Senate Standing Committees on Environment and Communications

Parliament House

Canberra ACT 2600

Submission on *Clean Energy Finance Corporation (Abolition) Bill 2013*

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The Senate Standing Committee on Environment and Communications has the opportunity in its consideration of this Bill to signal that Australia intends to protect its national interest and promote renewable energy and clean technology industries – whatever the rhetoric of the present government. While the country was absorbed in a fruitless debate over a carbon "tax" – a policy which has nowhere proved itself to be efficacious in shifting energy investments from fossil fuels to renewables – it was allowing opportunities for real investment in a renewables future to pass. But the setting up of the Clean Energy Finance Corporation (CEFC) reversed this trend, and facilitated a round of investments in a green future that were long overdue.

In making the case for its continuance, one has only to look at what comparable powers are doing. In Germany we see a renaissance of manufacturing industry as the nation swings behind its *Energiewende* or "energy transformation". In Germany, nuclear power is now a dead issue, while renewables have been brought on stream in a remarkable way. Generation of solar PV electricity increased 48% to 27.6 TWh in 2012, while wind power held steady at 46 TWh – making for 11.9% of all electricity in 2012. Other renewables (bio and hydro) also increased, meaning that total renewables rose to 21.9% in 2012 – and rising fast. The proportion of renewables in capacity additions for 2012 is much higher – indicating that renewables will be taking more and more of the load. It is notable that Germany's promotion of renewables has moved on from market expansion policies (like feed-in tariffs) to industry promotion policies – taking a leaf out of China's book.

As in China, the national power grid is being drastically upgraded, to enable it to accommodate higher and higher levels of fluctuating (renewable) power sources. Official estimates are that 20 billion Euros will need to be invested in grid upgrading over the course of the next decade, with the Bundestag opting for three major north-south connections to be

built first – consisting of high-voltage (380kV) lines.[1] Installing and equipping the smart grid is the huge new growth opportunity in Germany. The same result would be secured in Australia if the CEFC were allowed to do its job.

If Germany is not a convincing case for looking to a future powered by renewables, consider the even more remarkable case of the US military. Pictures of US military convoys snaking their way across Afghanistan, carrying oil and other supplies to far-flung positions (and then ferrying waste back again) reveals why the military is moving ahead, in advance of the US business and political elite, to transition away from fossil fuels to renewables. In October 2010, the 150 marines of Company I, Third Battalion, Fifth Marines, were the first to take a full battle 'energy kit' consisting of portable solar panels, energy-conserving lights, solar tent shields that provide shade and electricity, as well as solar chargers for communications and computer equipment into the rugged outback of Helmand province in Afghanistan.[2] This is the first of many such initiatives designed to relieve the military of the burden of defending their fuel supply lines and their dependence on increasingly unreliable oil supplies.

It is not just the Army and Marines that are interested. In 2009 the Navy introduced its first hybrid vessel, the U.S.S. Makin Island, an amphibious assault vessel that can run on electric power as well as fuel. The Navy is ordering up supplies of alternative fuels as well; in 2010 the Navy took delivery of the first alternative fuel (ethanol) made from algae – on the understanding that algae-generated fuels can be produced anywhere they are needed, without long supply lines. The Air Force too is certifying its fleet of aircraft to fly on aviation biofuels.

Now the US Armed Forces are driving initiatives across the whole spectrum of renewables, energy and resource efficiency. Consider the aptly named SPIDERS program – standing for 'Smart Power Infrastructure Demonstration for Energy Reliability and Security' – which is a project designed to maintain critical military facilities in operation in case of grid outages, while accommodating renewable power input into the micro-grids at a level up to 90% of all sources. A joint facilities project led by Sandia National Laboratories, the project

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[1] Dagmar Dehmer, 'The German Energiewende – the first year', *The Electricity Journal*, Jan/Feb 2013 (26 (1)): 71-78, at: http://www.sciencedirect.com/science/article/pii/S104061901200317X

[2] See 'U.S. Military orders less dependence on fossil fuels' by Elizabeth Rosenthal, *The New York Times*, 4 Oct 2010, available at: http://www.nytimes.com/2010/10/05/science/earth/05fossil.html

is quite explicitly aimed at proving the feasibility of a similar organizational architecture for the civilian grid – making it resilient as well as flexible and adaptable.[3]

The military has both motive and means to transition away from fossil fuels. The motive is clear: the US armed forces, which once sought a military advantage in building global oil supply lines, now find them a burden. The forces are by far the largest consumers of oil in the US and are for this reason the most vulnerable of organizations. The means is also clear: the military does not have to wait for Congress to act, but can move of its own volition to adopt alternative fuel and energy solutions. Indeed the military can adopt innovative approaches that are likely to have widespread repercussions in the civilian markets. One such initiative is termed Waste-to-Energy (WTE) where in place of loading and transporting and dumping waste, the forces instead turn it into synthetic gas and biofuels for low-grade use (e.g. fuel for generators and military trucks). An experimental device termed the Tactical Garbage to Energy Refinery, that converts up to 1 tonne of garbage per day to synfuel that can power a generator set, has already been tested in Iraq.[4] The military is now a hotbed of research, testing and experimentation in alternative fuels and renewable.

The Senate Committee thus has ample evidence available that two of the strongest industrial powers on the planet, the German energy industry and the US military, are swinging in a very big way behind renewable energy systems. Australia has lost precious time in its endless debates over the efficacy of a carbon tax – an instrument that has never been proven to be useful in shifting investment in a serious way towards renewables. But direct investment facilitated by a green bank – which is what the CEFC effectively is – is another matter entirely. Australia has an institution in the CEFC that is proven to be effective in pump-priming serious investment in a renewables energy future. It is to be hoped that the Senate Committee will play its role in ensuring that the CEFC be allowed to continue its good work.

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[3] See the official project website at Sandia Laboratories: http://energy.sandia.gov/?page_id=2781 and a useful description by Tina Casey, 'In first test, US Military's SPIDERS microgrid uses 90% renewable energy', *Clean Technia*, 12 Feb 2013, at: http://cleantechnica.com/2013/02/12/u-s-militarys-new-spiders-renewable-energy-microgrid/ See also Andrew DeWit, 'The US military, green energy and the SPIDERS at Pearl Harbor', *Asia-Pacific Journal*, 11 (9) no 5, 4 March 2013, at: http://japanfocus.org/-Andrew-DeWit/3909

[4] See John Lyons, Richard Chait and James Valdes, 'Assessing the Army power and energy efforts for the warfighter', Center for Technology and National Security Policy, National Defense University, March 2011.

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