



ENVIRONMENT AND RESOURCES COMMITTEE

Report No. 4

May 2011

Inquiry into Growing Queensland's Renewable Energy Electricity Sector - Executive Summary

The Committee

The Environment and Resources Committee is a select committee of the Queensland Parliament appointed to monitor and report on issues in the policy areas of environmental protection, climate change, land management, water security and energy.

Inquiry Terms of Reference

The inquiry examined the opportunities and challenges for the Queensland Government associated with increasing the proportion of electricity generated from renewable energy sources in Queensland. Issues examined included:

- the value for money from the Queensland Government's investments in renewable energy projects for electricity generation;
- whether the Queensland Government should adopt a target for increasing the proportion of the state's electricity generated from renewable energy sources, and if so, what form the target should take; and
- actions the Queensland Government should take to encourage investment by government-owned energy companies and the private sector in producing more electricity from renewable energy sources.

Inquiry Scope

The committee applied the Queensland Government's definition of 'renewable energy' for the inquiry which is:

... energy harvested from inexhaustible resources such as wind, tide, solar, biomass, geothermal and hydro energy as opposed to non-renewable energy from fossil fuels (eg coal, oil, natural gas, petroleum, and uranium for nuclear energy). Renewable energy sources are naturally replenishing.¹

¹ Office of Clean Energy, 2009, *The Queensland Renewable Energy Plan*, Department of Employment, Economic Development and Innovation, Queensland, p.7, viewed 10 December 2009, http://www.cleanenergy.qld.gov.au/zone_files/Renewable_Energy/occe_rep_11_web_final.pdf.

Climate change and greenhouse emissions from electricity generation

In Australia the push for greater use of renewable energy sources to generate electricity is being driven predominantly by concerns about climate change.

There is a plethora of scientific evidence that emissions from the burning of fossil fuels to generate electricity are a key contributor to global warming and climate change risks. It is prudent and vital for governments to act to reduce greenhouse gas emissions to mitigate climate change risks. Cutting emissions from electricity generation, through energy efficiency improvements and switching to renewable energy sources, are central to meeting Australian and Queensland greenhouse gas abatement targets.

The Federal Government's Renewable Energy Target Scheme

The Federal Government's Renewable Energy Target scheme provides the central framework for expanding Australia's renewable energy electricity generating capacity to achieve greenhouse gas emissions in line with international obligations. The scheme aims to stimulate \$12 billion of investment in renewable energy across Australia by 2020.

The Queensland Renewable Energy Plan

The objectives of *The Queensland Renewable Energy Plan* are consistent with the Federal Government's Renewable Energy Target scheme and, if fully implemented, could help to bring significant investment and employment to the state and its regional economies.

Pricing carbon emissions

While the details have not been released, the Federal Government's proposal to implement a carbon price mechanism from July 2012 has the potential to provide further incentives to invest in low emissions technologies such as renewable energy and greenhouse gas abatement measures.

However, until the details of the mechanism are finalised, the proponents of renewable energy projects and other energy projects in Australia will be plagued by continuing uncertainty. In our view, the Queensland Government should encourage the Federal Government, through the Ministerial Council on Energy, to move to finalise the form of its proposed carbon price mechanism as quickly as possible.

Electricity and renewables in Queensland

The committee supports the efforts of the Federal and Queensland Governments to expand the use of renewable energy sources to generate electricity in Queensland. Expansion of the state's renewable energy electricity generating capacity will have particular benefits for regional areas and create jobs.

There is strong support in Queensland for an expanded renewable energy electricity generation sector as a measure to cut greenhouse gas emissions and reduce climate change risks. Expansion of the renewable energy electricity sector also offers opportunities to diversify the state's electricity generation portfolio.

Given the inherent imperfections of energy markets, governments will need to play a key role in providing conditions and support to encourage and manage the expansion of the renewable energy electricity sector in a cost-effective and sustainable manner whilst avoiding adverse impacts on electricity costs for all users. They will also need to seek to ensure that existing fossil-fuelled electricity generating resources owned by the Queensland Government continue to be utilised efficiently.

Key Barriers

The committee identified the following key barriers to expanding the state's renewable energy electricity generating capacity:

- the higher cost of electricity generated from renewables. This includes the higher capital costs for renewable energy projects, and the higher costs of projects in Queensland compared to similar projects in other states;
- Queensland's relatively low electricity prices;
- Grid connection issues faced by renewable energy generators;
- Intermittency of renewable energy generators;
- Difficulties experienced by renewable energy projects accessing power purchase agreements; and
- Delays due to government approval processes.

Setting the priorities for energy policy in Queensland

As noted in the committee's first inquiry, energy efficiency improvements remain the lowest cost option for reducing the state's energy intensity and meeting greenhouse gas emission reduction targets. The cheapest and greenest watt of electricity remains the watt that is not used. Changing energy use behaviours to reduce wasteful energy use and improving the efficiency of appliances and equipment are key prerequisites for an affordable and sustainable switch to cleaner energy sources. Energy efficiency improvements should therefore be pursued as the first priority.

In the foreseeable future, Queensland will continue to generate the bulk of its electricity needs from its coal-fired power stations and gas-fired generators which have lower greenhouse gas emissions. Supplementing coal-fired generators with gas-fired generators and other hybrid systems offers significant and affordable savings in greenhouse gas emissions for the future. Generating more of the state's power needs from gas-fired power stations should be the second priority after energy efficiency improvements.

The committee also notes that the emerging liquid natural gas industry and the resulting availability of large supplies of 'ramp up' gas will significantly increase gas supplies that could be used for electricity generation. In our view, the prescribed percentage of electricity to be sourced from gas-fired generation under the Queensland Gas Scheme should be increased to 20 per cent by 2020.

Setting a Queensland target for electricity from renewables

There is a role for the Queensland Government to set an aspirational target, or targets, for the incremental expansion of the state's renewable energy electricity generating capacity consistent with the Federal Government's target. Having a Queensland target, or targets, in addition to the goal of securing a 20 per cent share of federal funding for investment in renewable energy electricity generating capacity, would provide clear, unambiguous evidence of the government's commitment and resolve to support a vibrant renewable energy electricity sector.

This would provide greater certainty and help to attract and secure future investment. A mandatory target would be unenforceable and impractical given the provisions contained in the Commonwealth *Renewable Energy (Electricity) Act 2000*.

The committee does not recommend that the government sets arbitrary regional or industry-specific targets. Similarly, targets for specific renewable energy technologies, rather than an aggregate target for renewable energy electricity output, are problematic. With renewable energy

technologies still evolving, it is impossible to make long-term projections with any certainty about future advances and investments.

There are, however, other worthy objectives for renewable energy electricity generation that could be assisted by a state aspirational target. One is to seek to end the reliance on diesel generators for providing primary electricity supplies in towns and communities that are remote from the electricity grid, particularly the state's remote indigenous communities.

This would provide a significant boost to the development of renewable energy electricity generating capacity in remote areas of the state. Logically, this is where renewables have a natural advantage.

Preparing the electricity network for renewables

The expansion of renewable energy electricity in Queensland will depend on the proximity of the grid to high quality renewable energy resources, and the ability of the grid to handle intermittent power sources. Investment in the grid will be needed to exploit the state's best renewable energy resources and ensure the reliability of electricity supply.

The committee supports the government's work to explore options for the CopperString Project to extend the grid from Townsville to Mt Isa for the dual purpose of meeting the needs of the Western Minerals Province and communities in the region, and providing grid access points for future renewable energy generators. In our view, this approach provides a good model for expanding the grid into other areas where there are high quality renewable energy resources as well as large scale electricity users to share the costs of the grid extension.

The committee welcomes the government's proposal in *The Queensland Renewable Energy Plan* to establish renewable energy zones. The committee also notes the potential benefits of smart grid technology, and the Federal Government's Smart Grid Smart City trial in Newcastle. We encourage the Queensland Government to monitor the outcomes of this trial with a view to its suitability and feasibility for Queensland.

The committee noted the potential impact of electric vehicles in Queensland on the electricity network and for significant reductions in carbon emissions to be achieved if they are charged using electricity from renewable energy sources.

Feed in tariffs

Feed in tariffs are a key option for accelerating the deployment of renewable energy electricity systems. The committee acknowledges concerns raised by submitters about the design and limited coverage of the Queensland

net feed in tariff system. We also acknowledge that there may be opportunities to expand the scheme to other renewable energy systems and technologies. These opportunities need to be carefully examined together with the likely costs and benefits. The committee also acknowledges the importance of a consistent approach across all states through a national feed in tariff.

Other options

The committee noted the potential for the government to assist the deployment of renewable energy in Queensland through tendering for electricity supply contracts, and assistance for electricity consumers in rented accommodation to purchase GreenPower.

Achievements of the government's renewable energy electricity projects

The information provided by the Queensland Government does not identify whether the projects and initiatives it has pursued have achieved their objectives or whether they represent sound returns on the investments made. As in other areas of government, it is fundamental to good renewable energy policy that initiatives are well designed, implemented and then evaluated to inform future policy development work.

The committee welcomes the government's forthcoming review of returns on investments in its renewable energy electricity initiatives as part of its review of *The Queensland Renewable Energy Plan*. The committee also notes that investment priorities for the future will be set as part of this review.

In our view, the government should clarify the actual outcomes and value for money from its initiatives from 2005 to date before embarking on further initiatives and policies. This information would be of interest to all Members of Parliament and their constituents and we would welcome its tabling in the House.

Recommendations²

1. That the Queensland Government should encourage the Federal Government, through the Ministerial Council on Energy, to finalise the form of its proposed carbon price mechanism as soon as possible.
2. That the government should continue to pursue energy efficiency improvements and efforts to minimise energy wastage as a priority to achieve greenhouse gas abatement targets.
3. That the government should increase the prescribed percentage for the proportion of electricity to be sourced from gas-fired generation under the Queensland Gas Scheme to 20 per cent by 2020.
4. That the government should set an aspirational target for Queensland of 20 per cent of the state's electricity needs to be generated from renewable energy sources by 2020, consistent with the Federal Government's national renewable energy target.
5. As a further Queensland target, the Queensland Government should aim to replace diesel generators with renewable energy systems as the primary source of electricity in all the state's remote Indigenous communities by 2020.
6. That the government should consider options to mandate that GreenPower be used for recharging electric vehicles used on Queensland roads.
7. That the government should review the existing net feed in tariff scheme for small scale solar photovoltaic installations to ensure the scheme provides appropriate outcomes for electricity consumers and promotes better, more efficient use of energy. This review should consider: the cost of the feed in tariff scheme to electricity consumers; whether the feed in tariff should be extended to other renewable energy technologies as well as solar photovoltaic systems larger than 10 KW; whether the tariffs should be reviewed and adjusted on an annual basis; and the specific tariff rates that should apply.
8. That the government, through the Ministerial Council on Energy, should seek the establishment of a uniform, national feed in tariff regime for renewable energy generators.
9. That the government should legislate to provide certainty to current and future participants of feed in tariff schemes and confirm that arrangements for existing scheme participants are grandfathered in the event of alterations to the scheme.
10. That the government should consider whether upfront subsidies or interest free loans may provide electricity customers with greater incentives to participate in the

renewable energy market than the current feed in tariff.

11. That the government should examine the benefits and feasibility of allowing open tendering by renewable energy generators for long-term electricity supply contracts for government departments, buildings and other infrastructure.
12. That the government should consider providing support for renters to purchase GreenPower by providing subsidies based on the Brisbane City Council EzyGreen scheme.
13. That the government should consider a scheme to mandate the purchase of GreenPower by households to offset the electricity consumed by pool pumps and air conditioners.
14. That the government provides the Parliament with a statement of the objectives, outcomes and value for money achieved from its renewable energy projects and initiatives.

The full report from the inquiry is available from <http://www.parliament.qld.gov.au/erc>

Committee Members

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² The minister with portfolio responsibility for these recommendations is the Minister for Energy and Water utilities