**Decarbonising NZ: A think piece**

- **Net Emissions**
  - **ELECTRICITY**
  - **DEGRADING SOIL**
  - **ECONOMIC INSECURITY**
  - **LINEAR ECONOMY**
  - **DECLINING HOUSING CRISIS**
  - **UNEMPLOYMENT**
  - **HEATING CLIMATE**
  - **HIGH EMISSIONS**

**The Challenge:**

- **BIODIVERSITY**
- **Landuse 30%**
- **Industry 16%**
- **Agriculture**
- **Waste 5%**
- **Transport**

2020

- **4MtCO2e**
- **2020 22%**
- **48%**
- **Utility Scale Wind & Renewable Investment:**
  - **Utility scale opportunities throughout the country.**
- **Supporting Accelerated Electrification:**
  - **The greatest part of our Wave-3 recovery:**
  - **for grid electricity transitions which could be progressed as part of our Wave-3 recovery:**
- **Supporting Scale Wind & Renewable Investment:**
  - **Electricity scale wind will be an essential component of both accelerating electrification and transitioning towards 100% renewable electricity:**
  - **to substitute fossil fuel energy with electricity, we will need to expand electricity infrastructure, particularly as we transition to greater use of electric vehicles.**

**Key Opportunities:**

- **BECA specialists have identified the following key opportunities for grid-electricity transitions which could be progressed as part of our Wave-3 recovery:**
  - **Supporting Accelerated Electrification:**
  - **the greatest opportunities for rapid decarbonisation in New Zealand include a rapid shift from fossil fuel-based energy to electricity in transport and industry.**
  - **Grid capacity will need to expand to help support this and additional transmission and distribution networks and/or upgrades may be required to support high process heat users. Fast tracking this will create employment opportunities throughout the country.**
  - **Utility Scale Wind & Renewable Investment:**
  - **regional value jobs, and help to position New Zealand as world leaders of hydrogen capability in New Zealand would create high-potential to become a future export.**
  - **the complete phase out of fossil fuels, it would be more cost effective to focus in the first instance on increasing renewable energy generation during the post-COVID-19 transition before targeting 100% renewable energy.**

**Transition: Electricity Systems**

**Challenger Statement:**

New Zealand’s electricity grid has a high proportion of renewable energy (approximately 82%) and as a result, only contributes ≈4MtCO2e per year, approximately 5% of national GHG emissions. Electricity is an essential service providing household heat, light and communication, however its cost has led to ‘‘energy poverty’’ in some low-income households.[1] Further, in order to substitute fossil fuel-based energy with electricity, we will need to expand electricity infrastructure, particularly as we transition to greater use of electric vehicles. All electricity infrastructure has some environmental impacts and some, like visual impacts are often opposed by local communities.

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**Regulatory Systems & Renewables Financing:** We believe that regulatory and financing changes will be needed to enable accelerated electrification and growth in renewable energy. The streamlining of consent processes for renewable energy solutions and transmission network installations and upgrades should be undertaken to enable an accelerated growth in renewable energy and access to electricity and associated job creation. It is our view that new financing models may be needed for renewable systems. Wave-3 initiatives should include modelling of future financing mechanisms and the development of clear road-maps that address challenges such as price structures, enabling and incentivising distributed energy and storage (e.g. from rooftop solar, electric vehicles and household batteries), and different roles for key stakeholders including government, electricity suppliers, transmission and distribution companies, and end users.