

CAUSE – Center for Advanced of Undergraduate Studies and Experience

Day Two

Wednesday May 8th, 2013

We woke up the next day, after our first night together, to the sun rising over Raglan, New Zealand.



We headed out from Raglan at “not a hard” 8:15am. We headed towards the Te Uku wind farm, where we met Robin Christy, the construction project manager for the wind farm. We ditched the carnival van, due to its lack of four wheel drive and she took us on the long drive along the ridgeline up to the huge bank of wind turbines on the hills. These turbines reside on private farming land where they are grazing livestock, such as sheep. Meridian Energy currently owns the wind farm, which is the most northern wind farm in New Zealand. Only a few of the turbines were out of order while we were there, because the full time maintenance crew that resides on site was working on them performing tasks such as hydraulic checks, greasing, and oil changes. At the time we were there they had blade technicians from Denmark working on some of the turbine blades.

Before the project was initiated, there were concerns from the public about the endeavor. However, after it was built, the concerns dwindled. There were five years of data compiled before they decided that Te Uku was a feasible and worthy project. The project started in 2009 and took 18 months to complete. The entire project was monitored by Environment Waikato, and the water was monitored weekly throughout the construction. It took four trucks, three pulling and one pushing, in order to get the nacelle (brains of a turbine) to the top. In order for this site to be built, there were 26 km of road that were constructed. There are 28 turbines, each with 2.3MW of capacity. There are plans to install over 170 turbines at this site in the future. One of the steps the company took to reduce their impact

included keeping the ground that they removed so that the land can potentially be returned closely to its original state. They also are constantly monitoring bird and bat activity, as well as the noise generated by production.



It was the first time many of us had ever seen a turbine up close, and these were new, very impressively sized turbines. The machines were large, yet graceful giants. At the tip of the blade, each was turning at about 120 km/hr. Each turbine is underlain by the support of 2.5 meters deep and 18 meters wide of a concrete foundation as well as steel reinforcements. The brains of a turbine's operations reside in the nacelle, which weighs 82 tons and can adjust the machine in order to utilize the wind in the best way. The turbine can also turn itself off if the blades are under too much pressure from heavy winds. These turbines were capable of turning two and a half times before running out of cable. People in both Wellington and Denmark are able to control the turbines remotely. Each year, this site only experiences about 5-6 days where it produces no energy output.

After our discussion with Robin, we headed out and decided to stop and hike to Bridal Veil Falls. It was absolutely beautiful. It was nice that we had so much say in what we wanted to do throughout the trip. We could just say the word and then we were allowed to go and hike to a gorgeous waterfall. These unplanned moments were some of the favorite moments from the entire trip.



We then headed to Taupo, and along the way we stopped at the Ara Puni Dam. We talked about hydro power along the Waikato river. At this stop, Jake spoke about different aspects and things we would see regarding hydro and the Waikato. Mighty River Power owns and operates the vast majority of the Waikato hydro scheme, which contains 39 turbines throughout. It is comprised of eight dams from Aratiatia to Karapiro. We went over to take a look at the dam, it was a very impressive



structure. After this stop we made another pit stop in order to hike across the swing bridge near the dam. Some people were scared to death of the wooden bridge supported by nothing but cables, and others were thoroughly amused. We loaded up the Carnival and Party bus again and headed towards our next stop, Taupo.

As we neared Lake Taupo, we stopped to look out on the town, lake, and surrounding landscape. We arrived at the hostel to find it was quite nice and we did not have share a room with anyone who was not in our group. We headed out early in the evening to go to a local Irish bar that was recommended to us. We ordered a few drinks (best hard cider ever!) and sat around and played a game which was filled with slightly awkward questions and insinuations but was a ton of fun. It was the first night we all hung out and drank together and started to really get closer. After we had a few drinks, we got some food at the grocery and cooked some burgers and hung out around the hostel. We all Headed to bed around 11 that night, as we were all still getting used to the time difference.



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