

Dispatch for Tuesday March 7th, 2023

Te Uku Wind Farm

By Erika Lenhart

Leaving the hostel early in the morning to get a quick breakfast at a café in Raglan, we headed up to Te Uku Wind Farm to meet representatives from Meridian Energy. After an in-depth briefing, we learned that this wind farm uses 28, 2.3 MW Siemens Gamesa variable-speed turbines that generate a total of 64 MW of energy. New wind farms have started building 4.2 MW turbines because of advancing technology. The turbine blades are pitched to control the speed, maximizing the power generation and ensuring the safety of the components. The turbines also sit at a hub height of 75 meters and have a 101 m diameter rotor. The blades are painted a very specific color, tailored to the geographical area, that will reflect the heat and UV rays, protecting the components from unnecessary maintenance. Te Uku Wind Farm was built due to the strong and consistent wind resource on the hills of Raglan. Here, the project has a 48% capacity factor which is much more favorable than some wind resource in New Zealand that may only reach 15%. To determine this desirable wind resource, the assessment took two years and an additional year for siting of the turbines in terms of their position and spacing to accept the wind.



A "human wind turbine" in front of a wind turbine at Te Uku Wind Farm

We noticed not all the turbines were in operation at the time we arrived which is due to the needed stability of the grid and also the lack of energy demand. Turbines not in operation will create reactive power that will in turn stabilize and increase reliability of the grid.

This project is part of Meridian Energy, who leases the land from sheep and cattle farmers already utilizing the land. Using existing land makes this project relatively sustainable with the exception of the construction of roads up to the farm, that may have disrupted some existing biodiversity in the area. Considering the complaints about how loud turbines can be, I personally didn't think they were really loud at all. And while I know this occurs, I didn't witness any bird deaths during our visit.

After leaving Te Uku Wind Farm, I tested positive for COVID-19 and then masked up for the rest of the trip. Overall, I was really happy that I was able to see Te Uku before my positive test prevented me from joining the other powerplant tours.