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To the Research Director, Environment and Resources Committee, Parliament House, Brisbane.

On behalf of the Tropical Green Building Network, we would like to thank you for the opportunity to comment on the *Growing Queensland's Renewable Energy Electricity Sector Issues Paper*.

The Network's charter is to identify, develop and action projects that will have a measurable impact on the uptake of sustainable building practices in Far North Queensland. To achieve this, builders, construction service professionals, building material manufacturers, retailers, government representatives, industry and community associations and other interested stakeholders are invited to work together.

We provide the following comments and recommendations:

1. Should the Queensland Government aim to expand the use of renewable energy sources to generate electricity?

Unquestionably. Queensland is well positioned to be a leader in the development and roll out of renewable energy technology. Work has already been done by the State to map renewable energy resources in Queensland, and it is clear that there are multiple viable opportunities to develop wind energy, geothermal energy, small scale photovoltaics and base load solar thermal technologies. Additionally the State could expand co-generation of power by retrofitting existing sugar mills as well as investigate the viability of trigeneration power plants that may be well suited to being integrated in new and existing urban developments.

A major expansion of Queensland's renewable energy sector would:

1. Promote job creation (especially in regional centers such as Cairns and surrounding districts)
2. Assist in the stimulation, diversification and greening of local economies
3. Improve Queensland energy security, especially in the light of declining oil availability
4. Significantly reduce Queensland's per capita carbon footprint (the highest in Australia and way above international average)
5. In the medium and longer term help reduce the per Kw cost of power as fossil fuel-based power generation increases in price due to carbon pricing mechanisms, decline in

fuel availability and removal of government subsidies to polluting industries. Renewable technologies also often come with a significantly lower operational cost compared to fossil fuel based power.

6. Create a positive and proactive space for the community to focus on in how we collectively deal with climate change and broader sustainability challenges. In the face of bad news, the community needs hope and moving to clean energy is a powerful way to demonstrate we can act to address these challenges.
7. Reduce the health and environmental impacts of coal-based power associated with the release of heavy metals and other toxins in the environment
8. Reduce the need to destroy good agricultural land and natural systems in the pursuit of coal deposits
9. Coal fired power plants are also significant users of water, and for much of Queensland water is a limiting resource. A shift to renewable energy power would free up water resources.

Recommendation 1: That the government rapidly expand the development and roll out of clean energy technologies

Recommendation 2: That Far North Queensland be made a priority region for investment due to-

- The region has good wind, solar, co-generation resources
- It is the gateway to the Great Barrier Reef – the long term future of which is threatened by climate change. Having the Cairns region on 100% renewable energy would be a powerful signal of the State's commitment to helping protect the Great Barrier Reef World Heritage Area and Wet Tropics World Heritage rainforests from Climate change
- The Cairns region aspires to been a leader in sustainability and development of a clean green economy that supports the region as a premier national and global eco-tourism destination
- The Cairns regional economy needs to diversify and find alternative avenues for job creation

<u>2. What are the barriers to increased use of renewable energy for generating electricity and associated investment in Queensland?</u>

Key barriers to increased use to, and investment in renewable energy in Queensland include:

1. Lack of adequate support by the Queensland and Federal Governments in supporting renewable energy investment and technologies compared to conventional power generation including a strong MRET in Queensland
2. Ongoing uncertainty regarding the level of Federal support for renewable energy
3. Uncertainly regarding the price of Renewable Energy Credits
4. Ongoing uncertainty regarding mechanisms to put a price on carbon
5. Lack of a level playing field for renewable energy technologies. Australia subsides the fossil fuel sector to the tune of around $9 billion annually, thus artificially lowering the cost of production of fossil fuel based power compared to clean energy.
6. Undue influence of fossil fuel sector in government policy and decision making
7. Queensland's extensive coal and gas resources
8. The capital costs associated with building and purchase of large and small scale renewable energy systems
9. Lack of adequate standards to keep poor quality OPV and other technologies out of the market which have the potential to damage the reputation of renewable technologies and offer poor ROI.

10. An inadequate feed-in-tariff scheme
11. Lack of incentives to switch to Green Energy

3. What have the Queensland Government's own investments in renewable energy projects for the generation of electricity achieved to date, and at what cost?

Queensland has made some important investment in this area, but they are still minor in comparison to other infrastructure spending. According the Queensland's Clean Energy Future report, total spending over 5 years on renewable energy amounts to less than $137 million dollars. This, compared to $3.130 billion that is budgeted to be spent in 2010-11 by the Government owned electricity corporations on plant and network overhauls, maintenance and augmentation, is a rather insignificant amount. The State has also allocated a total of $300 million to carbon capture and storage technology; despite the low probability of this proving to be a viable and cost effective option ("Our calculations suggest that the volume of liquid or supercritical CO2 to be disposed cannot exceed more than about 1% of pore space. This will require from 5 to 20 times more underground reservoir volume than has been envisioned by many, and **it renders geologic sequestration of CO2 a profoundly non-feasible option for the management of CO2 emissions**." - Sequestering carbon dioxide in a closed underground volume - Journal of Petroleum Science and Engineering 70 (2010) 123–130). Given the urgency to move to a low carbon economy, the percentage of investment in energy infrastructure devoted to renewable energy is grossly inadequate and does not reflect a serious commitment to supporting the large scale deployment of this technology in Queensland.

Recommendation 3: Significantly increase investment in supporting both development and deployment of renewable energy technologies to reflect the urgent need to transition to low carbon future.

4. What are the priority issues the Queensland Government should address to encourage investment in renewable energy for the generation of electricity?

1. Subsidies to fossil fuel sector vs renewable energy
2. Tax Incentives for renewable energy research and investment
3. Market certainty
4. Affordability of clean energy and clean energy technologies
5. Supportive network infrastructure
6. Demonstrate a clear commitment through co-investment

5. Should the Queensland Government set a state target, or targets, for the proportion of electricity generated from renewable energy sources?

Absolutely. See above.

6. If so, what should the target/s be, and what form should it/they take?

This target should be informed by a combination of the science on what emissions reductions are required to achieve climate stabilization together with a pragmatic assent of the fastest pathway to shift from current power generation options to clean power generation options. Current climate science suggests a limited window of approximately 10 years to achieve a global decline in greenhouse gas emissions. It should be a mandatory renewable energy target which creates real certainly for the market and demonstrates a genuine commitment by government to tackle climate change. Given Queensland abundant renewable energy resources, we should be setting a very ambitious target. Given the enormous amounts we spend as a state on roads,

bridges, ports and other infrastructure, we should be prepared to invest what is required to transition to clean energy, given our exposure to climate change impacts and that electricity is a critical resource for all Queenslanders and underpins our economy and wellbeing.

Recommendation 4: A target of 50% of the State's electricity requirements to be generated from renewable sources by 2020 is ambitious, but achievable with the right policy setting and incentives. This should be coupled with strong demand management policies and incentives for energy efficiency and conservation.

A recent report from Beyond Zero Emissions, *Zero Carbon Australia 2020,* outlines how Australia can meet 100% of its electricity requirements from renewable energy by 2020. This would require significant initial financial expenditure, but would see long term benefits for the community by generating 15,000 jobs initially and 50,000 ongoing jobs and greatly increasing energy security and significantly reducing our carbon emissions.

7. What actions should the Queensland Government take to encourage investment in the generation and co-generation of electricity from renewable energy sources?

To remain competitive and to attract investment in renewable energy, players in this market require certainty regarding the market for clean energy and that government policy is supportive and provides for a reliable operating environment.

We propose the following recommendations 5:

1. **Establish an ambitious MRET – this is essential to provide market certainty**
2. **Shift current subsidies to polluting power generation over to clean energy generation**
3. **Extend the rebates for domestic solar technologies (PV and solar hot water)**
4. **Offer dollar-for-dollar co-investment in large scale renewable energy plants with the State to retain a 25% share in the company**
5. **Offer attractive tax incentives to attract renewable energy companies to establish in Queensland**
6. **Increase the feed in tariff. Investing in appropriate feed in tariffs will mean a greater uptake of small scale energy generation systems, which will reduce demand on the grid and thereby avoid or reduce the cost of upgrading the grid network.**
7. **Introduce a gross feed in tariff. This is a more equitable way to pay energy producers, and provides a stronger incentive for individuals to install renewable energy generation systems.**
8. **Ensure adequate investment in smart grid infrastructure to support a diverse and flexible power supply system**
9. **Set greenhouse intensity limit for new baseload power stations of 0.5 t CO2-e/MWh**
10. **Increase competition in the electricity retail sector, in particular Far North Queensland.**

We thank you for your consideration of the above issues and we look forward to working with the State to ensure we live up to our clean green and smart ambitions.