

MEMO

To: BusinessNZ Energy Council (BEC), World Energy Council (WEC)
From: Tina Schirr, Executive Director, BEC
Date: 31 March 2020
Subject: **THE IMPACTS OF COVID-19 ON THE ENERGY SECTOR**
Action Required: For your information

Purpose

The purpose of this memorandum is to update the BEC and WEC about the impact of COVID-19 on the New Zealand and Global Energy Sector.

What is happening overseas?

COVID-19 and a disagreement between Russia and Saudi Arabia have had a major impact on energy prices due to disruption in oil demand and supply.

The oil price has dropped sharply, and the LNG price is very low in Asia. Current spot prices are at a record low, around \$3/mmBtu, due to low demand, mainly in **China**. Current prices of term contracts are around \$10 but will decline to \$6-7 within 3 months due to the decline in oil prices.

There are positive signs that indicate Chinese industry and consumer demand are picking up and even food service is bouncing back.

There are some concerns that a second wave of re-infection in China could cause further disruption, so China is being vigilant regarding its borders when it comes to people movement.

In **Japan** the many changes in social activities (such as school closures, closing of manufacturing firms,) don't seem to have led to a big decrease in electricity demand at present (e.g. "teleworking" will likely see electricity demand in offices decrease, but residential demand might increase; TEPCO will closely monitor).

Tokyo Gas witnessed ~15% demand decrease in February compared with last year, a decrease mainly seen in the industrial and generation sectors, with a 20% decrease in total. TEPCO is taking significant countermeasures to avoid any infection of operators, including totally

separate access routes to the office, dedicated elevators and eating at desks. If the situation worsens, TEPCO may require operators to stay in their offices for extended periods.

Small businesses in Japan are suffering due to the outbreak. Another challenge is that manufacturing and building sectors depend on parts from China. Also, Italy is a major supplier for some elements of energy plants/equipment and the border closure means that Italian maintenance staff cannot attend to the machines, so those companies which depend on Italian parts are suffering.

In **Hong Kong** residential energy use is going up slightly, but there has been not much change in industrial use. Small-medium enterprises are suffering both due to virus and to political disruption. This has resulted in a slight decrease in load from that sector. Solar panels are less available because they must be imported, so new solar plant development is delayed.

Most workers in Hong Kong have been working from home since January. Hong Kong was among the first to be hit by the virus but due to previous experience with SARS, the community was more prepared (e.g. masks, sanitisers,). Like New Zealand, most virus cases have been imported. However, managing virus issues has been complicated by new anti-government politics which began last year.

Hong Kong is starting to see that social isolation is difficult; after two months, people are starting to take risks. For business continuity purposes, staff are now slowly beginning to move back into their offices (by, for example, splitting staff into teams).

India is currently in lockdown for 21 days. There are reports that while the ports are 'open' they are not very operational.

Canada, Australia, Chile, Brunei, Myanmar and Singapore have joined forces with New Zealand in issuing a joint statement committing to keeping supply chains open and removing any existing trade-restrictive measures on essential goods, especially medical supplies.

There have been no changes to market access or added regulatory burdens internationally. But there are reports that airfreight prices have increased by 30-60% internationally.

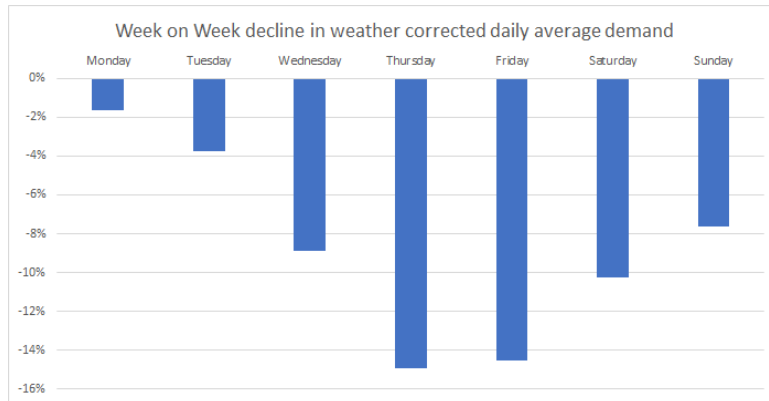
What is happening in New Zealand?

Around 1pm Monday, 23rd March, Prime Minister Jacinda Ardern announced a four-week lockdown beginning at midnight on Wednesday 26 March.

Only entities and their workers carrying out essential services are eligible to keep doing business. This has impacted not only on the businesses and their workers, but also on energy demand and supply.

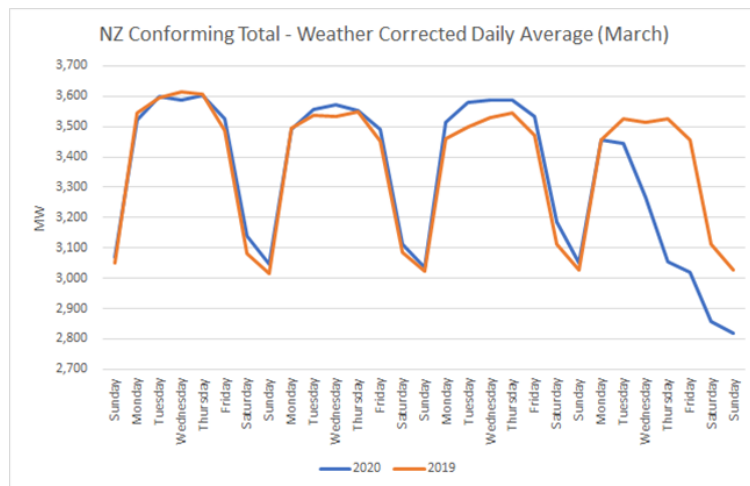
Electricity demand began to drop almost immediately as employees began packing up and leaving the workplace. Thermal generation has decreased alongside the decrease in demand. With lower demand there has been less plant generating, leading to less reserve being available in the system.

The chart below shows the percentage decline in weather-corrected daily average demand from the previous week.



In full lockdown, we are seeing a 15% drop in weekday power demand. On Saturday 28 March there was no sport, pubs or shopping leading to a 10% drop in demand. On Sunday 29 March there was an 8% drop. The week on week percentage drop for Sunday was the lowest as many businesses are already closed on Sundays. Sunday's demand was the lowest we've seen this month.

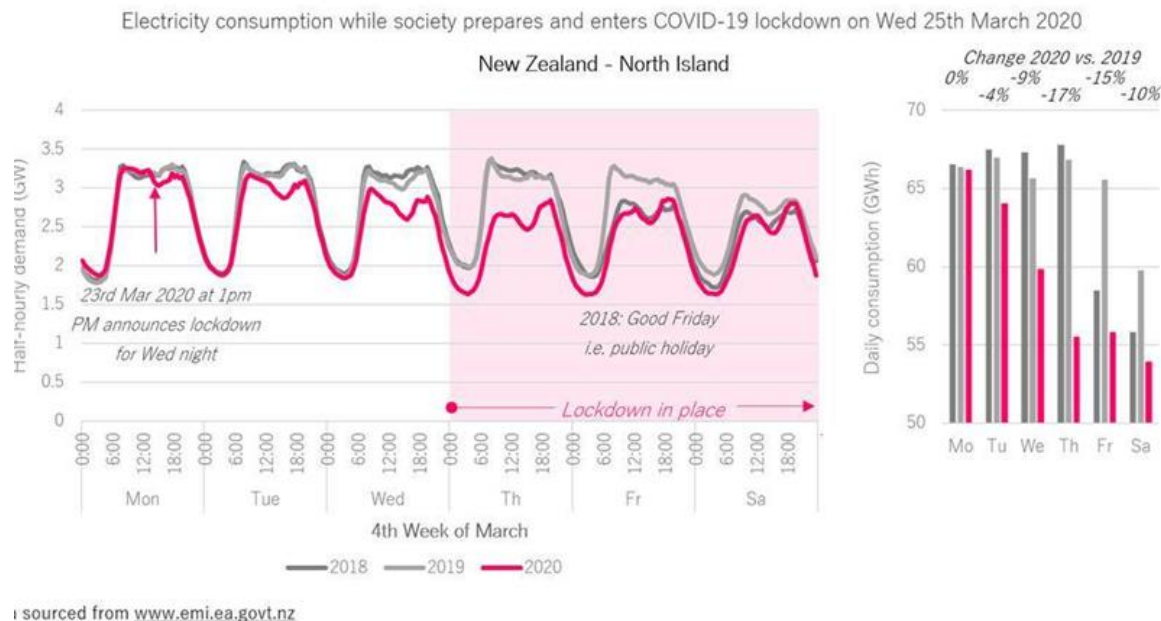
The graph below shows March 2020's weather-corrected daily average demand compared with last year's. All weather-corrected demand is calculated using [TESLA Forecasting's](#) methodology.



Note: This is an aggregation of demand at all conforming grid exit points in NZ.

Obviously, there are a lot of large electricity users that have reduced demand drastically, but it is interesting to look at the profile across the day at GXPs that are a mix of residential and commercial or light industrial demand. The chart below shows that the morning peak declines more than the evening peak. Peaks are down on average overall, but the morning peak is much lower or non-existent during the week because businesses are not ramping up their demand in the morning at the same time as residential demand peaks. In the evening, a lot of GXPs have peaks that are just the same as they were before the lock-down, because by 6 pm most businesses have ramped their demand down, but people are at home cooking, and doing

all the things they would normally do at home. Overnight electricity use dropped only during lock-down.



In terms of the spot market, the HVDC link is now fully operational after being down to one pole since early January, so the big price separations between the islands (north and south) have gone, but prices are generally very subdued due to a combination of low demand and very healthy storage in the South Is.

Natural gas production has been deemed an essential service, and therefore continues to be available to meet demand and to ensure energy security. Producers are working together collaboratively to share information about managing the COVID-19 risk. They are planning for near-term disruption to production quantities as major users are curtailed, with, for example, the steel mill being shut down as a non-essential service while Methanex’s methanol production has been scaled back.

Oil production has not been deemed an essential service on the basis that New Zealand-produced oil is nearly all exported and therefore not required for domestic energy security.

Coal production for immediate needs (e.g. home heating) or fulfilling existing orders is an essential service and can continue.

Domestic fuel market has seen some large declines in volumes at the back half of last week and over the weekend. New Zealand is experiencing declines for retail petrol of around -80% but this is only based on two or three trading days. Monday and Tuesday of last week (days before the lockdown) were high-volume days as customers pre-filled their cars before the lockdown. Retail diesel and commercial diesel have also seen a decline, with truck stops in the vicinity of -50% volume declines but again this is only based on a few trading days. Though, New Zealand seems confident with network stocks and ability to supply. The major clients of the refinery have negotiated a -50% reduction in refining output for the next two months. The fuel industry remains confident in its ability to adequately supply New Zealand.

Below a list of energy relevant services that remain open:

- Any entity involved in the production, supply, sale, distribution or disposal of electricity, gas, water, wastewater, waste, fuel, telecommunication services, and any entity contracted by these entities;
- News (including news production) and broadcast media, Internet service providers;
- Refining NZ, Fonterra and Ballance Agri-Nutrients, classified as essential businesses due to their roles in supporting domestic fuel and primary sector supply chains;
- Methanex remains in production but at a scale consistent with the stability of gas supply;
- The Tiwai Point smelter is exempt from closure;
- NZ Steel has shut down in a way that allows for production to recommence easily;
- Pulp and paper plants have shut down non-essential elements in a way that allows for production to recommence easily while maintaining essential production;
- The use of private vehicles and public transport but only for essential services. Ministry of Transport, New Zealand Customs, New Zealand Transport Agency, Civil Aviation Authority (including Aviation Security Service), Maritime New Zealand (including the Rescue Coordination Centre), Airways NZ, MetService, KiwiRail (including the Interislander), and any entity which is contracted by these entities;
- More information on essential services can be found [here](#).

Potential side effects for the New Zealand energy sector

An economic recession and falling oil prices may contribute to a slowdown of wider electrification and the uptake of clean technologies including renewable generation, EVs, and hydrogen development in New Zealand.

Wider impact on New Zealand's economy

New Zealand expects to see a very sharp drop in GDP in Q2, but overall a less impactful economic hit than if we had acted later.

Business finance support schemes, mortgage holidays, and wage subsidies were announced by the Government over the last two weeks, with more initiatives to come. Part of the package includes a doubling of the existing Winter Energy Payment subsidy for 2020. But even with these responses, economic damage is inevitable.

Among others, the Government announced a NZ\$12.1 billion Covid-19 business package that included \$8.7 billion for businesses and jobs, \$2.8 billion for income support, \$500 million for health, and \$600 million for the aviation sector and to support supply chains (this did not include any support for Air New Zealand).

The Government also indicated to invest a total of NZ\$54 billion to update New Zealand's transport infrastructure.

Up to NZ\$330 million of the Government's aviation support package will be allocated to ensuring air freight capacity is available on key routes for at least the next six months and for dealing with immediate risks and opportunities as they arise in the aviation sector.

New Zealand's export of food and beverages continues as usual. Most food industries reported that demand remains high for New Zealand food.

Most of the New Zealand Embassies and High Commissions around the world are open and while their initial workload is focused on consular issues, they will be increasingly able to support exporters with any trade issues. Some are operating with a 'skeleton' staff.

Further information can be found at:

- Ministry of Health webpage, which is being constantly updated.
<https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus>
 - Treasury, which is leading the work on some of the longer-term impacts on the NZ economy and NZIER, which has reported on economy-wide impacts.
<https://nzier.org.nz/publication/>
 - Also, keep checking the NZTE site <https://www.nzte.govt.nz/coronavirus>
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