SUBMISSION TO THE RET REVIEW

Definition of Renewable Energy Sources should include new emerging technologies which renew themselves naturally at a rate that equals or exceeds its rate of use.

The ability to obtain a Renewable Energy Certificate is the gateway for the incentive designed to help Australia meet it's renewable energy targets. It is submitted that the current legislation needs to be amended to allow a "functional" definition of "renewable energy" describing what it does, rather than what it is. Any description of "what it is" is limited to today's knowledge and therefore excludes the new innovations that are meant to be encouraged by this whole exercise. Why exclude innovations that would help the planet and make Australia more competitive?

The situation is easily rectified and appropriate amendments to make our definition "functional" are marked up in the attached document.

Such a functional definition was set out in the Report of the Intergovernmental Panel on Climate Change 2011, Renewable Energy Sources and Climate Change Mitigation:

"Renewable energy (RE) is any form of energy from solar, geophysical or biological sources that is replenished by natural processes at a rate that equals or exceeds its rate of use. Renewable energy is obtained from the continuing or repetitive flows of energy occurring in the natural environment and includes low-carbon technologies such as solar energy, hydropower, wind, tide and waves and ocean thermal energy, as well as renewable fuels such as biomass …"

With this definition, proponents of a new power generation technology could still get comfortable if their technology was

"replenished by natural processes at a rate that equals or exceeds its rate of use."

The present definition provides an exhaustive list of renewable energy sources and therefore excludes various key potential technologies. In general terms, these technologies include:
(1) energy from the vacuum extracted by electromagnetic devices (sometimes called zero-point, etheric, space, free, over-unity energy);
(2) cold fusion or low temperature non-radioactive nuclear reactions;
(3) advanced hydrogen and water chemistries;
(4) low grade heat technologies such as atmospheric-thermal and oceanic-thermal. These devices use low grade heat to facilitate a phase change enabling kinetic energy to be derived from heat and result in the provision of it's own heat sink; and
(5) nano-sonic molecular manipulation wherein specific frequencies are used to facilitate different molecular configurations resulting in the energy efficient facilitation of a pressure gradient sufficient to convert into rotational kinetic energy.

There are a myriad of technologies being developed that may make today's renewables look inefficient, intermittent and expensive. Is Australia going to support and encourage these technologies?

One example is cold fusion, there are numerous permutations being developed around the world including at the NASA Langley Research Centre in the USA. Dr Joseph Zawodny of NASA has described this cold fusion as follows:

"It has the demonstrated ability to produce excess amounts of energy cleanly without hazardous ionizing radiation. Without producing nasty waste. This clean form of energy is also powerful, able to support everything from transportation systems to infrastructure."

This is just one example of the kinds of important energies which have been excluded and Dr Zawodny can be easily found on Google as can Andrea Rossi of Italy, another proponent of cold fusion technology which has been independently verified.

None of the technologies listed above would be able obtain a Renewable Energy Certificate under the present legislation. Why exclude these exciting new technologies and other innovations from our 2020 target of 20% of our electricity from renewable energy sources.

Not only does this discourage innovation, it also creates the potential for Australia to become less competitive. For example, a non-Australian licensee of Andrea Rossi would have a competitive advantage over the Australian licensee.

Another innovative technology is the Hidro+ Technology which uses hydrostatic pressure gradients naturally found in a column of water. This technology seems to be a fantastic Australian innovation for efficient low cost renewable electricity without emissions, and yet, it does not appear to be an "Eligible Renewable Energy Source" within the current definition.

Surely it is in the best interests of the people of Australia to support new innovations from within our own Country.

The Specifics of the Current Definition

Rather than defining "eligible renewable energy", section 17 of the

Renewable Energy (Electricity) Act 2000

as amended, defines an "eligible renewable energy source" as follows:

"17 What is an *eligible renewable energy source*?

(1) The following energy sources are eligible renewable energy sources:

(a) hydro;

(b) wave;

(c) tide;

(d) ocean;

(e) wind;

(f) solar;

(g) geothermal-aquifer;

(h) hot dry rock;

(i) energy crops;

(j) wood waste;

(k) agricultural waste;

(l) waste from processing of agricultural products;

(m) food waste;

(n) food processing waste;

(o) bagasse;

(p) black liquor;

(q) biomass-based components of municipal solid waste;

(r) landfill gas;

(s) sewage gas and biomass-based components of sewage;

(t) any other energy source prescribed by the regulations.

(2) Despite subsection (1), the following energy sources are not eligible renewable energy sources:

(a) fossil fuels;

(b) materials or waste products derived from fossil fuels.

(3) For the purposes of this Act, the regulations may provide that <u>an energy source referred to in subsection (1) or (2)</u> has the meaning prescribed by the regulations.

(4) For the purposes of this Act, the regulations may make provision for and in relation to limiting the meaning of an energy source referred to in subsection (1).

(5) For the purposes of this Act, the regulations may make provision for and in relation to extending the meaning of an energy source referred to in subsection (2).”

Subsections (3), (4) and (5) authorize regulations to:

- define the meaning,
- limit the meaning, or
- extend the meaning

of an energy source but only if it is already listed.

There is no power to add new energy sources to the list by Regulation. This may be an oversight given that paragraph (t) above, includes within the definition

“any other energy source prescribed by the regulations.”

Paragraph (t) seems superfluous as there is no regulatory power to prescribe new sources of energy. Rather than simply amend this, surely it is much better and more practical to adopt the functional definition.
Surely we need to be adaptable to cope with climate change. This is commercially important as the ability to obtain an REC in respect of a potential new technology may impact its financial viability. Investment and funding is crucial for these new technologies.

Even if the law is changed so that new technologies can be allowed by regulation, it seems cumbersome to require this process every time that a new technology emerges.

Amendments suggested to rectify this are marked up to the existing definition in Appendix A. The suggested amendments combine a functional definition but retain the current list, as things which fall within that definition, but are not an exclusive list.

Appendix A Suggested Functional Definition of Renewable Energy.

Changes are shown in red and are less than 100 words

17 What is an *eligible renewable energy source*?

(1) An Eligible Renewable Energy Source is any source of Eligible Renewable Energy.

(2) Eligible Renewable Energy is any form of energy that is replenished by natural processes at a rate that equals or exceeds its rate of use. Renewable energy is obtained from the continuing or repetitive flows of energy occurring in the natural environment and includes, but is not limited to energy from the following sources:

(a) hydro;

(b) wave;

(c) tide;

(d) ocean;

(e) wind;

(f) solar;

(g) geothermal-aquifer;

(h) hot dry rock;

(i) energy crops;

(j) wood waste;

(k) agricultural waste;

(l) waste from processing of agricultural products;

(m) food waste;

(n) food processing waste;

(o) bagasse;

(p) black liquor;

(q) biomass-based components of municipal solid waste;

(r) landfill gas;

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(t) any other energy source prescribed by the regulations.

(2) Despite subsection (1), the following energy sources are not eligible renewable energy sources:

(a) fossil fuels;

(b) materials or waste products derived from fossil fuels.

(3) For the purposes of this Act, the regulations may provide that an energy source referred to in subsection (1) or (2) has the meaning prescribed by the regulations.

(4) For the purposes of this Act, the regulations may make provision for and in relation to limiting the meaning of an energy source referred to in subsection (1).

(5) For the purposes of this Act, the regulations may make provision for and in relation to extending the meaning of an energy source referred to in subsection (2).

(6) For the purposes of this Act, the regulations may add other Eligible Renewable Energy Sources to the above definition in accordance with paragraph (1) (t) above.

Submitted by EvolveSmart Pty Limited