

DANGEROUS ASSUMPTIONS: ENERGY AND GROWTH – CALL FOR A PUBLIC ENQUIRY

Macron warns of ‘end of abundance’ as France faces difficult winter

(The Guardian, 24 August 2022)

We call on Government to arrange a public enquiry by the Parliamentary Commissioner for the Environment into the validity of current assumptions behind material and energy security, and material growth as a rational primary policy objective. When 80% of the economy is reliant on fossil energy to function and sound evidence is for a declining trend, a different basis for future national planning is required.

The Energy Assumption

All New Zealand government plans and budgets rest on the implicit assumption of an energy supply at least equivalent to current levels of approximately 32 barrels of oil per capita per year. This assumption is based on projections of levels of energy used over the past few decades.

Energy is of critical importance for all government plans and hence the wellbeing of all New Zealanders. We believe the evidence is overwhelming that any assumption that anticipates a similar or growing level of energy supply will be accessible in the future, demands urgent and dispassionate re-evaluation.

Key reasons for questioning these assumptions are:

- The declining net energy surplus of fossil energy, because all the easy to extract sources have been exploited and increasingly more energy is required to deliver the same amount of useful energy^{1,2}.
- The lower net energy available from all alternative energy sources (apart from hydro power) and the energy required for the transition³ to them.

¹ Hall, C.A.S., 2016. *Energy Return on Investment: A Unifying Principle for Biology, Economics, and Sustainability*, 1st ed. 2017th ed. Springer, New York, NY.

² Brockway, P.E., Owen, A., Brand-Correa, L.I., et al., 2019. Estimation of global final-stage energy-return-on-investment for fossil fuels with comparison to renewable energy sources. *Nature Energy* 4, 612–621. <https://doi.org/10.1038/s41560-019-0425-z>

³ Slameršak, A., Kallis, G. & O'Neill, D.W. Energy requirements and carbon emissions for a low-carbon energy transition. *Nat Commun* 13, 6932 (2022). <https://doi.org/10.1038/s41467-022-33976-5>

- The likely lower net energy delivered by a national electricity system based on renewable technologies.
- The growing scarcity of mineral resources required for building a replacement for the global fossil-based system with alternative energy sources⁴.
- The need to decrease fossil energy use as quickly as possible to achieve climate goals⁵.
- The generally ignored environmental and social costs of expanding a renewable energy system that would be incurred if current levels of energy consumption were to be maintained⁶.
- The multiple uncertainties underlying the feasibility of a renewable energy system remotely equivalent to the current fossil fuel system⁷.
- The widespread misconception that energy reserves equate to net energy available⁸.
- The changing geopolitical landscape, where access to minerals and energy resources becomes increasingly precarious.

In correcting from gross to net energy, some estimates are that per capita energy consumption will decline by 24 - 31% by 2050 reversing the current rising trend of 0.5% per annum⁹.

If less energy is going to be available in the future, then changes in national priorities will be required to determine how energy can best be used to support a well-functioning and secure society.

The Growth Assumption

Historical data show a close relationship between GDP growth and primary energy supply¹⁰. Hence, economic growth depends on a growing energy supply. But regardless of the energy supply, the notion that economic growth and the associated high levels of energy consumption are prerequisites for wellbeing has been shown to be flawed. For example, the energy consumption of many European countries is half that of the USA, but still return equivalent levels of public service and life satisfaction.

There is now clear evidence that:

- GDP growth is not the same as improved wellbeing, and is a poor proxy¹¹.

⁴ The Role of Critical Minerals in Clean Energy Transitions - World Energy Outlook Special Report (International Energy Agency, 2021).

⁵ <https://www.ipcc.ch/sr15/>

⁶ Slameršak, A., Kallis, G. & O'Neill, D.W. Energy requirements and carbon emissions for a low-carbon energy transition. *Nat Commun* **13**, 6932 (2022). <https://doi.org/10.1038/s41467-022-33976-5>

⁷ DeAngelo, J., Azevedo, I., Bistline, J. *et al.* Energy systems in scenarios at net-zero CO₂ emissions. *Nat Commun* **12**, 6096 (2021). <https://doi.org/10.1038/s41467-021-26356-y>

⁸ N.J. Hagens Economics for the future – Beyond the superorganism [Ecological Economics Volume 169](https://www.sciencedirect.com/science/article/pii/S0921800919310067), March 2020, 106520 <https://www.sciencedirect.com/science/article/pii/S0921800919310067>

⁹ King, L.C., van den Bergh, J.C.J.M. Implications of net energy-return-on-investment for a low-carbon energy transition. *Nat Energy* **3**, 334–340 (2018). <https://doi.org/10.1038/s41560-018-0116-1>

¹⁰ Hugo Bardi – data from BP and World Bank 2017 and <https://braveneweuropa.com/steve-keen-the-macroeconomics-of-degrowth-can-planned-economic-contraction-be-stable>

¹¹ Smil, V., 2017. *Energy and Civilization: A History* (The MIT Press). The MIT Press.

- Beyond a certain level, GDP growth, especially in developed nations like NZ, may be uneconomic in the sense that it creates more environmental and social costs than benefits¹².
- The preoccupation with GDP growth as a national goal is incompatible with preserving and restoring biosphere integrity, the disruption of which is humanity's greatest existential threat, expressed as global heating, biodiversity loss and pollution of air, soil and water sources.
- International supply chains are fragile and likely to weaken further for a variety of reasons, not the least of which is nations competing for dwindling supplies of vital resources¹³.

Alternative Frameworks

Adjusting to a new reality based on both biophysical limits and social justice will require significant changes from the current mode of functioning in our society.

Fundamental change to both the energy transition and economic growth paradigm requires alternative models of national wellbeing. Treasury's Wellbeing Framework has been a step in the right direction. But to adjust to the transition challenges of moving away from both a high energy and high growth paradigm, this framework requires strengthening. Judiciously implemented, an enhancement will serve all future scenarios, but particularly a low carbon, no growth scenario.

Key ways of enhancing the framework and reducing reliance on growth would be to set minimum levels of wellbeing for those dimensions that address universal basic needs and ensure their provision for all. These include both material or "care" investments (e.g., shelter, food, education, and health services), as well as non-material basic needs that feed "creativity" (e.g., identity, a voice in community decision making, and a meaningful role in contributing to community welfare).

Investing in the provision of essential needs for all would improve social equity, alleviate malcontent and subdue the growth imperative while minimising economic risk.

The case has been well made

Our Society formed in 2012 to draw attention to the patent contradiction of endless material growth with finite resources. Examples of initiatives are:

- In 2013, led by 100 respected New Zealanders, petitioning government for a national risk assessment as a politically realistic pathway, securing minority support of Labour, Greens and NZ First at select committee¹⁴.

¹² Herman E. Daly, *Uneconomic growth: Empty-world versus full-world economics*, Published online by Cambridge University Press: 17 August 2009

¹³ Seifi, S. (2020). Resource Depletion. In: Seifi, S. (eds) *The Palgrave Handbook of Corporate Social Responsibility*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-22438-7_14-1

¹⁴ Petition 2011/106 of Sir Alan Mark Report of the Finance and Expenditure Committee

- In numerous submissions on Government policy (including RMA, Minerals, Energy Efficiency, Conservation, Fin Fisheries, Marine Network, Emissions Reduction, Infrastructure, Productivity, Financial Disclosures, and Taxation), setting out clearly how crucial underlying assumptions are for the formulation of provisions with specific policy recommendations¹⁵.
- On the advice of a Queen’s Counsel, made legal representations with evidence to Regional Policy development seeking a recognition of resource limits for growth and to meet national emission reduction goals.
- Prepared specific reports for Government, articles for the general public, and run public meetings on the same theme.
- Met with the Parliamentary Commissioner for the Environment to request a specific investigation.
- Discussions with MBIE regarding the extent to which their models for economic forecast take into account physical supply beyond cost.
- Argued with Government, the Financial Markets Authority and the State Services Commission for tighter rules on investment of public funds to ensure that it is genuinely ethical and does not perpetuate fossil fuel dependence and further undermine ecosystem resilience¹⁶.
- With the School of Governance of Victoria University of Wellington, invited all MPs to workshops on questions of growth, energy and the economy, most recently in the Beehive hosted by Rachel Brooking MP¹⁷. Only 2 MPs attended.

None of these efforts have delivered what is needed. Right now, the extent to which we are dependent of fossil energy for everyday lives including food and technical security is being dramatically illustrated by the Russia – Ukraine war. Time has run out and frankly, we are at a loss.

“The care of human life and happiness, and not their destruction, is the first and only task of good government” wrote Thomas Jefferson in 1809. No matter what the political apprehension, continuing to turn a blind eye to this structural contradiction at the core of our economy is not “good government”.

Therefore, to provide a sound basis for future national planning, we call on Government to arrange a public enquiry by the Parliamentary Commissioner for the Environment into the validity of assumptions behind material and energy security, and material growth as a rational primary policy objective. When 80% of the economy is reliant on fossil energy to function and sound evidence is for a declining trend, anything less is a dereliction of duty with potentially calamitous and damning consequences.

¹⁵ <http://wiseresponse.org.nz/category/submission/>

¹⁶ <http://wiseresponse.org.nz/category/investment/>

¹⁷ <http://wiseresponse.org.nz/category/event/>