

2 December 2011



Commissioner for Renewable Energy
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Submitted by email:
climatechange@dpc.sa.gov.au

Re Submission: Carbon intensity of South Australia's new electricity generation

Dear Commissioner

Please find attached a copy of Conservation Council of SA's submission on the **Carbon intensity of South Australia's new electricity generation Discussion Paper.**

Thank you for the opportunity to comment on this matter.

Yours Faithfully

A handwritten signature in black ink that reads "Tim Kelly".

Tim Kelly
Chief Executive



Conservation Council SA

Carbon intensity of South Australia's new electricity generation Discussion Paper.

1 December 2011

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Introduction

We note that the Government has stated that it proposed setting an emissions intensity target of 0.5 tonnes CO₂-e/MWh and in this paper, states a proposal to set an emissions intensity cap of 0.7 tonnes CO₂-e/MWh for new utility-scale generation.

The Conservation Council of South Australia would support the setting of an emissions intensity cap for electricity generation if that was the proposal. However, the policy only covers electricity **combustion**.

The Conservation Council of South Australia supports both the statewide target and power station cap on emissions intensity for electricity generation subject to these targets adopting a life-cycle approach that incorporates greenhouse gas emissions associated with exploration, mining, processing, and transport related to the fuels that are burned in combustion to generate electricity. These would include fugitive emissions and energy consumed in production processes.

The difference between emissions intensity of combustion versus electricity generation

The GHG Protocol Corporate Standard is a widely respected standard for reporting on greenhouse gas emissions associated with an entity or activity. Greenhouse gas emissions associated with the electricity generation sector are shown on page 92 of the GHG Protocol Corporate Standard and replicated below.

| SECTOR | SCOPE 1 EMISSION SOURCES | SCOPE 2 EMISSION SOURCES | SCOPE 3 EMISSION SOURCES ¹ |
|--------------------------|---|---|---|
| ENERGY | | | |
| Energy Generation | <ul style="list-style-type: none"> Stationary combustion (boilers and turbines used in the production of electricity, heat or steam, fuel pumps, fuel cells, flaring) Mobile combustion (trucks, barges and trains for transportation of fuels) Fugitive emissions (CH₄ leakage from transmission and storage facilities, HFC emissions from LPG storage facilities, SF₆ emissions from transmission and distribution equipment) | <ul style="list-style-type: none"> Stationary combustion (consumption of purchased electricity, heat or steam) | <ul style="list-style-type: none"> Stationary combustion (mining and extraction of fuels, energy for refining or processing fuels) Process emissions (production of fuels, SF₆ emissions) Mobile combustion (transportation of fuels/waste, employee business travel, employee commuting) Fugitive emissions (CH₄ and CO₂ from waste landfills, pipelines, SF₆ emissions) |

The GHG Protocol very clearly shows how fugitive and other scope 3 emissions are part of the electricity generation activity. An intensity value for stationary combustion of fuels within power stations is only a subset of electricity generation emissions intensity and must not be confused with or misrepresented as electricity generation intensity.

For determining the combustion efficiency only, the GHG Protocol provides a specific tool to give guidance. Other tools, methodologies, the GHG Protocol, emissions values and factors may be required to determine the total electricity generation intensity.

It is vitally important that the South Australian Government names its policies accurately so that there is truth in policy. There also needs to be appropriate capacity to compare like with like values from across the globe. For example, without being factually explicit on the type of policy that has been adopted, it would not be possible to compare South Australia's emissions intensity (covering

combustion only) with a value for another nation or jurisdiction that incorporates life cycle emissions in its policies on electricity intensity.

Australia's NGER methodologies cover scope 3 emissions associated with gas consumption via the National Greenhouse Accounts (NGA) Factors, which is an appropriate mechanism to incorporate scope three emissions associated with gas use. Using Australia's factors to determine electricity generation scope 3 emissions is in line with and consistent with the GHG Protocol approach. (I believe that these scope 3 emission factors will be improved in time to better cover the leaky nature of coal seam gas and shale gas production.)

More importantly, it is only the inclusion of scope 1, 2 and 3 emissions associated with electricity generation that can provide the basis for sound decision making. This is particularly important as Australia rapidly moves towards non-conventional gas sources such as coal seam gas, shale gas and coal gasification technologies.

A decision will need to be made as to whether this policy is about constraints for combustion emissions, or electricity generation more broadly. When the decision is made, the title of the policy must reflect the policy.

Which constraint to use, combustion emissions or electricity generation emissions?

Given that the purpose of making comparisons of the greenhouse impact of electricity generation is about reducing emissions, it would make far more sense for the policy to be directed towards electricity generation. It would therefore need to include fugitive and other scope 3 emissions that are part of electricity generation.

It is only the inclusion of both scope 1 and scope 3 emissions associated with electricity generation that can provide the basis for sound decision making. This is particularly important as Australia rapidly moves towards non-conventional gas sources such as coal seam gas, shale gas and coal gasification technologies.

Application of this policy to unconventional and hybrid power stations.

There is every likelihood that this policy will need to be relevant to new and diverse electricity generation technologies and hybrid schemes, and those where electricity production is a by-product of another activity.

For example:

- Where a solar power station feeds heat or steam into a new fossil fuel power plant there is a need for the following guideline to prevent the double claiming of a renewable benefit:

- Should the two parts be defined as one power station under this policy, this must preclude the eligibility to create Renewable Energy Certificates.
- Where a coal-to-liquids mine produces electricity from heat then the emissions should be divided according to the financial value of the products, such that if 1/3 of the value is achieved through sale or use of the electricity, then 1/3 of the site emissions should also be allocated to producing that electricity. By far, this would be the easiest approach and is in tune with the broader business decisions made in relation to the project.

Ensuring the policy does not delay renewables

In the event that the Government chooses the weaker '*combustion emissions constraint*' rather than the life cycle based '*greenhouse intensity of electricity generation*' approach, the Conservation Council advocates that a component of at least 50% renewable energy be required for all new power generation projects. This would ensure that new gas generation would facilitate rather than delay the transition to renewable energy.

Concluding comment

The Conservation Council commends the South Australian Government for this initiative and suggests that the cap should be set in a way that rules out polluting fossil fuels and inefficient fossil fuel based thermal power stations. This will enable the most efficient technology to be adopted and foster innovation to incorporate renewable energy into most, if not all future power station proposals for a transition to a low carbon economy.