

Cooking with Gas: Māori and the coming energy transition

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Abstract

This paper presents an Indigenous and Māori perspective about the need for urgent energy transitions by examining three areas:

- Climate change transition, which I define as an energy transition to a largely non-fossil-fuel future within 30 years;
- Justice, in light of the above and in the context of Indigenous peoples' rights; and
- How traditional Indigenous environment concepts can bolster both a just and an urgent transition

Introduction

In 2015 COP21, more commonly called the “Paris Agreement”, agreed to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aimed to strengthen the ability of countries to deal with the impacts of climate change. While Indigenous people were not in the negotiating room at COP21 because only sovereign nations were included, Indigenous people are mentioned in the preamble of the Framework on Climate Change, although not in its legally binding articles (Survival, 2015).

Most of the world’s countries agreed to certain targets, with notable exceptions being Russia and the United States. Some examples (Climate Action Tracker, 2018) are:

- New Zealand: net zero carbon emissions by 2050. Reducing emissions by 40 per cent from 1990 levels by 2030;
- UK: Reducing emissions by 40 per cent from 1990 levels by 2030;
- Australia: reduce emissions to 26-28 per cent on 2005 levels by 2030;
- EU - By 2050, cut greenhouse gas emissions to 80% below 1990 levels - 40% emissions cuts by 2030;
- US - rescinded the Climate Action Plan (states, cities, and organisations are stepping up to fill the gap);
- China: commitment to peak CO₂ emissions by 2030 at the latest, lower the carbon intensity of GDP by 60%–65% below 2005 levels by 2030;
- India: by 2030 lower the emissions intensity of GDP by between 33%–35% below 2005 levels;
- Japan: emissions reduction target of 26% below 2013 levels by 2030, equivalent to 18% below 1990 levels by 2030.

Despite such targets, most of the 32 governments whose policies are tracked by Climate Tracker (2018) are will not meet their Paris Agreement commitments. This includes the authors' country of Aotearoa New Zealand, which in 2018 banned all new oil and gas exploration offshore with onshore exploration banned from 2021. Indeed, some countries appear to be going backwards, particularly when it comes to the ongoing or expanded use of coal by China, the US, Russia, Indonesia, Turkey, Poland and Australia.

Given more recent IPCC pronouncements that countries' efforts will fail to keep the world's climate below 2^o, this paper is going to present an Indigenous and Māori perspective about the need for urgent energy transitions by examining three areas:

- Climate change transition, which I define as an energy transition to a largely non-fossil-fuel future within 30 years;
- Justice, in light of the above and in the context of Indigenous peoples' rights; and
- How traditional Indigenous environment concepts can bolster both a just and an urgent transition

The paper proceeds as follows. Section one provides an overview of what is meant by an energy transition while section two provides information about the technical realities behind transitions. Section three reflects on the previous section by asking what an energy transition looks like from an indigenous perspective that is just. The fourth section

Section one: Energy Transitions

Given Climate Action Tracker's negative assessment of current policy, the good news is that there is still time. Most countries have given themselves deadlines – 2030, or in Aotearoa New Zealand's case, 2050, so somewhere between 12 – 32 years from 2018. 2050 is the 'outer' limit for which, if countries do nothing to slow greenhouse gas emissions, the climate will have fundamentally changed (Mora, et al., 2013).

To slow down greenhouse gas emissions requires a shift to the use of other energy forms, assuming that we wish to continue to use electricity to power our lights, our heating and our computers; shift goods around the world or within our own countries; and enjoy public and private transport. Clearly changing from a relatively easily accessible and reliable energy form that has been used at an industrial scale over the last 200 years, to new forms of energy

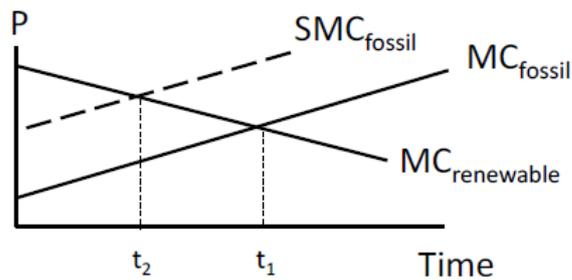
for which infrastructure is still being developed, is not going to happen without pain. However, many countries are showing that it is possible to connect these new forms of energy – wind, solar, wave, biofuels and geothermal – to their existing energy infrastructure. For example, Germany meets almost 78% of its electricity demand from renewables. In 2015, 42% of Denmark’s electricity was from wind turbines (The climate reality project, 2016). Even in the US, electricity from coal and gas declined in 2017 with wind and solar increasing their share (U.S. Energy Information Administration, 2018).

While we can celebrate these statistics, even the most optimistic predict some future for oil, gas and coal, although the extent of such use and under what conditions they might be used is up for debate. The International Energy Agency (IEA), which is the world’s most influential source of energy information, and whose data guides government and business investment decisions, remains bullish on all three energy forms (International Energy Agency, 2017). In contrast, Oil Change International (2018) accuses the IEA of misleading countries and corporates to the extent that it would make the Paris goals unachievable. The reason for this discrepancy is due to technological ‘boosterism’, that is a belief that future technology will be able to negate fossil fuel emissions, and, ‘conflict of interest’ between the IEA and its corporate stakeholders.

Whether one agrees with the latter or not, the Oil Change International report shows that major fossil fuel producers’ own predictions align with the IEA’s (an example of group-think, perhaps) which in turn drives forward investment. Thus, fossil fuel producers are ‘locking-in’ their next 30 years’ production. Why might this be so? Economics (some would say greed) is in play, but time is of the essence. As Figure 1 shows, to speed up a transition, requires a mechanism, for example the removal of subsidies or the imposition of taxes (T2) that in economics language “internalises” the “external” social and environmental (SMC) marginal cost (MC) of a fossil fuel. Competition from other energy forms will make fossil fuel production less economic, just not quickly enough (T1). Calls for “divestment” attack the economic logic of fossil fuels by arguing that these will become “stranded assets”.

Figure 1: Renewable energy transition dynamics

Renewable energy transition dynamics



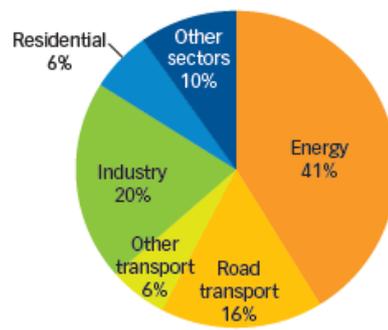
Source: Clement, C. (2016) Renewable energy transition: Dynamic systems analysis, policy scenarios, and trade-offs for the State of Vermont. University of Vermont.

While such tactics have seen success, with \$5.53 trillion of institutions' managed assets committed to divest from at least one type of fossil fuel (Trinks, Scholtens, Mulder, & Dam, 2018), continued significant fossil fuels investment continues. Might there also be another reason besides greed?

Section Two: The technical realities of transition

Oil Change International is right about one thing: belief that technology will provide the answer at scale by 2030 or even 2050 is not feasible. They argue that fossil fuels need to be kept in the ground rather than relying on unproven technologies to give negative emissions to 'offset' increased emissions (Oil Change International, 2018, p. 27). However, while Oil Change International rightly points out that relying on technology seems to be a ploy to avoid having to produce and consume less, there is one question it cannot answer: the materiality of transition. This requires a 'whole of system' approach to think through the actual details of transition at the country, regional and local level.

Figure 2: CO₂ emissions by sector



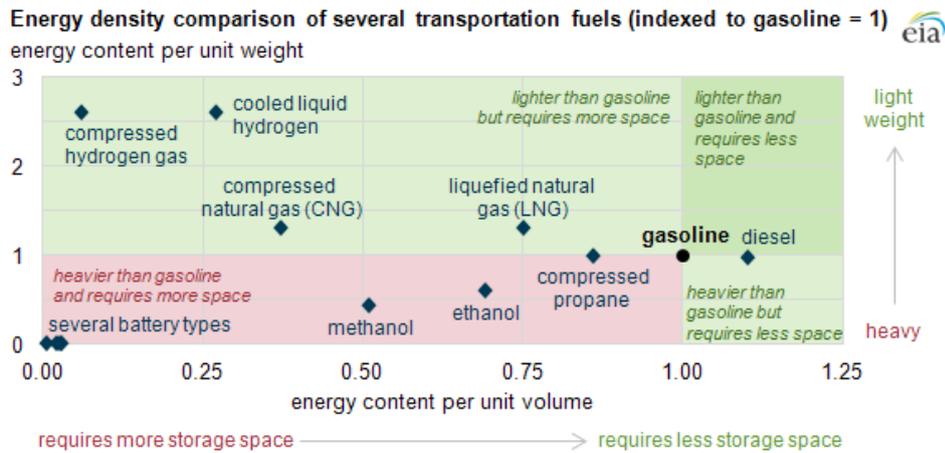
Source: The World Bank 2014/5

Figure 2 shows the CO₂ emissions of various sectors, with the energy sector itself responsible for just under half of all emissions through the burning of fossil fuels, industrial waste, and non-renewable municipal waste to generate electricity and heat. Each of these sectors has to reduce its fossil fuel input and for some sectors, particularly transport and industry, the alternatives are not readily or easily available.

Below is a very brief overview, based on Heinberg and Fridley's (2016) analysis of the above sectors and the opportunities and roadblocks that each presents:

Electricity represents 18% of energy consumed globally and is the sector in which renewable energy is happening the fastest due to the falling price of photovoltaics and wind generators. However, the latter are intermittent forms of energy, dependent on sun shining or wind blowing unless stored long-term in, for example, dams or batteries. Additionally, if transportation moves towards electric vehicles (EVs) as discussed next, this will create additional stress on the system. While there have been improvements in increasing the resilience of an electricity system, such as using 'smart-grids' and dynamic pricing to spread demand, coal and gas act as the 'back-up' system for emergency situations. The goal of a near-100 percent renewable grid-based system, which is Aotearoa New Zealand's goal, is unproven in most places except for some small islands such as Samsø in Denmark and Uruguay, which like Aotearoa generates most of its energy from hydropower. For everyone else, the cost of moving to all-renewable electricity is trillions of dollars.

Figure 3: Energy density of different transportation fuels



Source: EIA 2013

Transportation electrification has seen the spectacular rise of EVs. The heart of the EV is its battery, but because of a battery’s density (weight) compared to a petroleum-based fuel (Figure 3), most batteries are suited to small, light vehicles, and certainly not aviation, cargo ships or heavy vehicles such as tractors. Ethanol and biodiesel are not alternatives for aviation because of their chemical composition although the industry continues to look for alternatives such as the Aotearoa New Zealand-developed ‘Lanzatech’ process that uses gases from steel production to convert to jet fuel. Compressed natural gas, provided it is freed up from its back-up electricity generation function may provide a temporary reprieve from oil. Global shipping, which accounts for 90% of trade and contributes as much GHG as Germany will also have to change in the absence or reduction of oil. There has been recent agreement to cut emissions by 50% by 2050 (Cushman, 2018), however the mechanism by which reduction will occur – sails, kites, slowing down, fewer exports – is less certain.

Industry presents a number of challenges, although not all insurmountable. Heat for buildings can mostly be addressed through energy efficiency and renewable energy, but production of steel and cement – our basic building infrastructure - require high heat and this requires coking coal. Substitutes under consideration include electricity, solar thermal, burning biomass or biogas, and hydrogen. The first is economically inefficient; solar furnaces may be unscalable to meet current demand; increasing biomaterial from, for example, renewably planted forests would require millions of hectares just for charcoal production. Hydrogen is a potential source, but there are still technical, infrastructure and financial challenges to be overcome.

Section Three: Just transitions for Indigenous people

I have taken some time to identify the very practical technical issues that accompany energy transition and the likelihood of this happening within the next 30 years. In some areas such as electricity generation, it may be possible to get close to 100% fossil fuel substitution, dependent on the country, but in other areas, such as airplane transportation and steel making, it is unlikely that the technology will be developed sufficiently at scale to enable a substitution within 30 years. As Heinberg and Fridley (2016) observe, each country's transition pathway will differ, depending on its level of industrialisation. This brings me then to what such energy transition pathways look like from an Indigenous perspective. I use the word Indigenous cautiously. As Jeff Corntassel (2003) reminds us, attempting to define Indigenous people can be fraught with difficulty. Hence, I use the phrase 'Indigenous perspective' to examine energy issues that have been highlighted in international fora.

To explore this, I am drawing on theory from energy justice, which takes a holistic approach to justice within energy systems (Heffron, McCauley, & Sovacool, 2015). Drawing on legal theory, the approach has three philosophical tenets - distributive justice, recognition justice and procedural justice – that can act as a framework to assess a project or policy approach at a local, national or even international level.

Distributive justice posits that the benefits and risks of energy production and use should be distributed fairly across all members of society. Indigenous people would add that distributive justice applies not only to those who are alive now, but also to those who are to come. Distributive justice would also include the non-human as well as the human given that many Indigenous people view their own lives and those of their environment as intimately bound. For example, Māori believe that through *whakapapa* or the system of kinship, all living and non-living beings are connected to each other through descent from a common ancestor.

Recognition justice means that individuals must be fairly represented, free from physical threats and be offered complete and equal political rights (Jenkins, McCauley, Heffron, Stephan, & Rehner, 2016). Recognition justice has a particularly negative resonance for Indigenous people, bound up as it is in nation states recognition of Indigenous peoples' right to autonomy and/or sovereignty. Such recognition has been codified at the international level in the Declaration on the Rights of Indigenous People (DRIP), although it is non-binding

unless part of a nation's legal system (Davis, 2009). For some (Alfred & Cornassel, 2005) (Coulthard, 2014), Indigenous people's reliance on nation state recognition merely keeps Indigenous people in a pathological relationship of dependency thus preventing Indigenous people's own resurgence and sovereign action. However, as an internationally agreed mechanism, the DRIP has normative force, acting as a "springboard" to argue for justice (Beidelschies, 2008).

Procedural justice concerns the decision-making processes involved in energy development and consumption, and the extent to which these processes are equitable, non-discriminatory, fair and unbiased (Mundaca, Busch, & Schwera, 2018). Failure to adequately include designated representatives of key stakeholder voices leads to loss of 'social licence' (Owen & Kemp, 2012) that influences trust and community acceptance. The need for free, prior and informed consent (FPIC) is enshrined in DRIP and other international conventions such as ILO 169 to ensure that resource developments are undertaken in line with Indigenous people's self-determination. FPIC can be described as a mechanism for procedural justice.

Keeping in mind that transitioning to a fossil fuel free future will require alternative forms of energy as outlined in section three, and that the nature of the transition will be dependent on the level of industrialisation of a country, I make the following observations.

First, it is not known how Indigenous people fare when it comes to energy access (Indigenous Peoples Major Group for Sustainable Development, 2018). Eighty-four percent of those who have no access to electricity live in rural areas with Indigenous people making-up a third of extremely poor rural people. About 70% of Indigenous people live in Asia (Cultural Survival, 2017). It is probably reasonable to assume that for such Indigenous peoples, their basic energy needs are met by biomass (ie wood), biofuel from animals or perhaps diesel or gas. However, this does not account for Indigenous people who have migrated into urban areas because of land loss, or who choose to move for economic or education reasons (Indigenous peoples indigenous voices, 2008). For such migrants, their energy needs may be met by electricity, oil, or gas.

Second, from a 'development' perspective, energy is a key factor for economic activities such as agriculture, health, education and food security (Indigenous Peoples Major Group for Sustainable Development, 2018, p. 2). It makes sense to improve energy supply and

reliability. Unfortunately, Indigenous people's territories are increasingly under assault in the name of 'clean energy'.

There are many cases of human and sovereign rights' abuses associated with renewable energy projects, in contradistinction to the DRIP and the need for FPIC. Hydroelectric power projects in particular have been estimated to have displaced 40-80 million people globally (Imhof & Wong, 2002). Honduran Lenca activist and Goldman environmental prize winner Berta Cáceras' was murdered in 2016 because of her leadership in the fight against the Agua Zarca Dam (Poindexter, 2016). As a result, the UN Special Rapporteur strongly criticised the Honduran government's human and Indigenous rights abuses (United Nations, 2016), with international financiers pulling out of the project (Human Rights Watch, 2017). Such projects continue apace in Honduras. In Aotearoa New Zealand there has been contestation around hydro generation in relation to water (Ruru, 2012) and the extent to which Māori retain sovereign ie property rights to water. This has not been resolved although in specific cases administrative and legal innovations have been devised. For example, the Whanganui River has been deemed a legal 'person' with government and Māori "guardians" (New Zealand Government, 2015) and the Waikato River is collaboratively governed and managed by Māori and the government (Te Aho, 2009). This might be viewed as a just way to allow for hydroelectric development and thus a transition to renewable energy.

Then there are carbon-offset schemes such as the World Bank and UN's Reducing Emissions from Deforestation and Forest Degradation (REDD+) programme that aims to encourage 'developing' countries to conserve their forests, paid for by providing carbon credits to companies in the developed world to offset their emissions. While appearing theoretically sound from a net carbon emissions perspective, such schemes have been criticised for not only increasing developed world emissions paid for with bargain-priced credits, but for causing harm to Indigenous populations (Tuckman, 2013) (Ahmed, 2014), likened to new forms of colonisation. REDD+ has been accused of pitting the conservation movement against Indigenous inhabitants, encouraging governments or government proxies to forcibly remove forest-dwellers to set-up protected areas (Indian Law Resource Centre, n.d.) and opening up opportunity for corporate or state land grabbing (Morris L. , 2010). Thus, while REDD+ schemes recognise Indigenous rights at the international level, the national implementation has been varied given the pre-existing contexts in which REDD+ is implemented (Centre for International Forestry Research, 2017).

Geothermal, windfarm and bioenergy developments in the name of clean energy have likewise led to harm. For example, Maasai village people were resettled in 2014 to make way for geothermal development in Kenya's Rift Valley, a project funded by the World Bank amongst others. Harms suffered included an inability to undertake their main livelihood of pastoralism, their other industry of tourism being devastated and a benefit sharing agreement failing to be honoured (Coalition intern, 2017). In contrast, in Aotearoa New Zealand there are an increasing number of Māori tribes using geothermal resources for social and economic benefit (Bargh, 2012). With recent interaction between Māori and Maasai to understand how to develop benefit agreements and "to live with energy companies", and a revenue-sharing Bill before Kenya's parliament, there is hope that there may be a more just outcome for the Maasai communities (Newshub, 2018).

In contrast, there is the intimidation, harassment and death threats against Zapotec community members who protest against ongoing windfarm development on the Isthmus of Tehuantepec, located in the southern Mexican state of Oaxaca. Rather than benefitting local people, much of the energy will be exported to California under the NAFTA agreement. In the meantime, communities like those of Venta are enclosed by turbines with no compensation for use of their lands and water pollution caused by the oil that keeps the turbines in operation (Navarro & Bessi, 2016).

Third, despite these egregious abuses, often aided and abetted by international financiers who take a 'hands-off' approach to the observation of FPIC despite their corporate statements, Indigenous people are well disposed to shift to clean energy projects as long as their sovereign and human rights are recognised and respected. Shiva's solution to such issues is for a 'decentralized democracy' (Shiva, 2009, p. 7) approach to energy to meet the needs of the poorest, many of whom are the globe's Indigenous people.

The decentralised and localised approach to biofuel energy is one that chimes well with Indigenous sovereignty. For example, Alaska's remote Indigenous peoples receive no benefit from the oil and gas pipelines that run through or near their communities. Instead, their energy needs are dependent on costly diesel that is trucked, flown or brought in by barge. In response to this, the Gwichyaa Zhee of Fort Yukon are seeking energy sovereignty by developing a woody biomass boiler system fueled by their tribally owned and operated forestry. The system will not only provide employment for their own people and warmth in peak winter, it will also offset high diesel costs (Brewer, Vandever, & Johnson, 2018).

Likewise, rather than hydro projects that drown forests, animal life and force people from their lands, micro hydroelectric projects, such as in Upper Bakun, Malaysia powers the lights and refrigeration needs of 350 Oranga Asli people (Calma, 2016).

Fourth, displacement of one energy form for another is not easily undertaken. While Indigenous people are the least to blame for climate change, for some their livelihoods have become dependent on fossil fuels. This is the case for Navajo people, where coal mines have been shut down on their tribal lands, reflecting the trend whereby coal is being replaced by other energy forms (Morris D. , 2017), with overall global demand dropping in 2015-16 (International Energy Agency, 2017). This is despite the ‘pro-coal’ policies of the current US government. From a climate change perspective, this is a positive trend as by some estimates, coal contributes to a quarter of the globe’s greenhouse gas emissions (Ecofys, 2016) which is twice as much as the next highest emitter, natural gas. However, the transition to clean energy jobs for the 200 Navajo miners did not eventuate. This was partially due to a collapsing carbon credit market that was supposed to fund the jobs (Carlton, 2015) but also due to assumptions about the acceptability of ‘green jobs’ that ran counter to the tribe’s internal economy that has been based on coal (Curley, 2018). Likewise, in Aotearoa New Zealand, many Māori have been involved in the coal mining business on the West Coast of the South Island and in the coalfields of the Waikato. Recognising that transitioning away from fossil fuels will be associated with economic transition in rural areas, a \$1 billion regional development fund has been set up, with \$100 million of that to plant trees, with an emphasis on Māori-owned land and getting Māori into jobs (Gower & Burr, 2017).

Wind, water, coal, wood, oil, gas as energy forms are understood not just as a material resource for electricity supply or carbon abatement. If we agree with Onandaga Nation Faithkeeper Oren Lyons that for Indigenous people what ‘you call ‘resources’, we call our ‘relatives’’ (Lyons, 2005), then ‘place-based choices and priorities’ and who wins or loses from the development of a resource (Pasqualetti, Jones, Necefer, Scott, & Colombi, 2016, p. 886) are key to understanding ‘just’ transition. The three justice’s framework provides a way to assess an individual project or a national policy.

Table 1: Indigenous case studies assessed against three justices framework

Case	Recognition Justice	Distributive Justice	Procedural Justice
Hydro-electric Honduras	x	X	x

Hydro-electric Aotearoa NZ	✓	X	✓
Geothermal Kenya	✓	x (may improve)	x (may improve)
Geothermal Aotearoa NZ	✓	✓	✓
Windfarm Tehuantepec	x	X	x
Gwichyaa Zhee woody biomass	✓	✓	✓
Green jobs Navajo	✓	x	✓
REDD+	✓	X	x
Carbon offset Aotearoa NZ	✓	✓	too early to assess

As Table 1 unsurprisingly reveals, where an Indigenous group's human and sovereign rights are observed, then a transition towards acceptance of renewable energy is more likely. Better still is when an Indigenous group owns the land on which the resource is sited, as is the case of geothermal in Aotearoa NZ and the Gwichyaa Zhee forestry in Alaska. Recognition of resource ownership and sovereign right and ability to direct the use and benefits of energy production enable Indigenous people like Maasai and Māori "to live with energy companies" (Newshub, 2018), whether these are private or state owned. Together, recognition, distributive and procedural justice give effect to another form of justice, restorative justice, which is the political and legal approach to recognise harm created and to compensate for it (Kapua'ala Sproat, 2016). Restorative justice will be different in different places, but at its heart it is about restoring balance, a fundamental value of many Indigenous people.

Bearing this in mind, I now turn to my last question: under what circumstance should Indigenous people engage with fossil fuel companies.

Section Four: Indigenous engagement with the fossil fuel industry

In my mind, the answer to this question will be contextual to the location, the sovereign rights situation of the Indigenous group and the extent of a restorative justice movement within a nation. The three justices framework can be used to support an Indigenous group as to whether they wish to develop a relationship with an energy producer. Such a framework

moves beyond the more commonly used environmental or even cultural impact assessments that are common in resource extraction or energy production projects.

As the technical discussion in section three identifies, 100% renewable is theoretically possible in some energy sections, but very difficult in others, and each country's pathway is dependent on its level of industrialisation and its economic and energy structure. In Aotearoa New Zealand, the implications of the ban are only just starting to be discussed, and in particular the role that oil and gas will play. As yet, we have no idea of how the ban will displace some forms of energy for others. We do not have a robust EV infrastructure, our housing and vehicle stock is inefficient energy-wise, and for a country that is highly dependent on exporting agricultural products and importing people through tourism and education, we are highly reliant on long-distant transportation. It is very difficult at this stage to see whether we can be entirely fossil-free within 30 years, given that it has been estimated that entire energy system change takes 40 years (Sovacool, 2016).

For climate change distributional justice to occur requires an intergenerational and non-human perspective. Māori agree that, as Oren Lyons state, 'resources' are 'relatives'. In our tradition of *whakapapa* (kin-relationship), oil and gas can be seen as the descendants of Pūtoto and Parawhenuamea along with their other kin lice, grubs, caterpillars, clays, bedrock, shore reefs, stones, rocks, earths and ferns. Oil and gas have their own *mauri* or value beyond the purely utilitarian, and recognising this would help determine how best to sustain and manage a resource (Ruckstuhl, Thompson-Fawcett, & Rae, 2014), which might include use as in Table 2.

Table 2: Mauri Management Framework

- | |
|--|
| <ul style="list-style-type: none">• Use with respect• Use sparingly• Use in the proper way• Only to be used by the right people• Beware of using• Don't use now• Never use under any circumstances |
|--|

Applying this logic, it may be possible to view oil and gas and coal within a *mauri* management regime that should be used only in prescribed and controlled circumstances in a country, as is suggested by Heinberg and Fridley (2016). Those circumstances would be:

- An agreement about which industries are key to a nation’s economic and social wellbeing, with use of oil, gas and coal *only* in those industries;
- An agreed maximum timeframe – say 30 years or 2050 - after which the use of oil, gas and coal would be stopped unless the country is able to “balance its carbon budget” as Aotearoa New Zealand intends to do (ie, REDD+ schemes would not be an option given their association with injustice and abuse of the intent of the scheme);
- A justice-based national energy transition plan that identifies the linkages between energy production and energy use and protects the most vulnerable.

The above suggestions of viewing fossil fuels from a *mauri* perspective is akin to placing the use of a nation’s fossil fuel resources on a wartime footing and directing those resources only to key industries. It holds out to the market the possibility of some production rather than none but limits that production away from the ‘business as usual’ scenarios to which a market-based logic as used by the IEA and oil companies drives them. The *mauri* approach is an energy justice transition approach away from market production logic towards controlled and limited use at the service of people and environment.

Might such an approach actually work? Aotearoa New Zealand as a small island nation has appointed a climate change commission, including the Māori voice, to consider this. It may be that oil can no longer be used for private consumption and that outbound and inbound tourism are a luxury. There will be implications for our global food supply chain, both from a production and from an export perspective. If a *mauri* approach is used, then undoubtedly our consumptive and leisure activities will be curtailed. This will cause disruption and pain to parts of our society for which a just *mauri* approach will account.

To conclude, a just climate change transition is an energy transition within a prescribed period of time. The technical requirements of such a transition are daunting, but not impossible if planned for using a *mauri* approach – limited and prescribed use of oil, gas or coal. While the *mauri* is akin to a war-time footing for a resource, if managed within the three justices framework it need not inherently undermine Indigenous sovereignty or autonomy or violate human rights as laid out in the DRIP.

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