

1. EXECUTIVE SUMMARY

Questions posed by the issues paper specifically relevant to the inclusion of waste coal mine gas generation within the RET are as follows:

- *Is a list approach to 'eligible renewable sources' appropriate?*

The listing of eligible renewable sources in the legislation is consistent with the approach taken in other jurisdictions. Likewise the identification and listing of other eligible energy sources in the RET is also consistent with international practice.

The listing of eligible energy sources, both renewable and “other” is desirable as it provides scheme transparency for both operators and the community.

- *Should waste coal mine gas be included in the RET?*
- *Should new capacity of waste coal mine gas be included in the RET?*

Waste Coal Mine Gas (WCMG), which although not a renewable energy source by definition, may be characterised as a regenerative energy source or an energy source that has zero additional emissions due to electricity generation. The inclusion of WCMG as an “other eligible” energy source under the RET is consistent with international practice and recognises the beneficial use of what would otherwise be a waste material. It not only delivers greenhouse gas abatement benefits but also the additional benefits which flow from offsetting other fossil fuel generation.

As stated above, the inclusion of “other eligible” energy sources such as Waste Coal Mine Gas under the RET is consistent with international practice. Developing a consistent international approach to the generation of certificates is important as Australia links its carbon trading regime with that of Europe and presumably other jurisdictions in the future.

The ability to use existing generation units in the development of new WCMG power stations at new sites would partly recognise the significant investment made in plant and equipment by existing operators before the current regulatory arrangements were put in place. Furthermore, the ability to establish new WCMG generation at new sites under the RET would be consistent with international practice and secure the greenhouse gas abatement benefits and the additional benefits flowing from offsetting other fossil fuel generation mentioned above.

2. OVERVIEW

Envirogen is a waste coal mine gas generator with power stations in New South Wales and Queensland of total 21 megawatts and 20 megawatts respectively. The sites upon which the power stations are built have long term leases and long term gas supply agreements out to 2031 and 2025 respectively. Envirogen is not related to or owned by coal mining companies, and contributes net abatement of greenhouse gas emissions of approximately 1.4 million tCO₂-e per annum of which 75% is methane destruction and 25% is emission off-sets by decreasing coal fired generation. This emission reduction equates to removing approximately 315,000 cars from Australian roads.

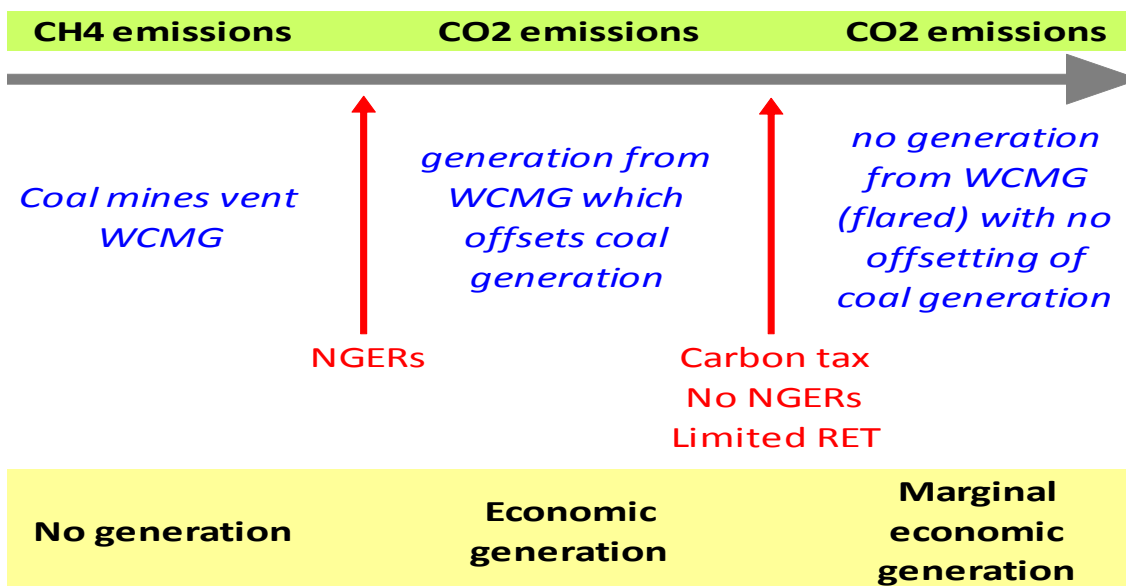
The birth of the WCMG industry rests in the NSW National Greenhouse and Energy Reporting Scheme (NGERS) where a financial incentive was used to reduce emissions based upon the

emissions reduced as opposed to the carbon tax being a penalty on emissions and it remains an industry that operates on low margins and requires a stable regulatory environment.

Waste coal mine gas generation technology is a reliable base-load generation source with high unit availabilities and the technology can now reliably offset coal fired generation and extends the timeframe for when new plant has to be built whereas the same MW of wind and solar cannot contribute to such an extent. The additional and often forgotten implication of the reliability is that the generation can now be utilised to hedge retailer’s loads, unlike the intermittent generation of other renewable technologies of wind and solar.

WCMG power stations are located close to major demands which are often at the end of long transmission lines. The location of generation at the coal mine has reduced the need for transmission investments which subsequently reduces the overall cost to every electricity consumer and contributes significantly to the increased local reliability of electricity supply for the adjoining mine.

A history of the birth and evolution of the WCMG generation industry is below:



3. Large-scale Renewable Energy Target

Question:

- In the context of other climate and renewable policies, is there a case for the target to continue to rise after 2020?

Response:

The policy decision for the RET target to rise post 2020 depends upon climate science at the time. If science indicates that carbon effects on the environment require continued management, then policy needs to reflect that view and the scale of the response needed by the community.

This will determine whether the response needs to increase or decrease the carbon effects.

Implementation of the policy can be via the existing arrangements or via the electricity market depending upon the competitiveness of renewable technologies at the time.

Question:

- Should the target be a fixed gigawatt hour target, for the reasons outlined by the Tambling Review, with the percentage being an outcome?
- Should the target be revised to reflect changes in energy forecasts? If so, how can this best be achieved – as a change in the fixed gigawatt hour target, or the creation of a moving target that automatically adjusts to annual energy forecasts? How should changes in pre-existing renewable generation be taken into account? What are the implications in terms of economic efficiency, environmental effectiveness and equity?

Response:

The management of the RET target must be on a basis that allows the supplier of the electricity to manage the volume of “certificates” that must be surrendered for each customer in an efficient manner.

Whilst markets manage pricing, the management of the target is best done in relation to the volume that the supplier supplies to the customer. With a target based on a percentage of energy supplied to the customer, the supplier can manage the customer requirements easily and without reference to any other mechanisms. Compliance costs are minimised under such an arrangement.

Question:

- What are the costs and benefits of increasing, or not increasing, the LRET target for Clean Energy Finance Corporation-funded activities? What are the implications in terms of economic efficiency, environmental effectiveness and equity?

Response:

Where the Clean Energy Corporation funds projects that can produce LGCs, those should be traded as part of the RET scheme and be accounted for under the target. On the basis that the funding will only bring forward small volumes of LGCs from projects, setting an appropriate target that considers the potential volumes of LGCs is acceptable. Cessation of funding also should not change the target.

Question:

- The self-generator exemption pre-dates the emissions intensive, trade exposed partial exemptions – are both required? If so, why?
- What, if any, changes to the current exemption arrangements should be made? What would be the impact of those changes on directly affected businesses and the broader community?

Response:

The existing self generation exemptions do not distinguish between end user supplied generation fuel and external fuel sourcing. Differing outcomes and incentives apply when the fuel for generation is sourced from the site where the end user will use the electricity generated from that fuel. Of particular importance is WCMG generation where the existing self generation provisions provide a financial barrier to entry for 3rd party generators compared to end user (coal mine owner) owned generation.

Owners of coal mines, when they have self-generation exemptions, have a clear cost advantage over 3rd party generators who do not have access to the self generation provisions as they are a separate legal entity. This financial and regulatory advantage increases the carbon emissions as it reduces the volume of RET generation that must be acquired by the end user through the self generation exemption. This is not the case when Envirogen or a third party owns the generation plant.

This can be rectified by permitting 3rd party generators to enjoy the same advantages when they supply to the mine or to remove the self generation provision for WCMG generation. Either option eliminates the competitive barrier to entry. Legal ownership is not so much the issue as ensuring that the WCMG is utilised as a zero emissions generation source in a competitive manner and not wasted by flaring which under the current legislative provisions is the least cost option for the coal mine owner. The limitation on exemptions through the connection to an integrated network is also somewhat irrelevant in achieving emissions reductions and can be relaxed. Ensuring WCMG is utilised as a generation source is a significant way to contribute to emissions reductions, as generation of this nature off-sets coal fired generation.

On this basis, the best policy position is to ensure that the WCMG is utilised by providing an exemption to any owner of the generation assets and not just to the mine owner and that the provisions on network connection be relaxed.

Question:

- Is a list approach to 'eligible renewable sources' appropriate?
- Are there additional renewable sources which should be eligible under the *REE Act*?
- Should waste coal mine gas be included in the RET? Should new capacity of waste coal mine gas be included in the RET?
- What would be the costs and benefits of any recommended changes to eligible renewable sources?

Response:

Listing Eligible Energy Sources

The listing of *eligible* renewable sources in the legislation is consistent with the approach taken in other jurisdictions. However, Australia (along with other jurisdictions) recognises the importance of and use of *other* energy sources in achieving greenhouse emissions reduction targets and has included generation from such other sources under a RET or similar scheme.

Typically other *eligible* sources include Waste Coal Mine Gas, which although not a renewable energy source by definition, may be characterised as a regenerative energy source or an energy source that has zero additional emissions due to electricity generation. The recovery of waste heat from industrial processes including the exhaust of electricity generators to generate electricity is another example of zero additional emissions electricity generation. The inclusion of such “other eligible” energy sources under the RET has been done to ensure that the greenhouse abatement benefits and benefits of offsetting other fossil fuel generation are not lost to the environment or the community.

The listing of all eligible energy sources, both renewable and *other* provides a transparent means of ensuring consistent scheme design across jurisdictions, a feature that is increasingly important as Australia moves to link its emissions trading regime with that of Europe and presumably other jurisdictions in the future.

WCMG and the RET

The destruction of the methane in WCMG by flaring achieves an almost identical level of abatement as the use of the gas for power generation. Whilst the environmental outcome in terms of emissions is the same, the use of WCMG for power generation delivers an important environmental benefit in that it offsets the need for additional high emission (fossil fuel based), energy generation.

As flaring of WCMG is the least cost option for the mine owner, there is a need for some incentive to achieve the beneficial use of WCMG for power generation which creates no additional greenhouse gas emissions.

As WCMG generation can be classified as a zero additional emissions source of generation achieving the same reductions in greenhouse gas emission as other renewable generators, the outcome of WCMG generation is similar to that of other generation which is assisted by the RET.

Whilst not being a *renewable* energy source, the beneficial use of WCMG as a regenerative energy source assists the community achieve its emission reduction targets.

It should be noted that with the introduction of the carbon tax and the associated changes to state legislation, the economics of WCMG generation has declined. In order to ensure that WCMG generation is viable and continues to contribute to reducing greenhouse emissions in Australia and assist Australia to achieve its emission reduction targets, like renewable energy generation, it requires ongoing financial assistance.

In its report to the Council of Australian Governments’ Select Council on Climate Change in March 2012, the Renewable Energy Sub Group implies that the WCMG sector may benefit from the assistance packages offered to the coal mining sector. The report states:

In addition, the Commonwealth Government’s Clean Energy Future package contains two elements to assist the coal sector in transitioning to a clean energy future:

- The \$70 million Coal Mining Abatement Technology Support Package, which will assist coal mines in developing and deploying new technologies to reduce their carbon pollution, and

- The \$1.3 billion Coal Sector Jobs Package, which will provide transitional assistance to help the coal industry to implement carbon abatement technologies for the mines that produce the most carbon pollution.

Whilst these coal sector assistance programs support coal mines to manage fugitive emissions that currently cannot be utilised in generation and to install flares to burn methane with no productive output, neither package provides assistance to WCMG generators.

In the absence of a specific assistance package for WCMG generation which would effectively mirror the measures under the RET, the inclusion of WCMG generation in the RET as an “other eligible” energy source is an effective one of achieving this end.

Furthermore, the inclusion of WCMG generation in the RET is consistent with international practice, a factor which is particularly relevant as Australia moves to link its carbon trading scheme with that of Europe.

An additional advantage of retaining eligibility in the RET for WCMG generation is that the financial support is market price based ensuring that the most efficient projects are bought forward. This inclusion also does not increase compliance costs to customers as no additional schemes and administrative infrastructure of those schemes is required.

New Generation

An extension to include new WCMG generators will make a further contribution to emission reductions. Extension of the target is not required if the target is set at an appropriate level considering the total cost of the RET legislation as the market will set the price of the LGCs and not distort the economics of renewable generation.

Under the existing arrangements, there is no ability to establish new WCMG generation or transfer existing generation units from eligible power stations to new sites and operate those facilities under the RET. There are serious consequences arising from this situation.

First, there is an effective barrier to developing new WCMG generation on any site other than that which supplies embedded power to the customer. This means that the opportunity to beneficially use WCMG at new mines is denied notwithstanding the potential environmental and social benefits of such use.

Secondly, because new sites cannot be developed for WCMG generation other than those where embedded power can be supplied, operators of existing WCMG generators face the prospect of plant becoming redundant at existing sites as the gas resource is depleted. The consequence of an inability to redeploy the existing generating units to new sites effectively destroys the value of those units and the business as a whole.

If RET inclusion is extended to new WCMG generators and/or new sites, increasing the total RET by setting an appropriate percentage level will ensure that the sector remains viable and increases production of zero emission generation. An extension would make a further contribution to emission reductions (there is potentially 300MW of new WCMG generation which can further contribute to the replacement of coal fired generation) and ensure that the level of renewable generation is not diminished by zero fuel options.

The matter of the self generation exemption must be considered in conjunction to this RET inclusion extension.

As WCMG generation represents a long term investment in the same manner as renewable generators, the continued support of those generation investments beyond 2020 is critical in ensuring that the investments that are made from now until 2020 are supported across the term required by investors for the investments to be economic. Without this extended support, investments from now until 2020 may not be made.

4. Review Frequency

Question:

- What is the appropriate frequency for reviews of the RET?
- What should future reviews focus on?

Response:

The policy decision to continue the RET post 2020 depends upon climate science at the time. If science indicates that carbon effects on the environment require continued management, then policy needs to reflect that view and the scale of the response needed by the community.

This will determine whether the response needs to increase or decrease the carbon effects and implementation of the policy can be via the existing arrangements or via the electricity market depending upon the competitiveness of renewable technologies at the time.

On this basis, regular reviews of the effect of the RET should be undertaken at no more than 5 year intervals to ensure that the Commonwealth financial support to reduce carbon effects is managed in a way that is not distorting normal market interactions.

5. CONCLUSION

The barriers to competition due to certain circumstances when using WCMG generation require further consideration to ensure that access to the zero emission source of generation is fully utilised. Permitting all owners of WCMG generation seek self generation exemptions where they supply to the host coal mine will reduce these artificial barriers.

The maintenance of financial support is critical to ensuring that potential generation and emissions reductions are not lost and will ensure that WCMG is utilised in a value adding manner. Continued inclusion in the RET in an appropriate manner is required. Furthermore, with Australia linking its carbon trading system with that of Europe, a consistent treatment of WCMG as an 'other eligible' energy source for generation under the RET is necessary.

Reducing regulatory risks across time is critical to ensuring that future capital investments are made in a timely manner and those made are not exposed to ongoing sovereign risk. To that end, an ability to use existing generation units in the development of new WCMG power stations at new sites



would recognise the significant investment made in plant and equipment by existing operators before the current regulatory arrangements were put in place.

Furthermore, the ability to establish new WCMG generation at new sites under the RET would be consistent with international practice and secure the greenhouse gas abatement benefits and the additional benefits flowing from offsetting other fossil fuel generation.

Additional Comments

Issue	Comments
Environmental impact	<ul style="list-style-type: none"> operating WCMG facilities reduce greenhouse gas emissions by about 6.5 million tonnes CO₂-e every year and there is the potential to roughly double the abatement using waste coal mine gas to around 12 million tonnes CO₂-e (generating up to 400 MW of electricity) at a market efficient cost if the WCMG is not used productively for power generation, it will be flared, resulting in the loss of the energy supply and increased electricity generation emissions equivalent to the emissions of base load generators operating WCMG facilities displaces the need for coal or gas fired power generation and saves about 1.6 million tonnes CO₂-e per annum and 0.8 million tonnes CO₂-e per annum respectively the solution is to continue to financially support WCMG generation of which the RET is one such support option
Investment impact	<ul style="list-style-type: none"> the Government is encouraging further investment in infrastructure and environmentally friendly technologies in particular however sovereign risk is increasing the solution is to stabilise the regulatory framework for the existing and future WCMG generators
<p>Efficient policy will protect initial investment value of WCMG generation and assist new WCMG generation to provide low cost options for emissions reduction.</p>	