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Response to A Path Forward: Developing the Western Australian Government's Aboriginal Empowerment Strategy

Thank you for the opportunity to respond to this ambitious strategy.

In its capacity as Australia's foremost social science research body focusing on Indigenous economic and social policy, the Australian National University's Centre for Aboriginal Economic Policy Research is collaborating with the University's Energy Challenge Institute to identify how Aboriginal and Torres Strait Islander peoples can benefit from Australia's transition to a low-carbon economy. This is the focus of our work on the *Australian National University's Grand Challenge¹ Zero Carbon Energy for the Asia Pacific*. Our research of this subject leaves us well placed to comment on how the Western Australian Government's Aboriginal Empowerment Strategy should be implemented in relation to Western Australian energy policy.

Our comments are premised on the fundamental importance of affordable, reliable and culturally appropriate energy services to the empowerment of Western Australia's Aboriginal peoples. We welcome the Western Australian Department of Premier and Cabinet's identification of services and infrastructure as a foundation of Aboriginal empowerment. We also commend the Department's emphasis on culture, collaboration and self-governance, which will be essential in ensuring that electricity and other energy services are provided effectively (Stewart et al 2019; Buergelt et al 2017).

Access to energy drives human development and contributes to social equity (Boudet 2019; Chatterjee 2019). It is also intrinsically linked to some of the Department's other foundations of Aboriginal empowerment, including schooling, health, connection to country, housing, and food security. Without energy, no water is pumped, food and medicine spoil in the heat, lighting does not work, and daytime temperatures can reach life-threatening levels. A lack of reliable energy infrastructure also restricts communities from pursuing activities on country—both for their own enjoyment and in connection with commerce including tourism, art-making, or land care enterprises. Simply put, the government's efforts to empower Aboriginal peoples cannot overlook the provision of energy.

Proceeding on this basis, we recommend that the Strategy's implementation in the area of energy should incorporate the following approaches.

¹ The ANU Centre for Aboriginal Economic Policy Research and the ANU Energy Change Institute collaborate on the Grand Challenge: *Zero Carbon Energy for the Asia Pacific* project to identify pathways to Indigenous benefit from Australia's current transition to renewable sources of energy.

- Small-scale diesel-generated electricity must be replaced² or supplemented by renewable resources in remote communities.
- Existing small-scale renewable energy systems in remote communities must be serviced, upgraded and where necessary replaced by new systems.
- Barriers to the adoption of Electric Vehicles in Aboriginal communities must be removed.
- Native title holders and other Aboriginal land owners must be provided with timely and effective legal, commercial, technical and strategic advice regarding the development of utility-scale renewable energy projects on their lands.

The sections below explain why each of these approaches must be adopted and provide guidance as to how this adoption could be implemented.

Small-scale diesel-generated electricity must be replaced or supplemented by renewable resources in remote communities. Existing small-scale renewable energy systems in remote communities must be serviced, upgraded and where necessary replaced by new systems.

Far from the transmission infrastructure that characterizes more than a century of investment by the State, energy services for Aboriginal people in remote parts of WA have evolved in ways that reflect a unique geography, demography and history. This lack of transmission infrastructure in remote regions is often a cause of energy injustice in otherwise rich countries (Bouzarovski et al 2018 p:3):

“...more technologically advanced networked forms of energy provision are often absent in large tracts of states that are conventionally labelled ‘developed’”.

Remote living Aboriginal residents in Western Australia face additional cross-cutting issues which can add to the cost and complexity of realizing reliable, affordable energy services in these regions, as described by Dwyer (2016 p:7):

“Aboriginal households in remote areas are often times burdened by both structural (weather³, poor quality housing, fixed high energy use appliances) and socio-economic factors (overcrowding, family structure and mobility, and low income households⁴)”.

Aboriginal communities in the regions have until very recently relied predominantly on the recurrent burning of expensive⁵ and environmentally damaging fossil fuels for electricity generation. Diesel engines coupled with electrical alternators have significant advantages

² Sustainable, scalable models such as the Centre for Appropriate Technology’s Bushlight program (2002-2013) offer examples of best practice in this regard.

³ There is a strong seasonal component to energy use in these regions; during the ‘hot-dry’ and ‘wet’ seasons daytime temperatures regularly exceed 40 degrees and peak energy demand may be double that of the ‘cool dry’ season.

⁴ See also McKenzie and Howe (2013 p:6-10)

⁵ Aecom (2014) p:51 reports costs of generation as some of the Australia’s most expensive.

that historically have made them attractive to both communities and funding bodies alike in this context⁶.

Generators typically require modest up-front capital expenditure, are easy to deploy to remote sites, and are based on the familiar technology of remote area transport, being diesel engine light and heavy vehicles. This form of electricity generation has one major disadvantage that has had an outsized effect on productivity and community development aims of many remote communities during the self-determination period : the punitively high cost of providing diesel fuels for the ongoing operation of essential community energy and transport services.

As observed by McKenzie and Howes (2013 p.4) the cost of transporting fossil fuels in some cases exceeded the value of the fuel being transported, and the recurring nature of these expenses has become a significant life-cycle sum for many small remote communities. The burden of high fossil fuel costs for energy and transport has been felt acutely by remote living Aboriginal residents. In 2008 the Education and Health Standing Committee (2008 p.99) reported:

“Liquid fuels such as diesel, will form the core economic input for many future economic ventures being considered by Indigenous organisations in remote regions of WA.”

After a century of insensitivity to external factors, the energy sector is currently experiencing rapid disruption. Both local and global trends indicate the shift towards renewable energy as a preferred energy source is well underway. Wind and solar photovoltaics accounted for 60 per cent of new net capacity additions to global energy supply in 2017 (Baldwin et al 2018). Australia is deploying renewable energy technology at a rate 4-5 times faster per capita than the EU, USA, Japan and China (Blakers et al. 2019), based on abundant renewable resource wealth. Australia has the highest solar radiation per square metre of any continent, providing the best solar energy resource in the world (Geoscience Australia).

Considering that the vast majority of land across large parts of Western Australia is subject to the rights and interests of Aboriginal people, renewable energy developments across scales from small to large represent the potential for multi-generational Aboriginal benefit if well supported. However the rapid transition away from a reliance on fossil fuels towards renewable energy sources is not only a technical and infrastructural transition but also a significant socio-economic and cultural change, and requires strategic consideration. As Eames and Hunt note:

“even a low-carbon transition has the potential to distribute its costs and benefits just as unequally [as historical fossil-based transitions] without governance mindful of distributional justice”. (2013:58)

⁶ It should be noted that in 1982 the Diesel Fuel Rebate Scheme (DFRS) was introduced to allow eligible parties to claim back the diesel excise for ‘off-road’ use— eligible parties included, miners, users of diesel for heating, lighting hot-water, air-conditioning and cooking for domestic purposes.

The transition to renewable sources of energy has long been identified as a potential socio-economic boon for Aboriginal communities. Yet awareness of the benefits of a transition to renewable energy has not yet translated into widespread deployment on Aboriginal land other than at small scales (Byrnes et al 2016). Moreover, a recent history of abundant resource wealth and economic activity has not led to measurable improvement in the lives of many Aboriginal residents in these regions (Taylor 2019). To assess the potential of a renewable energy transition to benefit Aboriginal people in WA we need to be clear that economic growth and activity alone will be insufficient measures. Developments will need to be progressed with the engaged participation of communities at all stages to best ensure alignment with community priorities.

Leveraging the benefits of a renewable energy transition will require policy leadership that recognizes the radical opportunity that the widely distributed ownership of renewable energy resources represents.

At small scales, absent the unlikely expansion of national or regional electricity networks to traditional outstations and small communities, the need for robust, reliable, far-from-grid renewable energy solutions will persist for many decades. There is a rich history of Aboriginal engagement to be learnt from, including both disappointments and successes, with renewable energy projects at these small scales. The Bushlight⁷ (2002-2013) community energy planning process provides one positive case study of a sustainable and scalable model well adapted to local circumstances. Such supportive organisational and physical infrastructure is crucial (Shirodkar, Hunter and Foley 2018) for many Indigenous owner managers in the early years of business⁸ and renewable energy has proved to be a significant boon for many small Indigenous businesses.

Clearly articulated pathways for finance⁹ for those Indigenous organisations seeking to invest in remote off-grid standalone renewable energy projects will continue to be required. Dedicated repairs and maintenance services for communities sourcing their energy in part or fully from renewables are essential. Services must be expanded to include necessary upgrades, to replace those assets now approaching their end of life, and for new installations.

For that proportion of Aboriginal people who may live in public or community housing, or rent on the private market accessing the benefits of renewable energy may be challenging. Many may not be homeowners able to benefit from available renewable energy allocations through buyback schemes. The large disparity in incomes in the regions (Taylor 2005, Taylor 2006, Taylor 2018) may mean residents do not have spare capital to invest in solar panels, and they may have difficulty obtaining loans to do so, or more generally lack information about the window of opportunity that renewable energy allocations represent. Community engagement processes and benefit sharing models cognizant of the complexity of the challenges inherent in incentivizing the uptake of renewable energy amongst Aboriginal

⁷ See the Centre for Appropriate technology <https://cfat.org.au/renewable-energy-supporting-enterprise> and <https://cfat.org.au/bushlight-archive>.

⁸ <https://cfat.org.au/renewable-energy-supporting-enterprise>.

⁹ See Indigenous Business Australia for examples of best practice models in this regard.

people living in public or community housing or renting on the private market will be beneficial.

Similarly, conventional understandings of the private and public benefits of renewable energy are complex in communities where communally owned land is the norm. There are a number of innovative approaches to integrating renewable (solar photovoltaic) energy adapted to local contexts currently being trialled in the Kimberley¹⁰ and these should be supported and expanded where there is evidence of success. Dwyer's (2016) recommendation that energy providers aim to work from the 'grassroots' accords closely with the findings of Liam Byrnes et al (2014) on the efficacy of 'bottom up' approaches to incentivizing renewable energy in remote Aboriginal communities. This is one example of an adaptive approach that prioritizes the engaged participation of community.

Distributed energy resources allied to technological advances including grid forming inverters, peer to peer trading of energy, smart metering and demand management may in future prove uniquely pliable to Indigenous innovations in energy governance. The value of managing demand in high-cost networks will likely see increasing levels of demand management innovation. Whether a transition to renewables can be leveraged to decrease the incidence of energy disconnection within many of our most vulnerable communities remains an important question yet to be answered.

Native title holders and other Aboriginal land-owners must be provided with timely and effective legal, commercial, technical and strategic advice regarding the development of utility-scale renewable energy projects on their lands.

It is projected that in coming decades Western Australia is set to see a dramatic expansion in large scale renewable energy projects (Clean Energy Council 2020) many of which will occur on land subject to Indigenous rights and interests¹¹. Northern Australia hosts significant comparative advantages for the large-scale production of renewable energy which can be transformed into green fuels such as hydrogen and ammonia (Blakers 2012) and downstream industrial development.

A number of Prescribed Body Corporates are building capacity with a view to Indigenous ownership, employment and benefit within industries associated with the transition to renewable sources of energy¹². This marks a significant and positive opportunity in the

¹⁰ One promising approach being trialled by the network service provider Horizon Power in eight larger remote communities in the Kimberley is the use of a 'bottom up' approach that seeks to share both the costs and the benefits of a transition to renewables with community. The model uses a variable pricing structure offering individual buyback offers that are tailored to each individual community with buyback rates aligned to those generation and distribution costs (in the form of liquid fuel and distribution costs) that are defrayed by the move to renewable energy resources. In the circumstances described renewable energy is found to benefit the network service provider and can also benefit communities subject to their cost of capital and to the imposition of connection charges.

¹¹ National Native Title Tribunal (2019)

¹² For example, the Nyangumarta people are currently engaged in the process of negotiating an Indigenous Land Use Agreement (ILUA) with the developers of the 15GW solar, wind and hydrogen project, the Asian Renewable Energy Hub.

context of long standing efforts to find innovative pathways to overcoming Indigenous socio-economic disadvantage. However, many PBCs remain under-resourced for the multiplicity of demands incumbent upon them¹³, whilst some of the world's largest public and private oil and gas companies committed to cheap energy are taking increasing stakes¹⁴ in the renewable energy transition (Csomos 2014, Pickl 2019). In many, though not all cases, consortia prospecting for large scale renewable energy projects in the north will command far greater resources than the Aboriginal landholders.

Greater strategic support and the provision of high-level technical, legal, environmental, financial and scientific advice to those entities representing native title holders will be required if they are to realize the benefits of a transition to renewable energy. Access to independent, timely and robust technical advice is of obvious import to ensuring native title owners understand the development agendas of proponents and are provided with adequate and accurate information regarding the technical possibilities, risks and benefits, and potential downstream uses and end products of renewable energy developments, on which to base free, prior and informed consent.

Informed processes enable better alignment of development with First Nations economic, social, cultural, governance and land use priorities, decrease the potential for conflict between parties and improve the chances of sustained Indigenous benefit from all scales of development over medium and longer terms. Our research has shown that whilst direct access to energy from large scale renewable development is of lower likelihood, Indigenous benefit is likely derived in large scale developments primarily through economic benefit sharing arrangements where:

- Indigenous communities and organisations are well informed and well resourced;
- Indigenous communities and organisations are meaningfully engaged in the development process;
- developments are progressed in accordance with community priorities; and
- developments include provision for community equity and/or ownership.

Removal of barriers to the adoption of Electric Vehicles in Aboriginal communities

Much attention is currently focussed on the benefits to urban and peri-urban commuters and communities from the imminent electrification of parts of the transport sector. More research is needed on the ways in which Aboriginal communities might be better supported to benefit from this transition.

¹³ Whilst financial capacity varies greatly, the average annual budget for an Indigenous PBC is \$66,000.

¹⁴ See also <https://reneweconomy.com.au/oil-and-gas-majors-could-lead-australian-renewables-development-by-2020/>

As noted above the provision of fuel to communities for energy and transport services can be unreliable, is incredibly expensive, and can introduce health risks. Electric vehicles have 100 times fewer parts than internal combustion engine vehicles making them more robust and potentially easier to repair. The running costs of EVs are between 60-90% cheaper than internal combustion engine vehicles, with fewer moving parts, and reduced running and maintenance costs.

Of particular relevance, the battery capacities of modern electric vehicles are large enough to power a house for many days, potentially providing much needed backup power in settings where access to reliable, affordable energy has historically proven challenging. EVs may provide more value to Aboriginal communities than cheaper transport alone. Cheaper energy and transport could in future contribute significantly to reducing multidimensional poverty in these communities and provide opportunities for economic development.

There are significant barriers facing communities in the uptake of EVs. More research is needed into those barriers that will affect the uptake of EVs in ex-urban and remote communities. Barriers to uptake may include trip ranges, the effect of heat on batteries, further range limits introduced by the drain on batteries by situation-dependent auxiliary services such as air conditioning, the quality of local electrical supply, and upfront costs. However, driving ranges of EVs have improved rapidly over time, with standard new vehicles on the market typically able to cover 240 km, and high-end vehicles able to cover up to 600 km.

People who have access to outlets at their homes are more likely to consider adopting an electric vehicle (White and Sintov 2017). To increase electric vehicle adoption rates, one low-cost measure to pursue would be developing regulation to ensure that electric vehicle charging stations are included, or can be easily added, to new community infrastructure, social housing, and to rental properties, providing options for public and private charging on community.

Similarly, strategies that lower the cost of electric vehicles, such as taxation waivers or subsidy provision, increase electric vehicle adoption – not only due to the lower costs, but also due to those lower costs contributing to electric vehicles being seen as a ‘mainstream’ vehicle choice rather than an unusual one. There may be a need to develop benefit sharing models that accord with community-identified priorities in deploying charging infrastructure. In some instances EVs may represent an alternative to stationary storage options for small communities with access to existing renewable energy services.

We would argue that the barriers to community uptake are not insurmountable, and that the potential opportunity for benefit warrants further investigation. We suggest there is value in quantifying the existing barriers to uptake of electric vehicles in remote communities as part of the current discussion, including;

- Examining the extent to which recharging infrastructure at major towns and communities could feasibly enable recharging for EVs upon arrival and prior to departure, including identifying early commercial opportunities for communities.

- Identifying the technical challenges of integrating EVs with the above-mentioned communities' electricity supply.
- Examining international policy contexts that identify the barriers facing EV uptake in remote settings.

There is now scope for a much broader conceptualisation of the potential role for First Nations participation in renewable energy.

This could be broadly encouraged and incentivised through legislative, policy and implementing frameworks supportive of the engaged participation of First Nations. Any concerted effort to maximize Aboriginal benefit from renewable energy must recognize the important role that Aboriginal people, communities and land must play,

Clearly articulated pathways to dedicated repairs and maintenance services for communities sourcing their energy in part or fully from renewables are essential. Support for renewable energy services must be expanded to include necessary upgrades, to replace those assets now approaching their end of life, and for new installations.

In larger communities consideration should be given to the efficacy of energy payment models that are cognisant of both the challenges and opportunities presented by community owned Aboriginal land. There would be benefit in greater levels of support for those residents who may live in public or community housing, or rent on the private market in accessing the benefits of renewable energy. Further promotion of the opportunity presented by renewable energy allocations in larger towns and communities would be beneficial.

Greater strategic support and the provision of high-level technical, legal, environmental, financial and scientific advice to those entities representing native title holders will be required if they are to realize the benefits of a transition to renewable energy. Access to independent, timely and robust technical advice is of obvious import to ensuring native title owners understand the development agendas of proponents and are provided with adequate accurate information regarding the technical possibilities, risks and benefits.

The current energy transition touches upon a broad range of policy areas - given this interconnected nature **we recommend that State departments with responsibility for energy, climate change, roads and transport, and economic development need a coordinated approach to driving Aboriginal involvement in the transition to renewable sources of energy across all sectors.**

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