Expert Report about the Goschen Mineral Sands Project

By

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Social Benefit-Cost Analysis

Different economic analysis techniques are used to estimate different economic phenomena. Computerized General Equilibrium Analysis and Input-Output Analysis are economic techniques that estimate a change in economic activity expected from a change in how resources in an economy - land, labour, and capital - are being used. These economic techniques are incomplete or partial in that they do not measure whether project and changed use of resources increases or reduces the welfare of the people in the economy. Results from these analysis methods are not intended to, and do not claim to, provide the basis for judgment about whether a proposed investment will make people better or worse off.

Social Benefit-Cost Analysis is the economic technique that estimates much more than the changes in economic activity that are estimated using computerized general equilibrium modelling. Social benefit Cost Analysis estimates the size of all primary and secondary benefits of a private and public nature and all primary and secondary costs of a private and public nature. Social Benefit Cost Analysis estimates the change in producer and consumer surplus, which, when summed, gives the net social benefit of an investment, which is the change in people's well-being with and without the investment. It estimates the change in social welfare after counting all the benefits and costs of whatever nature, whether they have market prices on them or not.

The change in Net Social Benefit from a proposed change in how society's resources are being used tells us whether a change is worthwhile. This information can only be known when all benefits and costs of whatever nature have been counted and valued, whether priced or unpriced, and with all benefits and costs appropriately valued and adjusted for the time when they occur, with consideration of the risk and uncertainty involved.

Social Benefit-Cost Analysis, done with rigour and incorporating the risk and uncertainty associated with a change in resource use, tells us whether it is likely that people will be made better off or worse off from the proposed change and by how much and how likely it is to occur. This, then, is a basis for deciding whether a proposed investment should or should not proceed.

When done correctly, social benefit-cost analysis has a national perspective unless the resources involved and consequences of the changed resource use are partitioned into a sub-region of the nation, such as a state or region within a state. Putting boundaries around a Social Benefit-Cost Analysis at a level that is less than the National level is only legitimate if the State or sub-region is using resources that are solely owned by the inhabitants of that region and where the effects of the change in resource use are confined within the boundaries of the region.

The Social Benefit-Cost Analysis of the proposed Goschen Mineral Sands Project, which is necessary to inform judgment about the project's merit, has not been done. It is impossible to form a judgment about whether this proposed investment in a region of Victoria in the Goschen Mineral Sands Project will make the people of Australia better off or worse off.

From the analysis that has been done, we simply cannot and do not know if this proposal is a good idea or not.

The Computerized General Equilibrium Analysis That Was Done

The economic analysis of this proposed project that has been done, Computerized General Equilibrium modelling, provides estimates of the change in **economic activity** that could result from the investment in the Goschen Mineral Sans Project if it went ahead. Economic activity refers to the number and size of additional economic transactions at market prices that are likely to happen in a defined area, with and without the project; this is not the net social benefit and the additional welfare of people from a project as determined by measuring the sum of additional consumer and producer surpluses.

This analysis has been done at state and regional levels after allowing for increases in economic activity in some parts of the State and reductions in other economic activity in other parts of the State.

Social Benefit Economic Analysis is whole analysis of the sum of economic, environmental and social impacts of a change in uses of resources, usually across the whole nation. The economic analysis of the Goschen Mineral Sands Project Goschen project captures transfers of economic activity, not additions to welfare, within Victoria and the region: it is State and regional-centric. Suppose one State Government uses funds from their state taxes to subsidize a significant entertainment event from another State being brought to a population centre in their State because there will be an increase in economic activity in that population centre. Apart from telling nothing about the welfare of the people, a Computerized General Equilibrium analysis of the change in economic activity would tell nothing about the net effect on broader economic activity beyond the reach of the analysis, be it elsewhere in the State if only a regional focus is employed, or in other States of the Nation. Economic activity may go up in the State from which the resources previously involved in the entertainment event were drawn, while economic activity in the part of the State or the whole State now hosting the event may be increased or reduced. The effect on economic activity in areas beyond the area included in the scope of the Computerized General Equilibrium analysis may be positive or negative.

More importantly than the state and regional focus (which can be justified in some circumstances), the Computerized General Equilibrium analysis and the estimate in the Net Present Value of the economic activity in the State and Region with and without the investment in the project say ***nothing*** about the changes in people's well-being in the region, a State or the whole Nation, because the Computerized General Equilibrium method does not measure changes in welfare. It simply measures changes in the volume and size of the economic transactions defined in scope of the model as being relevant. Benefits and costs are broader than this.

Social Benefit-Cost Analysis would demonstrate the genuine change in national net social benefit with the Goschen Mineral Sands Project. For instance, if the economy's resources are fully employed, increased social welfare in one part of the country, such as from more people working, buying things, and having haircuts in one region of the nation, comes at the expense of the welfare of people doing these things in another part of the country. With Social Benefit-Cost Analysis all the benefits and costs of all types and wherever they occur are counted to get the true net benefit of the change to inform decisions about alternative uses of resources.

In the Computerized General Equilibrium method that has been used, only some of the genuine benefits and costs have been counted, while some that should not have been

counted have been counted. Of particular importance in this case is that negative externalities that reduce people's welfare (social costs) are not included in the CGE analysis (as admitted by the CGE modeller). Also, claimed secondary benefits from increases in employment are spurious if the economy's resources are fully employed without the project. In social benefit-cost analysis, the so-called secondary benefits of increased economic activity in one part of the country are usually spurious when viewed from the correct perspective. The discount rate captures the opportunity cost of the capital moved around the economy.

The CGE analysis of change in economic activity also contains a number of debatable elements, such as the choice of the 7% real discount rate of the value of the increased private economic activity, which may not reflect the actual risk-weighted cost of the private capital in the venture. As happens, 7% is the discount rate commonly used by state governments and the federal government as being the opportunity earning rate, which the capital the public is using after taking it from the private sector, could earn 'on average', with 'average risk'. Is this project an 'average risk project' no different to most other investments in the economy? Arguably a venture of this particular type could be considered to have a risk profile that is higher than the average risk profile of all the private capital investments being made in the economy and thus use of a higher discount rate (and thus a lower NPV) as a base case could be justified.

Estimating increased economic activity over time as an annual average sum using undiscounted values as in done and reported in the economic analysis of the project is incorrect. The estimated net present value of the sum of the modelled increase in economic activity, if it is to be represented as an annual equivalent sum, must be represented as an annuity (discounted value), not the higher figure which is the annual undiscounted average. It is well established in economic theory that the different values of benefits and costs that occur at different time cannot be ignored.

The above-mentioned questionable aspects of the CGE analysis are apart from the limitations and deficiencies of the analysis that the analyst has previously acknowledged in replies to the queries raised in the witness statement of Mr.Noel Richards.

In Sum: Incomplete Analysis Hitherto

The primary focus of our expert comments on the case being made for the Goschen Mineral Sands Project is that, hitherto, the work that has been done to evaluate the proposed project's impacts still needs to be completed. The CGE analysis and the environmental and social impact analyses provide some descriptive information about the situation with and without the project; these ***analyses do not indicate in any way whether the people of the nation are likely, in sum, to be better off or worse off, nor by how much, and nor with what likelihood. A social benefit-cost analysis has yet to be conducted to determine the answer to these questions.***

Social Benefit Cost Analysis, which encompasses the economic, environmental, and social aspects of new capital investments and changed resource uses in an economy, is the ***only*** method that can indicate the net social benefit of an economy with and without a project such as the Goschen Mineral Sands Project.

To reiterate, at present, the answer to the question 'Is this project likely to make the people in sum better off or worse off?' is 'We simply do not know because the Social Benefit-Cost Analysis has not been done',

Our advice is that a proper, rigorous Social Benefit-Cost Analysis of the proposal is required for society to be confident that it should or should not proceed.