

SUBMISSION TO THE NUCLEAR FUEL CYCLE ROYAL COMMISSION TENTATIVE FINDINGS

OVERVIEW

The Commission's report raises three broad questions with regard to the establishment of a storage facility for intermediate and high level nuclear wastes in South Australia.

It asks whether

- . The community supports the proposed facility?
- .Is there agreement with the Business Case?
- .Should any of the tentative findings be changed. If so why?

CONCLUSION

Facility

The establishment of a Nuclear fuel waste depot in SA to take intermediate or high level waste is not supported.

It is not supported by some Aboriginal Communities, nor other groups including the Conservation Council of SA.

Expansion of the industry would take SA further down a very risky and uncertain Nuclear path with potentially major adverse economic, environmental, social and cultural impacts.

Business Case

The Business Case as proposed is not convincing. It does not provide a compelling argument to proceed.

The project requires a vast amount of upfront capital expenditure. Given long lead times, uncertainty of capital requirements and operating costs, market penetration and

revenue estimates, the venture is risky. Combine these factors with issues relating to timing and the venture looks uncertain.

All costs have not been included.

Opportunity costs, for example, have not been considered. Has there been sufficient consideration of Nuclear liability? What is the risk of accident? Insurance costs, are these inadequate?

Effective project management is crucial for the facility to succeed. Human resource selection and management along with facility design are critical factors to achieve success.

What is the probability of the Baseline facility achieving NPV of A\$14.4 billion?

Key Tentative Findings

Key Tentative findings 2,3,4 and 5 on the Overview page are accepted and follow from the report.

Tentative finding number 1 is not supported. A more cautious finding is suggested given the concerns expressed in this submission.

SOCIAL/ENVIRONMENTAL/CULTURAL REASONS FOR NOT SUPPORTING THE WASTE FACILITY

Sec 103-115. Social and community consent

The decision not to allow the transport and disposal of high level nuclear waste was embodied in legislation some years ago. SA decided not to grant a social licence for a waste facility. The interim report does not provide compelling findings to change the decision.

Submissions to date provide evidence the community does not wish to change its mind. A number of Indigenous Communities, environment and conservation groups have indicated they do not support a disposal facility for high level waste in SA.

. We have no ethical right to ignore or over rule cultural concerns raised by our First Australian's about development on Native Title Lands. Apart from not wanting high level waste on areas of cultural significance Aboriginal wishes to be fully consulted and listened to on all matters affecting their culture and way of life is paramount..

Site Selection Sec 79.

It is impossible to determine environmental impacts and costs until alternative sites for the Port Railway and facilities are identified. It could be expensive, time consuming and possibly controversial to establish all necessary baseline Environmental Data .

Site selection was not part of the Commission's terms of reference and the cost of this additional work should be included to determine total project costs. See further comment below on Port/Rail costs.

Why do the extra work if it is clear already the community does not want the nuclear waste facility?

COMMENTS ON THE BUSINESS CASE

.Sec.155 Impact on other sectors.
Sec. 152-154 Education/Skills

To proceed with the project a sound and accepted Business Case is essential.

The nuclear facility means creation of a new, large sector of economic activity which will play a dominant role in the transformation of our State. It is a sector where we have limited expertise and experience.

Selection of experienced, competent management and staff will be a challenge and could take longer and be more expensive than provided in the estimates. What amount was provided and how was the figure determined?

Achieving the overall objective will take focus and energy away from existing economic sectors, redirect training activities and require significant legislative change.

We may need to partner with large international companies. We may rely to a large extent on international expertise and best practice. All with a high cost. Is this aspect fully considered and costed in the commission report?

Economic impacts will extend beyond the tourism, transport, construction and training sectors. There will be impacts across the entire economy. Not all will add to productivity.

The Project will take scarce capital resources away from alternative infra-structure projects and cause a significant re-ordering of State priorities. Our States current image and brand could be tarnished.

Do we want to rely on nuclear waste to reinvigorate our Economy?

After our experience with over reliance on the car and mining sectors we need to think carefully about the potential impact of investing so much in a capital intensive, high risk venture.

Do we want to change current investment, employment trends? We are emerging in the Pacific Basin as an

international leader in renewables and energy efficiency. Why change the emphasis to become a State reliant on the risky nuclear waste disposal field? (See further comments below under opportunity costs)

Site location

The estimate for site location, \$750m, seems low. To find a suitable site for the port, rail infra structure, storage and disposal facilities will be costly and time consuming. More than one site should be considered.

Price/Market share

The baseline price achieving revenue of \$1.73m per tHM seems high. There is no international market for permanent storage of high level waste.

In the United States nuclear industry around US \$400000 per tHM(say AUD\$600000) is set aside to cover research, development and final storage.

Market penetration could be below that assumed in the baseline case.

Cash Flow

Cash flows are negative for many years. There is no revenue in the first few years only outgoings.

The outflow for the first 2 years with accumulated construction costs is estimated to be about \$2.4billion. This means the SA public must carry the impact of the outflow for the period.

How was this figure calculated? Does it include all the initial costs? How will this be paid for?

Capital Costs

\$100m is estimated to build port and rail infrastructure. This seems too low. It is impossible to reasonably estimate these costs without being site specific. Costs could be much higher depending on such factors as the extent of initial dredging and ongoing dredging (if required).

Total estimated capital costs for the baseline facility is \$410b. Is the 25% growth allowance and scope contingency provided sufficient?

Cost Certainty

Given the long time frames involved it is necessary to consider a range of costs for each of the key cost areas.

Experience with major costs for large and complex capital projects in SA shows significant cost over runs occur for many reasons.

We have no experience in siting and building a facility for high level radioactive waste.

The USA has no long term facility for disposal of nuclear waste despite consideration and expenditure over many years. The Yucca Mt. Nevada project was never completed despite expenditure of US \$9b. The estimate to complete the contractual obligations has grown from \$11b(2008) to \$21b(2013). Current expectations are for costs to escalate to possibly \$24b. A doubling of estimates in less than 10 years. (1)

To address the issue of uncertainty Jacobs MCM has provided useful sensitivity analysis. Variations to costs, revenue streams and a delay in the receipt of revenue are considered. The

conclusion “the project remained highly viable under all these scenarios”. What factors were held constant?

Has a worst case scenario been considered? This might arise if delays, cost overruns, failure to achieve budgeted price and market share along with systems and human resource problems occur . Given the complex nature of the project, the probability of a worst case scenario (as well as its impact on cash flow and annual revenue returns) should be considered.

Opportunity Cost

One aspect which has not been considered in the interim report is opportunity costs.

The demand for infrastructure capital in SA is considerable. The ability to borrow and repay money raised is finite and while borrowing limits are not capped the liability of very large amounts of capital will impact on SA credit standing, debt level and future borrowings.

High risk capital for a nuclear facility would not come at a low cost.

In addition to the direct costs capital raised for a nuclear facility could come at a cost to other essential infrastructure projects. An important new urban rail line could be cancelled (e.g City to Victor Harbour line), or necessary educational and medical facilities deferred for many years.

There is an opportunity cost for cancelled or deferred development in alternative growth sectors.

Money and human resources spent on the nuclear fuel cycle will not be allocated elsewhere. Resulting in less investment, in say the Aged Care industry. An industry with high employment potential, a guaranteed and growing market sector, with little

attached risk. Comparing the two sectors, Aged Care investment could provide greater short term certainty with less risk than a nuclear waste facility.

Surely a better brand image for SA to develop, as a leader in Aged care, is a better image than the Pacific Basins nuclear fuel dump. Who wants to live and work near that?

Risk Management.

The interim report looks at risk management in terms of radiation, security, transport and storage.

Insurance/Nuclear Liability Sec 148-151.

Further consideration of the cost of Insurance is required. The report mentions the need for new legislation with insurance coverage designed for” new risks. “

What is the probability of an accident? Could the financial impact be modelled? Even with a relatively low probability the impact could be substantial in terms of loss of reputation with costly remedial action. We do not want any accidents in the rich marine waters of the Gulf.

The Projected Annual Revenue \$5.6b puts the project as one of major potential impact for SA not only in terms of gain but also in terms of loss if the project fails, or is shut down in the first 10-15 years.

Does SA want the potential for long term nuclear liability on its books? I expect many tax payers do not.

Tax Implications

The projected revenue from the project, if successful, may prove to be very attractive to taxing authorities who may be tempted to divert some of it or reduce other grants to SA. (2)

CHANGE TO THE FIRST TENTATIVE FINDING

For the reasons give above I believe this finding should be altered.

The project is estimated to cost \$410 billion. Given the size and complexity of the project and the issues raised it would seem sensible to undertake additional work to test the findings to ensure decision makers are fully aware of all the risks and possible benefits.

I thank the Commission for its interim report and the opportunity to comment.

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General References (Commission)
Royal Commissions Tentative Findings report
Jacobs and MCM Full report
Issues Paper four
A range of Submissions to the Commission including the
Conservation Council of SA; ACF /Friends of the Earth; Kauma
Yerta; Anggumanthanha; EDO.,BHP Billiton.

Additional references.

- (1) "Yucca Mt. Nuclear waste repository. Sec 2 The Facility-.
Wikipedia
- (2) Nuclear Waste Boom-a Hot Story..... John Spoehr
Adelaide Review March 2016.