

Submission

No 6

INQUIRY INTO INQUIRY INTO THE ECONOMICS OF ENERGY GENERATION

Organisation:

Name: Mr Graeme Jessup

Telephone:



Date Received: 8/02/2012

Theme:

Summary

PUBLIC ACCOUNTS COMMITTEE

Inquiry into the economics of energy generation

Submitted by: Graeme Jessup



Comments

In particular, the Committee will consider:

(i) the mix of energy sources used in New South Wales;

No Comment

(ii) a comparison of NSW's energy mix with other jurisdictions both in Australia and overseas;

No Comment

(iii) issues relating to long term energy security in New South Wales;

Long term energy security will be enhanced if NSW can move to a more distributed mix of power generation.

(iv) the potential for NSW sourcing energy interstate;

No Comment

(v) the potential for, and barriers to, development of alternative forms of energy generation(e.g. tidal, geothermal) in New South Wales; and,

Any rational assessment of the most appropriate path to long term power generation in NSW will conclude that we should quickly move away from a reliance on fossil fuels – they simply generate an unsustainable level of CO2 emissions. The barriers to a transition to alternative low carbon forms of energy generation are mainly:

- a. **High capital cost**
- b. **The huge opposition from entrenched fossil fuel generators.** However commercial interests do not or should not run the State, and the Government should develop a well conceived plan to re-educate and replace existing work with works associated with the transition to sustainable energy
- c. **Lack of operational experience** – this is a valid impediment which can only be addressed with the availability of funding with an increased element of risk. Only those forms of alternative generation that have demonstrated operational viability should be considered for large scale generation. However the Government may have to underwrite some forms of alternative generation.
- d. **The inability to generate 24 hours per day** – this is true but a mix of hydro, geothermal and solar thermal energy storage with some reliance of fossil fuels can overcome this problem. Beyond Zero Emissions in Victoria have addressed this problem and offer a viable solution. (<http://beyondzeroemissions.org>)

(vi) best practice in alternative energy generation in other jurisdictions

No Comment

General Comments

In my view any assessment of the economics of power generation must include all the financial implications of energy generation for each option. The matters to be included in the assessments should include:

2. The cost of fuel

- a. For coal fired generation this should include:
 - i. the cost of obtaining the land for mining
 - ii. the cost of remediating the land to its original state, including the replanting of native vegetation if applicable.
 - iii. the cost implications of land subsidence due to underground mining, including the remediation of waterways and damage to sandstone pagodas and other surface features
 - iv. the cost of transportation including the cost of any noise abatement if such noise abatement measures are required by other forms of generation such as for wind turbines.
 - v. the cost of carbon emissions from the mode of transport involved based on the Federal Governments projected rates starting at \$23/tonne CO₂.
 - vi. the cost of any dedicated Government financial assistance, auditing or insurance necessary to adequately support the operation
- b. For gas fired generation this should include:
 - i. the cost of remediating the land to its original state, including the replanting of native vegetation on all roading and water storage sites.
 - ii. the cost of removal and appropriate disposal of all salt and other waste products produced by the gas extraction operation.
 - iii. the cost of remediating any damage to the underground aquifers disturbed by the gas extraction operation
 - iv. the cost of removing all civil and mechanical structures at the end of the mining operation, including wellheads and piping.
 - v. the cost of fugitive carbon emissions from the extraction and transport of the gas based on the Federal Governments projected rates starting at \$23/tonne CO₂.
 - vi. the cost of any dedicated Government financial assistance, auditing or insurance necessary to adequately support the operation
- c. For nuclear fired generation this should include:
 - i. the cost of obtaining the land for mining
 - ii. the cost of remediating the land to its original state, including the replanting of native vegetation if applicable
 - iii. the cost of long term management of the spent fuel for current and future generations
 - iv. the cost of any dedicated Government financial assistance, auditing or insurance necessary to adequately support the operation

3. The cost of the Power Station construction and operation

- a. For Coal, Gas, Wind, Nuclear, Geothermal, and large Solar Thermal generation
 - i. the cost of carbon emissions associated with the construction and operation of the power station based on the Federal Governments projected rates starting at \$23/tonne CO₂.
 - ii. the cost of removing all civil and mechanical structures at the end of the useful life of the power station
 - iii. the cost of remediating the land to its original state, including the replanting of native vegetation on all roading
 - iv. the costs of power transmission
 - v. The cost of any dedicated Government financial assistance, auditing or insurance necessary to adequately support the operation
- b. For small scale Solar PV generation:
 - i. the cost of carbon emissions associated with the construction and operation of the power station based on the Federal Governments projected rates starting at \$23/tonne CO₂.
 - ii. the cost of any dedicated Government financial assistance, auditing or insurance necessary to adequately support the operation
 - iii. the benefits of embedded generation where transmission of the power may be less costly

Unless these factors are all included in the economic comparison there can be no direct comparison of the various options. Of particular significance will be:

- i. the cost of remediation for the extraction of coal, gas, and nuclear fuels
- ii. the cost of cost of carbon emissions for coal and gas fired generators
- iii. the cost of long term management of the spent nuclear fuel for current and future generations
- iv. the cost of any dedicated Government auditing or insurance necessary to adequately support the operation of nuclear powered generation

Signed:

Graeme Jessup

A large black rectangular redaction box covering the signature of Graeme Jessup.