

REVISED SUBMISSION TO THE REVIEW OF THE RENEWABLE ENERGY (ELECTRICITY) ACT 2000

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Introduction

This submission was prepared in limited time. It is an attempt to put the experience with MRET to date into the context of its early development, as I was co-facilitator of a series of workshops that helped to frame the scheme, and I also contributed to negotiations through my involvement in the policy area of the then Sustainable Energy Industry Association (now subsumed by the Business Council for Sustainable Energy).

I have not been closely involved with the operation of MRET, but through my involvement with a number of groups, I have been made aware of a number of issues that have arisen to date.

If I can be of further assistance to the Review Panel I would be pleased to contribute in whatever way I can.

The submission is structured to respond to the Terms of Reference of the Review.

I also urge the Review Panel to give consideration to expanding the framework for public consultation. During preparation of this submission, my interaction with others preparing submissions has highlighted the value of interaction between interest groups, with regard to clarification of issues, review of thoughts regarding priorities and practicality of solutions, and generation of ideas for action. It would be desirable for the Panel to arrange for a summary by issue of the range of views presented in submissions to be prepared, and for facilitated workshop sessions to be run in conjunction with state by state consultations.

Alan Pears

Summary of Recommendations

This submission includes discussion of many issues of relevance to MRET, including consideration of a range of options for action. The following recommendations relate to issues where there seems to be a case for specific action.

- Prepare an issue by issue summary of views presented in submissions, for consideration by those making presentations at consultation sessions, and run facilitated workshop sessions during consultation
- Ensure that MRET is formally recognised as a long term element of government energy policy.
- Develop improved methods of evaluating the long term benefits of MRET and comparing its cost to other long-term options for greenhouse emission reduction. Regularly report on this.
- Establish reporting mechanisms to document the percentage locally-sourced value of MRET projects and the value of export activity generated.

- At a minimum, indexation of penalties should be introduced for the scheme. To limit the potential for windfall gains for each project, the indexed penalty value applying at the time of commissioning could be applied to each project over its life.
- There is a case to consider introduction of much higher penalty levels (eg \$300/MWh) to increase the incentive for compliance, and to create incentives for emerging technologies such as solar cells. A high penalty level would also simplify introduction of a portfolio approach (see below)
- Income from penalties should be used to purchase sufficient RECs to balance any shortfall resulting from the compliance failure.
- Conduct research into methods of adjusting penalties and incentives (including by varying the number of RECs per MWh generated) to reflect locational and system characteristics. A simple method should be developed for small generators. These should be considered in further public consultation processes by the MRET Review Panel.
- Replace the 'higher value' test with a requirement that only biomass (including waste) from vegetation planted since 1990 or 1997 can be used for MRET projects: this would allow both biomass-energy projects and energy from waste projects to qualify for MRET
- Establish an expert panel to advise ORER on environmental aspects of proposals and to develop guidelines for ongoing application
- Create a small guaranteed share for photovoltaics
- For Liable Parties above a specified minimum size, require that no more than half of their MRET liability be supplied by one technology: this requirement may need to be phased in over time
- Apply a much higher penalty (\$300/MWh or higher) across all of MRET, or to the PV portfolio (see earlier comments).
- Increase the MRET target to an additional 10% (or 30,000 GWh) in 2010 and upgrade interim targets.
- Require large generators to create RECs within one month, and small generators within 6 months, of generation.
- Limit the life of RECs to 5 years or less
- Require all Liable Parties to report to ORER the cost of their compliance, and ensure that the cost/MWh across their total electricity sales is publicly reported
- Allow Liable Parties to net out certified Green Power sales from their MRET liability and publicise the expectation that Green Power sales should not include any levy being passed through to customers for MRET compliance costs.
- Introduce quarterly (or more frequent) acquittal periods for Liable Parties above a minimum size.
- Introduce arrangements so that each new project is eligible for MRET for a minimum period from its commissioning (for example, 15 years).
- Review baselines for pre-1997 generators or introduce adjustment mechanisms to limit the value of RECs from pre-1997 sources
- For pre-1997 generators, require that only net generation above the baseline be eligible for RECs
- Maintain a watching brief on the contribution of upgrades to projects to compliance with a view to limiting their share of the MRET target to facilitate new development if necessary.
- Change the MRET scheme so that the owner of a REC, not just Liable Parties, can extinguish it.
- The proposed expert advisory group should provide advice to ORER on additional energy sources to be eligible for MRET, taking into account their environmental, social and other impacts.
- The principle that 'double dipping' between MRET and other schemes should not be allowed should be promoted to State Governments and other jurisdictions for consideration in the development of other renewable energy and carbon abatement schemes.

Extent to which the Act has contributed to reducing greenhouse gas emissions and encouraged additional generation of electricity from renewable energy sources

The role of the Act in reducing greenhouse gas emissions and increasing renewable electricity generation has multiple dimensions:

- The direct contribution of expanded renewable energy generation in response to the mandatory compliance targets. The net impact is the total MRET generation minus ‘windfall’ certified electricity due to inappropriate baselines and other loopholes (see below) and the extent of new generation that would have occurred in any case.
- The momentum built within the renewable energy industry through accelerated RD&D and commercialisation and increased familiarity (and hence lower perceived investment risk) within the financial sector
- The increased community support for ongoing investment in renewable energy resulting from greater familiarity, expanded retail infrastructure and recognition of the importance of the role of renewable energy. Even where some aspects of renewable energy development have been controversial, the process of public debate is an important step towards developing a community consensus on the large-scale use of renewable energy.
- Developments within governments to manage the larger scale roll-out of renewable energy driven by MRET, such as the development of wind energy guidelines and adjustment of planning controls: such developments underpin future expansion of renewable energy.

Ongoing achievement of these outcomes is dependent upon ensuring that a stable rate of growth in renewable generation is maintained, so that development of support infrastructure continues. MRET plays an important role in driving progress in all the above areas, many of which have not been acknowledged in discussions of the benefits of MRET.

Recommendation:

Ensure that MRET is formally recognised as a long term element of government energy policy.

Extent to which Policy Objectives Have Been Met

The policy objectives of MRET are to reduce greenhouse gas emissions, to build a viable renewable energy industry in Australia and to capture renewable energy export opportunities.

It is still early to judge definitively the extent to which MRET is achieving its policy objectives, although general indications based on the substantial investment and infrastructure development, as well as the work being done on practical issues such as interaction of wind energy systems with weak grids, suggest that substantial progress is being made.

There is no doubt that in the medium to long term, renewable energy must play an important role in Australia’s transition towards (as the Australian Government describes it) a ‘low greenhouse signature’ economy, and that there is significant potential for an Australian renewable energy industry to contribute to exports and to global emission reduction.

Some critics of MRET, such as the Parer Energy Market Review, have argued that there are lower cost strategies that would achieve emission reductions, and recent claims about low cost geosequestration have also undermined commitment to renewable energy.

The issue when looking at the costs of MRET is to look at the long term cost framework. It is certainly true that in the short term, measures such as energy efficiency and fuel switching to gas could deliver lower cost greenhouse reductions in many (but far from all) circumstances. However, if Australia is to achieve the large greenhouse cuts consistent with global cuts of 50-60% in emissions by 2100 (as stated by Environment Minister Kemp) while maintaining economic growth, substantial contributions from renewable energy and/or other very low greenhouse impact energy supply options will be needed over

time. For example, by 2050 Australia's economy could be four times as large as now if 3% pa economic growth is maintained, while emissions will have to be cut significantly in absolute terms: this implies a need to cut Australia's greenhouse intensity (that is greenhouse gas emissions per unit of GDP) by a factor of more than four by that time.

So evaluation of comparative costs of MRET and other options such as geosequestration should not focus on the first tranche of emission reductions, but on the longer term picture. It is therefore important to look at projected costs of options beyond 2010, and for 2030 and beyond for large emission reductions beyond those that could be delivered by energy efficiency. For example, CSIRO's estimate of the short to medium term cost of geosequestration for coal fired power is around \$50-60/tonne (Dave et al, 2002) although the long term target is more like \$25-30/tonne (US \$15/tonne).

Further, when comparing renewable energy options with conventional energy solutions such as coal-fired power with geosequestration, cost comparisons must include potential savings from avoiding the need to upgrade transmission and distribution capacity for distributed options.

At present in Victoria, generation cost is, on average, only 40% of the total cost of electricity, which averages \$118/MWh (DNRE, 2002). Since many renewable energy options offer potential to reduce investment in transmission and distribution systems, and even retailing costs, their cost should be compared with the cost of delivering conventional centralised electricity to users, which is significantly more than the cost of generation. For regional and rural areas, T&D costs (and energy losses) avoided by distributed energy sources could potentially be very large. On this basis, renewables seem likely to be competitive in cost with any likely alternatives.

Beyond the issue of cost, the roles of energy sources within the electricity demand profile and the overall electricity system need to be considered. Coal-fired power struggles to meet peak electricity demand, while photovoltaics, biomass solar reformed natural gas and other renewable options can be matched to demand profiles. As the economics of renewables improve, they will be able to play increasing roles around the fringes of the grid and for stand-alone energy systems. As shown by the 120 Edward St Brisbane building, renewables can also play a role in providing high quality, reliable power for computer systems, even in CBD areas. So some options that are, at present, seen as competitors with renewables may be complementary rather than competitive when the realities of demand profiles, regional energy system development and innovative energy solutions are considered.

Recommendations:

- **Develop improved methods of evaluating the long term benefits of MRET and comparing its cost to other long-term options for greenhouse emission reduction. Regularly report on this.**
- **Establish reporting mechanisms to document the percentage locally-sourced value of MRET projects and the value of export activity generated.**

Mix of Technologies Resulting from MRET

There have been some surprises in the technology mix satisfying MRET to date. Biomass (especially cogeneration in the sugar industry) has supplied much less than expected, while existing hydro has been able to exploit baseline anomalies and the potential to upgrade existing plant to deliver a lot, and the wind energy industry has managed to mobilise resources to capture significant market share.

An issue that requires consideration in this Review is the possibility that some technologies may be able to capture a large market share through early mobilisation, rather than because they have fundamentally lower costs or other beneficial attributes. In some ways, the wind and hydro sectors seem to be positioning themselves for substantial growth.

Options for limiting this problem could include one or more of:

- introduce a portfolio approach
- increase the size of the targets (both incremental and final) so that there is more room for other technologies
- limit the period over which a given project is eligible for MRET, for example to 15 years.

These options are discussed further later in this submission.

Level of Penalties

The present level of penalties was set quite low because of extreme uncertainties as to whether renewables could meet the target. The relatively low penalty therefore placed a cap on the level of financial risk for Liable Parties.

It now seems clear that renewable energy can deliver levels of electricity generation much higher than was previously thought at reasonable cost, so that fears of cost blow-outs are now much reduced.

The issue again arises: should the penalty be set at a much higher level that punishes those who fail to comply, or at a level that reflects a reasonable cost margin for generators of renewable electricity. And, if the latter, what should this level be? Higher penalties would create a stronger incentive for Liable Parties to comply. They would potentially encourage development of higher cost renewables such as photovoltaics because they would be cheaper than the penalties – although the degree of difficulty of the target set would influence whether or not higher cost renewables were likely to be needed. Higher penalties may also encourage greater emphasis on technologies that can be rolled out quickly at short notice (in case they are needed), and/or increased promotion of Green Power schemes with flexible contractual arrangements, so that some generation capacity could deliver Green Power under normal circumstances, but be switched across to MRET if required because of a shortfall.

Many in the renewable energy industry argue that a reasonable balance would be to index the present penalty. However, this level of penalty might not provide an incentive for compliance if a portfolio approach were applied to expensive sources, for example, photovoltaic cells.

The argument against indexation is that renewable energy should become cheaper as it captures economies of scale and benefits from the ‘experience’ effect. Also, as the incentive declines over time, such an approach keeps pressure on the renewable energy industry to continue to cut costs.

However, failure to index reflects a simplistic view of renewable energy’s development: in fact there are many different renewable energy technologies, each at a different stage in its development. Failure to index will help to entrench the market position of early movers such as wind energy and solar hot water at the expense of renewable technologies that emerge in future years or have been constrained by short term problems (eg bagasse). Further, if such an approach leads to less than optimal development of renewables, and adoption of potentially more expensive measures to limit global warming in the medium term, as well as loss of export potential, it may simply be penny pinching.

It should be noted that there are many other barriers to renewable energy, such as urban-rural subsidies, lack of standard grid access agreements and inadequate locational pricing within energy markets. One approach could be to pursue indexation of penalties while monitoring progress on removal of barriers such as subsidies and improvement in locational pricing signals (both recommended by the Parer Review). As progress is made to reduce barriers, indexation could be scaled back or reviewed either according to some formula, or by future review processes.

Another option could be to index the penalty for new projects in any given year, but apply a fixed penalty rate to that project for its life. So the indexed value of penalty would be set for that project by the year in which it was commissioned. In commercial terms, this would still provide certainty for each project, but would avoid the possibility of windfall profits if penalties increase over time with indexation.

These approaches do not address the creation of markets for more expensive renewables such as photovoltaics. If a portfolio approach were adopted, it may be feasible to apply different penalty levels to different parts of the portfolio. This would allow improved targeting, but it could also be seen as ‘picking winners’. On the other hand, differential price penalties could also be used to compensate for distortions in the marketplace. For example, photovoltaics feed power into the grid at times when prices are often at a premium, as well as potentially reducing transmission and distribution capacity requirements.

On balance, some form of indexation seems important. However, fixing the penalty level for each project, based on the year it was commissioned would limit potential for windfall profits while still maintaining effective levels of support for new projects. If a portfolio approach is adopted to encourage high cost technologies of importance, then either all projects should be subject to a much higher penalty level, or the higher cost parts of the portfolio would need a higher penalty level - otherwise Liable Parties may simply prefer to pay the penalty.

An important issue with regard to penalties is how any income from penalties should be spent. It should be used to purchase and acquit RECs equivalent to the number by which the failure to comply fell short of the liability. While it may be argued that penalties are normally sent to consolidated revenue, that applies when penalties are punitive in nature. In this case, the penalty level has been set to be sufficient to encourage compliance while limiting the risk of a blow-out in the cost of the MRET scheme. That is, the scheme has been designed so that a Liable Party might make a rational decision to pay the penalty in preference to buying a more expensive REC rather than seeing the penalty such as gaol or a large fine. Further, Liable Parties seem to be ‘passing through’ the cost of compliance to customers (see below): if they can also pass through the cost of paying penalties, then this adds to the case for using income from penalties to buy RECs, as electricity customers would have effectively paid for the RECs.

Recommendations:

- **At a minimum, indexation of penalties should be introduced for the scheme. To limit the potential for windfall gains but provide certainty for each project, the indexed penalty value applying at the time of commissioning could be applied to each project over its life.**
- **There is a case to consider introduction of much higher penalty levels (eg \$300/MWh) to increase the incentive for compliance, and to create incentives for emerging technologies such as solar cells. A high penalty level would also simplify introduction of a portfolio approach (see below)**
- **Income from penalties should be used to purchase sufficient RECs to balance any shortfall resulting from the compliance failure.**

Adjustment of penalties due to distance from demand centres

At present, MRET makes no adjustment for the implications of distance of renewable sources from the locations of demand, or the losses from energy supply infrastructure. This certainly simplifies the situation. However, it leads to some shortcomings:

- Where renewable energy systems are located where they reduce transmission and distribution losses (which can reach 50% in some rural areas) the renewables receive less credit for displacement of conventional energy sources than they deserve
- The present approach provides the same incentive for large distant renewable energy solutions as for renewable energy systems located close to demand: this can add pressure for upgrades of powerlines

Adjustment for the impact on T&D line losses for MRET sources could be achieved by scaling up or down the number of RECs per MWh generated. Such an adjustment should take into account the net impacts of reduced line losses from delivery of conventional power and increased losses from the MRET source. Potentially a simplified approach could be used in most cases. For example, where there was sufficient demand to absorb the output of the MRET source within a distance of, say, 50 kilometres, it would be assumed to have no line losses. The line loss reduction from conventional electricity supply

could be worked out on the basis of the regions used for the National Electricity Market or equivalent arrangements.

Such an approach would provide stronger incentives to locate MRET sources where they would cut line losses from conventional electricity sources, while reducing the incentive to locate them long distances from loads.

Recommendation:

Conduct research into methods of adjusting penalties and incentives (including by varying the number of RECs per MWh generated) to reflect locational and system characteristics. A simple method should be developed for small generators. These should be considered in further public consultation processes by the MRET Review Panel.

Other Environmental Impacts of MRET

The major actual or potential environmental impacts of MRET as it has been implemented relate to:

- Provision of support for biomass projects in sensitive areas such as forests, or that involve unsustainable agricultural practices
- Failure of MRET to support biomass projects where the bulk of project revenue comes from energy that could assist in land rehabilitation, such as the mallee projects in WA or possible trees-for-energy projects
- Impacts of wind energy projects on highly valued landscapes

Clearly environmental impacts were not well addressed in the original legislation, due to their complexity and the complex political negotiations that occurred. It seems unlikely that a simple set of guidelines could adequately deal with the wide variation in circumstances that may apply.

One approach would be to simply refer all decisions on environmental impacts to states and territories, as was done for some environmental impacts in the original legislation. However, this would lead to potential inconsistencies of application around Australia, and may lead to states introducing limitations on the sourcing of RECs by electricity retailers under their jurisdiction. It would also be seen as a failure by the Commonwealth to play a leadership role in environmental protection. This could become messy.

At present, at least two issues could be addressed:

- Projects where energy is the major revenue stream and there are demonstrable positive environmental and social benefits, and existing forests are not involved, could be included in MRET, subject to compliance with appropriate environmental requirements
- Further consideration could be given to defining the range of timber wastes allowed to be used. This is a difficult area, as there is strong disagreement over definitions of native and re-growth forests. A key problem with the existing approach is that revenue from energy, even though being less than half of total revenue from a project, could make the difference between the project being economically viable or not going ahead. On this basis, it can certainly be argued that MRET is contributing to development of projects that are environmentally controversial, generating so-called 'dead koala' RECs. This controversy is undermining public attitudes to the positive benefits of MRET and also adding to confusion about the environmental credentials of Green Power schemes.

One possible approach may be to establish an expert panel to advise the ORER on projects where environmental concerns are widely held. A strategy that could at least address the problem of biomass from forests would be to specify that only biomass (and associated wastes) planted after 1990 (the base year for Kyoto) or 1997 (the base year for MRET) could be used for MRET generation.

Recommendations:

- **Replace the ‘higher value’ test with a requirement that only biomass (including waste) from vegetation planted since 1990 or 1997 can be used for MRET projects: this would allow both biomass-energy projects and energy from waste projects to qualify for MRET**
- **Establish an expert panel to advise ORER on environmental aspects of proposals and to develop guidelines for ongoing application**

Portfolio Approach

When the MRET legislation was originally introduced, a portfolio approach was not favoured because it introduced additional complexity, and could be seen as ‘picking winners’. Supporters of a portfolio approach argued that it provided a way of limiting the risk of a small number of technologies dominating MRET, and that it facilitated development of technologies with strategic value, or which were early in their development and which were currently fairly expensive.

It now seems that a small number of technologies could dominate MRET, especially if indexation of some kind is not introduced. The problems relate not just to photovoltaics, but also to technologies that miss out on the ‘first mover’ advantage.

A minimalist approach to a portfolio approach could be to:

- require a minimum share for photovoltaics (this share could rise over time from a low base, to reflect technological evolution and prices of PVs) and
- require that no single technology should provide more than a specified proportion of the total target (eg half). The overall limit may have to be phased in to take into account existing shares and to provide time for other technologies to catch the early movers.
- Require that the number of RECs from existing generators (ie pre-1997) submitted by each Liable Party be limited to a maximum level each year, to control the extent to which these generators can exploit overly generous baselines (see discussion later)

A difficulty with application of a portfolio approach is the extent to which individual Liable Parties can be expected to comply. The more onerous the portfolio requirements, the greater would be the problems. It may therefore be necessary to allow small Liable Parties to deviate from the requirements, as they may be heavily dependent on electricity from one or a few MRET projects.

Recommendations:

- **Create a small guaranteed share for photovoltaics**
- **For Liable Parties above a specified minimum size, require that no more than half of their MRET liability be supplied by one technology: this requirement may need to be phased in over time**
- **Apply a much higher penalty (\$300/MWh or higher) across all of MRET, or to the PV portfolio (see earlier comments).**

Levels of Ultimate and Interim Targets

The original target for MRET was to increase the overall share of renewable electricity from 10.5% (or 10.7%, depending on how it was calculated) in 1997 to 12.5 (or 12.7%) by 2010. In order to create greater certainty, this target was converted to a fixed 9,500 GWh in 2010.

As a result of significant increases in projected electricity demand by 2010, the MRET target means renewable electricity would fall well short of its original intended market share by 2010. This provides one rationale for upward adjustment.

However, it is also clear that the fears of those who believed that renewable electricity could not deliver substantial amounts of electricity have proved wrong. Renewable electricity has the potential to supply a substantial proportion of Australia's electricity. If, for example, MRET were revised to supply an additional 10% (around 30,000 GWh – see below) of Australia's electricity by 2010 at a marginal additional cost of \$20/MWh (see below for rationale for this cost), this would be equivalent to an additional cost of around \$600 million per annum in 2010. This must be compared with a likely cost of over \$20 billion for that electricity, and a carbon value (at \$20/tonne) of around \$4 billion if most electricity is still supplied from fossil fuels. For comparison, a recent ABARE study suggested that the cost to Australians of gaming of the market by electricity generators was \$300-\$500 million per annum.

It seems that the likely gross cost of MRET would be equivalent to \$20/tonne of CO₂ or less, for a number of reasons:

- Already some technologies are delivering RECs at around \$25 – for example solar hot water.
- Economies of scale, ongoing optimisation of technologies, and streamlining of installation should all help reduce the cost of renewables
- By 2010, plant established early in the program will be almost fully depreciated but still generating power
- Savings on transmission and distribution infrastructure will offset some costs
- Indirect economic benefits are likely, through transferring investment from low employment, capital intensive conventional energy to more employment intensive renewables: recent studies for energy efficiency have highlighted these effects, although the benefits of renewables are likely to be significantly smaller than for energy efficiency
- Installation of renewable electricity in rural areas where electricity is presently subsidised will reduce the extent of government subsidy costs. For example, over the past two years the Victorian government has allocated \$175 million to rural electricity subsidies, and there are further subsidies built-in to the core financial arrangements relating to electricity distributors.
- If renewable energy is rolled out in conjunction with energy efficiency, significant capital and ongoing operating costs could be saved. While it is not the intent of MRET to encourage energy efficiency, as Liable Parties become more sophisticated, and other incentives for energy efficiency emerge, integrated schemes are increasingly likely.

A cost of \$20/tonne of CO₂ is well below the long term price of carbon dioxide predicted by ABARE, and is below the likely cost of geosequestration (Dave et al, 2002).

There is substantial confusion regarding how much electricity would have to be generated under MRET for different target levels. The following analysis is presented for information. This has formed the basis for this submission: if it is incorrect, it would be appreciated if the Review Panel could issue a definitive statement about the implications of each target level.

ABARE's data for 1996-97 indicate that 158,917 GWh of electricity were consumed, of which 16,528 GWh (10.4%) were from renewable sources. This is close to the values that were discussed during the original negotiations on MRET (10.5 or 10.7% depending on the exact categories of electricity included in the category of liable generation). The present 9,500 GWh MRET target would therefore increase renewable generation to 26,028 GWh in 2010. At the time of MRET negotiations, the projection for year 2010 electricity consumption was 209,306 GWh, so that 26,028 GWh was 12.4% of all electricity – 2% more than the 1997 baseline of 10.4%. Recent projections for 2010 have been significantly higher, with the ESAA suggesting a level of 225,000 GWh in 2010. In this case, adding 9,500 GWh to the 1997 level of renewable generation means renewables would supply 11.6% of Australia's electricity, significantly below the 12.4% implied by the original interpretation of the 2% target.

If the same approach is applied, then a 10% MRET target would require 20.4% of all electricity to be supplied by MRET sources by 2010 – this would mean renewables would supply a 10% larger share of the electricity supply in 2010 than it did in 1997. To achieve this share would require renewables to supply 45,900 GWh of the 225,000 GWh in 2010. After deducting the baseline renewable generation of 1997 (16,528 GWh) this would mean a 10% MRET target would require 29,370 GWh of MRET

compliant generation in 2010. A 5% MRET target would require 15.4% (34,650 GWh) of electricity to be generated from renewables, with 18,100 GWh from MRET compliant sources.

For the 10% MRET target, renewable electricity would satisfy almost 45% of the presently projected growth in electricity supply between 1997 and 2010, while a 5% target would satisfy just over 27% of the growth. Given that additional conventional generation capacity has been installed since 1997, this will impact significantly on the amount of new conventional generation capacity required, thus avoiding that capital cost. If future demand growth is much reduced by effective demand side action, it may be difficult to achieve the 10% outcome unless some existing electricity generation capacity is closed by 2010. Given the age of some of our generation assets, this seems feasible.

An additional benefit of driving the higher target would be that it could potentially drive electricity prices down by creating a tendency towards excess capacity. Such an outcome could help balance the present situation, where generators have an incentive to create shortages of capacity to drive prices up.

A 10% MRET target seems feasible, though ambitious. It would provide a very positive signal to the community and the world that Australia is serious about renewable energy, and it would allow the renewable energy industry to reach a significant scale within Australia.

Experience to date suggests that the early interim targets were set too low. There was a natural inclination for an untried scheme to err on the conservative side, but we now have the experience to see that substantial renewable energy capacity can be made available in a relatively short time. There is a case to increase some of the earlier targets as a proportion of the final target on the basis of experience to date.

During negotiations over MRET, it was decided to shift from a percentage market share target to a fixed target of 9,500 GWh in 2010. In giving consideration to upgrading of the target, it may be worth revisiting the case for applying a percentage market share. It seems that the advantage of a fixed target is that it does provide certainty, while its disadvantage is that, if demand grows faster or slower than projected, the fixed target becomes a smaller or larger share of the market. In the recent past, growth has been unexpectedly rapid, so the government has been open to criticism that MRET has fallen short of the government's own commitments. There is more uncertainty about future trends, given the introduction of schemes such as the NSW Greenhouse Benchmarks (which may soon be adopted by Victoria), the possibility of stronger policy response resulting from the National Energy Efficiency framework process now under way, and the pressures to pursue a 'lower greenhouse signature'. So each approach has its own uncertainties. It may be simplest to maintain a fixed target, but to review this issue at intervals.

Recommendation:

Increase the MRET target to an additional 10% (or 30,000 GWh) in 2010 and upgrade interim targets.

Appropriateness of Operating Environment

Participation and transparency

There are some serious weaknesses in the area of transparency. First, because generators do not have a time limit on the creation of RECs after power has been generated, it is possible for generators to 'game' the market by creating fewer RECs than they are entitled to based on their actual generation. It is essential that a time limit be placed on creation of RECs. The NSW greenhouse benchmarks scheme requires certificates to be registered within 6 months of generation. However, even this period leaves a substantial period of uncertainty. One approach would be to require large generators to register RECs within a month of generation, while allowing smaller generators to register every 6 months.

RECs have an indefinite life: that is, they can be 'banked' for use at any time in the life of the MRET scheme. While this was seen as a way of reducing the risk of price blow-outs for Liable Parties, it has the effect of creating potential for distortions. First, owners of large numbers of RECs can withhold them

from the market, creating an artificial shortage. Second, owners of large quantities of RECs could flood the market with them at some time in the future, artificially depressing the price and undermining stable revenue flows for MRET generators. RECs should have a finite life of, say, not more than five years.

Another problem of transparency that may lead to profiteering is the need for exposure of the cost of compliance for each Liable Party. Many Liable Parties apply a levy to customers to fund their MRET compliance costs. However, there are some suggestions that at least some Liable Parties are charging customers at the equivalent of the penalty cost (ie \$40/MWh) rather than at the actual cost they incur. While large contract customers see the cost of the levy on their bills, they do not necessarily know what this cost should be. Most or all residential customers do not receive detailed bills, and are therefore ignorant of any cost transfer that may be occurring. ORER should therefore publish the cost of compliance per MWh sold for all Liable Parties on a regular basis (possibly quarterly), and should encourage energy market regulators to ensure that profiteering does not occur. ORER should also establish a mechanism for public reporting of trading prices in RECs.

Further, it also seems that Liable Parties may be applying their MRET levy to all electricity sales, including Green Power. Since revenue from the Green Power premium is intended to be an alternative to MRET, this approach is increasing the cost of Green Power by forcing Green Power customers to contribute to the cost of compliance with MRET. My understanding is that the MRET liability is based on all electricity sold by a Liable Party so, if this is correct, Liable Parties may well be entitled to charge the MRET levy to green Power customers at present. But this unfair burden on Green Power customers should be removed. This could be achieved by allowing Green Power sales be netted out of electricity sales contributing to the MRET liability.

The annual acquittal process is too infrequent, as it limits feedback to the market regarding prices, supply-demand balance, etc. A quarterly acquittal process for Liable Parties above a minimum threshold should be established.

Recommendations:

- **Require large generators to create RECs within one month, and small generators with 6 months, of generation.**
- **Limit the life of RECs to 5 years or less**
- **Require all Liable Parties to report to ORER the cost of their compliance, and ensure that the cost/MWh across their total electricity sales is publicly reported**
- **Allow Liable Parties to net out certified Green Power sales from their MRET liability and publicise the expectation that Green Power sales should not include any levy being passed through to customers for MRET compliance costs.**
- **Introduce quarterly (or more frequent) acquittal periods for Liable Parties above a minimum size.**

Scheduled end date of 2020

The intent of the present arrangement is to provide sufficient certainty regarding revenue flows for investors in MRET projects. Now that the scheme seems to have become established, it makes sense to establish an arrangement whereby all new projects commissioned in a given year have an appropriate period of guaranteed support from MRET, for example 15 years. Otherwise, by 2010, new projects will have only 10 years' benefit from MRET. The review Panel should consult with the renewable energy industry and financiers to determine the length of the period for which the scheme should apply to projects.

Recommendation:

Introduce arrangements so that each new project is eligible for MRET for a minimum period from its commissioning (for example, 15 years).

Baselines for existing generators

There are two problems with the baselines for existing generators:

- It seems that for at least one large hydro generator, the baseline agreed is below the stable maximum output of its existing plant. On this basis, the generator may be gaining windfall profits from creating more RECs than was intended. This has a secondary impact of reducing the share of the target available for other renewable energy sources.
- If an existing generator's output falls to a level below its baseline in one year, it does not forfeit RECs for the shortfall. It is therefore possible for an existing generator using some types of technology to game the system by artificially reducing generation below its baseline one year (while storing water or biomass), then run the plant hard the following year, creating large numbers of RECs. This could become even more of a problem after BassLink is built, as Tasmania could then import large quantities of fossil fuel-generated electricity one year while building up water storages, then export large quantities of renewable electricity the next year while creating windfall profits from creation of RECs. Again, this kind of behaviour reduces the market available for other generators.

The low baseline creates a problem for legislators, as redefining the baseline may be seen as retrospective action, which is generally unpopular among governments. Nevertheless, it could be argued that the original baseline was set in a situation where there was inadequate information, and changing it is a matter of fine-tuning. If the baseline cannot be changed, then some generators will continue to gain windfall profits for the duration of the MRET scheme, unless some new mechanism is introduced. This could be some kind of appreciation factor applied to the baseline over time to reduce the role of existing (pre-1997) generators in the scheme progressively, or a limit to the number of RECs from pre-1997 generators that can be acquitted by each Liable Party in a given year.

The issue of variation in output can be simply resolved by only allowing pre-1997 generators to create RECs for cumulative generation above the baseline multiplied by the number of years MRET has been operating. So after 5 years of MRET, RECs could be created only for generation above five times the annual baseline.

Some have argued that upgrades of existing plant that increase output should not be eligible for RECs. Where it can be shown that upgrades have been delayed in order to gain eligibility for MRET, there may well be a case for this. However, refusing to allow upgrades could lead to a sub-optimal outcome in economic terms. In any case, it seems to be the case that ongoing improvements in computer-aided design (eg using computational fluid dynamics models) and improving materials are creating significant potential for cost-effective improvement in efficiency of renewable energy systems, and this should be encouraged. At the same time, it seems unfair that, for example, an upgrade to the blades of a wind generator built after the beginning of MRET would allow additional RECs to be created, but an upgrade to a pre-1997 wind generator (or other renewable energy system) would not be eligible for extra RECs.

If at some future time upgrades of existing (potentially both pre- and post-1997 generators using a wide range of technologies) are creating large quantities of RECs, this can be dealt with by increasing the MRET targets accordingly, or by applying a portfolio approach.

Recommendations:

- **Review baselines for pre-1997 generators or introduce adjustment mechanisms to limit the value of RECs from pre-1997 sources**
- **For pre-1997 generators, require that only net generation above the baseline be eligible for RECs**
- **Maintain a watching brief on the contribution of project upgrades to compliance with a view to limiting their share of the MRET target to facilitate new development if necessary.**

Need for future reviews

It is clear that the renewable energy sector is changing rapidly, and the context within which MRET is operating is also changing: for example, the recent introduction of the NSW Greenhouse Benchmarks scheme. It is therefore appropriate to propose regular reviews of MRET. However, it may be practicable to limit their scope, or to even create an ongoing framework within which reviews can be triggered by specified changes in circumstances. In any case, it would seem desirable to carry out a further review within 3 years.

Provision for owners of RECs to extinguish them

At present, the only way that RECs can be extinguished is when Liable Parties surrender them to the ORER. This situation creates difficulties for owners in circumstances such as:

- Some state governments collect the RECs for solar hot water services when they provide rebates and incentives. These RECs accumulate. While it may be the intent of the present government to quarantine the RECs, so that the contribution of solar HWS units funded is additional to the mandatory obligation under MRET, there is no guarantee that future governments would apply the same philosophy. If large quantities of quarantined RECs were released into the market, they could have a destabilising effect.
- Administrators of Green Power schemes require suppliers of Green Power to surrender their RECs to the Green Power administrators. Management of these RECs creates complexity and costs.
- If schemes such as the Australian greenhouse Office's *Greenhouse Friendly* offset scheme were to accept RECs as one form of offset for emissions, it would not be able to extinguish the RECs collected.

The logical and simple solution is to allow the owner of a REC to extinguish it as of right. So the right to extinguish the REC would pass to others with sale of the REC itself. It has been argued by some that allowing the owner of a REC the right to extinguish it may set some kind of precedent with regard to environmental legislation. However, the only environmental impact of extinguishing a REC is to effectively increase the amount of renewable electricity that must be generated to meet the MRET target: this can hardly be described as an environmental negative. In any case, property rights generally give owners the right to dispose of an item at whatever price and in any way they wish as long as it does not infringe on the rights of others or cause negative environmental or social impacts.

Recommendation:

Change the MRET scheme so that the owner of a REC, not just Liable Parties, can extinguish it.

Appropriateness of Policy Environment

Others are better qualified to document the detailed contribution of MRET to the development of the renewable energy industry, and its social impacts. However, the interest shown by other countries in this scheme does indicate that it is considered a successful model by many.

Economic impact

As noted earlier, it seems likely that an expanded MRET would deliver greenhouse gas mitigation at lower than \$20 per tonne of CO₂ which, for medium-long term measures, seems good value. However, there is no doubt that appropriately structured regional strategies could limit the negative impacts of MRET and enhance the benefits.

A recent study by Allen Consulting (2003) for SEDA investigated the impact on the NSW economy of a 5% MRET, and found that it reduced Gross State Product by, on average, 0.06% per year between 2005 and 2020. However, this analysis does not seem to have incorporated potential transmission and

distribution savings, while it assumed generation from renewables was almost 70% more costly than conventional power. Nor did it seem to take into account introduction of a price on carbon, which would have closed this gap. The study also showed that if an expanded MRET were integrated with an effective demand management strategy, there could be a net economic benefit.

Inclusion of additional renewable energy sources

A formal process for consideration of new renewable energy sources should be established. For example, a panel of eminent renewable energy experts could review a proposal and make recommendations to the ORER. If this panel also included environmental expertise, the same advisory panel as that proposed earlier could be used.

Recommendation:

The proposed expert advisory group should provide advice to ORER on additional energy sources to be eligible for MRET, taking into account their environmental, social and other impacts.

Interaction with other Commonwealth, State and Territory energy, environment and industry policies

A key issue is how MRET may interact with carbon pricing schemes such as the NSW Benchmarks scheme and, in the longer term, a national scheme. In principle, MRET certificates are zero or very low greenhouse impact energy. On this basis, the NSW Scheme allows its Liable Parties to deduct the number of RECs they surrender to ORER from their NSW liability. In principle, this approach could be applied to a national greenhouse emission permit scheme, with each REC surrendered generating a free emission permit. This could be further fine-tuned to adjust for fossil fuel inputs to manufacture of renewables by discounting the number of emission permits per REC, eg by 10%.

The principle that should be applied is that generators should not be able to ‘double dip’ MRET and other revenue streams.

MRET is a necessary but not sufficient strategy for delivery of energy, environment and industry policies. For example, unless a portfolio approach or some other alternative is introduced, as discussed earlier, it will provide little support for photovoltaic cells. So complementary renewable energy programs can be expected to appear. It is the responsibility of those developing such schemes to address their interaction with MRET.

Recommendation:

The principle that ‘double dipping’ between MRET and other schemes should not be allowed should be promoted to State Governments and other jurisdictions for consideration in the development of other renewable energy schemes.

References

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