

Mining and Climate Change



The products of mining are essential for modern society. Aggregates for infrastructure, housing, concrete; coking coal for steel; gold, copper, cobalt, rare earth elements (REEs), lithium and vanadium for electronics, electric vehicles, solar panels, batteries - this list goes on.

A recent report by the World Bank predicted increased demand for many minerals as we move to a lower carbon economy. New Zealand has the potential to supply some of these.

The use of fossil fuels is driving climate change. All of us – collectively, globally, including the coal industry – face the challenge of reducing CO2 emissions to stabilise average surface temperatures, as agreed by 195 countries (including New Zealand) in Paris in late 2015.

That's the problem definition. How to do this is the hard part.

Fossil fuels, including coal, remain the fuel of choice for many developed countries, and for developing countries where reducing poverty and raising living standards are frequently prioritised over climate impact and environmental cost more generally.

Progress is being made in the transition from fossil fuels but, globally, the development and take-up of current and new technologies such as solar, battery, nuclear, carbon capture and storage needs to accelerate if we are to achieve the emissions reductions required to meet the Paris commitments. Demand for oil, gas and coal remains strong because for many applications, technologies that do not rely on fossil fuels are simply not available, or not at scale.

Steel for example, cannot be made at scale without coking coal. Substitute technologies, and/or substitute materials will solve this problem, but over decades not years.

Fuel for transport is being replaced by electric and battery power, but more global progress is required in the transition from coal electricity generation to maximise leverage for this option. This is a very complex problem that is not helped by 'ban fossil fuels' slogans.

Opponents to mining in New Zealand often say we should concentrate on tourism instead. But most tourists arrive in this country by air. A UK Friends of the Earth report states: "Air travel is the world's fastest growing source of greenhouse gases like carbon dioxide." Aviation currently contributes 2.5% of the world's total carbon emissions.

Globally, nuclear could play a much larger role in power generation to accelerate decarbonisation.

For New Zealand, we need to understand the costs and trade-offs of what we do, and benchmark global progress, so we make well-informed decisions – decisions that ensure we do our share, we lead where it makes sense to lead, but we don't simply export investment and jobs for no global emissions reduction.

New Zealand's low electricity generation carbon footprint gives us a real advantage now over almost every other country. Our use of hydro, geothermal and wind, with energy security provided by fossil fuels, including coal, gives us positive options not available to most countries. This makes our electric vehicle strategy particularly important. Also, our premium products, high standards in environmental management, health and safety and operational efficiency mean that we can meet global demand for many products with a lower carbon footprint than many of our competitors.

Reality Check



Fossil fuels currently provide **80%** of global primary energy.

Coal makes up **38%** of global electricity generation.

Coal use in New Zealand contributes around **5%** of our emissions.



STRATERRA™
NATURAL RESOURCES OF NEW ZEALAND

Coal in New Zealand



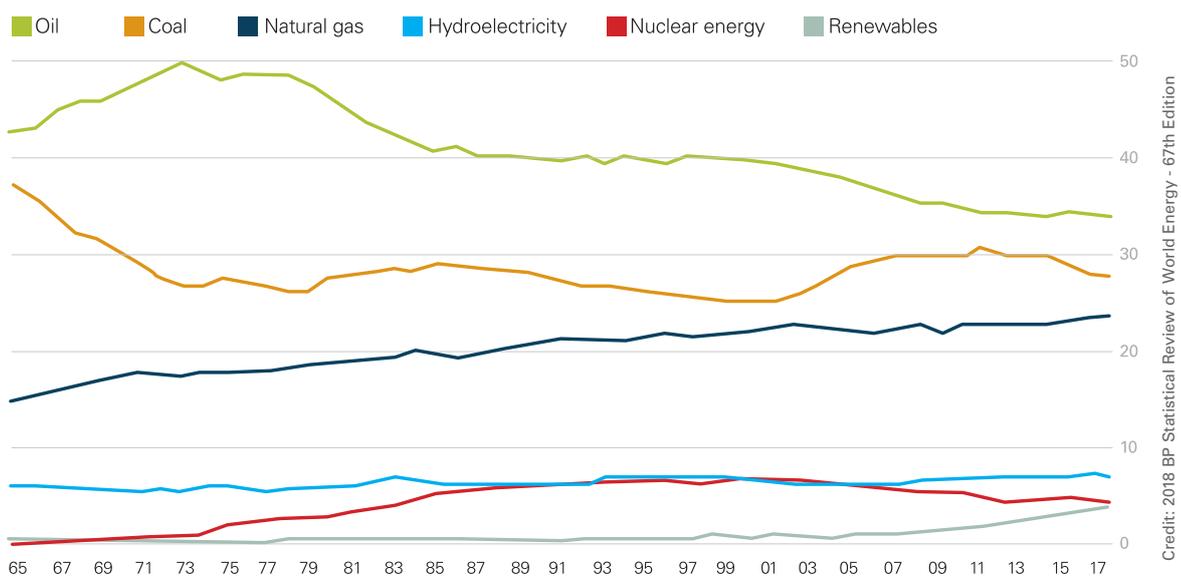
1. Thermal coal in New Zealand has an important role in maintaining the international competitiveness of our agriculture sector – dairy in particular – and in domestic food production. This will change as technology advances allow and as competitors take on the cost of reducing emissions.

2. Thermal coal plays an essential role in providing energy security in New Zealand – in dry years, when gas shortages occur and as a result of adverse weather events.

Over the past three years the Huntly power station used an average of 310,000 tons of coal a year from local production and imports.

3. New Zealand mines premium grade coking coal to meet demand from international steel manufacturers. At present, there are no commercially viable technologies to make steel, at scale, without coking coal. This demand will reduce, over decades, as new technologies and new materials allow. These exports do not count to New Zealand’s emissions liability.

Shares of global primary energy consumption by fuel (%)



Oil remains the world’s dominant fuel, making up just over a third of all energy consumed. In 2017 oil’s market share declined slightly, following two years of growth. Coal’s market share fell to 27.6%, the lowest level since 2004. Natural gas accounted for a record 23.4% of global primary energy consumption, while renewable power hit a new high of 3.6%.

