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# **ECONOMIC ANALYSIS OF TTR PROJECT – WHAT IS REQUIRED?**

# Economic analysis - 3 types

- 1. Commercial / business cases.** Considers cash flows over project life (revenues, capex, opex, taxes etc.). Narrow scope. A measure of commercial viability, with clear decision rules (e.g. ROR etc.). Done.
- 2. EIA.** Often using IO or CGE models (static models). An estimate of priced *activity* (including possible flow-on impacts) - not net benefits. Narrow scope. No decision rules (all activity is good). Useful context for decision makers only. Done.

# Economic analysis - 3 types

- 3. Benefit-cost analysis.** Measures the net benefits of a project (benefits – costs) over its full life from a societal perspective. Includes a broad scope of values (commercial, environmental, social). Includes sensitivity analysis to account for uncertainty. Clear decision rules (benefits > costs). Not done.

# Key issues and questions

- **Appropriateness of economic analysis.** Can it really inform regulatory decision making?
- **Direct impact of project.** Are the estimates reasonable?
- **Indirect impacts.** Are the estimates reasonable?
- **Environmental and social impacts.** Include in economic analysis? Avoid double counting?

# **APPROPRIATENESS OF ECONOMIC ANALYSIS**

# The submitted evidence

- An Economic Impact Assessment (EIA) as evidence of the benefits of the project. Specifically an IO modelling approach has been used.
- The EIA is based on the operational on-shore annual spend \$ (provided by TTF - \$133M p.a) and uses IO analysis to estimate economic *activity* as a measure of ‘benefits’. Only monetised activity is measured.
- *“EIA can provide useful contextual information for decision-makers, but is not suitable as a tool for measuring the balance of costs and benefits of a decision to society.”* (NZ Treasury)

# Benefits

- ‘Benefits’ in a decision-making (investment) context relate to net benefits. Does the project stack up?
- ‘Benefits’ aren’t defined in the EEZ Act, or the EPA Act.
- But the RMA Act does... *“benefits & costs include benefits & cost of any kind, whether monetary or non-monetary.”* Quantitative valuation should be used where practicable.

# Problems with IO approach used

- IO is a measure of activity – all activity is supposedly beneficial (e.g. smashing windows). No decision rule, cannot incorporate non-market values.
- IO is a static modelling approach, with linear assumptions of economic relationships (e.g. \$ of activity to employment). Not really appropriate for long-life projects with marginal or cumulative impacts, or where thresholds exist.
- Based in national data (adjusted for local conditions). Transparency limited.



# Problems with IO approach used

- Probably overstates impacts (particularly employment)...
- *“Proponents of projects often claim that their project have multiplier effects..... This thinking either assumes that there is significant unemployed resources available, or it ignores the fact that new activity displaces other activity that would have occurred. Unless there is significant unemployment of people with the requisite skills, it is therefore unlikely that multiplier effects do exist.” (NZ Treasury)*

# BCA – a more appropriate approach

- BCA looks more carefully at the marginal values attributable to the project. Benefit flows, cost flows, market & non-market values, long-term, incorporates risk and uncertainty. It answers the question, does the project provide net benefits to NZ?
- Approach is commonly used (has been since the 1930s). Non-market valuations since the 1950s (> 170 studies in NZ on Lincoln Uni database. More than 1,300 studies internationally). Problem that none in study area.
- Recommended approach by NZ Treasury. Used commonly internationally (including legislative requirements in NSW for new CSG developments).

# Bottom line

- Approach presented by proponent (EIA) isn't appropriate to inform decision.
- An alternative does exist (BCA) which is both preferred by Treasury, has a more appropriate scope, and can be done.
- Given the scale and potential risks associated with this project, the robustness of the analysis should be commensurate with the risks.

# **DIRECT IMPACT OF PROJECT**

# Direct impacts

- EIA report is right in assuming construction phase has negligible impact on NZ.
- Magnitude of estimates probably reasonable, but location of impacts difficult to determine (domicile of shift employees, location of supply of bespoke inputs and value-adding).

**INDIRECT IMPACT**

# Indirect impacts

- Uses IO model to estimate indirect & induced impacts.
- IO used in-lieu of CGE to enable local and regional estimates (reasonable given brief and desire for local impacts). Transparency a concern.

# Indirect impacts

- Spatial disaggregation of indirect benefits even less reliable than for direct impacts.
- Due to project financing (high levels of foreign capital), the benefits of project ownership (profit / dividends) accrue overseas.
- **Bottom line is that benefits are probably overstated (particularly jobs), and spatial distribution is questionable.**



# **ENVIRONMENTAL AND SOCIAL VALUES**

# Environmental and social values

- Technical assessments indicate the project creates risks and costs (fishing, tourism, local recreation, penguin habitat, biodiversity, risk of spills etc.). Uncertain impacts.
- Limited consideration within economic analysis (narrow scope). Not incorporated into analysis (net benefits not assessed). Puts onus on DCM to work out values, risks and tradeoffs.

# Environmental and social values

- Values and risks could be significant.
- BOTE estimates based on studies undertaken elsewhere of value of ecosystem and area of activity, indicate values anywhere between around \$30M to \$500M+.
- Environmental & social costs and risks can & should be estimated for inclusion in a BCA.

**CONCLUSION**

# Conclusion

- 2 of the 3 types of relevant economic analysis have been done. A reasonable application of the wrong tools has been used to inform the DMC.
- What is missing is a BCA – the approach that actually provides the right information to inform a robust regulatory decision.
- Direct impact estimates (expenditure & employment) are reasonable in magnitude, but determining location (local, regional) is a challenge.

# Conclusion

- Indirect impacts more difficult to estimate, may be overstated, difficult to determine spatially, and still lack transparency.
- Environmental and social impacts largely excluded from analysis, but could be significant. Low risk of double counting if estimates established and BCA done well.
- **Bottom line is that economic analysis presented cannot demonstrate a net benefit.**