ENERGY POVERTY IN NEW ZEALAND

Feedback to the Energy Hardship Panel

by Seniors Climate Action Network (SCAN) April 2023

A number of New Zealand households face having to choose between keeping warm in winter and buying other essentials such as food. Being unable to keep warm in winter can result in serious health problems. The scale of hardship these households face is such that a government-initiated Energy Hardship Panel has been set up to develop strategies to address and resolve the problem. The Energy Hardship Panel has proposed 27 strategies and seeks feedback on these strategies from the New Zealand public. Seniors Climate Action Network (SCAN) has reviewed these strategies and agrees with each one.

Energy poverty, an inadequate access to energy, is primarily due to an inadequate income distribution. Energy poverty applies especially to those on sickness and unemployment benefits, those on minimum wages, and superannuitants whose sole income is their pensions. Energy poverty is compounded when those on low incomes pay market rents or when families have more than two children. Some education and protection is needed by some households and the above proposed energy strategies address these needs. Each strategy requires a reallocation of resources by government.

All the above strategy proposals are commendable, but SCAN wishes to draw the Energy Hardship Panel attention to issues which perhaps currently fall outside its terms of reference. The current focus of energy poverty is on the use of energy in the home for heating, cooking, and lighting. This form of energy poverty is but a tip of the iceberg. Energy is required for everything and not just home heating, cooking, and lighting. The supply of all goods and services requires the use of energy and materials and the web of supply chains from primary producers to consumers result in an embodied energy content of all goods and services (Smil, 2017).

The Energy Return on Energy Invested (EROEI) of all forms of fossil fuels inevitably declines as it takes more and more energy to extract each unit of fossil fuels from the ground (Hall et al., 2014). Figure 1 shows that increasing energy costs of extraction from a typical oil well results in a decrease in annual net energy available for use by goods and services.

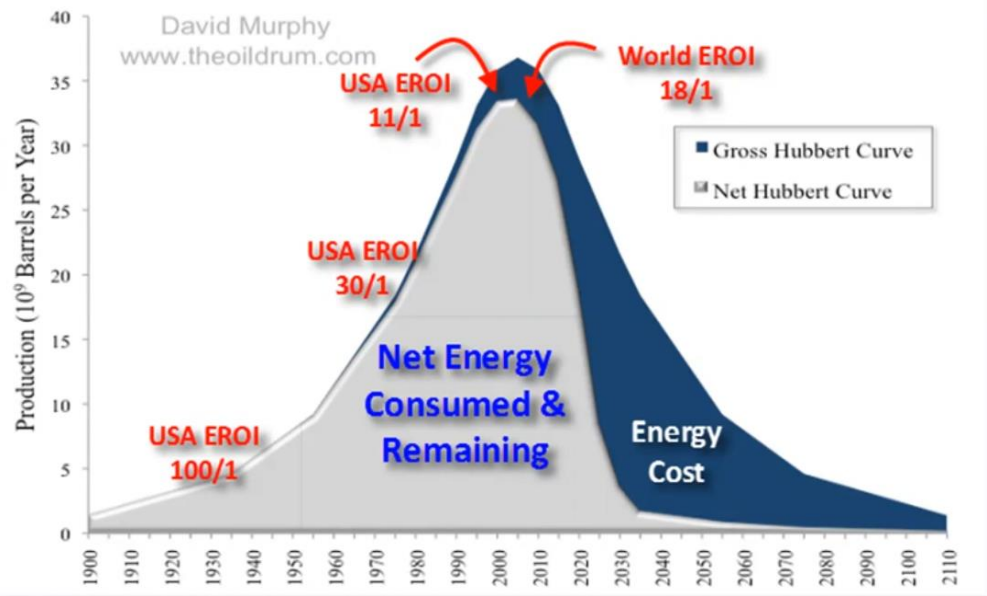
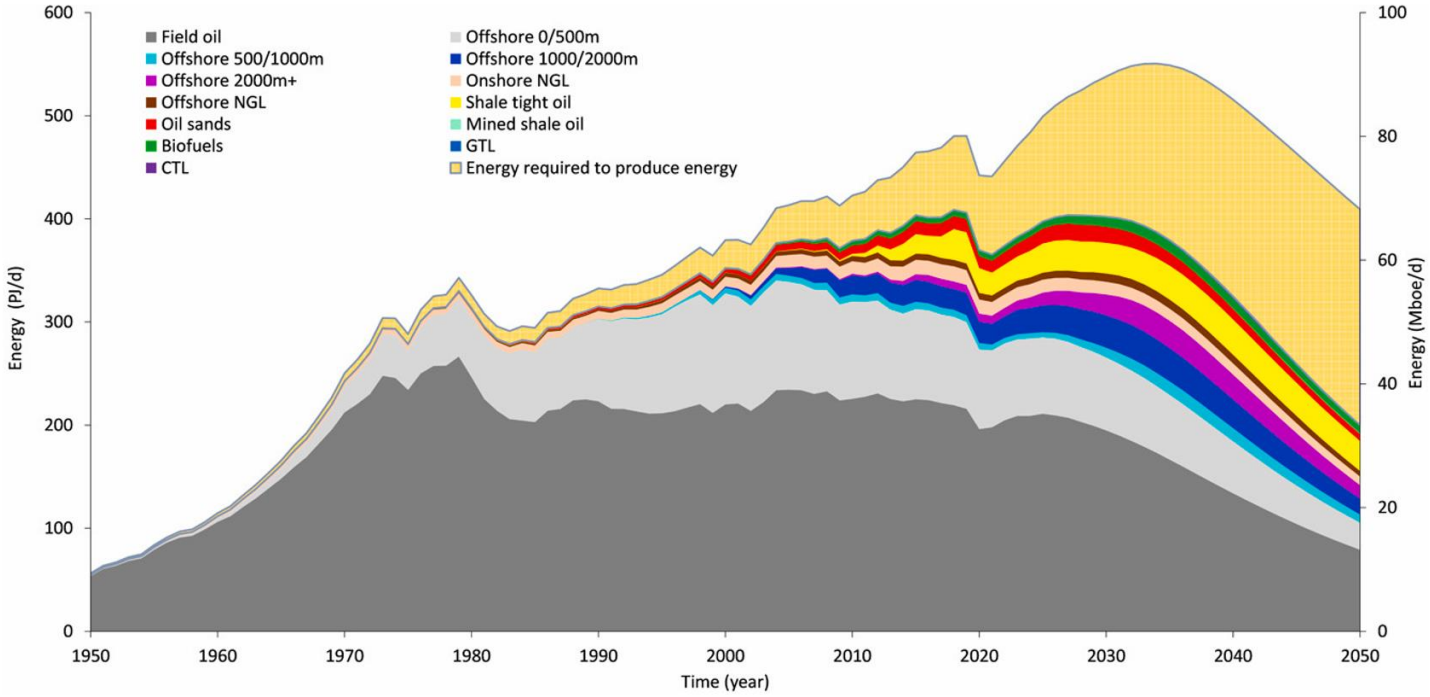


Figure 1: Peaking of fossil fuels (Murphy, TheOilDrum.com)

Peaking of each form of fossil fuels is inevitable, though different forms of fossil fuels peak at different stages (Chapman, 2014). Figure 2 shows peaking in the annual net energy production of key forms of oil liquids which includes natural gas liquids, biofuels, and shale.



Source: Delannoy et al. 2021

Figure 2: Peaking of key forms of oil liquids (Delannoy et al. 2021)

The combination of increasing energy costs of extraction for each form of fossil fuels are shown in hatched yellow at the top of the graph. The annual net energy production of easily accessible field oil shown in dark grey at the bottom of the graph peaked in the late 1970s and the combined annual net energy production of all forms of liquid fossil fuels are projected to peak about 2035 with a subsequent rapid decline.

We need to transition from fossil fuels to renewable energy in order to mitigate the impact of climate change and a large proportion of fossil fuels will need to be kept in the ground (McGlade & Ekins, 2014) otherwise we risk the prospect of hothouse earth (Steffen et al., 2018). According to MBIE (2022) "New Zealand's renewable share of total primary energy supply (TPES) increased to 40.8 per cent in 2021". Renewable forms of energy such as wind turbines and photovoltaic panels are unable to replace the same levels of energy provided by fossil fuels that we have become accustomed to (Michaux, 2021, Mills, 2020). We therefore face a future where there will be less available energy per capita.

Figure 3 compares the net energy available for a high EROEI society to that of a low EROEI society with luxuries and discretionary spending shown in blue and essentials in green. There will be less net energy available in a low EROEI society for the production and consumption of non-essentials.

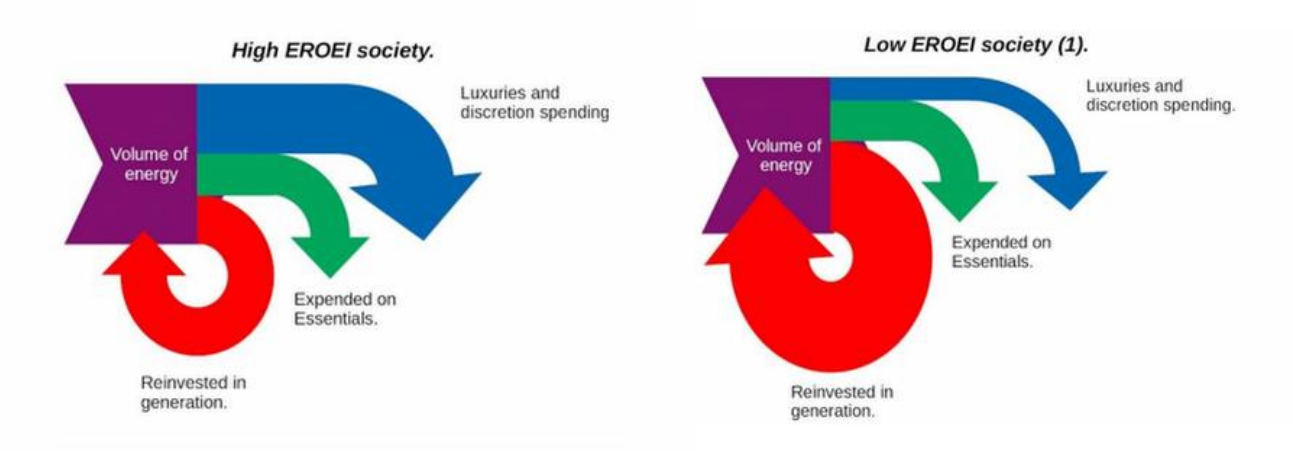


Figure 3: High EROEI versus Low EROEI Society (Adapted from Joy, 2023)

Figure 4 shows the inequality in global consumption of goods and services which result in greenhouse gas emissions. In 2015, the richest 10% were responsible for 49% of total global lifestyle consumption whereas the poorest 50% were responsible for only around 10%.

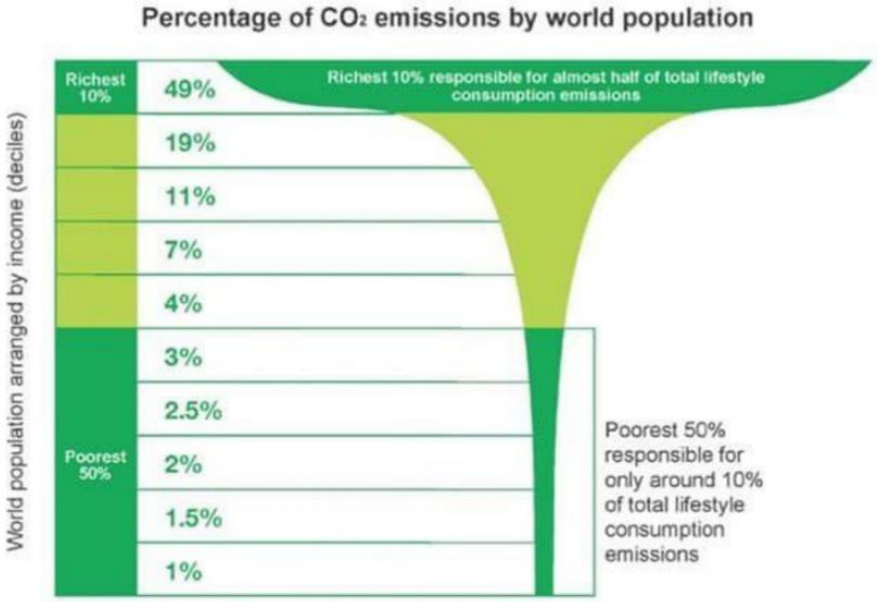


Figure 4: Global inequality pf CO_2 emissions (Oxfam, 2015)

Inequality in income exist not only between countries, but also within countries (Piketty, 2014; Chancel, 2021). New Zealand is one of many wealthy countries with high levels of income and wealth inequality (Creedy et al., 2017; Rashbrooke et al., 2021). Those on higher incomes in New Zealand have greater claims on resources (they have an effective demand as opposed to a need), consume more goods and services, and currently emit higher levels of greenhouse gases to the atmosphere than those on low incomes. Those on higher incomes are also more easily able to absorb future increases in the costs of goods and services whereas those on low incomes cannot.

In a future where we will need to learn how to live well on less energy per capita, many more households than current households will face energy poverty for all forms of essential goods and services if current inequalities in claims on goods and services are not fully addressed. Wilkinson and Pickett (2009) set out a strong argument why greater equality makes society stronger and Stiglitz (2012) describes how inequality divides society and endangers our future. Inequality in income and claims on current and future resources required to achieve an acceptable standard of living can be reduced by greater progressive tax on income and limits on income. Rationing of some goods and services and removing barriers to access of essentials in the form of free government coupons might be necessary to ensure that everyone in New Zealand has an acceptable standard of living. An adequate Universal Basic Income is another approach.

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