To: Committee Secretary
Senate Standing Committee on Environment,
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Re: Submission for the Renewable Energy (Electricity) Amendment (Feed-in-Tariff) Bill 2008

I wish to propose the subsequent material for consideration by the committee as it investigates the Renewable Energy (Electricity) Amendment (Feed-in-Tariff) Bill 2008. I am grateful for the possibility to partake in this Legislation framing.

Introduction

The proposed Bill will add significantly to Gross Domestic Product (GDP). The Bill will generate the rapid deployment of resources, rapid development of local manufacturing, increases in local acceptance and participation, encourages geographic distribution, will provide more jobs, greater investment, increased competition, in manufacturing, and equipment suppliers, and add to our export income. This Bill can firmly establish a new industry for the Australian economy. The solution for our overdependence on fossil fuels and to alleviate climate change is the renewable energy industry. By fostering the sustainable development of this new industry is through this Bill.

The forthcoming introduction of carbon trading will complement this Bill. This Bill will reduce demand for fossil fuel based energy and will allow renewable energy production to be more competitive.

In the context of Australia, 'each year approximately $10 billion …[of subsides are paid for]… fossil fuels. A report by the Institute for Sustainable Futures showed that in the 2005-06 financial year, the funding of fossil fuels outweighed Government support for renewable energy and energy efficiency by a ratio of 28:1. (Greenpeace International and European Renewable Energy Council, 2008, Energy [R]Evolution: A sustainable Australia Energy Outlook, p. 11).' This subsidisation is artificially supporting the market place, adding to climate change and not allowing for the development of an integrated solution for the climate crisis and our energy security.

Feed-In-Tariff

With the rapid changes occurring with climate change and fossil fuel reliance Australia needs to move swiftly to renewable energy systems. Prime Minister Kevin Rudd's signing of the Kyoto Protocol requiring Green House Gas emissions for Australia to have a 60 percent reduction by 2050. The most efficient and effective policy means to achieve this is through a Gross Feed-in-Tariff (GFiT) that is paid at least four times the user kilowatt rate.

A number of jurisdictions in Australia are using a rating systems based either on a Net Feed-in-Tariff or no Feed-in-Tariff (FiT) for their communities. In March, 2008 COAG called for a national plan with the standardisation of FiT (www.coag.gov.au). This Bill will ensure that national structural integration for renewable energy and provide world's best practice in FiT models.

Global Investment

To provide a perspective on the scale of global renewable energy industry investment over the past three years US$300 billion has been invested in renewable energy and by 2030 US$10 trillion will have been be invested (New Energy Futures, 2008). In 2007, US$71 billion was invested (excluding large scale hydro) with 47 percent in wind power

and 30 percent in solar photovoltaic. Investment in large scale hydro was estimated to be a further US$20 billion (REN21, Renewables 2007 Global Status Report). The scale of global investment in renewable energy provides many opportunities for the Australian economy. This Bill will provide a significant signal for Australian and international investments for the renewable energy industry.

Added to this large international corporations are commencing to invest in the renewable energy industry. For example, the heavy infrastructure firm General Electric announced in July 2008 that it will undertake joint partner investment in Spain. The Spanish joint venture is worth € 225 million with Fotowatio, one of Spain's largest and most successful solar power project developers. Fotowatio owns, operates and is developing almost 960 megawatts of solar projects in the fast-growing solar power markets of Spain, Italy and the United States (www.genewscenter.com). This investment decision by General Electric are based on solar power increasing by 40 percent worldwide each year since 2005, making it one of the world's fastest-growing renewable energy sources. Strategically these joint ventures allow access for General Electric to the renewable energy industry to become a major player in global solar power. Having this Bill with a GFiT model would provide for international investments like direct and indirect investments including joint ventures that would enhance investment in Australia, allow technology and management transfer and bring employment to the economy.

Increasing the Up-take Of Renewable Energy

GFiT model has proven to be an efficient and effective means for increasing the uptake of renewable energy technologies in European jurisdictions and certain jurisdictions across the United Sates of America. Along with increasing the uptake of renewable energy, GFiT provides the means to develop a new industry. Based on the German example, where both homes and businesses (including small businesses) are paid at nearly four times the standard rate for all the electricity they produce with the GFiT model. GFiT is a model in which any type of renewable energy technology is paid to the producer of the power. Those who generate power from renewable sources like bio-mass, solar, wind or hydro are guaranteed payment from the local power company. The

renewable energy technologies that lend themselves for the GFiT model include wind power, micro and small hydro, battery technology, energy conservation (including geo exchange technology), solar thermal electric, photovoltaic, landfill gas, and biomass, geothermal electric and municipal solid waste.

Global Boom

Based on international investment and the uptake of the GFit model globally the renewable energy industry is booming. For example, institutions like the United States Pentagon has announced in August 2008 that currently eight percent of United States military facilities globally have renewable energy generation and this is to be raised to 25 percent by 2025 (www.defenselink.mil). This far sighted renewable energy initiative by The Pentagon sets the benchmark for United States government institutions and industries to take up renewable energy. Similarly like the Pentagon example this Bill will provide similar leadership in the renewable energy industry in Australia and provide for a national boom.

Like Australia, the European Union has established a 20 percent renewable energy target by 2020. Like the global boom based on this target in the United Kingdom the market for renewable energy technologies and investments are estimated to create 160,000 jobs. Over this same period of time the estimated investment in the United Kingdom will be £100 billion (UK Renewable Energy Strategy: Consultation Document, 2007, p. 1). Similar economic boom that has occurred in the United Kingdom can be generated through this Bill for Australia.

A recent industry analysis of renewable energy in Germany found that in 2006, sales in the German renewable energy sector reached € 22.9 billion, of which more than € 8 billion came from exports. Investments have surpassed € 9 billion (www.invest-in-germany.de). An estimated 250,000 Germans are now employed by the renewable energy industry. By 2020 Germany has a projected 400,000 people employed in the renewable energy industry (Clean Edge, Inc. and Co-op America Foundation 2008, Utility Solar Assessment (USA) Study Reaching Ten Percent Solar by 2025, Washington, DC, p. 61). This Bill will assist Australia in establishing itself in the international renewable energy boom by assisting exports, investments and employment.

In 1987-1988 renewable energy was 11.5 percent of Australia's total electric generation (McLennan Magasanik Associates Pty Ltd, 2006, p. 14). Current electricity generation

rate is 9.2 percent from renewable energy. Based on a 2020 target of 40 percent of electricity generated by renewable energy Greenpeace expects Australia will have a growth in employment in this industry by at least 48,000 jobs (Greenpeace International and European Renewable Energy Council, 2008, p. 34). This Bill will provide significant changes in the Australian renewable energy industry in the development and delivery of this technology, educational providers, investors and its interface with providers and power companies. Given the need for urgent attention to the national targets for renewable energy this Bill will open the renewable energy market to new participants like small business allowing this industry to grow rapidly.

The current renewable energy industry in Australia has 15,000 jobs (including indirect), annual sales of nearly AUS$2 billion and has an estimated AUS$8 billion invested in assets that generate electricity. With investment in renewable energy for the past five years has been approximately AUS$257 million per annum, with approximately AUS$369 million per annum to be invested over the next three years (McLennan Magasanik Associates Pty Ltd, 2006, Final Report to Renewable Energy Generators Australia, South Melbourne p. ii). This Bill will provide the structural mechanism for a economic boom of renewable energy through the GFiT model. Over a 20 year period the Bill will ensure market stability for investment, employment and assist in the much needed growth for this sector to assist in a climate change solution.

Australian Small Business Owners

In the Australian context small business owners who total over 95 percent of business are currently unable to access the renewable energy schemes available to householders and community groups. This group in our society has an untapped potential for the Australian renewable energy industry. These business owners own business premises with large roof spaces and have farming properties where economies of scale of renewable energy technology can be fully utilised. Mobilising small business owners under this Bill as renewable energy participants would be highly effective, efficient and achieve unprecedented economies of scale for this industry.

Other Significant Issues

There are other significant issues beyond this Bill that need to be planned for with the introduction of this Legislation.

Industry Framework

Establishing this Bill provides opportunities national and globally for Australia renewable industry. Globally examples of these types of new industries develop industry frameworks like Information Technology, Biotechnology and Nanotechnology. These industry frameworks allow new industries to be developed as globally competitive. This industry framework for renewable energy would include the need for resourcing of a significant peak body; a national renewable energy plan; including investment analysis; development of a highly skilled workforce through education and training for the professions and trades; and exporting opportunities.

Resourcing Significant National Peak Body

Under a GFiT model a significant peak body is required resourcing for closer working relationship between industry, government and the Australian education sector. Significant work has already been carried out in this regard. Allowing for the industry growth that this Bill will generate additional resourcing for this peak body is critical. Overtime these relationships that the peak body would facilitate the formation of public-private partnerships for this industry. This network would also address issues relating the planning, research and development alliances, technology transfer, professional development, education and training, promoting renewable energy technologies and informing government policy on the renewable energy industry status and future trends.

Renewable Energy Planning

For instance there is a lack of a national renewable energy plan. This plan would determine across Australia the best sites for different renewable energy technologies, the technical and potential for these applications. This data can be integrated through overlay mapping, like MapInfo.

National Investment

Nationally there is little data analysis of the current national and future investments for renewable energy. Therefore an annual report on investments and proposed investments in the renewable industry is required. The investment reporting would include all aspects of current and proposed investment across the industry according to LGA areas, regions, states and nationally with international comparison of outcomes.

Development of a Professional Workforce

The renewable energy industry requires a highly skilled group of technology and business professionals. These professionals need to be developed across a range of technologies that exist, are emerging and are in the future. For instance the workforce in the German renewable energy industry is described as highly qualified workforce with research and development carried out in universities and scientific institutes (www.invest-in-germany.de). This Bill will allow for a rapid expansion of a highly qualified workforce in Australia with the participation of Australian education institutions.

Climate change, overly expensive and declining fossil fuels, the great need for energy security and major shifts in government policy requires urgent attention to renewable energy awareness programs and qualifications in high schools, TAFE Colleges and Universities in Australia. Opening the market to GFiT model through this Bill and to reach national targets will require urgent attention to the education and training sector for renewable energy.

The market demand generated by the GFiT model will generate a range of specialist professions for renewable energy industry include business strategists, policy makers and analysts, engineers, technicians, applied and theoretical researchers, product developers, technology transfer officers, manufactures, regulators, entrepreneurs, managers, financers, installers and maintainers. For example, policy recommendations for renewable energies from the 2004 International Conference on Renewable Energies in Bonn (p. 19) argued that masters and PhD programmes are needed to bring forward the

skilled people needed for the design, construction, and communicating the benefits of renewables.

Given the complex nature renewable energy industry there is a high level requirement for multi-disciplinary teaching and research. The types of disciplines that need to participate in the renewable energy industry include engineering, science, law, business, architecture, economics, science, computing science, social planning, public policy and other fields.

Specifically, urgent funding is required for the development of curricula and resources for multi-disciplinary and specialist education. Funding to develop education and research centres for the renewable energy industry. Increase the funding for higher-education based research and development on renewable energy technology in theoretical, applied, production and installation research and development.

Action is required at the national level for an analysis of current and future demand and supply of qualifications in renewable energy. For example, a web based search of the current geographic analysis of Australia for qualifications in renewable energy finds a range of certificates, diplomas, degrees and post-graduate qualifications. These qualifications are in different types of renewable energy technologies. There currently exists a lack of consistency of offerings across Australia.

Exporting the Industry

In addition, with GFiT attention is required in developing opportunities for exporting education, expertise, planning, project implantation and products in renewable energy in developing countries like India and China. These nations will soon be at the top of the list of carbon emitting nations. For example, Oceanlinx is part of a United Kingdom wave energy project worth £28 million to generate 20 MW for the grid. The expected benefit for the regional economy is £76 million with the creation of 170 jobs and a wave energy industry that this initial project is located (www.oceanlinx.com).

Conclusion

In conclusion, this Bill under GFiT model as a policy initiative has a high efficiency that for allows price differentiation and reduction in costs and there is planning certainty. This Bill that allows for rapid deployment of resources, rapid development of local manufacturing, increases in local acceptance and participation, encourages geographic distribution, transparent, more jobs, more investment, more competition, in manufacturing and equipment suppliers. This industry can be firmly be established by this Bill by establishing a new industry that has new technologies, and adds to the GDP.

Should you wish to discuss this submission further please contact Michael Christie on 041 444 2895 to discuss.

Yours faithfully,

Michael Christie, Phd