Submission: Inquiry into Australia's transition to a green energy superpower

31 October 2022

I respectfully submit the following comments regarding the Inquiry Term of Reference below:

• areas of growth, and how can these be accelerated and/or assisted, including through the use of Commonwealth Special Investment Vehicles; and how Australia can capitalise on existing and future trade agreements and economic frameworks with countries or regions around the world

Submission:

In our rush to embrace green energy, I am concerned that Australia as a nation is putting the cart before the horse and is not carefully considering the long-term implications of the rapid growth and explosion of investment in green energy projects.

Growth must be regulated, and perceived economic opportunities must not be exploited at the expense of community, agriculture, employment, cultural or environmental values, which unfortunately has happened with some green energy projects in my local area (Central Qld).

We must remain mindful that the primary objective of transitioning to green energy is to safeguard our planet for future generations while providing dependable, viable & affordable energy solutions to consumers with opportunities for sustainable long-term employment of locals (who may formerly have had jobs in fossil fuel energy projects.)

Green energy projects must be able to co-exist successfully with agriculture and have extremely low environmental impacts on local flora & fauna as many green energy generation sites require large areas of land or offshore areas, so long and short-term impacts on agriculture (food security) and environment (e.g. the Great Barrier Reef) must be carefully considered in all proposed developments.

These considerations apply to both Australian projects and Australian involvement in green energy projects in other countries or regions, as many opportunities will arise for green energy projects in developing countries, but these should not come at the expense of local environmental or cultural values. We should not allow our enthusiasm for green energy to become "green colonialism".

Transitioning to green energy should NOT:

- A) secure economic gain & privatised energy monopolies for corporations involved in development and construction of green energy projects at the expense of end-users of green energy....
- B) obtain short-term profits for shareholders or investors in corporations involved in development and construction of green energy projects at the expense of the environment, community values, jobs and opportunities for locals...
- C) allow questionable offshore interests such as China's State Grid Corporation to gain access to and influence over Australia's power utilities (see further comments and reference articles). This also applies in the reverse – Australian interests should not gain undue influence and control over power networks in developing countries.

Regarding points A) and B) above:

While trade and economic development will be spin-off effects of the green energy transition, they must be managed in such a way that Australian communities, jobs, and our unique environmental values are not sacrificed in the process. In my area, currently, one green energy project has been responsible for destroying a large number of old-growth eucalypts along a roadway being used for transport of wind-turbines. These trees were important habitat for local wildlife and an integral part of the local floodplain ecosystem. They were hundreds of years old and cannot be replaced in my lifetime, or the lifetime of my children. Impacts of green energy projects on fauna are already well documented: Chris Moorman, a professor and coordinator of the Fisheries, Wildlife and Conservation Biology program at NC State's College of Natural Resources (USA) notes the following:

- Wind turbines, both land-based and offshore, kill millions of migratory birds and bats each year from collisions.
- Hydroelectric dams block migration routes for fish, preventing them from breeding and causing high juvenile mortality rates.
- Concentrating solar plants known as "power towers" produce beams of sunlight intense enough to incinerate insects and birds.

Ref: https://cnr.ncsu.edu/news/2019/11/renewable-energy-poses-challenge-for-wildlife-conservation/

Another green energy project in my local area has divided a small rural community and created immeasurable stress for many local residents. The landholder hosting the development is happy, but the near neighbours and many people in the local community are not. The project area is in a region of good -quality agricultural land and some valuable remnant vegetation. Locals are concerned their neighbouring agricultural operations will be disturbed by the project and are worried by the risk of bushfires on the project site, which is fairly remote. Workers in the nearby coal-fired power station are worried about their long-term job security. Community engagement by the company involved has not resolved all the issues at the time of writing this submission. Not only that, the project is also in a major catchment area for the Great Barrier Reef Marine Park, so the potential for damage to the Reef from uncontrolled site runoff during major flood/rainfall events is a long-term factor that does not appear to have been given much consideration in the rush to get such green projects underway.

Regarding long-term green energy investment and growth, and the risk of private profit-focussed companies taking on green energy projects, I ask the Committee to consider the following:

Landholders are being offered highly lucrative dollar incentives for hosting green energy projects: $200K (AUD) per wind turbine per year is one figure that has been put forward. Can a single wind turbine generate more than $200 000 worth of power in a year?

As an example, average yearly ongoing maintenance and upkeep costs for a single wind turbine are in the vicinity of $45 000 or more per year. This doesn't include major repair costs, eg lightning strike damage, which is common. Most onshore turbines produce at anything from 35% to 45% of their actual capacity – NOT 100%. If a 4MW turbine averages 35% capacity it can theoretically generate around $245K of revenue in a year, which would just cover the landholder fee and maintenance costs. Obviously if a turbine produces at higher capacity, it will generate more revenue.

BUT – it is important to factor in how much the initial cost of a green energy project is… The initial cost of a single turbine is around $1.3 - $2.2 million per MW (so a 4MW turbine costs around $5.2 million dollars at the lower end of the price scale). At $5.2 million outlay, and 35% capacity, it would take about 21 years for a 4MW turbine to start generating a return after the initial investment costs are factored in! Reference article: https://weatherguardwind.com/how-much-does-wind-turbine-cost-worth-it/

I question whether green energy is promising more than it can deliver in terms of financial return on investments? If the main goal of green energy is to reduce impacts of fossil fuels on the environment, and slow climate change, while providing affordable energy for consumption, and it can viably achieve that, then, fantastic! BUT – investors will outlay a LOT of money to establish these projects. Do these investors expect a return? What about the landholders and the lucrative offers renewable energy development companies are making to them?

Who is going to be left picking up the pieces if green energy projects cannot deliver promised returns on investments? Who is going to be left with environmental cleanup and decommissioning costs if projects fail to generate sufficient revenue to cover end-of-operational-life expenses?? Are local communities and Councils going to be stuck with these rehab costs if companies bail out of the project? Will electricity costs increase, rather than decrease, as green energy replaces fossil fuels? Are electricity consumers and end-users going to end up paying the price for inability of renewable energy projects to deliver financial returns for investors??? Regarding the use of Commonwealth Special Investment Vehicles, the green energy sector is already enjoying significant Australian government financial support (QIC & the Future Fund are the major investors in Australia's largest renewable energy company, PowAR) so committing more funding needs to be carefully considered and managed in such a way as to benefit consumers & communities rather than the energy companies themselves.

Regarding point C) above – see below article – Ref:
https://www.aspistrategist.org.au/state-grid-and-australias-national-security-interests/

State Grid and Australia's national security interests

24 Nov 2015|**Geoff Wade**

The State Grid Corporation of China (国家电网公司), the world's largest electric utility company, is the monopoly power distributor across China in all but five southern provinces and a behemoth with an extensive network of subsidiary companies and subordinate research institutes. Through this network State Grid has ties to a wide range of defence and intelligence agencies across the PRC.

State Grid recently unsuccessfully bid for the $9 billion NSW electricity transmission network TransGrid in a consortium with Macquarie Infrastructure Real Assets. The company's bid was cleared by the Foreign Investment Review Board

In Australia, State Grid is the largest shareholder in the non-listed ElectraNet which operates the South Australian electricity transmission network and is seeking to expand its stake. There are four State Grid representatives on the ElectraNet board, Jiang Xiaojun (蔣曉軍), Li Lequan (李樂泉), Sun Jianxing, and Shi Xinghua. Mr Jiang, who is Senior-Vice President of State Grid International Development (SGID) is also on the board of State Grid Europe, which has been raising funds for European expansion, and the board of Hong Kong Electric Investment. He is also a member of the company's CPC committee.

State Grid has minority shareholdings in gas and electricity distributors in Victoria and NSW. In 2013, Singapore Power sold almost 20 percent of listed SP AusNet and 60 per cent of the shares in the unlisted SPI (Australia) Assets (branded as Jemena) to State Grid Corp. Thereby State Grid is now part-owner of Victorian electricity transmission and distribution networks, as well as Victorian, NSW and ACT gas distribution networks and transmission pipelines. The deal was valued at about $5 billion and saw Sun Jianxing assume a directorship at Ausnet and Ruan Qiantu （阮前途）be appointed as Deputy Managing Director of Jemena. Mr Ruan was previously involved in State Grid's Philippines operations and holds a wide range of posts in Shanghai.

It appears that major efforts have been made to reduce political sensitivities to PRC ownership of essential infrastructure in Australia by initially taking only partial shares

in these companies. Jemena, however, has just been announced by the NT Government as the preferred bidder for the $1 billion North East Gas Interconnector.

In other global holdings, State Grid has interests in power transmission companies in the Philippines, Brazil, Italy and Portugal. State Grid's international operations are pursued through SGID, whose CEO is Zhu Guangchao (朱光超) and whose party secretary is Li Haixiang (李海翔). SGID has also been involved in transmission line construction in Ethiopia and hydropower construction in Cambodia.
Subsidiary Heilongjiang Electric Power Company is developing business with Russia. Russian Grids and the State Grid are discussing the building of ultra-high voltage power transmission lines from Russia to China. Other SGID businesses include global mining operations.

The rise of the Chairman of the State Grid Corporation Liu Zhenya (刘振亚)—was intimately tied to the support of former Politburo Standing Committee member Zeng Qinghong (曾庆红) whose son, Zeng Wei, has strong Australian connections.

State Grid Chairman, Liu Zhenya, also heads the CPC Committee of State Grid, and all members of the company's leadership group are party members. As such they are ultimately responsible to the CPC Central Committee. Indeed the formal mission of State Grid is "to serve the overall work of the party and the state" in that order.

National security concerns over State Grid development and construction of the national power grid have been most loudly voiced in the Philippines, where again only an initial 40% interest (along with four director positions) in the National Grid Corporation of the Philippines (NGCP) has so far been bought by State Grid. In February this year, concerns about the State Grid technicians involved with the Philippines national grid project were expressed by the Philippines National Security Council and Department of Justice. It was then announced that the work visas of 16 Chinese experts employed by the NGCP would not be renewed when they expired in July 2015. State Grid have said the Philippines government's actions were related to the ongoing South China Sea dispute between China and the Philippines rather than any in-country activities of the company.

Egypt has also recently decided to end a transmission line contract with State Grid subsidiary China Electric Power Equipment and Technology Co. and assigned their own military engineers to develop it. This appears to have been the $1.8 billion deal signed in March 2015.

State Grid's networks carry the People's Liberation Army's communications. In 2012, 10 members of the Information Security Bureau of the Department of Information Technology under the PLA's General Staff Headquarters visited State Grid headquarters to investigate the security of their networks and their information systems and the development of classified security protection regimes.

State Grid is an influential element in the development of Chinese foreign and strategic policy. In July this year, an article by Hui Chunlin (惠春琳), a lecturer at the Institute for International Strategic Studies of the CPC Central Party School, was

published on the indaa website, run by State Grid-sponsored Yingda Media Group (英大传媒集团).

In the article Hui urged China, under the One Belt One Road (OBOR) initiative, to expand China's provision of electricity generation and transmission facilities to the OBOR countries in order to create a China (State Grid)-dominated "system of inter-connected and inter-operable" energy channels. This would also include a network of ports, highways, railways and energy pipelines. According to Hui the PLA Navy would be used to "guarantee the security of the energy channels". These are precisely the sort of strategic investments which AIIB was created to fund and to which China has managed to induce other countries to contribute.

This PRC agenda of investing in regional energy grids and economies through State Grid and other state-linked companies is being pursued with vigour. State Grid now has large energy infrastructure holdings in Australia and the Philippines and is seeking more, while the Nari Group and NARI Technology, both subsidiaries of State Grid, are engaged in power station construction, power transmission projects, photovoltaic plants, hydropower plants, substation contracting and renovation, equipment provision and ash handling systems in the Philippines, Pakistan, Thailand, Indonesia, Laos, Australia, Vietnam, Nepal and Cambodia. Zha Daojiong has written on how PRC energy companies abroad can manage political risk during this endeavour. At the same time, China is buying long port leases and the PLA Navy is seeking new access to ports across the region.

Postscript: In correspondence with *The Strategist* State Grid disputed a number of claims made in a previously published version of this post. We offered State Grid the opportunity to write for *The Strategist* putting the company's views in response, an offer they declined. The author has checked the facts to the best of his ability and *The Strategist* believes this post reflects a fair treatment of the issues raised.

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Please note that even though the article above is from 2015, China's State Grid corporation continues to hold over 46% interest in ElectraNet in 2022 – ref https://www.afr.com/street-talk/aussie-power-up-sa-s-electranet-malaysia-s-ytl-exits-20220208-p59uus