

## Submission related to the Local Power Agency Bill 2021

This submission is specifically to urge that the confusion in the wording of the proposed Bill about 'energy' and 'electricity' be corrected. Worldwide 'energy' is used in technical writing to cover all forms of energy, and specifically the aggregate of heat energy, chemical energy (usually as transport fuels) and electrical energy. Electrical energy usually makes up 25-30% of all consumed energy in advanced industrialised countries including Australia, and so the other two main components of 'energy' make up by far the majority of energy consumed. Any technical document, including legislation, must recognize this if it is to be clear and not prone to being disputed or contested. When the fraction of renewable energy that is electricity is referred to in technical documents or language, it must always be made clear that it is this 'renewable electricity' component.

Specifically, in the draft Bill the definition of Renewable Energy in Section 4, page 10, line 9, is simply wrong, and must be corrected. This Bill copies much of its wording and some definitions from the Australian Renewable Energy Act of 2011 that was about the setting up of the Australian Renewable Energy Agency ARENA. But that Act does not contain a definition of energy, let alone this simply incorrect one (in that Act there is no definition for any word between 'climate convention' and 'Finance Ministers'). There is no definition of 'Renewable Energy' in this Act that set up ARENA, but the definition of 'Renewable Energy Technologies' is extremely broad, including 'hybrid technologies' and 'technologies (including enabling technologies) that are related to renewable energy technologies'.

Another definition compounding this wrong definition of 'energy' is the definition of Renewable Energy on Page 11, lines 8 & 9. This is defined as 'energy produced using renewable energy technologies'. If the definition of 'energy' is that it is only electricity, this means that the various renewable energy technologies for production of other energy forms, or energy carriers including biogas, pyrolysis oil, renewable fuels, synthesis gas, etc., are all treated as if they do not exist. This is clearly erroneous in the extreme.

The draft of the Renewable Power Plan Agency Bill must be corrected so that 'energy' refers to the aggregate of energy forms (heat, power, transport fuels), and electricity be referred to as electricity or power (though 'power' is problematic as it can also be used to mean 'energy sources converted into performing mechanical work')

The meaning of 'Community Energy Project' (page 11, line 24) must also be clarified, which as it stands is solely about electricity and so ignoring the other 65-70% of consumed energy. As it stands, a project that produces electricity as well as heat energy may qualify as a community energy project, but one that produces only heat energy from renewable sources, and that displaces use of fossil fuels and so reduces net GHG emissions does not qualify.

Similarly, the meaning of 'the main activity of the project' (Page 11 line 26). The main activities given include i) generation of energy, ii) storing energy, iii) increasing energy efficiency. These need to be clarified or revised. 'Generation of energy' can properly refer to generation of heat or generation of volumes of transport fuels. 'Storing energy' can properly refer to storage of energy carriers or sources, like straw or woodchip or pelleted product, or of biogas or ethanol or biomethane, any of which can

then be used to produce one or other forms of energy. 'Increasing energy efficiency' can properly refer to improving public transport, improving design of building or retrofitting buildings, or improved industrial processes or systems that require less energy, including in maintaining cooling.

Page 16, line 10. '... perform functions in relation to Renewable Energy Technologies that could control, reduce or prevent emissions of GHGs'. This is another of the very many lines where the present wrong definition of 'energy' renders this draft Bill nonsensical. If 'energy' is only to be electricity, this then means that these lines do not include the many viable and valuable opportunities that community projects would have to 'control, reduce or prevent emissions of GHGs. Many of these opportunities will be other than in production of renewable electricity, and most will be to do with more efficient ways of production of 'renewable' heating, possibly as solar/biomass hybrid systems. Compared to the present intent to support community power only, these may be relatively lower capital cost, create more permanent local employment, result in improved viability in local businesses, and reduce far more GHG emissions, per unit of capital invested.

Page 28, line 14. – 'A large Renewable Energy generation facility has a maximum capacity of 10 MW or more'. This wording is sloppy in that '..maximum ... or more' does not make sense. But, secondly and more importantly, to give a capacity in megawatts means little without giving a capacity factor. For instance a 10 MW capacity biomass-fueled plant will generate 10 MW of power 95% of the time (ie CF is 0.95). A 10 MW capacity of wind turbines may only produce 3 MW over the year (so, CF of 0.33) but so intermittently that some form of costly backup will be required to allow power supply to be stable. While a 10 MW capacity set of solar panels will only produce 2 MW over the year (so CF of 0.2), with none of this at night, and almost none in times of heavy overcast, heavy rain or fog, so again will require significant back up generation or costly storage options.

The problem with the sloppy formulation of this draft legislation is that the sort of community projects that are being encouraged will do little to reduce GHG emissions, as they will be encouraged to invest in wind and solar power, which due to being intermittent and/or variable and/or unpredictable, require concurrent investment in significant back up generation or very large and costly battery storage.

Far better for this Bill to be reworded and with definitions improved, so that it will support creation of an agency that supports all forms of renewable energy (heat, transport fuels, power), plus storage of all renewable types of energy or energy carriers (not just the most costly option of battery storage and/or the roll-out of electric vehicles). Far better if this proposed agency is able to assist and support the development by regional/rural businesses, including farms, of renewable energy technologies. If this is done then we might see the sort of significant reductions of GHG emissions across the country that are being seen in some of the more advanced countries (including Sweden, Austria and Denmark), especially when in parallel with implementation of energy efficiency measures in all sectors and at all levels and scales.

Andrew Lang



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