

## Submission to Emissions Reduction Fund Green Paper

*Sustainable Energy Now, February 21<sup>st</sup> 2014*

The following submission is from Sustainable Energy Now (SEN). SEN is a voluntary group of some 200 members and associates, including professionals in engineering, science, educational, business and IT fields. SEN conducts regular talks and seminars, lobbies government, writes media articles and produces strategies to promote renewable energy in Western Australia.

There is much support for renewable energy in the community. SEN has conducted a study proving that a renewable-powered electricity grid is feasible and would be cost-competitive with a fossil fuelled system. It would remove the risk of increasing gas and coal prices while providing near zero emission electricity.

Executive Summary of SEN's Position on the Coalition's Direct Action Plan (DAP) and Emissions Reduction Fund (ERF)

The ERF as proposed by the Coalition essentially provides subsidies to industry entities to reduce emissions or sequester carbon. While SEN does not oppose some form of emissions reduction fund as part of a suite of measures, SEN does not support a stand-alone ERF, without some form of price / levy on carbon polluters. A taxpayer-funded ERF that pays polluters to reduce their pollution e.g. paying fossil fuel extraction corporations to reduce fugitive emissions is not fair or equitable to taxpayers. It is also not consistent with normal practice of business paying to dispose of their waste and minimise their pollution rather than expecting government subsidy to do so.

SEN believes that the Direct Action Plan as outlined in the Green Paper does not constitute a credible long-term decarbonisation strategy because:

1. It does not have a downward moving carbon emissions cap.
2. It does not include financial penalties for activities that exceed their set 'baseline' emissions.
3. Its main emissions reduction instrument – the ERF – is unlikely to achieve even the current legislated '5% of 2000 emissions by 2020' target.
4. Funding the ERF would be a continuing burden on all taxpayers, with no provision for 'polluter pays' disincentives to pollute, as is provided by the current CEF legislation.
5. SEN asserts (as described in this submission) that the ERF as outlined in the green paper faces numerous technical problems of additionality, verification and measurement in relation to both land-based and facility based abatements.
6. Setting of emissions baselines for over 300 large emitting companies will be fraught with difficulties. Assessing thousands of submissions to ERF auctions and ensuring that contracted abatements are achieved will likely far exceed that of administering the existing legislated carbon price scheme.
7. SEN foresees that the ERF may provide a perverse incentive to replace highly polluting fossil fuels such as coal with lesser polluting fossil fuels such as gas, which still emit about 50% as much as coal. Given that gas powered facilities are likely to have a life of more than 40 years, these could lock Australia into to a continuing carbon-intensive future as opposed to the innately low carbon intensity of renewable energy. There is also a risk of such gas fired facilities becoming stranded assets by 2050, when the longer-term target is that emissions should be reduced by 80% by 2050.
8. SEN holds, therefore, that no ERF funding of 'fossil fuel-switching' or new fossil fuelled projects should be allowed. SEN would support ERF funding of projects that switch energy sources from

fossil fuels to renewable low carbon fuels, solar, wind, geothermal, biomass, and wave or tide energy.

9. SEN notes that if the carbon price is removed, a significant effective incentive of some 2.5c per kWh\* for renewable energies over fossil fuels would be lost.
10. The ERF rules in the Green Paper would make any renewable electricity projects generating Renewable Energy Certificates ineligible for funding under the ERF. However, to compensate for loss of the carbon price and ensure continuing implementation of near-zero emissions renewable energy projects that do not incur the risk of rising gas prices, SEN suggests that ERF funding be available for dispatchable (i.e. capable of providing electricity 24/7) renewable electricity projects with near zero carbon emissions. Examples of such technologies that are near cost competitive with gas but not currently best economic practice in Australia are concentrated solar thermal with molten salt storage, sustainable biomass, pumped ocean storage hydro and geothermal (BREE, 2013).
11. SEN believes that the ERF without a price on carbon will be:
  - a. an increasing burden on taxpayers
  - b. significantly more costly per tonne of CO<sub>2</sub> abated than the existing carbon price and CEF program.

#### Summary of SEN's position on a carbon price and emissions reduction targets

1. SEN asserts that a stable, predictable carbon price and downward moving cap on emissions, is essential to:
  - a. Achieve the future emission reduction target of 80% by 2050 set by the previous government, in line with targets set by the European Union, and based on climate science.
  - b. Account for some of the 'externalised' costs of carbon emissions and other pollution from fossil fuel combustion, thereby allowing clean and renewable energy to compete on its own merit.
  - c. Pay for clean energy research and development, provide clean energy 'seed' finance on a commercial basis and pay for any energy efficiency programs or emission abatement subsidy programs such as the CFI/ERF.
2. The carbon price is a monetary disincentive for carbon pollution that can be expanded into other sectors of the economy such as transport and agriculture. This would not be practical with the DAP/ERF.
3. SEN notes that repeal of the carbon price would remove a significant and effective incentive for renewable electricity generation over fossil fuelled generation of some 2.5 c per kWh \* at a carbon price of \$25/ tCO<sub>2</sub>. (see also point 10 above). The carbon price also funds the CEFC and ARENA, which further enable commercially available energy efficiency and renewable energy technologies to be implemented.

*\* Average emission factor for NSW, Vic, Qld electricity generation is 0.98 kg CO<sub>2</sub>e/ kWh; at a carbon price of \$25.40 per tonne; this equates to 2.5c/kWh. (Australian National Greenhouse Factors, 2012)*

4. The Clean Energy Future (CEF) legislation including a carbon price of \$23– 25.40/ t CO<sub>2</sub>e since it was introduced in July 2012, has:
  - a. Incentivised energy efficiencies in industries, residences and commercial premises.
  - b. Together with the successful RET scheme, accelerated installation of wind and solar electricity generation.
5. SEN notes the fact that carbon emissions have been falling since the carbon price was introduced, in the liable carbon intensive industry sectors (entities emitting >25,000 t CO<sub>2</sub>e / year). Electricity emissions have reduced by 7.6% since 2008. (September 2013 National Greenhouse Accounts). Sydney Morning Herald, 2014 states “The total emissions, excluding increases in emissions from land-clearing, came in at 542.1 million tonnes of carbon dioxide equivalent for the year to September, or 0.3 per cent lower than a year earlier. When changes in land use are added, overall emissions for the 12 months came to 567.5 million tonnes or 1.2 per cent higher..... Emissions from the power sector have been dropping, particularly since the introduction of a \$23 a tonne price on carbon in mid-2012, making renewable energy supplies more attractive”. This counters recent claims by Coalition ministers that the carbon price is ineffective.
6. SEN notes that the increase in emissions nationally has been due mainly to emissions from the sectors not covered by the carbon price – land clearing, transport and agriculture – and a smaller increase in fugitive emissions from extraction of fossil fuels.
7. SEN believes that the 2015 transition of the current fixed carbon price to a ‘cap and trade’ scheme with auctioned domestic units, 200% penalty for exceedence of caps and the option of purchasing up to 50% international units (Climatechange website, 2013) is a more likely method to be successful in achieving the carbon reduction target. SEN’s misgiving is that the price of international units may remain too unstable and low however to give industry sufficient certainty and incentive to reduce emissions. It may be that the permissible percentage of international units will need to be reduced.
8. SEN notes that the CEF has a mechanism for providing percentages of free emission permits to trade exposed industries and agrees that some compensation is needed for trade exposed industries.
9. SEN believes that transition to a low carbon economy is inevitable and should be achieved as quickly as possible:
  - a. In concert with the CCA’s report of October 2013, Australia’s emission reduction target should be increased to at least 15% and up to 25% below 2000 levels by 2020.
  - b. These increased targets could be achievable using a suite of measures, which must include a broad-based carbon price scheme, regulatory measures, commercial projects ‘finance de-risking loan’s and research funding like those set up under the current CEF legislation (CEFC and ARENA respectively ).
10. For these reasons, SEN opposes the repealing of the carbon price and the abolition or defunding of Clean Energy Future legislated bodies such as CEFC and ARENA. SEN predicts that if the repeal / abolition occurs, the transition to a low carbon economy will be set back by many years, with significant environmental and economic costs.

#### Summary of SEN’s position on the Renewable Energy Target

1. SEN asserts that the Renewable Energy Target (RET) is essential for ongoing decarbonisation for the electricity industry. The current REC price of about \$38 per MWh plus the carbon price of about

\$25 / tCO<sub>2</sub> are sufficient to drive investment in clean, renewable, dispatchable energy technologies in Australia at the present time.

2. SEN holds that the current 41,000 GWh by 2020 large scale Renewable Energy Target be retained to 2020, and extended and increased beyond that to provide long-term continuity, and therefore business investment certainty
3. The scheme could also be expanded to include sustainable produced transport fuels and other forms of stationary energy.

#### SEN comments on issues identified for public comment in the Green Paper

This submission addresses points in the Emissions Reduction Fund green paper as follows:

##### Focus on Lowest-cost emissions reductions

SEN holds that the RET scheme and carbon price are the lowest cost means of achieving emissions reductions. The reasons are:

- In the electricity sector – the single greatest GHG contributor at about 35% of our total emissions – wind and solar PV generation, which has been enabled by the RET and the carbon price, are actually pushing down the price of electricity (RenewEconomy 2012). This is in effect a negative abatement cost. Further, renewables actually help to decarbonise our economy, rather than simply reducing or sequestering carbon, which will become ever more difficult as our economy grows.
- SEN believes that in the event of the removal of the carbon price, certain dispatchable renewable electricity technologies should be eligible to submit bids to the ERF, in addition to creating RECS under the Australian Government's Renewable Energy Target (see below).
- SEN notes that lifecycle costs for renewable technologies typically comprise approximately 80% capital and 20% operation and maintenance while gas and coal generation is the opposite, about 80% fuel/ operating and 20% capital. This de-risking of fuel price exposure is another justification for 'seed funding' of renewable energy projects, to realise their benefits.

In respect of finding lowest cost emissions reductions to be funded by the ERF:

- Abatements which satisfy the Kyoto criteria of additionality, verification and measurability would surpass the \$10–15/tonne cost assumed in the Liberal Part policy statement (The Conversation, 2013; Rose 2012)
- These more expensive, genuine abatements will be the major means for the ERF to achieve the 2020 target.
- The ERF budget of \$2.55 billion allocated for the first 4 years of the Fund is likely to achieve at most 85 million tonnes of abatement at a likely cost of \$30 / t CO<sub>2</sub>. That will leave some 346 million tonnes of CO<sub>2</sub> to be abated in 2018–2020, to achieve the abatement task outlined in the Green Paper of 431 million tonnes by 2020. This would cost \$10 billion over the 3 years (at a likely price of at least \$30 / t CO<sub>2</sub>).

Ensure that the emissions reductions are genuine

SEN supports the Green Paper's intention that ERF funding would not be provided for emissions reduction from projects that are not "additional", e.g.

- From equipment already installed;

- Reductions occurring from a decline in business activity due to normal market conditions or cost-negative changes, which need no incentives.

SEN also supports that ERF funding not be provided for projects that are already being funded from other Direct Action measures such as the 20 Million Trees programme, state-based energy efficiency schemes and various grant and rebate schemes that encourage carbon storage in vegetation, or the adoption of low-emissions technologies.

SEN sees the ERF as being potentially used for 4 categories of projects; however, there will be difficulties in ensuring projects in each category are genuine:

1. *Agricultural/ land based* – unlikely to expand beyond the current 1–2 million tonnes/ year under the CFI due to Kyoto compliance and cost constraints. The current rigorous methodologies do provide genuine abatement, but future methodologies must be Kyoto-compliant in order to be genuine. Soil carbon abatement methodologies that do not comply with Kyoto standards of additionality and measurement will not be genuine and should not be allowed. (Rose, 2012)
2. *Facility based energy efficiency projects* – SEN agrees the 5 year limit on payments is necessary to avoid paying for reductions that have become best practice. To determine which projects provide genuine abatement, pay-back time should be taken into account. Projects with up to 5 years payback time should not be deemed genuine abatement as they would be best practice, economic, and therefore non-additional. Projects with payback times exceeding 10 years, while they may produce genuine abatement, may be unattractive investments as they will be credited for only 5 years' reductions.
3. *Reducing fugitive emissions in coal, gas and oil extraction* – It is likely that many ERF auction bids will be from coal, gas and oil extraction corporations to reduce fugitive emissions. Such projects do not have the additionality problems identified for the above two categories. However, rigorous methodologies would need to be developed to ensure such abatements are genuine. It is essential that thorough monitoring strategies are included in any methodologies that may be approved for fugitive emissions reduction projects. Additionality will be a further problem in that best existing practices for fugitive emission abatement will need to be clearly defined. They should be enforced by regulation and ERF funds should not be used to fund abatement projects proposing use of current best practice. Another consideration should be that some energy resource extraction companies make very high-percentage profits and can afford to reduce fugitive emissions. SEN believes regulation of practices, together with a carbon price are fairer and more equitable means to ensure that wealthy companies reduce their pollution, rather than the taxpayer funded ERF.
4. *Fossil fuel switching and gas / coal hybrid projects*. The replacement of the CEF legislation with the DAP has the potential to provide perverse incentive to replace high polluting fossil fuels such as coal with lower polluting fossil fuels such as gas or hybrid solar gas and coal. This could prolong the life of the fossil generation plant with significant (albeit lower) emissions over a longer period. For example if the ERF is used to subsidize switching fossil fuels from coal to gas, new gas generation plant with a life of up to 40 years would be installed, still emitting about 50% as much CO<sub>2</sub> as the coal plant (Wikipedia / IPCC, 2011). in the case of fracked 'tight' gas, this could be even greater due to fugitive emissions. Another example cited in the Green Paper is subsidizing solar – gas hybrid projects. Such projects may be implemented to justify lengthening the life of the fossil-fuelled generation although they may have minimal abatement potential. SEN would only support this type of project if the solar hybridization resulted in a major reduction in fossil fuel consumption and did not lengthen the life of the fossil generation plant, or if the combustion process were

designed to be switched to a sustainable source of biomass in the near future and there is a commitment to do this.

Removal of the carbon price will also encourage gas over renewable energy. The current carbon price of \$25.40/ t CO<sub>2</sub>e adds about \$12/ MWh (1.2 c / kWh) to of gas fired electricity \*, providing a small disincentive for gas in relation to renewables. If this disincentive were removed, it would increase the likelihood of investment in more gas-fired electricity generation, when there is already more than sufficient gas generation to provide interim back-up for a substantially renewable-powered electricity grid. This would be detrimental to achieving a low carbon economy.

*\* EF of natural gas fired electricity generation = 469 g/kWh = 469 kg/ MWh (Wikipedia - IPCC, 2011). At a carbon price of \$25.40 per t CO<sub>2</sub>e this equates to \$11.90 / MWh*

Facilitate early participation in the ERF

SEN is of the view that the ERF as proposed, with the low benchmark carbon prices of \$10–15/ t CO<sub>2</sub> indicated in the Liberal Party climate policy 2013 web page, will not be attractive for 'stand-alone investments'. Most abatement practices will require prices in excess of \$25/ tCO<sub>2</sub>. Contrary to the Coalition's optimistic, unsupported estimates of \$10–15 per t CO<sub>2</sub>e, average abatement cost under the DAP has been estimated by various analysts (Politifact, 2013) at \$30/t, (SKF, 2013) \$40/t, (Australia Institute, 2011), \$50/t (Dept. of Climate Change and Environment (DCCE)), \$80/t (Treasury). Agricultural abatement has been estimated to cost \$25–\$200/t (Rose, 2012).

Technologies such as sustainable biomass production for energy described in this submission, which enable a carbon abatement price to be paid as a minor revenue stream additional to the sale of biomass for clean energy are more likely to be attractive to investors.

Standard Contracts ..... maximum 5 years

SEN agrees that the funding period would have to be limited, otherwise emission reductions for a project may be paid for by the taxpayer until well after the project has become accepted best practice. However this time frame may limit the attractiveness of the scheme to investors. For this reason and the low 'caps' on auction prices of \$10–15 suggested in the Liberals' policy paper, SEN believes that the scheme will be under-subscribed and will not achieve its target of 431 million tonnes of abatement by 2020.

Funding certainty for business

SEN is of the view that the ERF concept does not provide funding certainty for business. Industry subsidies like the ERF are notoriously uncertain, (as they are dependent on the prevailing politics and budget constraints). The outcomes of which bidders will win the auctions are also uncertainties, as well as the price, unless indicative lower and upper prices are provided.

SEN believes that it is inevitable that a price on carbon will be implemented, either internationally or unilaterally by developed nations. It would seem the best way to provide certainty for business in relation to carbon emissions is to have a stable carbon price mechanism where prices are determined say 5 years in advance.

SEN also notes that the de-funding of ARENA will remove significant incentives for some businesses to invest with certainty in research and development. If the CEFC is abolished this will remove a major source of commercial finance certainty for some renewable energy investors

Confidence that projected emissions reductions will be delivered

SEN believes that the ERF proposed system of a simple auction system with no rigorous assessment of project details and funding, will provide little confidence that reductions will be delivered. Under existing CFI Kyoto compliant rules a project must be verified as occurring and the abatement must be measured before abatement certificates can be created and paid for. It is a rigorous, proven system and it takes from one to several years. This time lag before measurement and creation of abatement means that it may be years before it is known how much abatement has occurred from a project. SEN believes this is not consistent with achieving set abatement targets. The Green Paper proposes that payment will not be made until abatement is created. However the Government is still exposed to the risk of failed projects resulting in their falling short of meeting the 5% reduction target.

The coverage of the mechanism

SEN believes the baseline mechanism as planned will be ineffective. For reasons stated above, any carbon reduction scheme should cover at least the companies liable under the current CEF mechanism, but must also be expandable to include more, smaller companies and other sectors of the economy, such as transport and agriculture.

SEN asserts that, if the CEF is repealed and replaced with only the DAP, it would not be feasible to apply what is essentially an optional grants program without penalties for exceeding baselines, more widely to millions of dispersed activities across the economy. Many questions about the DAP/ ERF are unanswered. For example, is it credible to expect that all car and truck owners and beef producers should be paid (from revenue raised by their income tax and GST) to reduce their emissions if they so choose to submit bids for abatement? How would penalties be applied to many small entities if they exceed their emission baselines? SEN concludes that the DAP would be a prohibitively inefficient and costly way of reducing emissions in the wider economy. The Coalition's DAP appears designed to limit rather than enable future expansion of carbon abatement.

On the other hand the current carbon price mechanism could be simply applied at wholesale level on other sectors of the economy, for example transport fuel and other carbon-intensive activities.

How baselines could most easily be set to effectively limit increases in historical business as usual (BAU) emissions

SEN believes that setting of fixed baselines (regardless of how they are set) with no penalties for exceedence, is a fundamental flaw of the DAP. The lack of penalties would mean that there is no guarantee to limit increases in BAU emissions and it would certainly not provide any incentive for continuing reductions in carbon intensity of the economy.

The Green Paper (GP) states "No revenue is sought nor will any be budgeted by the Government as part of the safeguard mechanism." SEN interprets this as meaning (as reported recently in 'The Australian') that there will be no penalties charged for exceeding 'historical BAU emissions'. This and another statement from the GP ".....the Government will work closely with the (electricity) sector on how the policy can best apply to

its needs” implies that the lack of penalties for increasing emissions is for the financial interests of large fossil fuel using corporations.

*Problems with the setting of baseline emissions.*

SEN sees many problems with the setting of baselines, which will have to be done individually for over 300 entities in different industries. This would be a complex, time consuming and expensive process. Some of the problems / questions that will be encountered and have not been adequately addressed in the Green Paper are:

- Productivity and output varying due to economic factors such as, commodity prices, value of the AU\$ and ore quality. For example if a mine closes down, will its ‘baseline emissions’ be struck off, transferred to other projects conducted by the parent company or allowed to be ‘used’ by other companies?
- How will baselines be applied to new ‘Green field’ projects. It would appear that benchmarks for emissions intensity per tonnes of product will have to be determined and applied. Do such benchmarks exist and if not how will they be determined?

These problems do not arise with a carbon cap and trade scheme, because carbon emission limits are not set for individual sectors, firms or facilities. Rather, there is an overall limit—or pollution cap—on annual greenhouse gas emissions from all sources of carbon pollution covered under the carbon pricing scheme. Under the cap and trade scheme soon to be implemented under the current CEF legislation, the Government will auction and issue Australian carbon units up to the quantity of the pollution cap. The price of carbon units will then be determined by the market. Liable entities will compete to buy the number of carbon units they need to meet their obligations.

The treatment of new entrants and significant expansions, including definitions of best practice

New projects need a financial incentive not to use energy inefficient processes. SEN holds that a carbon cap and price scheme is the most efficient way to achieve this for reasons described above. In addition to a carbon price, approval of new projects needs to be conditional on the proponent applying current best practice for energy efficiency and low emission intensity. The Energy Efficiency Opportunities program is already partly fulfilling this function (EEO, 2011).

Under the DAP, SEN believes it would be necessary to ensure Federal oversight of new developments by introducing a stringent greenhouse emission trigger in the Environment Protection Biodiversity Conservation Act (EPBC). This would enable the Federal Government to assess these projects and ensure that they comply with best practice for energy efficiency and minimizing emissions.

Benchmark ‘emissions indicators’ – carbon emissions per quantity of product – will need to be developed. On a basic level this could be done by dividing the emissions declared in the NGRS reporting by the expected quantity of product. But in practice it will be much more complex because, for example mines vary greatly in such factors as ore quality and access to fuel source (e.g. gas or diesel).

Compliance options in the event that baselines are exceeded

SEN much prefers a carbon cap and price scheme to baselines. If baselines are to be used, SEN can see no other option than to apply a financial penalty per tonne of CO<sub>2</sub> exceeded.

The lack of any penalty for exceedence of emissions baseline is a major failure of the DAP as proposed in the Green Paper.

How best to encourage the uptake of land sector activities

SEN's research shows that *offering higher prices of \$25 per t CO<sub>2</sub>* upward will be necessary for more farmers to take up CFI projects (Rose, 2012). This is indicated by the relatively low level of uptake (1.9m t CO<sub>2</sub> in the first 18 months of the CFI), when the price was \$23 – \$24/ tCO<sub>2</sub> (DoCCEE, 2012). It should be noted that the CFI had been operating as Greenhouse Friendly for several years prior to the CFI.

The CEO of a tree carbon offset company, which has been producing voluntary tree carbon offsets for several years states:

“Carbon sink reforestation projects contribute to a triple-win outcome: building carbon sequestration capacity, addressing land conservation biodiversity loss; and diversifying local employment opportunities in some communities. The environmental and social co-benefits of strategic and integrated biodiverse tree planting are significant. However, even when the carbon price is \$24 per tonne, tree planting carbon offset companies such as Carbon Neutral Charitable Fund are finding it difficult to find farmers willing to plant trees on their land and the alternative of purchasing marginal land to plant trees for carbon is risky and often not economic. If the Emission Reduction Fund auction price goes down below \$20 per tonne tree planting is likely to slow or even stop. This uncertainty has already had a negative impact on downstream suppliers such as nurseries.”

*Biomass production for renewable electricity and renewable fuels.*

One method that SEN believes could encourage uptake of land sector activities would be for Government to facilitate the planting of sustainable woody biomass crops such as oil mallee, and help finance industries to produce renewable energy from the biomass feedstock. CFI methodologies have been substantially developed to enable carbon fixed in tree roots and stumps to be measured and accredited as abatement and it would not be difficult to extend this to crops such as oil mallee. Under these projects, sale of the credits for the sequestered carbon would be minor revenue stream to the biomass farmers' main revenue, which would be the sale of biomass (Goss, 2013). The biomass could be used as feedstock for industries producing electricity by thermal combustion, bio-oil fuels from pyrolysis liquids (Goss, 2013) or transport fuels produced by gasification to syngas and converted to diesel and gasoline fuels by the Fischer Tropsch process. Other CFI methodologies could easily be developed to enable the renewable energy producers to also claim carbon credits for the low emission fuels, adding a minor revenue stream to their sale of the fuels SEN argues that this should be permissible for renewable energies, in addition to the RECs, to compensate for the removal of the carbon price.

The proposed governance arrangements

If the ERF is to proceed, SEN sees the Clean Energy Regulator (CER) and Carbon Farming Initiative (CFI) as suitable bodies to conduct it. The CER has the experience in governing the existing carbon price and administers the National Greenhouse and Energy Reporting database of emissions for reporting companies. The CFI has extensive knowledge of the international Kyoto standards for abatement and the development of abatement methodologies.

SEN agrees that expanding the current CFI, i.e. using the rigorously developed methodologies, developing new ones where appropriate and issuing of Australian Carbon Credit Units, is an appropriate way to conduct the ERF.

SEN is strongly of opinion that any new methodologies must be Kyoto-compliant. Examples of non-Kyoto compliance would be soil carbon offsets that are not measured or verified and offsets with permanence less than 100 years. SEN would oppose any such methodologies. The failed Chicago Climate Exchange attempted to use them and partly as a result of this, the price of abatements collapsed and it ceased to trade in 2010.

SEN asserts that the staffing and resources of the CER and CFI would have to be greatly increased to conduct the many functions required under the DAP, including for example setting of benchmarks and, conducting of auctions.

#### Options for streamlining the CFI

SEN holds that it is imperative that any steps to speed up or simplify the processes do not reduce the rigor of the methodologies or in any way circumvent Kyoto compliance. This would risk devaluing the carbon credits, risking collapse of the scheme as happened with the Chicago Carbon Exchange (CCX) in 2010. Attempting to include soil carbon methodologies in the ERF carries a particularly high risk of this occurring. The 100-year covenanting, verification and in particular soil carbon measurement required for rigorous soil carbon sequestration are expensive, but absolutely necessary to ensure these abatements would be genuine.

SEN suggests that publicising the auction 'reserve/ cap price' will be essential to making the scheme attractive to prospective investors.

At this stage, SEN has not identified any other options for streamlining the CFI.

Views on opportunities for large-scale, low-cost emissions reductions, including estimates of potential reductions.

SEN has conducted a study (SEN, 2013) presenting two scenarios for 100% renewable energy generation on WA's SWIS electricity grid. The study states: "While renewable scenarios will require more capital expenditure than adapting the existing fossil fuelled grid, it will ultimately provide energy at less cost because technology costs of renewables are decreasing and there are no fuel costs, except for biomass. For example the Australian Energy Technology Assessment (AETA) has forecast the Levelized Cost of Electricity (LCOE) from new wind, biomass and solar PV power plants to be lower than generation from new coal fired plants even without being equipped with CCS while the cost of solar concentrated thermal with storage is likely to be only slightly more. (BREE, 2012 "Australian Energy Technology Assessment). Since SEN'S original 2012 study, the 2013 update of the BREE study (BREE 2013) cites reduced Renewable energy costs:

- a reduction in onshore wind O&M costs of 18 per cent;
- single axis tracking and dual axis tracking PV configurations are approximately 20-30 per cent reduced based on a better understanding of the associated O&M costs;
- concentrating solar power (solar thermal) O&M cost reduced between 8 per cent and 27 per cent.

Beyond Zero Emissions (BZE, 2010) conducted a similar study for the Eastern (NEM) grid. It which found that re-building the grid with new 100% renewable technologies would be not only feasible but economically comparable to using new fossil fuel generation technologies.

SEN asserts that this decarbonisation of electricity generation is possible. However, due to the capital intensity of the task it is essential that Government retain carbon pricing and RET mechanisms, sufficient to

reflect the externalized costs of fossil fuel pollution and incentivise uptake of renewable energy over fossil fuels.

## Conclusion

SEN reiterates that a carbon price is the most streamlined and least costly means of reducing emissions and that the ERF will probably only achieve relatively minor emissions reductions. SEN asserts that the DAP/ ERF as outlined in the Green Paper is not likely to satisfy the community's expectations of increased adoption of renewable low pollution energy. It will probably further the interests of fossil-fuelled industries, and not achieve a de-carbonised economy with lower energy costs into the future.

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