. Under this option, most of the funds would be gained from these two sectors. Revenue collection through the domestic sector would be spread across a broad base, with 8.6 million households likely to be covered. The manufacturing sector, however, has a greatly reduced number of revenue collection points.

Sector	Sub-sector	PJ – Electricity
Agriculture, forests and fisheries		10.1
Mining		51.6
Manufacturing		244.4
<i>*note, some rounding errors occur</i>	Food, beverages and tobacco	19.7
	<i>Textiles, clothing, footwear and leather</i>	7.3
	<i>Wood products and printing and publishing</i>	21.5
	<i>Petroleum, coal, chemical and associated products</i>	22.1
	<i>Nonmetallic mineral products</i>	12.5
	<i>Metal products</i>	145.9
	<i>Machinery and equipment</i>	12.2
	<i>Other manufacturing</i>	0.1
Electricity, Gas and Water		93.6
Construction		0.1
Residential		169.5

Source: Australian Energy - Market Developments and Projections to 2014-15, ABARE Research Report 99.4, Table C1.

The only noticeable (or disproportionate) regional impact may be in those areas with metal product manufacturing businesses. However, unless these businesses were granted exemption from the measure, it is unlikely that any particular implementation approach would reduce these impacts. Energy intensive sectors, by virtue of the fact that they are consuming large amounts of electricity, and are therefore responsible for more greenhouse gas emissions, will be required to bear more of the burden under this measure.

In theory the cheapest renewables would be fully subscribed under this approach, with higher cost renewables coming on line as the subsidy increases. This may limit the spread of renewables which are able to respond to the target, but will act as a cost limiter for the measure. Higher cost renewables could still be subscribed to by electricity retailers to meet their Green Power obligations, however the subsidy in these cases, would only meet a proportion of the difference between the generation cost and the pool price.

It is likely that any increase in the levy value would not be smooth. This would occur not only as the subsidy value would need to be increased to bring in more renewables (increasing the levy value) but also because it would need to be raised to bring in higher cost renewables if the higher generation levels are to be met.

The subsidy would need to be limited to new renewables generation, as existing generation is already commercially viable without financial assistance.

There could be some risk of gaming under this approach, where renewable energy generators may wait until the subsidy reaches very high levels before generating, even though a lower level subsidy would have met their costs and drawn them into the market earlier. If this occurred, costs may rise, as the government increases the value of the subsidy to stimulate renewables production and renewables generators continue

to wait until the subsidy reaches a higher level before generating. Competition among existing and potential renewable energy producers should largely overcome any such gaming problems.

If this approach functioned effectively, it would be an administratively simple and transparent method of supporting renewables.

Option 3 Develop a tradeable certificates market to support a legal requirement for individuals to increase the amount of renewables sourced

This approach will ensure that a set amount of electricity is generated but at an uncertain cost. Administration costs may be relatively high, although, on a per unit of electricity basis, these will be extremely small (discussed further in Chapter 17).

By supporting an individual liability approach, each liable party would be able to pursue compliance strategies which best suits the needs of their business. This substantial freedom in meeting the requirements of the measure allows liable parties who would, for one reason or another, be unlikely to simply pursue least cost approaches to compliance in order to differentiate themselves in the market place. For example, the Body Shop has an image of being environmentally friendly and reinforces this corporate image by sourcing their electricity from the “pure” renewables (at higher cost). Similar opportunities are available under Option 2.

Most consumers would be indirectly affected by this implementation approach. Some large electricity buyers would face direct price increases, as their wholesale electricity purchases would require them to individually source certificates, but the impact of this implementation approach would be predominantly imposed on the customer base through an intermediary (ie the electricity retailer).

Under this approach, the level of renewables required would be fixed, but the cost of purchasing that electricity would be uncertain. It is expected that electricity retailers would attempt to recover compliance costs by increasing electricity tariffs. This would most likely be achieved through a continuance of existing variable pricing arrangements for different classes of end users. The Electricity Supply Association of Australia, in their Electricity Australia 1999 publication, report a current differential of 3.38c/kWh between average residential (10.91c/kWh) and business electricity tariffs (7.53c/kWh). While the business market remains contestable and the residential market is not, it can be expected that intense competition for the large volume industrial consumers will continue to support lower electricity tariffs for that sector.

All electricity users would be likely to see progressive increases in electricity prices over the term of the measure. Domestic customers would probably see this immediately once the measure comes into effect. The timing of the price increases for business and Government would be variable, depending on the source of their electricity. If businesses and Government agencies source their electricity through a retailer, the same impacts as residential customers will be felt. If these parties hold long term, fixed price contracts, price increases should be felt as long term contracts expire and are renegotiated.

The extent to which business, householders and Government would be impacted by this measure would be dependant on the way in which retailers and other liable parties choose to pass on costs. Under this approach, individual liable parties could recover costs in the manner which best suited their business. It is not envisaged that there would be a mechanism in the legislation which would mandate any particular pass-on behaviour. There would also be no legislated pass-on requirement under the levy options (2 and 4a). However, as the levy would be explicit, it is more likely that a uniform pass-on of costs would occur under those options than would occur under Option 3.

Regulatory Impacts

This would be a new requirement on the electricity industry and therefore there are no pre-existing regulations or administrative processes to support this implementation option. The New South Wales environmental licensing conditions for electricity retailers, which require a reduction in the greenhouse intensity of the electricity supply, do not specify that this should be achieved through increases in renewables.

Eligible renewable energy generators who are seeking accreditation under both the Green Power scheme and the 2% target may face slightly different eligibility criteria. However, the Green Power scheme is likely to remain stricter in terms of eligibility and therefore Green Power accredited products would be a subset of the 2% accredited renewable energy generation. The Regulator, when established, would be required to develop accreditation processes for the 2% target and the Government can direct that the accreditation processes under the two schemes be as similar as possible.

Costs and benefits

As discussed, this would impact on all consumers of electricity through increased electricity tariffs. Energy intensive sectors are most concerned about the possible impact on their international competitiveness, where they are price takers on an international market. This concern will remain as long as Australia is an early mover, in greenhouse response terms.

Additionally, the certainty of achieving a set levels of greenhouse reductions under this approach is enhanced. If Australia is to meet its international obligations to reduce emissions, measures will need to be put in place to achieve quantifiable gains. In assessing the adequacy of current greenhouse responses, it will be important to be able to identify the likely greenhouse reductions in order to predict, with some degree of certainty, whether or not we are on target.

Impact of a portfolio

Analysis of the likely cost impacts of including a small portfolio component in the 2% target has shown that even a 10% solar photovoltaic (PV) and solar thermal electric portfolio increases the energy costs of the measure by 53% and the investment costs by 138%. Expected levels of Australian content rise if a PV portfolio is included as Australia, for the last 20 years, has been at the leading edge of R&D in this field with the two PV manufactures in Australia supplying 7% of world shipments of PV.

Depending on how the portfolio was specified, there is the potential that greater levels of greenhouse gas abatement could occur, as some renewable sources produce no emissions (not including life cycle analysis). However, pursuing a portfolio would involve added complexity and increase administrative costs.

Allowing for some technologies to produce higher value certificates could reduce the overall level of renewable energy achieved through this approach, the extent of which would depend on the volume of 'high value' certificates being traded. It may be possible to have lower value certificates for some renewables, which could balance the overall result (through reducing the impact of the higher value certificates) to some extent.

Option 4 **Establish a centralised purchaser of renewable energy funded by either: a levy on electricity consumers; or government**

Similar to Option 2, this approach will collect a set amount of revenue but support an uncertain amount of renewable electricity, providing less certainty that the sought after greenhouse benefits from this measure will be achieved. Administration costs would be moderate.

Under this approach, the bulk of the compliance burden would be placed on the centralised renewables purchaser. The impacts on industry would still be related to the volume of electricity purchased (as in Options 2 and 3).

As the renewable energy tender process would most probably only be conducted every 2 years, if a renewables generator did not successfully tender in a particular auction, they would be required to wait for a further 2 years before they had the opportunity to tender again, although the potential to subcontract could alleviate this to some extent.

Impacts on individuals will differ depending on the source of the funds to purchase the renewable energy. The different funding options are discussed separately below under the heading 'funding arrangements'.

Regulatory Impacts

New regulatory arrangements would need to be established in order to enact this measure and a new body would need to be established to act as the centralised renewables purchaser. There is no existing scheme in Australia which directly levies consumers of electricity for funds to purchase renewable energy. The regulatory structure of the United Kingdom's NFFO could be used as a basis for its development should this option be pursued.

It is possible that the Regulator could be a small body, as the measure would be met through the actions of the one renewables purchasing authority.

Costs and benefits

This approach would require all liable parties to operate through the centralised purchaser. In investigating this option, the Renewables Target Working Group identified significant barriers to the effective operation of the centralised purchaser if some liable parties were allowed to operate independently to meet their liability. For example, if lower cost renewables options were fully subscribed by independently operating parties, the only options remaining to the centralised purchaser would be the more expensive options. As a result, the costs of meeting this measure would be unevenly allocated among the liable parties.

Also, if a party ‘opted-in’ for a period and subsequently went out of business, the costs to the remaining participants would be increased as contractual obligations to the renewables generators would still need to be met.

The greenhouse gas reductions which can be achieved under this implementation approach are also uncertain, in that the amount of renewable electricity to be purchased in each bidding period would remain uncertain, as it would be based on the projected costs of each party bidding in through each auction. The pool of funds is fixed under this approach, but not the amount of electricity which can be purchased as a result. To increase the certainty of the level of greenhouse gas abatement achieved through this measure, any shortfall between the amount of funds raised through the levy and the cost of the required amount of renewable-based electricity would be made up by the Government. Similarly, any excess in funds raised by the levy could be redirected to consolidated revenue. The levy could be altered in subsequent periods to reduce the likelihood that these events would occur, however this would render the value of the levy less certain and may have adverse impacts on businesses attempting to plan for compliance.

However, there would be a reduced compliance role on the liable parties, as they would only be required to collect and pass on the revenue collected through the levy. The levy approach (see below) in itself could assist some liable parties, especially those without a diverse customer base or who have a limited ability to pass on costs. Considering the contestable and competitive nature of the electricity market, if the levy was clearly identified as a Government tax, to be equally collected through all liable parties, one retailer would not be at a competitive disadvantage to another retailer.

Funding Arrangements

There are two possible approaches to funding the centralised purchaser.

Firstly, a levy could be placed on electricity consumers. As with option 2, the value of the levy for consumers could be determined by the levy’s collector (ie it could be uniformly or differentially allocated to different customer classes). As a result, all consumers of electricity would be directly affected by this policy, including householders, businesses and government. Costs of administration of the centralised purchaser could potentially be recovered through a small loading on the levy placed on consumption of electricity. The same distributional impacts as discussed in Option 2 could be experienced under this approach.

Alternatively, the Government could fund the costs of compliance. If this was the case, electricity consumers would benefit from increased renewables but with no noticeable impact and the electricity industry generally would benefit from the government funding a proportion of the required greenhouse gas reductions in their sector. The costs of this implementation approach could be a possible reduction in services to the Australian public, an increases in taxes, or the economic impacts of reducing the budget surplus, depending on the funding approach chosen.

Summary of Options

Alternative	Impact on				Likely benefit/ comment
	Households	Business	Renewable Energy Industry	Government	
1. Increased voluntary take-up	Voluntarily incurring additional costs, depending on Green Power product chosen	Voluntarily incurring additional costs, depending on Green Power product chosen	Limited support for new renewable energy.	Limited impact – action already being taken to support National Green Power Program.	Small amount of additional renewables enter the market, but this approach does not offer potential for significant greenhouse gas reductions.
<i>Impacts and benefits common to Options 2-4</i>					<i>Between 4 and 5.5Mt of CO₂ abated with an expected increase in generation costs of electricity of between \$100m and \$250m in 2010.</i>
2. Production subsidy funded by levy on electricity consumers	Increase in electricity prices determined by collector of levy.	Increase in electricity prices determined by collector of levy.	Represents a substantial increase in the output of the industry. Actual GWh difficult to calculate.	Low impact. May be able to operate through existing mechanisms.	Has the potential to be a simple and transparent approach to stimulating renewables. Uncertain costs of the levy and greenhouse gas reductions. Administration costs low.
3. Tradeable certificates approach	Increase in electricity prices determined by retailer.	Increase in electricity prices determined by retailer. Impact will relate to their ability to secure low cost electricity contracts	Represents a substantial increase in the output of the industry. Actual GWh difficult to calculate, but easier to predict with some certainty.	Moderate impact. Will need to establish a Regulator to oversee market.	Strongly based market design. Flexibility in compliance provided for through unbundling the physical energy from the tradeable “renewable” instrument required to meet the target. Administration costs may be relatively high. Provides certainty of attaining the 2% target.

Alternative	Impact on				Likely benefit/ comment
	Households	Business	Renewable Energy Industry	Government	
3b. Tradeable certificates approach – with weighted or unweighted portfolio	Increase in electricity prices determined by retailer. Costs increased above 3.	Increase in electricity prices determined by retailer. Impact will relate to their ability to secure low cost electricity contracts. Cost increased above 3.	As 3(a) except likely that higher cost renewables will benefit to a greater extent due to the emphasis placed on them by the weighted or unweighted portfolio.	Moderate impact. Will need to establish a Regulator to oversee market.	Similar to 3 above although costs to consumers of electricity will be increased. The portfolio increases the complexity of administration and also increase costs. Under the weighted portfolio approach, less certainty in achieving the 2% target.
4a. Centralised purchaser – levy approach	Increase in electricity prices determined by collector of levy.	Increase in electricity prices determined by collector of levy.	Represents a substantial increase in the output of the industry. Actual GWh difficult to calculate.	Moderate – high impact. Will need to collect revenue and purchase renewable energy.	Relies to a large extent on government intervention. Some concern expressed at the lack of flexibility provided under this approach. Administration costs may be moderate. There may be some difficulties in setting the levy.
4b. Centralised purchaser - Government funded	No direct impact, unless additional taxes introduced to fund measure	No direct impact, unless additional taxes introduced to fund measure	Represents a substantial increase in the output of the industry. Actual GWh difficult to calculate.	Moderate impact. Will need to purchase renewable energy.	Concern that other Government programs may suffer as a result of funding renewable energy purchases, taxes are increased or the potential for adverse impacts of reducing the budget surplus. Administration costs may be moderate. These impacts are additional to those in 4a.

C5: Implementation: Consultation

Extensive consultations have been conducted in designing possible implementation approaches for the 2% renewables target. Detailed comments have been received on Option 3 and, to a slightly lesser extent, on the centralised purchaser aspect of Option 4. Comments on Option 2 have not been directly sought. Option 1 has not been discussed in detail in the context of developing implementation options for the 2% renewables target as it is acknowledged to not achieve the objectives of the measure.

Consultation Process

The Australian Greenhouse Office established a technical working group, the Renewables Target Working Group (RTWG), to develop implementation options for this measure. The RTWG was formed in April 1998 and presented its final report to its parent body, the Greenhouse Energy Group, in May 1999. The RTWG comprised representatives of the:

- Commonwealth Government (Australian Greenhouse Office and Industry Science and Resources);
- States and Territories (through energy and/or environment departments);
- Australian Industry Greenhouse Network (AIGN);
- Electricity Supply Association of Australia (ESAA);
- Energy Users Group (EUG);
- Australian Cogeneration Association (ACA); and
- Sustainable Energy Industries Association of Australia (SEIA-A);

The RTWG released an issues paper in April 1998 and followed this with a series of public consultation forums in 5 capital cities, which were attended by members of the general public as well as other interested parties. The issues paper identified a number of issues which the RTWG would be considering in order to develop implementation recommendations. No actual implementation recommendations were presented at this stage. Public comment was sought in response to those issues and feedback was encouraged to identify any additional issues for consideration. Fifty five submissions were received through this process.

The views expressed in these submissions fed into the development of an interim report of the RTWG. Once the interim report was finalised, a further series of bilateral consultations with industry representatives were conducted. A workshop, sponsored by the Australian Greenhouse Office and organised by SEIA-A, focussing on the views of the renewable energy industry was also conducted in Sydney in October 1998.

This was followed by a four day series of workshops, held in Canberra, in November 1998, to discuss specific implementation issues which the RTWG wished to discuss in detail before developing recommendations. The AGO prepared a number of discussion papers for this event, which outlined the issues to be resolved and proposed some possible solutions. Attendance at the workshop was restricted to invited industry representatives. Between 40 and 60 people attended each session over the

four days. The workshop papers and summaries of outcomes are available on the AGO's website.

Extensive expert advice has also been sought and has fed into the development of implementation recommendations throughout the period.

After receiving the RTWG's final report, the GEG agreed to release the report for further public consultation over June 1999. Forty seven submissions were received at this time. The results of this exercise are publicly available off the AGO's website at www.greenhouse.gov.au/markets/2percent_ren/consult/.

Stakeholder Views

General comments on the 2% renewables target

Areas of stakeholder concern and support have changed as the measure has developed, however there is a consistent theme of concern by industry that this measure (as implemented through Options 2-4) will result in increased costs and therefore damage their international competitiveness (domestic competitiveness should remain relatively the same as most businesses will be required to contribute towards Australia increasing the amount of electricity sourced from renewables). Major concerns relate to the likely increases in electricity prices of up to 2.5% and the impact that this could have on Australia's electricity intensive sectors, such as the aluminium industry. Some States/Territories also remain concerned with the implementation of the 2% target.

Industry concerns, and the design features of the measure which support or address these concerns, include that this measure is an ineffective way to reduce greenhouse gas emissions. However, the target is a medium- to long-term greenhouse reduction measure but will still achieve some 4-5.5 million tonnes of CO₂ reduction in 2010. This represents between 5% and 9% of Australia's total commitment in 2008-2012.

Additionally, some industry representatives have expressed concern that a phased introduction requires more renewables to be sourced than if a single target were set in 2010. However, it is unlikely that the renewable energy industry would be able to meet a 9,000 GWh target in a single year without time to develop capacity. There will be no incentive to develop generation capacity should there not be enforceable interim targets. It is also likely that there would be limited Australian content in this instance.

On the other hand, the AGO has received support for rapid implementation of this measure from the general public, environmental groups and the renewable energy industry. While the AGO has experienced some difficulty in gaining comment from these groups, the views expressed to date are sufficiently strong in this respect. Difficulties in gaining views from these groups may relate to the complexity of the measure, a general lack of understanding by the community of the electricity sector and the direct impact of this measure, in terms of compliance, on a small number of parties (electricity retailers and large buyers).

Specific comments on implementation options

Option 1

As discussed earlier, comments were not directly gained on this Option, but there is considerable concern in the renewable energy industry that, due to strong industry lobbying, this measure may not be implemented and this has been met with strong opposition. Members of the public have also indicated that they would be concerned if renewables were not supported by the Government.

Option 2

Comments on this approach have not been gained to any depth.

Option 3

The Renewables Target Working Group identified this approach, without a portfolio aspect, as its preferred implementation option. Final comments were sought on the basis of this being the preferred implementation approach. The outcomes of this consultation process are available on the Australian Greenhouse Office's website at www.greenhouse.gov.au/markets/2percent_ren.

The renewable energy industry is particularly supportive of this implementation approach to the measure as it provides certainty to the industry, allows for considerable flexibility in contributing to this market and incorporates a wide range of eligible technologies. However, the renewable energy industry would have preferred a portfolio approach, where set proportions of the target were to be met through specified technologies, which was not included in the measure's preferred design based on the substantial cost increases which would have occurred as result. Industry has voiced strong opposition to the inclusion of a portfolio due to the perceived added complexity of complying with the measure under this approach, a reduction in the flexibility available to businesses in meeting their obligations and the increased costs which would result.

However, industry remains concerned that the costs of this approach may be high and that penalties may be unreasonable. In response, the design of this implementation approach could include a number of cost limiting factors, including capped penalty values.

Option 4

In stakeholder consultations, there was some level of support expressed for a centralised purchaser, although concerns about the requirement for all parties to comply with the measure through the centralised purchaser, to achieve cost-effective outcomes, was considered a drawback.

C6. Implementation: Conclusion and recommended option

The options for achieving an increase, by 2% by 2010, of renewables in Australia's electricity supply mix are summarised below.

Option 1 – Support increased voluntary take-up. Under this option, it is likely that an additional 1,500 GWh of new renewables will be introduced into the market by 2002 as a result of increased voluntary participation in Green Power schemes, however past this point growth may stabilise, with business as usual growth continuing past this point. Up to 3,000 GWh of new renewable energy can be expected by 2014-15.

Option 2 – Production subsidy for renewable energy. The costs of production of renewable energy would be subsidised under this option, with the subsidy representing the gap between the pool revenue and costs of generation. Revenue for the subsidy would be raised through a levy on electricity users, based on their electricity consumption. Subsidy levels would be raised until sufficient renewable energy was dispatched to meet the target.

Option 3 - Tradeable certificates approach. Renewable energy generators will be able to create tradeable certificates on the basis of new renewable energy generation. These certificates can be traded independently of the physical electricity market and sought by electricity retailers and wholesale buyers of electricity to meet an obligation to hold increasing numbers of certificates. A further option would be to implement a portfolio in order to support specific renewable energy technologies. This could be achieved through either allocating a set amount of the target to be achieved through specified technologies, or allowing different technologies to produce certificates of a higher or lower value.

Option 4 – Centralised purchaser of renewable energy. This would be either funded through:

- **Fixed levy.** Under this approach all consumers of electricity would pay a levy based on electricity consumption. The Government would use these funds to purchase as much renewable energy as possible. The levy could either remain fixed or vary over the life of the scheme. The amount of renewables purchased would vary as a result.
- **Government funded increase in renewables.** Under this approach, the Commonwealth Government would fund the purchase of an equivalent amount of new renewable energy to meet the target. This could either be funded through the existing revenue base, through a new tax or a reduction in the budget surplus.

Preferred Option

Option 3a is the preferred implementation option, principally because:

- it provides certainty in meeting the 2% renewables target;
- it is a low-cost, market-based mechanism; and
- it is supported by industry and the Renewables Target Working Group.

From feedback, industry believes that an implementation option which has minimal government involvement, beyond light-handed but sufficient regulation, is the preferred approach to meeting the target.

Compared to other, more physical (ie linked to electrons) methods, certificates trading allows for a variety of transactions to occur to support flexibility. For example, under a physical approach, once electricity is generated it must be dispatched and used (it cannot be stored). However, separating the physical electricity from its renewable nature allows for the certificates to be traded among liable, eligible and third parties. This is one way of dealing with the impact of seasonal variations on renewables production by providing for banking of certificates.

Comparison with Option 1

Option 3a is preferred above Option 1, which will not draw sufficient renewables into the market to meet the target.

Comparison with Option 2

Option 3a is preferred above Option 2, as Option 2 produces uncertain amounts of renewables at uncertain costs and there may be some limited risks (gaming etc) such that Option 2 could entail greater compliance costs than Option 3. While this Option may be less administratively costly, the costs of Option 3 are judged to be neither substantial relative to the overall cost of the measure nor unduly high in their own right.

Comparison with Option 3b

While Option 3b would achieve potentially the same outcome as Option 3a, the added complexity and cost of achieving the target through a technology specified portfolio, or the increased uncertainty that the CO₂ reductions would be achieved under the weighted certificates approach, make it less attractive.

Comparison with Option 4

Option 4 with a levy on electricity consumers can potentially achieve the same objective as the preferred approach, but extensive consultation with the affected parties (predominantly electricity retailers) showed stronger support for an individual approach to meeting the requirements of the measure.

In discussions with stakeholders on possible implementation approaches for this measure, a levy approach was popular with a number of liable parties, as it was considered to represent a transparent and efficient implementation mechanism¹³. However, there was real concern raised at the ability of such a mechanism to achieve the measure's multiple objectives of increasing renewables and developing a domestic industry if the NFFO approach was pursued.

There was also concern that forcing all parties to comply with the measure through a centralised purchaser would limit flexibility and innovation in meeting the requirements of the measure. For this approach to work, all parties had to be bound to meeting their targets through the centralised purchaser, with no ability to opt out of

¹³ Feedback from public and industry consultations and views expressed by members of the Renewables Target Working Group.

this arrangement. This would, in effect, disadvantage those businesses wishing to pursue alternative renewables strategies (such as higher cost renewables).

7. Implementation and review

Implementation

The RTWG has identified a need for a Regulator to be established to oversee the operation of this measure. The Regulator will be required to accredit renewable energy generators, issue renewable energy certificates, record the surrender and expiration of renewable energy certificates for the purposes of meeting liabilities, assist liable parties to project their liabilities and will be responsible for regulating and monitoring progress in meeting interim targets and the overall 2% target by 2010. The Regulator will also be responsible for administering rules for the contribution of solar water heaters towards the target and applying and managing compliance incentives.

The Regulator would need to be independent from liable parties and accredited renewable energy generators. It is expected that the functions of the Regulator could be undertaken by a small organisation, possibly an existing agency.

The Regulator will need to develop and maintain an information system which can record the creation of renewable energy certificates and track certificate trades, so renewable energy certificates can be authenticated upon surrender.

Eligible parties will be required to submit, each accounting period, accurate, metered data to the Regulator, in order to establish how many renewable energy certificates were created through their generation activities. Liable and eligible parties will be required to record energy consumption or generation respectively at agreed measurement points. These points may be slightly different to those where data is currently recorded. For those liable and eligible parties who do not record this information, meters will need to be installed. In many instances, the cost of this equipment is expected to represent only a small proportion of normal operational costs.

The initial development period for the Regulator could require between \$2 to \$3 million dollars in 2000-01, as staff, equipment and specialist information technology packages will need to be obtained to support the administrative functions of the Regulator. These costs should then be reduced to predominantly running costs, although there is the possibility that as the measure is progressively implemented and the size of the target grows, that the Regulator may need to grow in size to accommodate the greater volume of certificates creation and trade. However, all options which can reduce the overall administrative burden of the scheme will be considered in finalising design principles. Further consultations with stakeholders will occur during this phase.

Compliance would be monitored by the Regulator and be conducted on the basis of random audits of both eligible and liable parties. Independent parties trading renewable energy certificates may also require some scrutiny by the Regulator.

It will be important in monitoring and reviewing the measure, to be able to develop synergies with other certificates trading schemes which may operate in the future, such as emissions trading, should Australia decide to pursue this approach.

This is a complicated measure and as such there has been some difficulty experienced in adequately communicating the preferred form of the measure. However, it is expected that this will become clearer once a single implementation approach is legislated, as effective communication strategies can be developed to inform all stakeholders, including the complying parties and the general public, of the intent and requirements of this measure when sufficiently finalised. To date, communication has predominantly related to investigating options for implementation and there has been some confusion as to the current state of the recommendations. This should cease once the legislation is drafted.

As the measure will be implemented through a certificates trading mechanism, it should be sufficiently flexible to cater for changing market participants, seasonal variations in generation levels from different renewables sources and changing growth rates in the consumption of electricity. Supplementary to this, the implementation approach also provides for a liable party to miss up to 10% of their interim target in each year prior to penalties being applied. These penalties will also be redeemable if the shortfall is made up in the following three years.

Penalties

All parties agree that this measure will require penalties if it is to be effective. The decision as to the dollar value assigned to the penalty, however, is yet to be finalised.

The strength of the penalty mechanism will impact greatly on the overall effectiveness of the measure, but will not alter the basic principles of the 2% target. If the penalty is low, liable parties may elect to pay the penalty rather than to take the chance that the cost of certificates available through the market could be higher than the penalty. If this were to occur, the target would not be met. Also, a low penalty level could become a price target, rather than a price cap, and could effectively become a carbon tax. Alternatively, if the penalty level were set at a high level, almost universal compliance could be expected, as purchasing renewable energy certificates would always be cheaper than paying the penalty.

The AGO expects that if the penalty were to be set not lower than \$100/MWh this would be sufficiently high to encourage compliance, but not so high as to force unreasonable compliance costs upon liable parties.

Legislation

It appears that Commonwealth legislation will be the most effective method of implementing this measure. It would be possible to enact the measure through State or Territory legislation, but it is expected that this will result in lengthy delays and some inconsistencies across jurisdictions.

Estimated compliance costs

Compliance costs (administrative) have been estimated in Table 2 below. Some compliance costs will be incurred by existing parties at the commencement of this measure. However, others costs will be incurred by new parties as they enter the market. To accurately represent the upper boundaries of likely compliance costs, all possible costs have been included in the estimate, rather than present a point in time analysis. It is possible that actual compliance costs will be lower, as deeming, as a proxy for the renewable energy contribution of very small renewables installations, such as stand alone power stations in remote areas and solar water heaters, will be allowed. It is envisaged that the Regulator could develop standard recording and reporting software or processes for distribution to liable and eligible parties, significantly reducing the costs to industry of compliance with the measure.

Our analysis suggests that these transaction costs could represent between an additional 0.00025 to 0.0004 c/kWh (based on a total of between \$545,000 and \$730,000 one-off and ongoing costs per year) on the cost of all electricity consumed in Australia, or about a 0.004% increase in the average cost of electricity per kWh.

The energy purchased costs for each business will be related to the renewable energy certificates that they choose to purchase (different technologies will require additional financial assistance).

Table 2: Estimated Compliance Costs

	<i>Retailers (1)</i>	<i>Other liable parties (2)</i>	<i>Eligible parties (3)</i>
One-off (non-recurring costs)	(\$)	(\$)	(\$)
Metering (4)	-	212,500	125,000
Accreditation for eligibility (5)	2,000	5,000	500,000
Compliance with auditing (6)	42,000	18,000	21,000
Establishment of administrative procedures (7)	65,000	100,000	500,000
Training (8)	35,000	50,000	250,000
<i>Sub total</i>	<i>114,000</i>	<i>385,500</i>	<i>1,396,000</i>
<i>Incidentals loading (9) (does not apply to metering costs)</i>	<i>273,600</i>	<i>415,200</i>	<i>3,050,400</i>
<i>Total category one-off costs</i>	<i>273,600</i>	<i>627,700</i>	<i>3,175,400</i>
<i>Total one-off costs</i>			<i>4,076,700</i>
<u>On-going costs</u>			
Solar water heater scheme administration (10)	29,120	20,800	104,000
Certificates tracking and surrender (11)	2,800	8,000	40,000
<i>Sub total</i>	<i>31,920</i>	<i>28,800</i>	<i>144,000</i>
<i>Incidentals loading</i>	<i>76,608</i>	<i>69,120</i>	<i>345,600</i>
<i>Total category ongoing costs</i>	<i>76,608</i>	<i>69,120</i>	<i>345,600</i>
<i>Total ongoing costs</i>			<i>491,328</i>

Assumptions used in Table 2

- (1) 35 existing electricity retailers as reported by ESAA Electricity Australia 1999.
- (2) Assumed 100 other affected liable parties by 2010.
- (3) Assumed 500 eligible parties, of 50kW installed capacity and above. By 2010. Currently fewer than 200 eligible parties. With an assumed growth rate of 12% pa until 2010, this reaches nearly 500 eligible parties.
- (4) Assumed 100% of existing retailer base has adequate installed metering. Assumed 85% of other liable parties have adequate installed metering. Assumed 90% of eligible parties will meter generation. Purchase and installation of meter assumed to cost \$2,500.
- (5) Assumed that 2 retailers will own renewables generation assets, 5% liable parties will own eligible assets and 100% renewables generators will seek accreditations. Accreditation costs assumed at \$1,000.
- (6) Assumed 10 audits will occur each year. All retailers will be audited once during the life of the scheme, 65 other parties (other liable and eligible parties) will be audited through life of scheme. Assumed retailer audits take 40 hours at \$30 per hour, other audits take 20 hours at \$30 per hour.
- (7) Assume costs \$1,000 each.
- (8) Assumed \$1,000 per retailer, \$500 per other liable party and eligible party.
- (9) Assumed that staffing on-costs increase costs of administrative tasks, estimated by using a multiplier of 2.4.
- (10) Assumed 40% retailers and 10% of other liable parties and eligible parties claim solar water heater installations under the measure. The administration of these schemes is assumed to take 2 hours a week at \$20 per hour.
- (11) Assumed forms to be completed 4 times a year, taking 1 hour a time, by an employee paid \$20/hour in each category.

Note: Where wages are the basis of the costings, \$20 per hour represents average weekly earnings of nearly \$40,000 pa, \$30 per hour represents a task performed by an employee on \$60,000 pa.

Review

The RTWG has recommended that a review to assess the efficiency and effectiveness of the implementation option occur three years after the introduction of the measure and be conducted by an organisation independent of the regulator. This review will include consideration of:

- the effect of the measure on the Australian renewable energy industry and liable parties;
- the system of incentives for compliance;
- the operation of the renewable energy certificates trading system;
- complementarity with other relevant policy initiatives;
- renewable energy price trends and trade prices of renewable energy certificates; and
- other measure implementation issues.

Any changes recommended in the review will need to be consistent with stated objectives, pre-announced and phased in over an appropriate period.

The measure, as announced by the Prime Minister, will operate in two phases. Firstly, the contribution of renewables will be increased from 10.5% to 12.5% over the period 2001 to 2010. From 2011-2020, the GWh contribution of renewables shall be maintained. Periodic reviews from 2010 onwards would need to take into account the policy environment which existed at that time.

LIST OF CONSULTED PARTIES

This list represents a list of organisations who provided submissions on various issues papers and who participated in workshops, bilaterals or contributed to development of implementation recommendations. A number of members of the public also provided submissions, but have not been named.

ACCC
ACT Department of Urban Services
ACTEW Corporation
Advance Energy
Alcoa
Alintagas
ALISE Energy Australia and Deacons Graham and James
Allied Solar
ANU Centre for Sustainable Energy Systems
Austa Energy
Australian Aluminium Council
Australian and New Zealand Solar Energy Society
Australian and New Zealand Solar Energy Society (Qld)
Australian and New Zealand Solar Energy Society (WA)
Australian Coal Association
Australian Co-generation Association
Australian Conservation Foundation
Australian Consumers Association
Australian Gas Association
Australian Industry Greenhouse Network
Australian Industry Group
Australian Petroleum Production & Exploration Association
Balance Research
Benchmark Economics
BHP
Biomass Taskforce Manager
Boral Energy
BP Solar Australia
Breamlea Wind Generator
Bureau of Resource Sciences
Business Council of Australia
Caltex Australia Limited
Canon Australia
Capelec
Cement Industry Federation
Charles Sturt University
CitiPower
Clough Engineering
Comalco Ltd

Commonwealth Department of Industry, Science and Resources
Community Information Project on Sustainable Energy, Australian Conservation Foundation, Total Environment Centre and Friends of the Earth
Conservation Council of WA
Cooperative Research Centre for Black Coal Utilisation
CS Energy
CSIRO
Delta Electricity
Derby Hydro Power Pty Ltd
Design Power
EarthWatts
Eastern Energy
Electricity Supply Association of Australia
Energex Retail Pty Ltd
Energy Australia
Energy Business Centre
Energy Developments Ltd
Energy Efficiency Victoria
Energy Equity
Energy Futures Australia
Energy Users Group
Environment Victoria
Ergon Energy
Great Southern Energy
Greenpeace
Hamersley Iron
HRL Technology Pty Ltd
Hydro-Electric Corporation
Institute of Engineers
Integral Energy
Intergen Australia
International Centre for the Application of Solar Energy
International Solar Energy Society
Isentropic
Kvaerner Energy Pty Ltd
Macquarie Generation
National Electricity Market Management Company
Natural Allies
NEG Micon
Newcrest Mining
NorthPower
NSW Department of Energy
NSW State Forests
NSW Sugar Milling Co-op Ltd
NT Department of Mines and Energy
NT Department of the Chief Minister
Pacific Hydro
Pacific Power

Pacific Solar
Plastics and Chemicals Industries Association
Power and Energy Services
Power Solutions Australia
PowerCor Australia Ltd
Qld Department of Mines and Energy
Qld Department of Treasury
Queensland University of Technology
Renewable Energy Asia Pacific
Renewable Energy Australasia Pacific
Renewables Etc
Resource Connections
SA Office of Energy Policy
SA Office of Energy Policy
Shell Coal Pty Ltd
Sinclair Knight Merz
Snowy Hydro Trading Pty Ltd
Snowy Mountains Hydro Electric Authority
Solahart Industries
Solar Energy Industries Association of Australia
Solarex
Southern Hydro
SRC International
Stanwell Corporation
Sustainable Energy Development Authority
Sustainable Energy Industry Association – Australia
Sustainable Energy Industry Council of Australia
Sustainable Technologies Australia
Swinburne University
Tas Office of Energy Planning and Conservation
The Green Energy Corporation
Total Environment Centre
United Energy
University of Sydney
University of Tasmania
Vic Department of Treasury and Finance
Visy Paper
WA Office of Energy
Western Power
Westrail
Woodside Australian Energy

Economic Impacts of a 2% Increase in Electricity Sourced from Renewables

Extensive analysis has been conducted in order to identify the likely financial and economic impacts of a mandatory target to increase the amount of electricity sourced from renewables by 2% by 2010. The results of these analyses are discussed in detail below. Additional interpretational notes for the findings of these studies are available in the full text of the Final Report of the Renewables Target Working Group.

Redding Energy Management

Dr Graham Redding, of Redding Energy Management, in association with RMIT and Dr Mike Taylor, conducted a comprehensive analysis of the Australian renewable energy sector in order to establish the capacity of Australia's renewable energy industry to respond to a renewable energy target. This study covered an assessment of each of the proposed eligible renewable energy resources (although cofiring was not separately modelled) and the likely responses of those resources to the opportunities provided by the 2% target.

The report indicates that a large majority of the eligible resources are currently at a commercially competitive or pre-commercially competitive stage in the Australian context and would be able to respond to meet the target, given the right investment signals.

The study assesses the likely resource/technology mix which would occur under various implementation scenarios. Under each of these implementation scenarios, and given the report's assessments of the maximum available installable capacity for a resource/technology combination in a particular period, a number of scenarios for least cost methods of meeting the target were constructed. From these assessments there were several conclusions:

- the additional cost, in energy generation terms, directly attributable to the 2% target is estimated to be between \$100m and \$250m in 2010;
- the Australian content of the technology used to meet the target will be between 75 per cent and 85 per cent under every scenario;
- the investment cost of the measure estimated to be as low as \$1.8 billion¹⁴ spread over the period until 2010, under a least cost dual slope linear implementation strategy;
- exponential phase-in paths were less expensive in terms of investment costs and purchased energy costs than linear phase-in paths;
- scenarios that contained a portfolio were substantially more expensive than those without; and
- biomass (most notably bagasse cogeneration) and solar hot water made the greatest contribution to meeting the target under this cost based modelling.

¹⁴ The time value of money was not taken into account in any of the Redding scenarios. Thus the present value of these costs are less than the report indicates.

Sensitivity Testing on Bagasse Capacity Factors

Due to some concern with the bagasse capacity factors used in the Redding analysis, a further sensitivity test was conducted where the contribution of bagasse was limited. This study showed that reducing the capacity factor from 90 per cent to 50 per cent is likely to increase costs by 4 per cent. Limiting the capacity factor to 30 per cent (which implies very limited improvements in efficiency by 2010) increases the costs by approximately 10 per cent above those previously predicted.

Econtech macro-economic modelling

The Redding Energy Management analysis provided the foundation for an analysis of the macro-economic and broad sectoral economic impacts of the measure. Econtech was commissioned in January 1999 to perform this work using their economic models MM2 and MM303 (Murphy models).

The MM2 model, a dynamic, macro-industry econometric model, was used to investigate the macro-economic effects of the extra investment required to achieve a projected level of electricity demand in 2010, while generating an additional 2% of that electricity from renewable sources. The MM303 model, a computable general equilibrium model, was used to provide sectoral detail on the impacts of the measure.

Both models indicated that the impact of the measure on the macro-economy were small - especially when compared to other fluctuations that occurred in the economy - and had little lasting effect. The modelling also indicated that the impacts on each of the sectors were small for the degree of detail permitted by this form of modelling¹⁵.

More specifically¹⁶:

GDP declines by around 0.06 per cent lower than business as usual levels and is in the long run around 0.04 per cent lower.

Employment is unchanged in the long run. Through the period to 2020 it fluctuates from periods of slight decline from the baseline (0.03 per cent) to periods of slight increase above the baseline (0.02 per cent).

The **exchange rate** (TWI) is slightly lower across the simulation period and remains slightly lower in the long run.

Imports are lower across the period and remain slightly lower in the long run.
Export levels are largely unchanged by the measure.

Interest rates are higher than in the base case at the start of the period and then lower than in the base case at the end of the period. In the long term they are largely unchanged.

¹⁵ The constraint on the extent to which the model can 'look' within particular sectors is the data that is available from the ABS.

¹⁶ These results are taken from the MM2 model run.

Prices as measured by the CPI increase above the baseline peaking at 0.12 per cent higher than the baseline level. Prices then decline back toward the baseline level. They are 0.06 per cent higher, than they otherwise would be, in the long run.

Likely increases in the price of electricity have been predicted to be 2.4% in the period 2005-6 to 2009-10.

Tony Beck Consulting sectoral analysis

Although the modelled effects across aggregated industries were consistently small, macro models are not able to assess sectoral impacts in great detail. An assessment of these impacts was especially important in order to determine the likely impacts upon energy intensive sectors. Tony Beck Consulting/Energetics were engaged in January 1999 to investigate the effects of the measure on these energy intensive sectors.

The Working Group identified several industries for which a detailed sectoral analysis would be required. These included:

- electricity retailing;
- aluminium;
- mining and minerals;
- pulp and paper;
- plastics and chemicals;
- iron and steel;
- gas; and
- renewables.

The Beck study has demonstrated that there is little readily available information on the actual industry affects of an increase in electricity prices and, more specifically, the likely impacts of this measure

The possible impacts identified for each sector appear below:

Electricity retailing: The tight margins on electricity retailers due to the low market price suggest that the cost increases of electricity under the 2% target are likely to be passed on to customers, although the degree to which this will occur will depend on the degree of competition within particular market segments. The time at which these cost increases will occur may coincide with other upward pressures on electricity prices (GST and upward movement in pool prices).

Aluminium: Although electricity is a significant input in the aluminium production process, the impact of the measure will not be uniform across the industry because of variations in contract arrangements for electricity supply. The nature of the world market for aluminium means that there is little scope for the passing on of increased costs of the production process. This indicates that the increased costs will have to be met through a decline in profits.

Mining and minerals: The variety of energy supply arrangements and requirements across the sector indicate that the effect of the measure will not be uniform but, aggregated across the sector these effects are expected to be small.

Pulp and paper: The energy intensive, competitive nature of the industry suggests that it would be susceptible to any electricity cost increases from the 2% target. This industry, however, has ready access to renewable forms of electricity generation (black liquor, wood waste) and the opportunity to cost effectively exploit these under the measure could help ameliorate any negative effects of the measure.

Gas: The 2% target has not been raised as an issue of significance by the members of the Australian Gas Association to its industry body. It is assumed that an increase in the cost of electricity relative to gas will lead to a substitution towards the use of gas.

Early Victorian Department of Treasury and Finance modelling

This study, performed by ACIL Consulting, Redding Energy Management and NIEIR, completed in June 1998, reviewed the economic, energy and greenhouse impacts of the 2% measure using the NIEIR modelling system.

A renewable strategy developed by Redding Energy Management was inserted into NIEIR's model of the energy sectors of the Australian states and territories. This model includes a detailed supply model for electricity and electricity demand models by industry and state. Energy demand is modelled across 21 industry sectors by fuel and state.

Conclusions from this study include:

- total gross investment required over the 2001 to 2020 period under this scenario would be \$6 billion in 1990 prices;
- total electricity prices to increase by 2.5 per cent in Victoria and 1.5 per cent nationally;
- losses in GDP of \$0.89 billion by 2010 and in employment of 18,000 by 2010;
- exacerbated impacts in Victoria based on existing lower share of renewable electricity purchases than the national average.

Price of Renewable Energy Certificates

McLennan Magasanik Associates, in association with the Allen Consulting Group and Dr Graham Redding, have been contracted to assess the likely value of the renewable energy certificates in the period of the measure. This study is currently in its preliminary stages and has indicated that in the initial years of the scheme, when the interim targets are low, there will be sufficient certificates available from already commercially viable renewables projects (ie those that have proceeded without the stimulus of the 2% target). Towards the end of the scheme (around 2008) prices will tend to rise in response to rapid increases in the interim target levels, as more expensive technologies come on stream in order to produce sufficient electricity.

RENEWABLE ENERGY (ELECTRICITY) BILL 2000

NOTES ON CLAUSES

Part 1 - Preliminary

Clause 1 – Short Title

The clause provides for the Act to be cited as the *Renewable Energy (Electricity) Bill 2000*.

Clause 2 – Commencement

This clause provides for the Act to commence 28 days after the day on which it receives Royal Assent.

Clause 3 – Objects/outline

This clause sets out the object of the Act.

Clause 4 – Years to which this Act applies

This clause specifies that the requirements of the Act commence on 1 January 2001 and continue in all subsequent years, although certain requirements are scheduled to cease. Renewable energy certificates cannot be created from 1 January 2021 onwards. Additionally, no liability is incurred for electricity purchased from 1 January 2021 onwards.

Clause 5 – Definitions

This clause provides definitions for a number of terms used in the Bill.

Some key terms used in the Bill are:

Accredited power station	Those power stations which have met the prescribed criteria and are generating eligible renewable energy
Eligible renewable energy sources	Those fuels which are prescribed in regulation as being eligible to be used to create electricity under this scheme.
Liable entity	A person with obligations under the legislation. Liability arises from making a relevant acquisition of electricity.
Notional generator	The part of a company (which both generates and retails electricity) which is implied to be a separate electricity generator
Notional retailer	The part of a company (which both generates and retails electricity) which is implied to be a separate electricity retailer purchasing electricity from the notional generator.
Notional wholesale acquisition	An implied wholesale acquisition of electricity from a notional generator by a notional retailer.

Relevant acquisition	The point at which a transfer of electricity becomes liable.
Renewable energy certificates	The mechanism for demonstrating compliance under the legislative scheme
Wholesale acquisition	A purchase of electricity from an entity who themselves did not have to purchase the electricity.

Clause 6 – Act binds Crown

This clause provides that the Act shall bind the Crown in each of its capacities. The Crown is not liable to be prosecuted for an offence.

Clause 7 – Application to the external Territories

This clause provides that the requirements of this Act extend to all of Australia’s external territories.

Part 2 – Renewable energy certificates

Division 1 - Preliminary

Clause 8 – Overview of Part

This clause provides a summary of the Part.

Division 2 – Registration of generators etc.

Clause 9 – Who can register

This clause specifies that any person can be registered under the Act, subject to any period of suspension under proposed clause 30. Note that clause 13 establishes a requirement to be registered before seeking accreditation of a power station under the scheme.

Clause 10 – Applying for registration

This clause stipulates the requirements for registration.

Clause 11 – Regulator to approve or refuse application

The Regulator must register all persons submitting properly made applications, unless the person is already registered (where the Regulator must refuse the application for registration).

Clause 12 – Regulator to allocate registration numbers

When a person is registered, they will be allocated and advised of a unique registration number by the Regulator.

Division 3 – Accreditation of eligible power stations

Clause 13 – Application for accreditation

This clause specifies that only registered persons can seek accreditation of an electricity generation system. The person must own the system they are seeking accreditation for.

Applications for accreditation must meet the requirements as specified in the Act.

Clause 14 – Regulator to determine certain matters

This clause provides a decision making process for the Regulator to make certain determinations. The Regulator can determine if a power station is eligible for accreditations, according to certain criteria. If it is eligible, other determinations must be made. Regulations can prescribe certain matters to be taken into account, which the Regulator must apply in making these decisions. Under this decision making process, the Regulator will first establish the boundaries of the electricity generation system which could be accredited as a power station under this Act. Guidance on setting these boundaries will be outlined in regulation. Generally a power station will include all components that are integral to the operation of the power station or to the generation of electricity.

The Regulator must also determine if a power station is eligible for accreditation. A power station can be eligible for accreditation if some or all of the power generated from the power station is created from the use of eligible renewable energy sources and the power station meets any of the prescribed requirements. Additional guidance to the Regulator on eligible renewable energy sources and prescribed requirements for eligibility will be outlined in regulations.

If a power station is eligible for accreditation, the Regulator must determine the 1997 eligible renewable power baseline for the power station and if any of the fuels used by the power station are not eligible. To avoid doubt, a power station's 1997 eligible renewable power baseline may be nil. Guidelines on the establishment of baselines will also be included in regulations. The baseline sets the level of generation by a power station, in each year of the scheme, which has to be reached before a renewable energy certificate (see Division 4 – Creation of Certificates) can be validly created.

Clause 15 – Regulator to approve or refuse application

This clause specifies that if a power station is eligible for accreditation, the Regulator must approve an application for accreditation. If the power station does not meet any of the prescribed criteria for accreditation, the Regulator must refuse the application.

Clause 16 – Regulator to allocate identification codes

The clause directs the Regulator to allocate a unique identification code to all accredited power stations.

Clause 17 – What is an *eligible renewable energy source*?

This clause requires the eligible renewable energy sources to be specified in regulations. Fossil fuels and waste products derived from fossil fuels cannot be prescribed in the regulations as eligible fuel sources.

Division 4 – Creation of certificates

Subdivision A – Electricity generation

Clause 18 – Creating certificates for additional renewable electricity

This clause provides for renewable energy certificates to be created for each whole megawatt hour (MWh) of electricity generated by accredited power stations. Certificates can only be created after the full MWh has been generated and only for generation which is above the power station's 1997 eligible renewable power baseline (determined by the Regulator under clause 14 on accrediting the power station). The measurement points used to determine how much electricity has been generated by an eligible power station will be specified in regulations. This will take into account how much electricity is actually available to be consumed (rather than simply generated) and will include necessary adjustments to account for auxiliary or transmission losses, where these apply.

Under subclause 18(2), if the electricity generated by a power station in a full year, in excess of the 1997 baseline, is less than 1 full MWh, but more than 0.5MWh, the power station can create one renewable energy certificate for the generation in that year. This subclause will only come into effect where the total eligible output for the complete year is less than 1 MWh. This subclause will not apply to incomplete MWhs of generation from power stations who have created renewable energy certificates for other eligible generation in the year.

Any electricity generated from non-eligible fuel sources will not be eligible for renewable energy certificates.

Clause 19 – When certificates may be created

The clause specifies that the registered owner of an accredited power station has the right to create a renewable energy certificate immediately after the full MWh of electricity has been generated, taking into account the requirement in Clause 18 to firstly generate above the 1997 baseline level. Certificates, however, can be actually created at any time in the year after generation, and do not have to be created at the exact time that the electricity was generated. For example, a power station operator can create certificates daily, weekly, monthly etc, as convenient.

Clause 20 – Electricity generation return

This clause imposes an obligation on generators of eligible renewable electricity in a year to advise the Regulator, in the approved form, prescribed information in annual *electricity generation return*, before 14 February the following year.

Subdivision B – Solar water heaters

Clause 21 – When a certificate may be created

This clause specifies that renewable energy certificates may only be created for solar water heaters installed on or after 1 January 2001 and where the solar water heater displaces non-renewable electricity. Further guidelines for the eligibility of solar water heaters will be outlined in regulations.

Clause 22 – How many certificates may be created

The number of renewable energy certificates able to be claimed for the installation of each eligible solar water heater will be determined in accordance with the regulations.

Clause 23 – Who may create a certificate

The person who owns the solar water heater at the time that it is installed will be entitled to claim certificates for that installation. The owner of the system will need to be registered with the Regulator (see clauses 9 – 12) before claiming their renewable energy certificates. However, if the owner of the water heater wishes, they may assign the right to claim the certificates for that installation to another party, who will need to be registered with the Regulator. Certificates can only be claimed once in respect of a single installation.

Subdivision C – Improper creation of certificates

Clause 24 – Improper creation of certificates – offences

This clause establishes the penalty for improper creation of certificates. To avoid doubt, the penalty can be applied for each certificate which was improperly created.

Division 5 – Form and registration of certificates

Clause 25 – Form and content of certificates

This clause specifies that renewable energy certificates must be electronic and establishes a requirement for certain information to be recorded as each individual certificate's unique identifier.

Clause 26 – Certificates must be registered

This clause specifies that renewable energy certificates will not be valid until recorded in the registry of certificates maintained by the Regulator. The register of renewable energy certificates is discussed in Part 11 – Division 4.

Parties creating certificates must advise the Regulator electronically when renewable energy certificates have been created. The Regulator will be required to determine, in writing, the form in which this advice is to be transferred.

Upon receiving advice of the creation of certificates, the Regulator must determine if the renewable energy certificate is eligible for registration. When a certificate is validly created and is eligible to be registered, the Regulator must register that certificate and record the person who created the certificate as the owner of the certificate. Where the certificate is not eligible to be registered, the Regulator must advise the party who created the certificate that it has not been properly or validly made and therefore cannot be registered.

Division 6 – Transfer of certificates

Clause 27 – Certificates may be transferred

This clause allows for the ownership of registered certificates to be transferred from the owner of the certificate to any other person.

Clause 28 – Regulator to be notified

This clause requires that the Regulator must be informed, electronically, of every transfer in ownership of every certificate. The certificates register (see Part 11 – Division 4) maintained by the Regulator must be altered to reflect the current ownership.

Division 7 – Retirement of certificates

Clause 29 – Retirement of certificates

This clause specifies that certificates which have been surrendered in order to discharge a liability will no longer be valid. When a certificate is surrendered to the Regulator, the register of certificates will be altered to show that the certificate is no longer valid. Certificates which have been surrendered can no longer be traded for use against another person's liability.

Division 8 – Suspension of registration

Clause 30 – Suspension of registration

If a registered person has been convicted of improperly creating renewable energy certificates with a criminal intent, as specified in Clause 24, the Regulator can suspend a person's registration for 2 years or less. The Regulator can determine the period of the suspension, taking into consideration all of the relevant circumstances. While a person's registration is suspended, they will be unable to create renewable energy certificates.

Where a person has been convicted of a subsequent offence of improperly creating renewable energy certificates with a criminal intent, as specified in Clause 24, the Regulator may suspend a person's registration for an appropriate period (including permanently), taking into consideration all of the relevant circumstances of the case.

Part 3 – Acquisition of electricity

Clause 31 – What are *relevant acquisitions*?

This clause establishes the acquisitions of electricity which will result in an entity becoming liable under this Act. These transactions are termed ‘relevant acquisitions’. Relevant acquisitions will be:

- wholesale acquisitions, as defined in Clause 32; and
- notional wholesale acquisitions, as defined in Clause 33.

Exceptions:

However, transactions which result in a party acquiring electricity in the following circumstances will not be relevant acquisitions under this Act:

- If the electricity was sourced from a grid that has less than 100 megawatts (MW) installed capacity and the grid is not connected in any way to another grid which has 100MW or greater installed capacity; or
- If the person who generates the electricity:
 - consumes the electricity within 1 km of the point of generation; or
 - delivers that electricity from the point of generation to the point of use on a transmission/distribution line which operates solely for the purpose of transferring electricity between those two points.

These transactions will not be covered and will not attract a liability. This gives effect to the Government’s agreement to not cover self-generators under the scheme. Where electricity is transferred between two points using the grid, this Act will consider that transaction to be a purchase, even if the person owning the electricity generator and the end user are the same. This is consistent with the treatment of the transaction through the electricity market, as electricity purchased from a grid cannot be traced to a point of generation. The National Electricity Market, for example, requires a generator to sell the electricity to the grid and buy it back (as a wholesale purchase if not purchased through an electricity retailer) at a different point. However, where a dedicated line is in place and the generated electricity can be transmitted to the point of use, independently of a grid, this will meet the self-generator exclusion provisions.

Additionally, the same person must own the generation system and the point of end use (for there to be no wholesale electricity purchase) to be a self-generator.

The processes involved with determining the amount of electricity acquired by a party in relevant acquisitions (such as points where the acquisition is measured etc) and whether a grid has greater than 100 MW installed capacity will be determined through regulation.

Clause 32 – Wholesale acquisitions

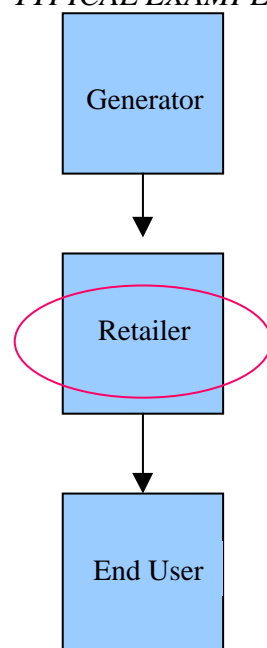
The effect of this clause is to deem certain acquisitions of electricity to be *wholesale acquisitions*. Entities making wholesale acquisitions will be liable for *renewable energy charge* under Part 4. The acquisitions which attract this liability are those

from NEMMCO (National Electricity Market Management Company) or from a person who did not acquire it from another person.

To illustrate: an electricity generator sells electricity to an electricity retailer, who then on-sells the electricity to their customers. The liability point will be dependent upon whether there has been a previous transaction. Liability for an acquisition for each party is as follows:

- The electricity generator: As a seller of electricity which was not acquired from someone else, this electricity generator will not be liable;
- The electricity retailer: As a seller of electricity which was acquired from someone else, the retailer is liable. This is because the entity who the retailer bought the electricity from did not have to purchase the electricity (from another party) in order to sell the electricity to the retailer. In purchasing electricity from a generator, the electricity retailer makes a *relevant acquisition* and the electricity retailer is the *liable entity*;
- The retailer's customers: as a buyer of electricity from someone who has previously bought the electricity, the retailer's customer does not make a *relevant acquisition* and the retailer's customer is not a liable entity.

TYPICAL EXAMPLE:



Subclause 32(2) specifies that if Clause 33 comes into effect to create a nominal wholesale purchase from the transaction in question, Clause 32(1) will not apply. However, if electricity is purchased directly from a generator and Clause 33 does not apply, this constitutes a wholesale acquisition.

Clause 33 – Notional wholesale acquisitions

This clause specifies the two situations in which a notional wholesale acquisition takes place. The effect of this clause is to confer an additional acquisition (a notional

wholesale acquisition) in a retail transaction involving a generator entity who retails to an end user who is not authorised under the National Electricity Code to purchase electricity wholesale. The reason for this is to avoid conferring liability on non-wholesale purchasers of electricity, such as ordinary householders, small and medium businesses etc, where they purchase their electricity from a company which both generates and retails electricity. Implying that this additional transaction takes place will place liability on an entity who would otherwise avoid liability for the transaction (since they did not acquire the electricity from someone else). Liability for that transaction would otherwise rest on the acquiring party in this single transaction situation.

The clause states, firstly, that where the end user of electricity acquires the electricity from the generator, but the end user of the electricity is not required to be registered under the National Electricity Code in order to allow them to purchase electricity directly from generators, the generator of the electricity is taken to be both generator (*notional generator*) and wholesale purchaser (*notional wholesaler*). This sub-clause acts to imply that the *notional wholesaler* has made a *notional wholesale purchase* from the *notional generator*. The *notional wholesaler* will be liable for that *notional wholesale purchase*. This applies, for example, to vertically integrated companies where the single company both generates and retails the electricity. This sub-clause states that the *notional wholesaler* is deemed to make the *notional wholesale acquisition* at the same time that the end user acquires the electricity.

A *notional wholesale acquisition* occurs where the end user of the electricity generates the electricity. However, a *notional wholesale acquisition* will not occur if the end user of the electricity is either:

- using the electricity at a point which is less than 1 km from the point at which it is generated; or
- transferring the electricity from the point of generation to the point of end use on a line which is used solely for transferring the electricity between these two points.

Sub-clause 33(3) mirrors the exclusion to the definition of *relevant acquisition* in sub-clause 31(2). If the specified conditions are not met, the entity is not considered to be a self-generator.

Clause 34 – Special provision relating to transactions involving NEMMCO

NEMMCO, as market manager for the National Electricity Market, manages the financial settlements relating to all wholesale electricity sales and purchases and could be construed as the wholesale purchaser of all electricity in the NEM. This clause therefore specifies that no purchase by NEMMCO relating to this function will be a relevant acquisition. Clause 32 states that all purchases from NEMMCO, however, are relevant acquisitions. NEMMCO is not a liable entity under the legislation.

Part 4 – Renewable energy certificate charge

Division 1 – Liability to charge

Clause 35 – Liable entities

This clause specifies that any person making a *relevant acquisition* of electricity (see Clause 31) is a *liable entity* under this Act.

Clause 36 – Charge payable by liable entity

This clause establishes that a liable entity who holds too few renewable energy certificates to discharge their liability (ie the party has a shortfall) may be liable to pay a renewable energy certificate shortfall charge for that shortfall. The liable entity is responsible for paying the renewable energy certificate shortfall charge.

Where a shortfall is greater than 10% of the liable entity's total liability, a renewable energy shortfall charge is payable for the whole shortfall. The value of the shortfall (in dollars) is determined by using the methodology specified in Clause 37.

Where a shortfall is less than 10% of the liable entity's total liability, this shortfall will be carried forward (in MWhs) and added to the liable party's target for the following year (*carried forward shortfall*). A renewable energy shortfall charge is not payable in this instance.

Clause 37 – Amount of charge

This clause specifies that the amount of a renewable energy shortfall charge to be paid by a liable entity is determined by multiplying the liable party's certificate shortfall (in MWh) by the rate of charge specified in the proposed Renewable Energy (Electricity) (Charge) legislation (in \$/MWh).

Clause 38 – Determination of renewable energy certificate shortfall

This clause provides an example of how to determine if a liable party has a renewable energy certificate shortfall for a year and is therefore liable to pay a renewable energy shortfall charge under clause 36, or has a carried forward shortfall.

If the number of certificates surrendered to the Regulator is less than the liability, the liable entity has a shortfall. If the number of certificates surrendered is equal to the liability, the liable entity does not have a shortfall. If the number of certificates surrendered is greater than the liability, the liable entity has a carried forward surplus.

Division 2 – Renewable power percentage

Clause 39 – Regulations to specify renewable power percentage

This clause states that the rate of liability for a given year will be specified in regulation as renewable power percentage applying to that year. The rate of liability allows parties to determine how many certificates they must hold given the sum of

their relevant acquisitions in the relevant year. The regulation specifying the renewable power percentage for each year must be made on or before 31 March of that year. If this does not occur, this clause makes provisions for an interim assessment to be made (discussed below).

The renewable power percentage will be 0.24% for the year commencing 1 January 2001.

For example, if a party purchases 100,000 MWh of electricity from the pool (ie a wholesale acquisition which attracts a liability), for 2001, that party will have to hold 240 certificates to discharge their liability. This is calculated by multiplying the total of a party's relevant acquisitions by the renewable power percentage for the year [ie $100,000 \times (0.24/100)$].

Where a regulation specifying the renewable power percentage for any year after 2001 has not been made, this clause includes the methodology for determining an interim renewable power percentage. To establish the interim renewable power percentage:

1. divide the interim target level for the current year by the interim target level for the previous year;
2. multiply the answer from (1) above by the renewable power percentage for the previous year.

The interim target levels (called the required GWh) are outlined in Clause 40.

For example, the required GWh for 2001 is 400 GWh and for 2002 is 1,100 GWh. If the renewable power percentage for 2002 has not been specified by 31 March 2002, an interim percentage for 2002 can be determined by the following calculation:

$$0.24\% \times (1100/400)$$

Where a renewable power percentage has been specified in regulation, the interim renewable power percentage should not be used to determine liabilities.

In making a regulation to specify the renewable power percentage to apply in a year, the Governor-General must consider:

- the GWhs of renewable electricity required in that year (as specified in Clause 40);
- the estimated amount of relevant acquisitions which will occur in the year;
- whether the previous year's target was under or over-estimated.

A failure by the Governor-General to take some of these factors into consideration will not affect the validity of the regulation.

The total amount of certificates to be surrendered to the Regulator in a year can be calculated by multiplying the sum of all relevant acquisitions in the year by the renewable power percentage.

Clause 40 – Required GWh of renewable source electricity

This clause sets the amount of renewable energy required to be sourced each year of the target.

Division 3 – Other provisions related to the charge

Clause 41 – Arrangements to avoid or reduce renewable energy shortfall charge

This clause provides for the Regulator to require payment of a set level of renewable energy shortfall charge, where the Regulator considers that the liable entity entered into an arrangement which was solely or principally for the purpose of reducing the amount of a renewable energy shortfall charge for which they were liable. The Regulator can calculate the amount of renewable energy shortfall which is payable based on the liability which would have arisen but for the arrangement.

Clause 42 – Application of Act to Commonwealth

This clause provides that the Commonwealth is intended to be notionally liable to pay renewable energy shortfall charges incurred under this Act. The effect of this clause is that the Commonwealth may pay charges, but under different arrangements to other parties.

Subclause 2 specifies that where the Commonwealth has a shortfall, the Minister for Finance may give written directions to make the Commonwealth notionally liable for charges under this Act, including giving directions to transfer money between within, or between, accounts operated by the Commonwealth.

Subclause 3 specifies that directions given by the Minister for Finance under Subclause 2 must be complied with, despite other Commonwealth laws.

For the purposes of this Clause, the Commonwealth includes an Agency and Commonwealth Authority (within the meaning of the *Financial Management and Accountability Act 1997* and the *Commonwealth Authorities and Companies Act 1997* respectively) that cannot be liable to taxation by a Commonwealth law.

Clause 43 – Cancellation of exemptions from charges

This clause cancels any exemption for a liable party which comes about because of a clause in another Act, except where that other Act commences after this Act or specifically references the charges payable under this Act.

Part 5 – Statements and Assessments

Division 1 – Statements

Clause 44 – Annual energy acquisition statements

This clause requires liable entities, who made relevant acquisitions of electricity during a year, to lodge an energy acquisition statement for the year on or before

14 February in the following year. However, the energy acquisition statement can be lodged on a later day if this is approved by the Regulator.

Annual energy acquisition statements must be completed in line with specified requirements, subject to requirements outlined in legislation and regulations.

A liable party must attach, to the energy acquisition statement, details of the renewable energy certificates being surrendered against a liability. A liable party cannot surrender a certificate against their liability unless they are the registered owner of the certificate at the time that the energy acquisition statement is lodged with the Regulator (see Clause 45).

Clause 45 – Restrictions on certificates that can be surrendered

This clause specifies that certificates cannot be surrendered by liable parties to meet their obligation unless:

- the certificate is valid (the requirements for certificates to be valid are outlined in Clause 25-26);
- the certificate is created before the end of the year to which the acquisition of electricity related. It cannot from a year commencing after the year in which the acquisition of electricity relates (ie a return for 2004, lodged by 14 February 2005, cannot nominate certificates from 2005 to be used against the 2004 liability); and
- the party seeking to surrender the certificate must be the registered owner of the certificate in the Regulator's register or certificates.

Clause 46 – Annual renewable energy shortfall statements

This clause establishes a requirement for liable entities with a shortfall in renewable energy certificates to lodge a renewable energy shortfall statement for the year by 14 February of the following year, unless the Regulator approves the lodgement of the statement by a later date.

The renewable energy shortfall statement must meet the prescribed requirements.

Renewable energy shortfall statements must be lodged with the Regulator and meet any requirements specified in the regulations. Clause 67 specifies that any renewable energy shortfall charge which is payable must be lodged with the Regulator by the same time as the renewable energy shortfall charge.

Division 2 – Assessments

Clause 47 – First renewable energy shortfall statement for year taken to be assessment

This clause establishes a self-assessment mechanism for reporting certificate shortfalls to the Regulator. The clause specifies that if a liable entity lodges a renewable energy shortfall statement, and has not previously lodged a shortfall statement for that year with the Regulator, that statement shall be taken to be the

assessment of a liable entity's certificate shortfall and the charge payable on that shortfall.

The assessment is taken to have been lodged on the later of 14 February (of the year following the year to which the statement relates), or on a later date approved by the Regulator.

The renewable energy shortfall specified by the liable party in their shortfall statement is taken to be the amount of shortfall for which a renewable energy shortfall charge is payable. This shortfall statement has the same status as a notice of assessment issued and signed by the Regulator.

Clause 48 – Default assessments

If a liable party has lodged their energy acquisition statement but has not lodged a shortfall statement, but the Regulator is of the opinion that a liable party has a shortfall and is liable to pay renewable energy certificate charge in respect of the shortfall, the Regulator may make an assessment of liability on behalf of the liable entity. In making this assessment, the Regulator must take into account any certificates surrendered by the liable party and the renewable energy certificate charge to be paid on the shortfall.

If a liable party has not lodged relevant documentation, there is provision for the Regulator to make an assessment of their liability. Specifically, if a liable party has not lodged either of the required renewable energy shortfall or energy acquisition statements for the year, and the Regulator is of the opinion that the liable party is liable to pay renewable energy certificate charge for the year, the Regulator may make an assessment of the liability on behalf of the liable party. In this case, the Regulator shall assume that no certificates have been surrendered in determining the renewable energy certificate charge which is payable.

Where the Regulator may make a default assessment on behalf of a liable party, the amount of renewable energy certificate charge payable by the liable party shall be the amount that the Regulator reasonably judges to be the shortfall.

Any renewable energy certificate charge payable by the entity for a year, as determined in the default assessment, is taken to be payable on 14 February in the following year.

The Regulator may not make a default assessment until after 14 February in each year.

Clause 49 – Amendment of assessments

This clause provides for the Regulator to make any amendments or additions to assessments that the Regulator considers necessary. This is regardless of whether a renewable energy certificate shortfall charge has been paid by the liable party in respect of that assessment.

If the Regulator considers that the amendments or additions to an assessment are required to correct fraud or evasion, which resulted in a liable party avoiding paying a renewable energy shortfall charge, the Regulator may amend the assessment at any time. If the amendment is to correct some other error or omission in the assessment, the Regulator must make the necessary alterations or amendments within 4 years on the day which the assessment is made.

Amendments which result in a reduction in the amount of shortfall charge payable by a liable entity must be made within 4 years to be valid.

If the assessment has been amended in any substantial way, the Regulator may, within 4 years from the day on which the shortfall charge would have been payable under the amended assessment, make any further amendments to the previous amendments required to reduce the liable party's liability.

If a liable entity requests an amendment to an assessment, and provides the Regulator with all the information required to make amendments, within the 4 year period, the Regulator may amend that assessment, even if the 4 years has elapsed by the time the Regulator makes the assessment.

The above time limits do not apply if the Regulator is amending an assessment in order to give effect to a review or appeal decision, or give effect to an objection while waiting for the results of an appeal.

The revised amount of a renewable energy shortfall charge, as determined after the amendment, is taken to be payable:

- on the date of the amendment, if the amendment arises from an error made wholly or partly by the Regulator; or
- on the date which the charge under the original assessment became payable in other cases.

Clause 50 – Refund of overpaid amounts

This clause allows that if, as a result of an amendment to an assessment, a person's liability to pay a renewable energy shortfall charge is reduced and the liable entity has already paid that shortfall charge, the Regulator must refund the overpaid amount to the liable entity. However, the Regulator can first deduct from the overpayment, any amount owing to the Commonwealth in relation to another shortfall related liability, and refund the remainder.

In this section, overpaid amount includes amounts payable under section 70 or Part 8 of this Act.

However, this does not apply to overpaid certificates (see Clause 38 which provides that when too many certificates are surrendered, these will not be refunded but will become a carried forward surplus, to be used against later liabilities).

Clause 51 – Amended assessment to be an assessment

This clause specifies that an amended assessment is considered to be a valid assessment for the purposes of this Act, except in circumstances where this is expressly provided against in this Act.

Clause 52 – Notice of assessment

This clause requires that the Regulator give written notice to a party when they make a default assessment or amend an assessment, as soon as practicable after these have been completed.

Clause 53 – Validity of assessment

This clause provides that the validity of an assessment is not affected because any provision of this Act has not been complied with.

Part 6 – Objections, reviews and appeals

Division 1 – Objections to and review of assessments

Clause 54 – Objections

This clause allows liable entities who are dissatisfied with an assessment to object to the assessment, following the processes set out in this Part.

Clause 55 – How objections are to be made

This clause establishes a requirement for a person making an objection to an assessment to:

- make it in writing;
- lodge it with the Regulator within 60 days after the assessment is made; and
- state fully the grounds that the person relies on in making an objection.

Clause 56 – Limited objection rights in the case of certain amended assessments

This clause provides that where an objection is brought against an amended assessment, a liable entity's right to object is limited to the amendments or additions made as part of the amended assessment.

Clause 57 – Applications for extension of time

This clause provides that if the 60 days for making an objection (allowed for in clause 55) has expired, a person may still lodge an objection with the Regulator, but this must be accompanied by a written request seeking an extension of time in which to lodge the objection. In making a request for an extension of time, the person must fully detail the reasons why they did not lodge the objection with the Regulator within the allowable period.

The Regulator must consider the request and decide whether or not to grant the request. The Regulator must provide written notice of their decision on the issue.

If the Regulator agrees to the request for an extension of time, the objection is taken to have been lodged within the allowable period. If the Regulator denies the request for an extension of time, the person may seek a review of the matter by the Administrative Appeals Tribunal.

Clause 58 – Regulator to decide objections

This clause requires that the Regulator decide whether to allow (either wholly or in part) or disallow an objection. This is called an objection decision. The Regulator must ensure that written notice of the objection decision is served on the person making the objection.

Clause 59 – Person may require Regulator to make an objection decision

This clause allows a liable entity to give written notice to the Regulator to make an objection decision in the following cases:

- where the objection was lodged with the Regulator (within the 60 day allowable period) and the Regulator has not made a decision within 60 days;
- where the objection was lodged outside the 60 day allowable period with the approval of the Regulator (see Clause 57), and the Regulator has not made a decision within 60 days of the day when the Regulator approved the request for an extension of time; or
- the Regulator has made a request, in writing, for further information from the liable entity within 60 days of the day when the request was lodged with the Regulator and the Regulator has not made a decision within 60 days of receiving the information required from the party.

Where the Regulator is given notice to make a decision by a liable entity, the Regulator must make a decision within 60 days after being given the notice. If the Regulator does not make a decision within that period, the Regulator is taken to have made a decision to disallow the objection. This will allow the liable entity to seek further appeal of the matter if they wish.

Clause 60 – Liable entity may seek review of, or appeal against, Regulator’s decision

This clause allows a liable entity who is dissatisfied with the Regulator’s objection decision to seek a review of the decision by the Administrative Appeals Tribunal or seek to have an appeal heard in the Federal Court.

Clause 61 – Grounds of objection and burden of proof

The clause provides that where a liable entity has a matter reviewed by the Administrative Appeals Tribunal or heard in the Federal Court, the liable entity (unless specifically allowed by the Tribunal or the Court), is restricted to the matters

covered by the objection. The liable entity holds the burden of proof in demonstrating that the decision of the Regulator was incorrect or an assessment amount was excessive.

Clause 62 – Time limit for appeals

This clause requires that appeals to the Federal Court must be lodged with the Court within 60 days of a person receiving notice of the decision.

Clause 63 – Order of Federal Court on objection decision

This clause specifies that the Federal Court, on hearing an appeal, may confirm or vary the decision of the Regulator.

Clause 64 – Implementation of Federal Court order in respect of objection decision

This clause requires the Regulator to give effect to a decision of the Federal Court within 60 days of the day when the decision was made by the Federal Court.

For the purposes of this clause, if the order of the Federal Court was made by a single Judge and no appeal is lodged against that decision, the order becomes final at the end of the time allowed for lodging appeals. If the order is made by the Full Court of the Federal Court and no application to appeal to the High Court is made, the order becomes final 30 days after the day when the order was made.

Clause 65 – Pending appeal not to affect implementation of decisions

This clause provides that, pending the conclusion of an appeal on a decision, the decision being appealed is still effective, and relevant actions to implement that decision can be validly taken.

Division 2 – Review of other decisions

Clause 66 – Review of decisions

The clause sets out the persons who can bring forward a request for the Regulator to reconsider a decision on a reviewable matter. The table in this clause sets out which are the reviewable decisions and who is able to bring forward an appeal on the issue.

Requests for the Regulator to reconsider a decision under this section must be made in writing and be lodged with the Regulator within 60 days of the day when the Regulator made the decision.

The Regulator is taken to have supported the original decision if no notice of an alternative decision is provided to the applicant within 60 days of when the request to review the decision was lodged. Where a party is dissatisfied with this decision, they may appeal to the Administrative Appeals Tribunal to review the decision.

Part 7 – Collection, recovery and refunding of charge

Division 1 – General rules about collection and recovery

Clause 67 – When renewable energy shortfall charge becomes due and payable

This clause establishes a requirement for a renewable energy shortfall charge owing for a year to be paid on 14 February, or on the date of lodgement if the shortfall statement is lodged after 14 February of the following year (if, for example, under Clause 46, the Regulator agrees to a later date for lodgement).

Clause 68 – When additional renewable energy shortfall charge becomes due and payable

This clause establishes a requirement for penalty charges imposed under Part 8 of this Act to be payable on the date specified in the notice of assessment from the Regulator.

Clause 69 – Extension of time for payment

This clause allows the Regulator to extend the time for payment of a renewable energy shortfall charge. If the Regulator extends the time for payment of shortfall charge, the charge becomes payable on the date specified by the Regulator.

Clause 70 – Penalty for unpaid renewable energy shortfall charge related liability

This clause provides that where an amount of renewable energy shortfall charge has not been paid by the due date, a penalty in the form of additional renewable energy shortfall charge can be applied to the unpaid amount.

The liable party who has not paid the renewable energy shortfall charge by the due date is liable for additional renewable energy shortfall charge from the first day from when the charge should have been paid. The liability to pay additional renewable energy shortfall charge continues until the day when the renewable energy shortfall charge or additional renewable energy shortfall charge is paid.

Additional renewable energy shortfall charge is calculated by multiplying the unpaid amount by the general interest charge rate for the day.

Clause 71 – Recovery of renewable energy shortfall charge related liability

This clause establishes that any renewable energy shortfall charge related liability is a debt payable to the Commonwealth. This debt is to be discharged to the Regulator in the manner prescribed by the Regulator. The Regulator may sue a liable party for unpaid renewable energy shortfall charge related liabilities in a court, from the date when the charges became payable.

Clause 72 – Service of documents if a person is absent from Australia or cannot be found

This clause allows the Regulator to serve a document on a person in order to recover renewable energy shortfall related liabilities. If the Regulator is satisfied that a person is not currently in Australia and has no Agent in Australia, or cannot be found, the Regulator can serve notice by posting it to the person's last known business or residential address.

Division 2 – Special rules about collection and recovery

Subdivision A – Recovery from a third party

Clause 73 – Regulator may collect amounts from third party

This clause applies where the following debts are owed to the Commonwealth:

- renewable energy shortfall charge;
- judgment debt for a renewable energy shortfall charge related liability;
- costs for the judgment debt;
- amounts payable to the Regulator for conviction of offences against this Act.

The Regulator can seek to recover these debts from a third party if that third party:

- owes money to the debtor;
- holds money for the debtor or for a party owing money to the debtor; or
- has authority to pay money to the debtor.

The third party is taken to owe money to the debtor even if the purposes for which the money is payable have not been completed.

In collecting money from a third party, the Regulator can require the third party to pay the lesser of the debt, or the money which the third party owes to the debtor. If the third party is required to pay money periodically to the debtor, the Regulator can require that the third party make payments to them (of either the whole, or a portion, of the amount payable) in order to pay off the debt.

The third party must pay this money to the Regulator immediately after the amount becomes payable to the debtor, unless a different timeframe is allowed.

The debtor must be notified by the Regulator of action taken to recover the debt from a third party.

If another party elects to pay off all or some of the debt on behalf of the debtor, the Regulator must advise the third party that the debt has been reduced.

Clause 74 – Notice to Commonwealth, State or Territory

This clause provides that if the third party is the Commonwealth or a State or Territory, the Regulator may serve notice to pay the Regulator to an employee who has responsibility for disbursing the Commonwealth's, State's or Territory's money.

Clause 75 – Indemnity

This clause specifies that any amount paid to the Regulator by a third party is taken to have been authorised by the debtor or any other person who may have been entitled to some or all of the money. The third party is indemnified for making these payments.

Clause 76 – Offence

This clause states that failure to comply with a notice to pay the Regulator will result in a penalty of 30 penalty units. A court may, in addition to imposing this penalty, order the party to pay the money owing to the Regulator.

Subdivision B – Recovery from liquidator

Clause 77 – Liquidator's obligation

This clause places obligations and conditions on the liquidator of a company who has been a liable entity.

The appointed liquidator must advise the Regulator of this within 14 days. The Regulator must notify the liquidator of the amount that the Regulator requires in order to discharge the debt. The liquidator must not commence liquidating the company until this notice has been received.

The liquidator may, after being advised of the size of the debt, part with the assets of the company to pay ordinary debts, to be done in accordance with a prescribed formula (which includes the notified amount required to discharge any outstanding renewable energy shortfall charge related liabilities). Ordinary debts do not relate to:

- outstanding renewable energy shortfall charges;
- unsecured debts of the company; and
- debts not required by Australian law to be paid in priority to some other debt.

The liquidator must discharge the liabilities to the extent possible with the assets available. The liquidator is personally responsible to discharge the liability if they contravene this section.

Clause 78 – Offence

This clause establishes a penalty of 30 penalty units if the liquidator fails to comply with this requirement.

Clause 79 – Joint liability of 2 or more liquidators

This clause imposes the liability to meet obligations and liabilities imposed by this section on all liquidators. These may be discharged by any of the liquidators.

Clause 80 – Liquidator’s other obligation or liability

This clause provides that this Subdivision does not reduce any obligations or liabilities of a liquidator arising elsewhere.

Subdivision C – Recovery from receiver

Clause 81 – Receiver’s obligation

This clause places obligations and conditions on a receiver taking possession of a company’s assets.

The appointed receiver must notify the Regulator of that status within 14 days. The Regulator must give notice to the receiver of the debt to be discharged. The receiver must not commence liquidating the company until this notice has been received.

The receiver may, after being advised of the size of the debt, part with the assets of the company to pay ordinary debts, to be done in accordance with a prescribed formula (which includes the notified amount required to discharge any outstanding renewable energy shortfall charge related liabilities. Ordinary debts do not relate to:

- outstanding renewable energy shortfall charges;
- unsecured debts of the company; and
- debts not required by Australian law to be paid in priority to some other debt.

The receiver must discharge the liabilities to the extent possible with the assets available. The receiver is personally responsible to discharge the liability if they contravene this section.

Clause 82 – Offence

This clause imposes of penalty of thirty (30) penalty units should a receiver fail to comply with these conditions.

Clause 83 – Joint liability of 2 or more receivers

This clause imposes the liability to meet obligations and liabilities imposed by this section on all receivers. These may be discharged by any of the receivers.

Clause 84 – Receiver’s other obligation or liability

This clause provides that this Subdivision does not reduce any obligations or liabilities of a receiver arising elsewhere.

Subdivision D – Recovery from agent winding up business for non-resident principal

Clause 85 – Obligation of agent winding up business for non-resident principal

This clause places obligations and conditions on an agent whose principal is not an Australian resident and where the agent has been instructed to wind up the principal's business in Australia.

The agent must advise the Regulator that they have been appointed within 14 days. The Regulator must advise the agent of the amount required to discharge the principal's debt. The agent must not part with any of the principal's assets before receiving the advice from the Regulator of the debt, unless this has been approved by the Regulator.

After receiving the notice of debt, the agent must set aside sufficient assets to cover the debt, or all of the available assets where this is not sufficient to cover the debt. The agent must use these assets to discharge the debt. The agent is personally liable to discharge those liabilities if they do not comply with the requirements of this section.

Clause 86 – Offence

This clause establishes a penalty of 30 penalty units for failure to comply with these conditions.

Clause 87 – Joint liability of 2 or more agents

This clause imposes the liability to meet obligations and liabilities imposed by this section on all agents. These may be discharged by any of the agents.

Clause 88 – Agent's other obligation or liability

This clause provides that this Subdivision does not reduce any obligations or liabilities of an agent arising elsewhere.

Subdivision E – Recovery from deceased person's estate

Clause 89 – Administered estate

This clause applies where a trustee manages a deceased estate. This clause allows the Regulator to deal with the trustee as if the trustee has the ability to make decisions regarding the estate with the same authority as the person who is deceased.

The trustee must complete the obligations of the deceased person in respect of this Act, on behalf of the deceased person. In their capacity as trustee, the trustee must take actions to ensure that the liabilities of the deceased person are discharged.

Where the trustee fails to make returns to the Regulator which would determine the amount of liability, the Regulator may make the return on the trustee's behalf.

Trustees dissatisfied with the return completed by the Regulator may object through the processes established in Division 1 of Part 6.

Clause 90 – Unadministered estate

This clause applies where a liable party is deceased and a trustee has not been appointed to administer the estate. In this instance, the Regulator may determine the liability of the deceased person. This determination must be published by the Regulator twice in a daily newspaper circulating in the State or Territory in which the deceased person resided. This determination of liability will be final, unless amended. A person with an interest in the estate or who is granted probate of the deceased person's will or administration of the estate can object to the Regulator's determination in the manner established in Division 1 of Part 6.

Division 3 – Other matters

Clause 91 – What this Division is about

This clause provides an overview of the Division.

Clause 92 – Right of recovery if another person is liable

This clause provides that a person paying some amount of a renewable energy shortfall charge, for or on behalf of another person, may recover that amount from that person through the courts, or retain that amount from payments owing to the other person.

Clause 93 – Right of contribution if persons are jointly liable

This clause specifies that if 2 or more persons are jointly liable to pay a renewable energy shortfall charge related liabilities, all parties are liable for the whole of the amount. If one person pays some of the liability, the person may recover a just and equitable amount from the other persons through a court.

Clause 94 – Regulator may authorise amount to be recovered

This clause allows the Regulator to authorise a person to recover the whole liability of a deceased person and costs associated with recovering that money, by seizing and disposing of property of the deceased person. The property may be disposed of in the manner specified in regulations.

Part 8 – Refunding charge

Clause 95 – Refunding charge in later years

This clause applies where a liable entity has paid a renewable energy shortfall charge for a year and is surrendering certificates against this liability in the allowable refund period. The allowable refund period commences immediately after the party lodges a return for the year following the year for which the shortfall charge was paid and ends 3 years after the actual payment of the shortfall charge.

In surrendering additional certificates against a shortfall for which a renewable energy shortfall charge was paid, the liable entity must specify the year of the shortfall for which certificates are being surrendered.

Clause 96 – Value of certificates surrendered

This clause establishes that the value of the certificate being surrendered against a liability will be equal to the amount of shortfall charge paid (per MWh) in the year in which the liability was incurred. The total value of certificates surrendered must not exceed the actual amount of the renewable energy shortfall charge paid for that year.

Clause 97 – Certificates can only be surrendered if there is no shortfall

This clause restricts the time at when certificates can be surrendered against a previous shortfall to those years when the liable entity did not have a shortfall in the previous year. The clause essentially requires that a liable party discharge the current liability prior to seeking to surrender additional certificates to make up previous year's shortfalls.

Clause 98 – Refund of charge where certificates surrendered

This clause establishes the method of calculation for determining the redeeming of renewable energy shortfall charge, where a party has surrendered certificates towards that liability. The Regulator shall refund the certificate value, determined in line with Clause 96, less the administration fee (which is specified in regulation). A party cannot receive more in refund than the amount of shortfall charge originally paid.

Part 9 – Penalty charge

Clause 99 – Failure to provide statements or information

This clause establishes a liability for liable entities (except government bodies) to pay penalty charges (called additional renewable energy shortfall charge) when they refuse or fail to submit, within the allowable timeframes:

- an energy acquisition statement;
- a renewable energy shortfall statement;
- information required by the Regulator to assess a liable entity's liability.

Liable parties will also be liable to pay additional renewable energy shortfall charge where they fail to retain sufficient records, or provide these records to the Regulator, to demonstrate that they have accurately reported, with respect to a liability to pay a renewable energy shortfall charge:

- the amount of relevant acquisitions in a year;
- the total MWhs of certificates being surrendered in that year;
- any carried forward shortfall or surplus for the previous year;
- any carried forward shortfall for the current year; and

- the basis of any calculations to determine a liability to pay a renewable energy shortfall charge.

In these instances, the additional renewable energy shortfall charge is equal to double the amount of renewable energy shortfall charge payable by the liable entity.

Clause 100 – False or misleading statements

This clause provides that if liable entities (except government bodies) make statements which are false or misleading in an area important to the determination of a liable entity's liability under this Act, or omit from a statement details which are important to the determination of a liable entity's liability under this Act and, as a result, the liable entity does not pay the correct amount of renewable energy shortfall charge, the liable entity must pay double the difference between the amount of the correct renewable energy shortfall charge less the actual shortfall charge paid.

This clause covers statements made orally, in writing, in electronic or other form pertaining to:

- an objection, statement of other document obtained by the person;
- answers to questions asked by the person; and
- information given to the person.

Clause 101 – Penalty renewable energy shortfall charge where arrangement to avoid renewable energy shortfall charge

This clause imposes penalty renewable energy charge where a party is deemed by the Regulator to have made an arrangement solely or principally to avoid paying a renewable energy shortfall charge (see Clause 41). Where such an arrangement has resulted in the party paying less renewable energy shortfall charge than they would otherwise be liable, the liable entity must pay, as penalty, double the difference between the actual liability and the reported liability.

Clause 102 – Assessment of additional renewable energy shortfall charge

This clause requires the Regulator to assess the amount of additional renewable energy shortfall charge payable by the liable entity and to advise them of that amount. Advice of this penalty may be incorporated into any other assessment made by the Regulator for that liable entity.

Clause 103 – Remitting additional renewable energy shortfall charge

This clause allows the Regulator to reduce the amount of additional renewable energy shortfall charge payable by a liable entity, before or after an assessment of the liability to pay the charge is made.

Part 10 - Administration

Clause 104 – General administration of Act

This clause establishes the Regulator as administrator of this Act.

Clause 105 – Annual report

This clause requires that the Regulator give the Minister a report on the working of the Act at the end of each year to be presented to Parliament.

Part 11 – Audit

Division 1 – Overview

Clause 106 – Overview of Part

This clause provides an overview of this part.

Division 2 – Appointment of authorised officers and identity cards

Clause 107 – Appointment of authorised officers

This clause allows the Regulator to appoint an officer or employee of the Office of the Renewable Energy Regulator to undertake actions related to audits.

Clause 108 – Identity cards

This clause requires the Regulator to issue identity cards to authorised officers. The form of the identity card is to be specified in Regulation. The identity cards must contain a recent photo of the authorised officer. Authorised officers intending to carry out duties or exercise powers under this Act must carry the identity card at all times.

Clause 109 – Offences relate to identity cards

This clause establishes the penalty for failing to return identity cards when ceasing to be an authorised officer.

Division 3 – Powers of authorised officer

Subdivision A – Monitoring powers

Clause 110– Authorised officer may enter premises by consent or under monitoring warrant to check information provided under this Act or to check compliance with the Act

This clause allows authorised officers to enter premises (at a reasonable time of the day) in order to exercise monitoring powers established under Clause 111, in order to determine if this Act has been complied with.

There are two means by which the authorised officer is authorised to enter business premises:

- the occupier of the premises has consented to the entry and the authorised officer has displayed their identify card to the occupier. In this case, the authorised officer must leave the premises when requested.
- the authorised officer can have access to the premises with a monitoring warrant.

Clause 111 – Monitoring powers of authorised officers

This clause establishes the monitoring powers that an authorised office may execute when inspecting premises.

Subdivision B – Power of authorised officer to ask questions and seek production in certain circumstances

Clause 112 – Authorised officer may request or require persons to answer questions etc.

This clause specifies that an authorised officer who has gained access to premises by consent may ask questions of the occupier of the premises relating to certificates, relevant acquisitions of electricity or information required or provided under this Act. The authorised officer may ask the occupier of the premises to produce related documentation.

Where the authorised officer has gained access to the premises by warrant, the office can require the occupier to answer questions and produce required documentation.

Clause 113 – Failure to provide information to authorised officer

This clause establishes the penalty for failure to provide information to authorised officers as requested under section 112. A person is not required to provide this information if it might incriminate the person or expose that person to a penalty.

Clause 114 – False or misleading evidence

This clause establishes penalties for knowingly giving false or misleading evidence of an important nature in response to a request under Clause 112.

Clause 115 – False or misleading documents

This clause establishes penalties for knowingly giving false or misleading documents of an important nature in response to a request under Clause 112 and the evidence is given in the knowledge that it is false or misleading in a material particular. This does not apply when the person provides documents that they have signed, or a competent officer of the body corporate (where the information is submitted by a body corporate) has signed, stating that the document contains false or misleading material and identifying that material.

Division 4 – Obligations and incidental powers of authorised officers

Clause 116 – Authorised officer must produce identity card on request

This clause restricts the ability of an authorised officer to exercise any powers under this Act unless the authorised office can produce their identity card on request.

Clause 117 – Consent

This clause requires authorised officers seeking to gain entry to premises, through consent, to advise the person that they may refuse consent. Consent will not be lawful unless given voluntarily.

Clause 118 – Announcement before entry

This clause requires authorised officers seeking to gain entry to premises to announce that they are authorised to enter and give the occupier the opportunity to allow entry.

Clause 119 – Details of monitoring warrant to be given to occupier etc before entry

This clause requires the authorised officer to make available, to the occupier of the premises or their representative, a copy of the warrant. The authorised officer must identify themselves to the occupant. Warrants securing entry to premises under this Act do not require the signature of the magistrate who issued the warrant.

Clause 120 – Use of electronic equipment in exercising monitoring powers

This clause allows authorised officers, or their assistants, to use electronic equipment already on the premises to exercise their monitoring powers, where they do not consider that they would damage the equipment by using it.

Where the authorised officer believes that information that they may require in exercising their duties is contained on equipment which the authorised officer cannot operate without fear of damaging the equipment, and this information could be destroyed, altered or otherwise interfered with, the authorised officer may take necessary steps to secure the equipment.

This equipment can be secured for the shorter of up to 24 hours or until the equipment has been operated by an expert. The occupier of the premises must be notified of the authorised officer's intention to secure the equipment. The period for which the equipment can be secured can be extended by authority of a magistrate. The authorised officer must notify the occupier of an intention to seek an extension of the period for which the equipment can be secured. The occupier is entitled to present their views on this matter. The same conditions applying to issuing of warrants applies for the issuing of an extension of a warrant.

In this section, premises means premises entered under consent or under warrant.

Clause 121 – Compensation for damage to electronic equipment

This clause requires the Commonwealth to pay compensation to the owner of equipment damaged through the operation of the equipment by an authorised officer or their expert selected to operate the equipment on their behalf. Where the Regulator and owner of the equipment fail to agree on reasonable compensation, the owner may seek compensation in the Federal Court of Australia.

The amount of compensation payable must take account of whether the occupiers of the premises at the time the equipment was operated provided any warning or guidance as to the operation of the equipment.

Division 5 – Occupier’s rights and responsibilities

Clause 122 – Occupier entitled to be present during execution of monitoring warrant

This clause provides that if the occupier of a premises, or their representative, is present at the time that the warrant is being executed, that person may be present to observe the execution of the warrant. This right ceases if the person impedes the execution of the warrant.

The warrant can be executed in two or more areas at the same time.

Clause 123 – Occupier to provide authorised officer with all facilities and assistance

This clause places a requirement on the occupier of premises, or their representative, to provide assistance to the authorised officer executing their powers under warrant.

Clause 124 – Offences related to warrants

This clause establishes the penalty for failing to comply with obligations stated in Clause 123.

Division 6 – Warrants

Clause 125 – Monitoring warrants

This clause establishes requirements for issuing warrants. Before a warrant is issued, the magistrate must be satisfied that it is necessary for authorised officers to have access to premises. The magistrate must not issue the warrant until they are satisfied that sufficient information on the grounds for issuing the warrant has been provided.

The warrant must:

- authorise the entry and exercise of powers by one or more authorised officers, including such assistance and using such force as necessary;
- state when the entry is permitted;
- state the day the warrant ceases to have effect; and

- state the purpose for which the warrant is issued.

Part 12 – Secrecy

Clause 126 – Persons to whom Part applies

The requirements of this clause apply to persons who are, or have been, the Regulator, Australian Public Service officers or employees under the control of the Regulator or engaged as a provider of services to the Commonwealth.

These persons must make an oath or declaration to maintain secrecy in accordance with this Part. The Regulator may determine the form of the oath or declaration and the manner in which it must be made.

Clause 127 – Information may be recorded or divulged only for purposes of Act

This clause establishes an offence for making records of protected information or divulging protected information outside of the purposes of this Act and specifies a maximum penalty of 2 years imprisonment.

Clause 128 – Court may not require information or documents

This clause provides that a person covered by this Part is not required to divulge or communicate protected information to a court, or produce document for the court, outside the purposes of this Act.

Clause 129 – Information may be divulged to persons performing duties under this Act

This clause allows the Regulator or persons authorised by the Regulator to divulge or communicate information to other parties performing duties related to the carrying out of this Act. A defendant does not bear an evidential burden in relation to this matter.

Clause 130 – Information may be divulged to court for purposes of this Act

This clause allows the Regulator, or person authorised by the Regulator, to divulge or communicate information obtained for the purposes of this Act to a court where required for the purposes of implementing this Act. A defendant does not bear an evidential burden in relation to this matter.

Clause 131 – Information may be divulged with consent of the subject of the information

This clause specifies that restrictions on divulging or communicating protected information do not apply if the person to which the information relates gives written permission to divulge that information. A defendant does not bear an evidential burden in relation to this matter.

Clause 132 – Information may be divulged to specified persons or bodies

This clause allows the Regulator, or person authorised by the Regulator, to divulge protected information to specified persons or Government bodies for specified functions. A defendant does not bear an evidential burden in relation to this matter.

Clause 133 – Australian Bureau of Statistics to observe secrecy requirements

This clause provides that any information given to the Australian Bureau of Statistics is taken to be given for the purposes of the *Census and Statistics Act 1905*.

Clause 134 – Regulator may publish certain information

This clause allows the Regulator to publish lists of liable entities with certificate shortfalls and the total renewable energy certificate shortfall for a year.

Part 13 – Registers

Division 1 – General

Clause 135 – Registers to be maintained

This clause states the registers the Regulator is required to maintain.

Division 2 – The register of registered persons

Clause 136 – Contents of register of registered persons

This clause establishes the information which must be contained in the register of registered persons.

Clause 137 – Form of register

This clause requires that the register be electronic and be available on the Internet.

Division 3 – The register of accredited power stations

Clause 138 – Contents of register of accredited power stations

This clause establishes the information which must be contained in the register of accredited power stations.

Clause 139 – Form of register

This clause requires that the register be electronic and be available on the Internet.

Division 4 – The register of renewable energy certificates

Clause 140 – Contents of register of renewable energy certificates

This clause establishes the information which must be contained in the register of renewable energy certificates.

Clause 141 – Form of register

This clause requires that the register be electronic and be available on the Internet.

Part 14 – Renewable Energy Regulator and Office of the Renewable Energy Regulator

Division 1 – Renewable Energy Regulator

Clause 142 – Renewable Energy Regulator

This clause establishes the position of Renewable Energy Regulator. When the office of Regulator is vacant, it is to be filled as soon as practicable.

Clause 143 – Appointment of Regulator

This clause allows the Regulator to be appointed by the Minister on a full-time basis, for a specified period of not longer than 7 years. The Regulator is not to engage in paid employment outside the duties of the Regulator without approval from the Minister. The minimum retiring age is to be 55 unless specified in the instrument of appointment.

Clause 144 – Remuneration of Regulator

This clause provides for the remuneration of the Regulator to be determined by the Remuneration Tribunal. Where the Tribunal has not made a ruling, the Regulator will be paid the amount specified in regulation. Allowances are to be prescribed in regulation.

Clause 145 – Recreation leave etc

This clause allows the Remuneration Tribunal to determine the allowable recreation leave for the Regulator. The Minister can grant the Regulator leave of absence under certain conditions.

Clause 146 – Resignation

This clause allows the Regulator to resign through signed notice to the Minister.

Clause 147 – Removal from office

This clause allows the Minister to terminate the Regulator's employment for misbehaviour or physical or mental incapacity.

The employment of the Regulator may also be terminated if the Regulator is absent without approval for 14 consecutive days of 28 days in 12 months, or engages in unapproved additional paid employment.

The Minister is required to terminate the employment of the Regulator if the Regulator becomes bankrupt or seeks legal relief for bankruptcy, compounds with creditors or assigns remuneration to creditors.

The Minister may retire, with consent, a Regulator covered by the *Superannuation Act 1976* or the *Superannuation Act 1990* due to physical or mental incapacity.

The Regulator is taken to have been retired on the ground of invalidity if they are retired on the grounds of physical or mental incapacity and have a certificate issued under the *Superannuation Act 1976* or the *Superannuation Act 1990* (as applicable).

Clause 148 – Acting appointment

This clause allows the Minister to act a person as Regulator where there is a vacancy in the office, or the Regulator is absent from Australia or unable to perform their duties.

The duties performed by the acting Regulator shall not be invalid because the appointment of acting Regulator has not occurred or expired, or occurred irregularly.

The acting Regulator is entitled to the same remuneration and allowances as the Regulator. Payment of remuneration and allowances are appropriated from the Consolidated Revenue Fund.

Division 2 – Office of the Renewable Energy Regulator

Clause 149 – Establishment

This clause establishes the Office of the Renewable Energy Regulator, consisting of the Regulator and staff.

Clause 150 – Function

This clause establishes the function of the Office of the Renewable Energy Regulator.

Clause 151 – Staff

This clause establishes the staff of the Renewable Energy Regulator as public servants. The Regulator and staff combined constitute a Statutory Agency.

Part 15 – Offences

Clause 152 – Application of *Criminal Code*

This clause applies the *Criminal Code* to offences against this Act.

Penalties for offences shall not be greater than maximum penalties listed for each offence.

Clause 153 – False or misleading information

This clause establishes the penalty for knowingly giving false or misleading information of an important nature to a person exercising powers under this Act or its regulations.

Clause 154 – Failure to provide documents

This clause establishes the penalty for failing to provide a required document within the specified timeframe.

Part 16 – Miscellaneous

Clause 155 – Contracting outsiders

This clause allows the Regulator to contract persons to assist in performing their duties.

Clause 156 – Delegation

This clause allows the Regulator to delegate functions to senior officers of the Office of the Renewable Energy Regulator, or limited functions to senior employees of authorised Commonwealth contracts.

The delegate is subject to the direction of the Regulator.

Delegates are taken to be performing services for the Commonwealth for the purposes of the *Crimes Act 1914*.

Clause 157 – Appropriation

This clause acts to appropriate funds from the Consolidated Revenue Fund to make payments under this Act.

Clause 158 – Judicial notice of signature

This clause requires the Courts to accept evidence signed by a person who holds, or has held, the position of Regulator.

Clause 159 - Evidence

This clause provides that if the Regulator can produce a notice of assessment or a signed copy of a notice of assessment, this is taken to have been duly made and correct.

If the Regulator can produce a signed copy of a document issued by the Regulator, this is *prima facie* evidence that the document was issued or given.

This clause provides that a copy, or extract of a copy, has the same status as the original.

A certificate signed by the Regulator, stating that a renewable energy shortfall charge related liability is payable is *prima facie* evidence of the matters in the certificate.

An energy acquisition statement or renewable energy shortfall statement purported to have been made or signed on behalf of a liable entity is *prima facie* evidence that the statement was made with the liable entity's authority.

Clause 160 – Record to be kept and preserved by registered persons and liable entities

This clause requires registered persons and liable entities retain all relevant records required under this Act. Relevant records are specified in the clause. Records must be kept in English (or readily accessible and convertible into written English) and in a form from which a person can readily ascertain the entity's liability. These records must be retained for the later of 5 years or until the transactions to which those records relate are completed.

Records are not required to be retained if the person has been notified that the records are not required or the company has been dissolved.

Failure to comply with this requirement can result in a penalty.

Clause 161 – Regulations

This clause allows the Governor-General to make regulations necessary for giving effect to this Act, including making regulation which prescribe a penalty.

RENEWABLE ENERGY (ELECTRICITY) (CHARGE) BILL 2000

GENERAL OUTLINE

The objectives of this Bill are to impose renewable energy shortfall charge.

FINANCIAL IMPACT STATEMENT

The financial impact of this has been factored into the costs in the Financial Impact Statement for the Renewable Energy (Electricity) Bill.

NOTES ON CLAUSES

Clause 1 – Short Title

The clause provides for the Act to be cited as the *Renewable Energy (Electricity) (Charge) Bill 2000*.

Clause 2 – Commencement

This clause provides that the Act commences at the same time as Section 1 of the *Renewable Energy (Electricity) Act 2000*.

Clause 3 – Definitions

This clause provides that expressions in this Act have the same meaning as in the *Renewable Energy (Electricity) Act 2000*.

Clause 4 – Act to bind Crown

This clause specifies that this Act binds the crown in right of each of the States, the Australian Capital Territory, the Northern Territory and Norfolk Island.

Clause 5 – Imposition

This clause specifies that charges payable under the *Renewable Energy (Electricity) Act 2000* will be imposed by this section and will be called renewable energy shortfall charge.

Clause 6 – Rates of charges

This clause specifies that the rate of charge will be \$40/MWh in 2001 and subsequent years.

Clause 7 – Act does not impose a tax on property of a State

This clause provides that this Act does not impose a tax on property belonging to a State. Property of any kind belonging to a State is defined in section 114 of the Constitution.

