



CCOF A COMMUNITY CLIMATE ACTION GROUP :: GLEN EIRA & MONASH, MELBOURNE

Submission to Productivity Commission Inquiry into Horizontal Fiscal Equalisation regarding assessment of energy resources

Context

Australia is a signatory to the Paris Agreement which aims to hold “the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels”. This implies that the majority of the world’s fossil fuel reserves must remain unused (McGlade & Ekins 2015; Brown & Caldeira 2017). Therefore the Australian Government should not seek to increase the level of fossil fuel extraction by any means such as the introduction of incentives or application of fiscal coercion through the Commonwealth grants process.

Practical considerations

The Commonwealth Grants Commission (CGC) has acknowledged the difficulties in imputing a base for States that may have undeveloped mineral resources due to a lack of reliable information such as reserve size, mineral grade (i.e. quality), accessibility and other factors affecting economic viability (CGC 2017).

To some extent these uncertainties are inherent to the nature of the resources and are unlikely to be fully resolved (Speirs *et al* 2015). Thus the CGC and/or Commonwealth Treasurer will not have complete, reliable and comparable information on economically recoverable reserves, production costs, risks, etc that determine production levels and values (i.e. production is not only determined by total estimated resources or prices). Therefore there is a high risk of overestimating the economic value of natural resources in any given State.

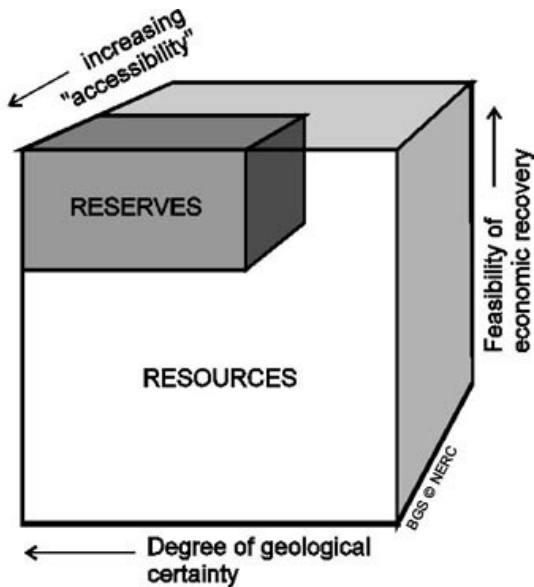


Figure 1: Reserves relative to total resources. Economically recoverable reserves will be lower than total resources due to a range of uncertain and/or volatile factors such as accessibility and prevailing and forecast resource prices.

Image source: <https://www.bgs.ac.uk/mineralsUK/images/mineralsYou/Resources-image.jpg>

Furthermore, companies have incentives to “maximise” (read: overstate) estimates of economically recoverable reserves, and we see examples of these ultimately having to be written down after much promise of economic benefits of proposed developments.

For example, Royal Dutch Shell has been forced to admit overstatement of proved reserves on more than one occasion (Uberman 2014). Chernov and Sornette (2016) also describe how shale gas operators in the United States overstate their recoverable reserves to enhance their investment attractiveness.

In a similar vein, substantial enthusiasm and political pressure has been generated in favour of a major coal mine in the Galilee Basin in Queensland by claims of very large numbers of jobs resulting from the development. The allure of these claims has helped to sideline legitimate concerns about impacts on groundwater and indigenous rights. However, the number of jobs has been revised downwards by at least an order of magnitude when examined under oath (The Australia Institute 2016).

Pressuring states to allow developments by imputing a value for blocked resource extraction projects could have unintended outcomes:

- It would create an even greater incentive for project proponents to “maximise” estimates of economically recoverable reserves so that states are pressured to approve development due to HFE implications. That is, resource companies could game the HFE system to obtain more favourable regulatory treatment.
- It would place greater pressure on states to approve projects in the presence of unresolved environmental or health risks, such as the contamination resulting from the Linc Energy UCG project in Queensland (Willacy 2017).

Other approaches to determining a counterfactual resource revenue value are also problematic. For example, population is poorly correlated with mineral endowment. As shown in Figure 2, total state population has poor explanatory power for total mining revenue in that state, implying that Equal Per Capita (EPC) assessment would also be a poor representation of reality.

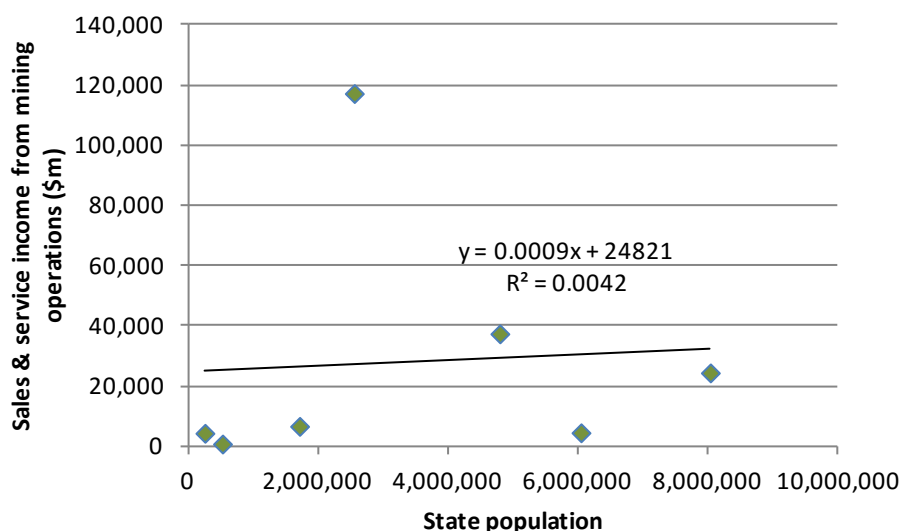


Figure 2: Sales and service income from mining operations by state population. There is little correlation between total population and mining operations.
Source: Australian Bureau of Statistics.

Arguably land area would be the most transparent (given uncertainties around economically recoverable reserves) and relevant metric for determining mining revenue, other than actual, as shown in Figure 3. This is unsurprising as mineral endowments are (in a sense) random occurrences across the landscape, and thus more likely to be encountered in larger areas than in smaller areas.

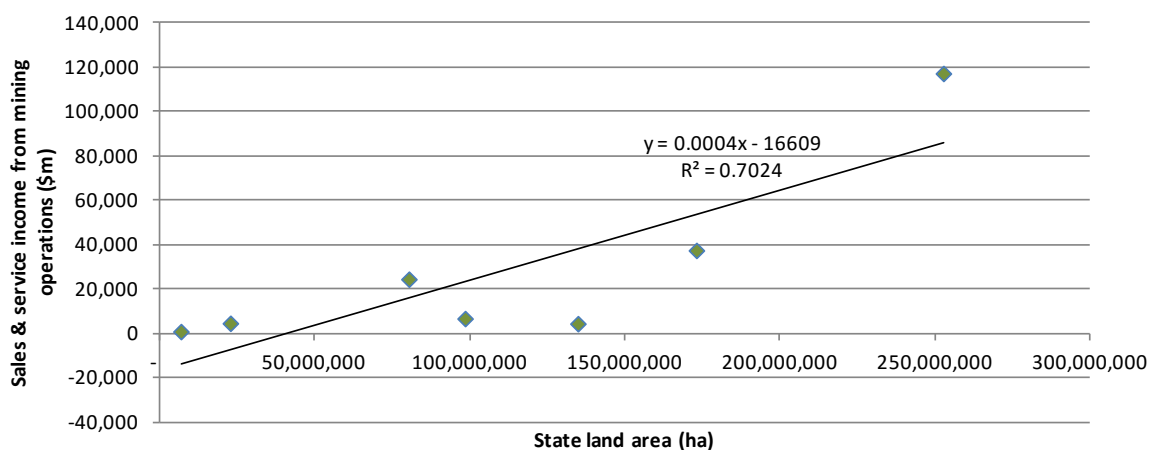


Figure 3: Sales and service income from mining operations by state land area. Mining operations tend to be higher in larger states.
Source: Australian Bureau of Statistics.

Furthermore, mining is arguably poorly suited to populated areas for reasons such as negative health and amenity impacts and conflicts with other economic activities, and this is seen in the level of mining activity relative to population density as shown in Figure 4.

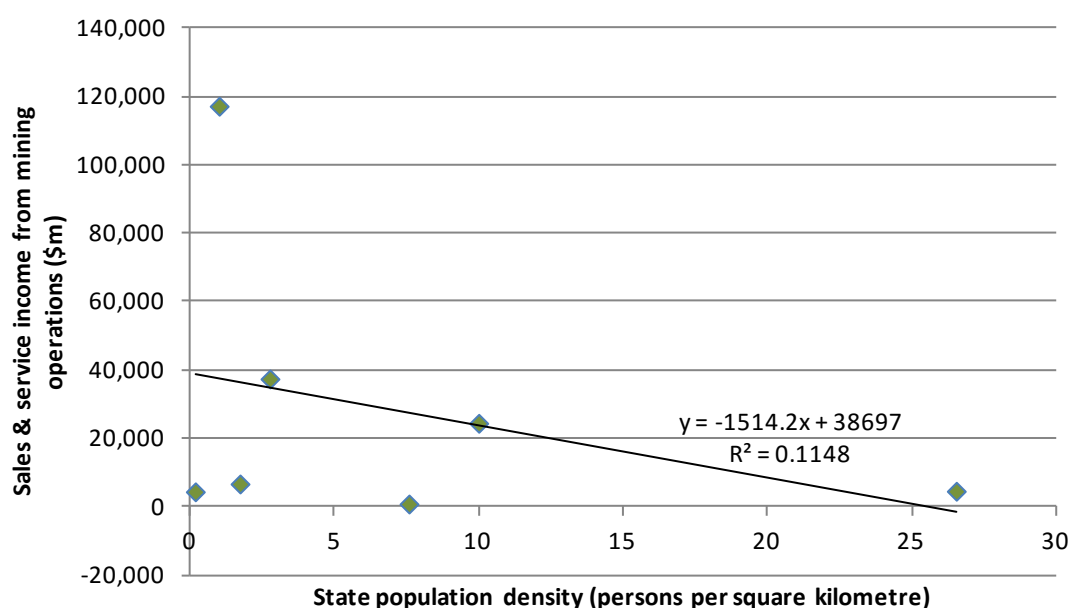


Figure 4: Sales and service income from mining operations by state population density. Mining operations tend to be lower in higher population density states, although the (negative) correlation is weak compared to land area.

Source: Australian Bureau of Statistics

Interjurisdictional impacts

Traditionally mining has not been seen to have major inter-jurisdictional impacts. However, projects now threaten groundwater resources such as the Great Artesian Basin (Currell 2015) that stretch across jurisdictions, so that activities in low population density states can have negative impacts on other states. For example, contamination of groundwater in Queensland by UCG operations could have serious costs for groundwater users in NSW. Similarly, GHG emissions from mining operations and combustion of extracted fossil fuels will have social costs for other states (Van Den Bergh *et al* 2015) and work against the Commonwealth government's commitments under the Paris Agreement (Carey 2017). On this basis, and particularly (although not exclusively) in the absence of broad-based emissions pricing in Australia, it could be argued that states that permit onshore fossil fuel production should be penalised instead of penalising states that ban it.

Furthermore, the commencement of LNG export operations from Queensland is the primary driver of rising domestic gas prices across the eastern seaboard (Forcey & McConnell 2017). While the Australian domestic market is connected to the international gas market in this way, we cannot expect domestic prices to return to below global parity as they were prior to the opening up of the export market. With Australian gas production at record highs, restrictions on onshore gas production are not the cause of high gas prices, and should not be the target of efforts to lower domestic prices. Instead, the headlong rush into excessive export volumes and an opaque market should be the focus of scrutiny.

Conclusion

Given the above considerations, we see no sound basis for assessing supposedly forgone fossil fuel revenues as part of revenue assessments.

Further to Draft Finding 4.3 (Productivity Commission 2017), we recommend that the Commission note that incentives for fossil fuel resource exploitation are inconsistent with Australia's commitments under the Paris Agreement and counter to the public interest given the large social costs and risks posed by climate change (Carey 2017; McGlade & Ekins 2015; Brown & Caldeira 2017; Van Den Bergh *et al* 2015). Further we recommend that the Commission note the highly unreliable and speculative nature of some data on potential mineral reserves and the potential for resource companies to game any system that penalises States for not approving resource developments. Finally we recommend that the Commission acknowledge that a range of legitimate reasons exist that may counsel against approval of mineral extraction developments, such as risks to groundwater or health impacts on neighbouring communities, and that States should not be penalised for acting in the public interest in not approving these.

References

- The Australia Institute, 2016. *Coal Wars: A fact check for the Turnbull government*. Available at: <http://reneweconomy.com.au/coal-wars-a-fact-check-for-the-turnbull-government-73788/>
- Brown, P.T., & Caldeira, K. 2017. Greater future global warming inferred from Earth's recent energy budget. *Nature*, 552(7683), pp.45-50 DOI: 10.1038/nature24672
- Carey, A., 2017. Coalition pledge to turn on the gas could imperil Australia's climate target. *The Age*. 9 October. Available at: <http://www.theage.com.au/victoria/coalition-pledge-to-turn-on-the-gas-could-imperil-australias-climate-target-20171009-gyx5h3.html>
- CGC 2017. *2020 Review. The Principle of HFE and its implementation*. Commission Position Paper CGC 2017-21. Commonwealth Grants Commission, Canberra
- Chernov, D., & Sornette, D. (2016). Major On-going Cases with Information Concealment Practice. In *Man-made Catastrophes and Risk Information Concealment* (pp. 281-336). Springer International Publishing.
- Currell, M., 2015. Groundwater: the natural wonder that needs protecting from coal seam gas. *The Conversation*. 20 May. Available at: <https://theconversation.com/groundwater-the-natural-wonder-that-needs-protecting-from-coal-seam-gas-41978>
- Forcey, T., & McConnell, D., 2017. *The short-lived gas shortfall: A review of AEMOs warning of gas-supply 'shortfalls'*. Australian-German Climate & Energy College, Melbourne. Available at: http://climatecollege.unimelb.edu.au/files/site1/docs/9835/Short-Lived_Shortfall.pdf
- McGlade, C. and Ekins, P., 2015. The geographical distribution of fossil fuels unused when limiting global warming to 2 °C. *Nature*, 517(7533), pp.187-190.
- Productivity Commission 2017, *Horizontal Fiscal Equalisation*, Draft Report, Canberra.

- Speirs, J., McGlade, C. and Slade, R., 2015. Uncertainty in the availability of natural resources: Fossil fuels, critical metals and biomass. *Energy Policy*, 87, pp.654-664. Available at: <http://www.sciencedirect.com/science/article/pii/S0301421515001044>
- Uberman, R., 2014. Valuation of Mineral Resources in Selected Financial and Accounting Systems. *Natural Resources*, 5(09), pp.496-506.
- Van Den Bergh, J.C. and Botzen, W.J., 2014. A lower bound to the social cost of CO₂ emissions. *Nature climate change*, 4(4), pp.253-258.
- Willacy, M., 2017. Contamination near Linc Energy UCG plant at Hopeland more widespread than first thought. ABC News. 9 February. Available at: <http://www.abc.net.au/news/2017-02-09/flammable-levels-hydrogen-found-near-queensland-gas-plant/8256808>