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To:

Climate Change Authority
GPO Box 1944
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SUBJECT: Renewable Energy Target REVIEW 2012

About Enhar

Enhar provides consulting services to clients who wish to plan and implement renewable energy projects and who wish to improve energy efficiency.

Our work involves us in the wind and solar sector in Australia, as well as in energy auditing.

We have a particular interest in good regulation of renewable energy products and installations, and in promotion of high quality products.

Importance of the RET

The Renewable Energy Target (RET) has enabled a renewable energy industry in Australia to exist and grow. The RET continues to be an essential policy for Australia and must be retained.

In response to section 5.1 of the issues paper, we encourage the government to extend the national target to 30% renewable energy by 2030. This extension of the RET would be an appropriate way to maintain a renewable energy sector in Australia with all the benefits that indigenous, non-polluting, inexhaustible energy sources bring.

It will take many years for carbon pollution pricing to rise to levels sufficient for carbon pricing to create a level playing field for renewables to compete without a RET. It would be very premature to consider reducing the RET this decade.

Emerging Technologies and the RET

It is to be applauded that emerging renewable technologies are being supported as part of the Clean Energy package. However, the newer renewable technologies will need support beyond their first commercial demonstrations to achieve meaningful levels of deployment in Australia. In response to section 8.1 of the issues paper, a banded RET offering LGC multipliers to certain renewable technologies would be a suitable means to ensure the wider renewable resource is utilised. LGC multipliers for large scale solar, geothermal, wave and tidal and even offshore wind power should be considered and planned.

Standards for Small Renewables Technologies

This section responds to sections 6.3 and 6.5 of the RET Review Issues Paper:

Australian Standards for domestic scale renewable electricity generating products and their installation are heavily focussed on solar photovoltaic. The rules around Small Technology Certificates are also evolved largely through the historic solar photovoltaic market.

While the solar photovoltaic rooftop sector is an exciting and growing market in Australia, other small scale technologies can also contribute.

Small wind turbines can provide useful generation at suitably windy sites. The notable uptake of small wind turbines in New South Wales during the gross feed in tariff period 2010-2011 demonstrated a surge of interest. This uptake which could be repeated if State or Federal support becomes available in future.

The RET review invites comments on access to new technologies. Our suggestion is that the RET regulations should be amended to create specific rules for small wind turbines using asynchronous generators, because these are currently inhibited from being installed due to a lack of suitable regulations and standards.

While many small scale wind turbines attach rectifiers to the generator to output DC current which is then passed through a grid connect inverter, some small scale wind turbines use asynchronous generators which safely generate alternating current at grid frequency and do not need an inverter. This technology is adopted by many types of large wind turbines in Australia and globally.

When a power interruption occurs, an asynchronous generator loses its magnetism and therefore cannot deliver power during a grid outage. Line personnel are protected from turbine generated power during an outage. Brakes are also activated by any power outage, keeping the turbine safely limited.

In the UK this year, Recommendations for the Connection of Type Tested Small-scale Embedded Generators in Parallel with Low-Voltage Distribution Systems have been published by the Energy Networks Association (ENO). This document states:

“Wind turbines can be connected to the Distribution Network Operator’s (DNO’s) Distribution System directly, typically using asynchronous induction generators, or using Inverters.”

For those generators connected directly to the DNO’s Distribution System, type verification testing and interface protection requirements are specified.

Small Wind Turbines

In Australia however, the only grid connection rules for small renewable generators assume that an inverter is used hence AS4777 is assumed to be the appropriate grid safety compliance standard for all small renewable generators. Grid connection for a small wind turbine using an asynchronous generator is made virtually impossible because in the absence of a suitable standard for small turbines with asynchronous generators, the grid connection compliance rules designed for large wind farms are applied. Large wind farm grid connection rules are generally far more onerous than AS4777.

In the case of small wind turbines <10kW which use asynchronous generators, a suitable standard should be recognised and permitted as a means of legally connecting small wind turbines in Australia. In Europe, EN 50438:2007 specifies “Requirements for the connection of micro-generators in parallel with public low-voltage distribution networks”. This standard could be recognised in Australia by amending the RET regulations, which would therefore allow the safe connection of asynchronous generator small wind turbines to the grid.

Compliance with EN 50438 could be recognised for small wind turbines <10kW, as well as AS3100, to allow state network operators to approve the products as safe to be connected to the grid.

Compliance with EN 50438, could be specified as a requirement for inclusion of asynchronous wind turbine products on the Clean Energy Council list of approved products. This would be in conjunction with any new wind turbine certification scheme being piloted by the Clean Energy Council and the Clean Energy Regulator.

An example of a wind turbine product which is currently disadvantaged is the Hannevind 5.5kW turbine. This product uses an asynchronous generator. Turbines of this type, which are inherently safe generators, have had grid connection requirements imposed by Australian network operators which are far more onerous than connecting inverter type systems which are not inherently safer. Corrections to the regulations such as those suggested above would address this imbalance.

Deeming period for small wind

In response to section 6.3 of the issues paper, small wind turbines are disadvantaged compared to solar PV by having a deeming period 1/3 that of solar PV. An increase in the deeming period for small wind would be a fair approach.

Yours sincerely,

A handwritten signature in black ink that reads "Demian Nata Khan". The signature is written in a cursive style and is positioned above a thin horizontal line.

Demian Nata Khan

Director