Clearing the Air

RECOMMENDATIONS ON ENERGY ECONOMICS AND SECURITY IN NEW SOUTH WALES.

NEW ENGLAND CITIZENS' JURY

August 2012

Submission to the New South Wales Parliament Legislative Assembly Public Accounts Committee

Clarification of Remit

The Public Accounts Committee provided the Citizens' Jury with the following remit:

> *Agree on an order of preference, barriers to adoption (including financial aspects and public perception issues) and recommended course of action with regard to alternative forms of energy generation in NSW*

After consideration of this remit, inclusive of presentations by several experts representing particular interests and knowledge bases relevant to the subject of the concerns of the Public Accounts Committee, the New England Citizens' Policy Jury decided to critically revisit the above remit.

Specifically, the Citizens' Policy Jury reached the conclusion that the requirement to 'agree on an order of preference … with regard to alternative forms of energy generation in NSW' presupposed that the optimal mechanism of choosing a so-called 'order of preference' generation resides in a process of political decision-making. On the contrary, after a review of the available evidence, we determined that the take-up of alternative energy forms is best determined by what we will denote as a 'guided market approach'.

Nevertheless, the Citizens' Policy Jury did determine three fundamental parameters of this approach with respect to the so-called 'order of preference', namely:

1. That pre-existing interference of pricing signals, particularly with respect to non-renewable energy sources (specifically, coal) ought to be addressed as soon as possible;
2. That adoption of alternative forms of energy generation be guided by triple bottom-line sustainability (economic; social; environmental) as determined by the largely pre-existing regulatory framework;
3. That the broader Community does not currently have confidence in either uranium-based nuclear energy generation or coal seam gas extraction technologies, and that until such time as the community's confidence level improves significantly in respect to both these technologies, they are not recommended for inclusion in any energy generation mix for NSW.

Executive Summary

It was the determination of the New England Citizens' Policy Jury that considerable diversity of alternative energy generation sources has already been invested in NSW and indeed more generally. Further, this suite of technologies provides solid grounds for optimism with respect to moving toward a future based upon a higher reliance on renewable energy. Nevertheless, the New England Citizens' Policy Jury did identify several barriers to the adoption of these technologies, namely:

1. The aforementioned market distortion created by the State Government's subsidisation of coal-fired electricity generation in NSW. In the opinion of the New England Citizens' Policy Jury, the NSW Government is in a unique position to decouple the negative political economies generated by this subsidisation – over time – and as such assist in moving the State toward a more sustainable energy future.
2. The New England Citizens' Policy Jury recognises that components of energy infrastructure – particularly the distribution network – exhibit characteristics of a so-called 'natural monopoly' (i.e.: where one firm – the state – can meet most of market demand and still achieve the lowest average cost per unit). As such, the Jury recommends that the Government exercise due diligence with respect to this natural monopoly, by retaining state ownership of it (the so-called 'poles and wires' of the network) while at the same time facilitating emerging alternative forms of energy generation to participate in this network. Expansion of the network is a technology neutral form of renewable energy subsidy.
3. That, notwithstanding the recommendation that the market be relied upon to generate both innovation and efficiencies in the energy sector generally, a strategic framework, or 'time-line' for the implementation of reliance upon renewable energy sources be provided at the level of the State Government, as a means to provide greater certainty for investors in these renewable energy forms.
4. Given the adoption of the carbon tax at a federal level, that the regulatory framework developed by the NSW Government be strategically aligned with the framework now emerging through mechanisms such as COAG, the ACCC, and various intergovernmental arrangements.

Statement of Principles and Assumptions

1. NSW consumers expect a reliable and continuous uninterrupted energy supply.
2. A transition is required to energy sources that are healthier for workers and the general community both now and in the future. Community expectations are increasing with respect to the prospect of a cleaner outcome for energy generation.
3. A transition is required to energy sources that have a significantly lower environmental impact.
4. Energy generation, retailing and pricing structures must have energy efficiency incentives as a core principle for both consumers and generators.
5. Government should adopt a holistic approach to energy generation by looking at the relationship between generation, transmission, delivery, efficiency, demand and the NSW energy market and the renewable energy target.
6. Despite its taking the lead, Government ought to recognise that energy solutions need a multi-partisan political approach.
7. Viable economic alternatives need to compete fairly with existing generation techniques. Barriers to entry to the NSW energy market must be reviewed to facilitate easier market access for the alternative technologies.
8. Infrastructure needing to be replaced or built must be more flexible to allow for decentralised generation.
9. It ought to be acknowledged that the NSW energy network is a part of a national system and the implications this has for power generation in the State.
10. The New England Policy Jury chose to not focus on specific technologies (existing or emerging) as such recognising that these are continuing to change and develop.
11. That the safety net for low-income and other disadvantaged consumers continues.

Analysis of Current Environment

Technical

1. The state of NSW no longer runs its power generation facilities. Consequently, it is no longer a state responsibility to dictate the technology to be used. Rather, it is a state responsibility to ensure that whichever technology is used it does not create an unhealthy working environment for the employees or the citizens of the state; now or in the future.

2. A mix of alternative energies and technologies is poised on the edge of the market; nevertheless, we recognise that this mix will continue to change and develop.

3. Those companies developing the various alternative technologies are the ones who will be able to determine when they have reached the viable stage. They are also the ones who will incur the costs and enjoy the profits.

4. Nevertheless, one technical area that needs state support is in the development of the grid management systems that will be required to allow for the inclusion of power generation technologies that are decentralised and may or may not generate continuously (e.g. solar and wind).

Economic

For new technology companies to enter the marketplace, they must be able to foresee a profit whilst providing power at a competitive rate to their rivals, both current and developing.

Barriers to the entry:

1. The companies running the state's coal-fired power stations are currently able to purchase coal at rates that are significantly below market price, and are therefore able to supply energy below the real cost. Alternative technology companies who are trying to enter into the power generation market are starting with a significant economic disadvantage because of this.
2. Control of the retail market is by groups with a vested interest in the current generation methods. As a consequence, new entrants, whilst able to offer power at rates competitive with the current wholesale rate, do not have appropriate access to the market.
3. Some forms of generation, whilst highly competitive when operational, do not continuously generate power and so may need supplementation from other sources on occasion e.g. Solar, Wind, Tidal, and Wave. This implies the need for an environment involving co-operative generation strategies rather than the competitive ones that exist in the current marketplace. Such technologies could include solar thermal, geothermal and solar-pumped hydro as methods of providing green dispatchable energy load.

4. Research and development of energy storage becomes more and more important as we increase the proportion of renewable energy. Solar thermal, geothermal, bio-gas, pumped-hydro, use of electric cars can play a significant role in providing green dispatchable energy.
5. If the cost of extending the network has to be absorbed by a business developing an alternative technology, e.g. to a Solar power station located in the country, then this will significantly limit the ability of a business to be competitive even if the technology can significantly lower generation costs.

Network

1. The existing network has evolved to satisfy the needs of a centralised, coal-fired generation system.

2. Further, grid management technologies and systems for NSW assume a limited number of power stations providing electricity relatively close to the majority of demand. Whilst some alternative technologies may be able to be similarly located, there may be sound technical reasons for choosing a site significantly further away e.g. locating a solar power plant because of climatic advantages.

3. The use of alternative technologies for power generation will require more flexibility in the location of the network and in the management of the network. The cost of extending the network and the cost of developing the appropriate management technologies and systems are a network cost and need to be included in the network budget appropriately. They must not be borne by the new entrants. The infrastructure to support the alternative technologies should be provided in the same way that it was provided to existing coal fired power stations and to the mining industry; for example when a new mine site is established that is not close to existing infrastructure.

Political

Currently the energy strategy development focus is clouded by vested interests and disparate government policy. There is no national focus to long-term energy solutions.

1. Decisions have historically been made affecting energy generation in NSW that have not been related to long-term sustainable delivery solutions.
2. Traditional energy generation providers have an unfair advantage.
3. Government at the national level has responded to environmental concerns by recently introducing a price on carbon. The NSW Government ought to reinforce this commitment to clean sustainable energy as a mechanism to promote economic growth.

Social

1. There has historically been no focus for energy consumers around sustainable energy usage.
2. There is a significant sector of low income earners who cannot afford their traditional usage levels under the current tariff structure.
3. Manufacturing businesses are becoming less competitive due to escalating tariffs, thereby negatively affecting employment. Increasing energy costs are a factor in this.
4. Current carbon-based fuel sourced generation creates significant health issues for both workers and the wider community.
5. Decisions around power generation, delivery and policy are not tested against traditional social indicators.
6. Consumers are not encouraged by pricing to be efficient. Lowering availability charges and balancing the loss of income by increasing usage charges would provide greater incentive for people to lower their demand.

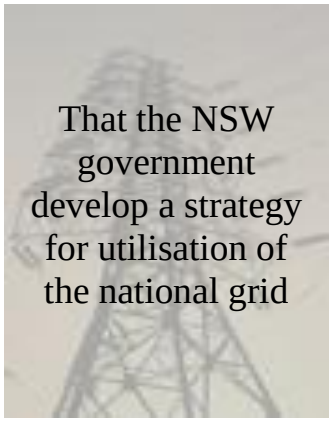
Environmental

1. The environmental impacts of the choices that are made need to take into consideration more than just the emissions. Soil, water, flora, fauna and air are all impacted, from pollutants to degradation, extinctions to genetic isolation through to genetic biodiversity. All these environmental impacts directly impact on our current, and future, health and well-being. It is important to take into consideration all environmental factors, not just a few.

Salient Facts

1. Fossil fuel reserves are finite and their continued use for energy generation creates significant health issues both for the workers and the wider community.
2. Economically viable alternative energy technologies are available to implement now, but alternative energy generators have difficulty accessing a market entry point under the current structure.
3. Economically viable alternative energy technologies are continuing to be developed and improved.
4. The renewable energy technology industry is looking for more certainty from government with respect to the environment in which they are operating to be able to make the long-term investment decisions required to enter the market place.
5. Existing coal fired power stations are reaching decommission dates and are in receipt of subsidies that provide them with a significant commercial advantage over non-fossil fuel generators (e.g.: coal price below the market value and excise tax exemptions for mines).
6. The current grid design is based on centralised power generation because of the availability of the fuel source (e.g.: coal). Alternative methods of power generation may be best suited to locations other than these.
7. Energy prices for consumers are rising, despite their efforts to reduce consumption. Indeed, the NSW energy demand has decreased in recent times.
8. Generally, the power generating companies have strong ties with the retail sale companies, and therefore they have the ability to disadvantage companies who can generate power from alternative sources.

- **Recommendations**



Parliament should adopt a multi-partisan approach to energy policy and regulation.

Policy should recognise and reward efficiency in generation and consumption

Generation Policy needs to set clear environmental and health bench marks that meet community expectations.

Ensure infrastructure provision focuses on efficient and cost effective energy outcomes

The electricity grid needs to be transformed into a decentralised network.

Separate electricity-generation from retail sectors.

Recommendations

1. Build a strategic framework with targeted stages to achieve a goal of 100% sustainable, renewable/green energy mix, promoting flexible technologies choices for energy production. Targeted stages would provide increased assurance for investment in renewable/green energy technologies. An illustrative example is:
    - 30 per cent green energy/renewable by 2020;
    - 40 per cent green energy/renewable by 2025;
    - 50 per cent green energy/renewable by 2030;
    - 60 per cent green energy/renewable by 2035;
    - 70 per cent green energy/renewable by 2040;
    - 80 per cent green energy/renewable by 2045, and
    - 100 per cent green energy/renewable by 2050.
2. That the NSW government develop a strategy for efficient integration with the national grid.
    - Ensure that NSW plans to be part of a National Energy Strategy, as renewable energy sources are not evenly distributed nationally and some areas have a comparative advantage in types of renewables.
    - NSW takes best advantage of the national grid to maximise economic, environmental and social benefits from the national electricity distribution system.
3. Governance of the NSW energy market needs to be revised to facilitate improved market access for renewable energy.
    - Legislation should guarantee decentralised small, medium and large scale generation has access to the NSW energy market at a set minimum price.
    - Subsidies for coal-fired power, such as 'below market price coal' should be phased out as contracts are renewed.
4. Parliament should adopt a multi-partisan approach to energy policy and regulation.

    To create long-term business confidence to invest in renewable energy, parliament should set up an on-going multi-party advisory committee that extends beyond a single term. This committee is to oversee the long-term policy development and implementation.
5. Policy should recognise and reward efficiency in generation and consumption.
    - All consumers, individuals, businesses and communities should be rewarded for efficiencies through incentives – for example:
        - A review of the tariff structures and an educational program to help consumers become more efficient.
        - Promotion of smart card system so consumers can participate in rewards as shareholders in renewable energy production.
        - Service availability fees should be kept low with increases, when necessary, only in usage fees to encourage efficiency.
6. Generation Policy needs to set clear environmental and health bench marks that meet community expectations.
    - Environmental and health considerations come before financial costs. Legislation should protect environment and health.
    - Coal seam gas, fracking and uranium-based nuclear power are unacceptable given the current technologies and safety concerns.

- Review plans to build new coal fired power stations.
- No new fossil fuel exploration for NSW power generation.

7. Ensure infrastructure provision focuses on efficient and cost effective energy outcomes.
   - Provide a legislative framework on generation ownership and mandating continuity of supply.
   - Conduct a review of public/private ownership for generation, network and retail functions to ensure operators are accountable and consumer needs are met.
   - Existing public ownership should be retained unless it is clearly demonstrated that asset sales will provide enduring advantages for electricity consumers
8. The electricity grid needs to be transformed into a decentralised network.
   - Investment in the grid should be directed toward optimal renewable energy locations, e.g.: wind along the dividing range and solar west of the range. A decentralised network has the added advantage of regional jobs, skills and investment as well as increasing the percentage of renewable energy in NSW.
   - Increased investment in a "smart grid" will help to lower peak demand.
9. Separate electricity generation from retail sectors to remove the monopoly that at present restricts access at the wholesale levels of alternative energy. The areas of energy generation, the wholesale energy market and the retail energy market need to be totally independent from each other.

   Our reasoning for this is that the separation will:
   - Increase competition
   - Prevent monopolies dominating price determination
   - Open the market to new alternative supplies
   - Lead to more decentralised power generation
   - Bring more realistic price outcomes as a result of the competition for market share.
10. Ensure strategies to aid the disadvantaged in the community

    As energy prices are likely to increase above CPI, the disadvantaged should receive energy subsidies on a regular 4-6- month basis
    That the ACCC monitor for price gouging and anti-competitive pricing from all sectors of energy supply industries.