Judge LJ Newhook
Acting Principal Environment Judge

28 September 2011

Dear Judge Newhook

Ref. Final Report and Decision of Turitea Wind Farm (Sept. 2011)

In the Final Decision there is no mention of the earthquake hazard to the Turitea wind farm. I raised this issue in my submissions to the Board of Inquiry. In the Draft Decision the following statement is made. It is repeated in the Final Decision

Chapter 5.5: 22

Mr Alexander also described:

- earthquake hazards and faulting where he had identified two fault lines, but as both were outside the project area **fault rupture is not expected to be an issue.** (emphasis added)

Mr Alexander further states in his evidence

"The Wellington Fault is within 1 kilometre of the proposed wind farm western boundary, at the base of the Tararua Ranges."

And

"Further subsurface investigation and analysis is necessary, and is planned to be undertaken once the project is confirmed."

And

"The Northern Ohariu Fault is mapped confidently as far north as the Kahuterawa Stream as the 'distinctness'of the fault is considered to diminish (Van Dissen et al., 1999). The Kahuterawa Stream is just southwest of the site. However based on the mapped geologic outcrops and site observations, it is considered that this fault or an offset splay fault extends along the eastern border of Browns Flat and traverses northwest across the access track of the Love property through the most eastern section of the wind farm."

A proper seismic study was not done, nor has professional advice been sought from a truly independent expert. When stating the wind farm is within one kilometer of the fault line the precise proximity has not been, in my opinion, properly identified.

The Wellington fault line has an accurately recorded history with regular, very severe movements greater than 7 on the Richter Scale. The Wairarapa is a seismically active area.

There is a high risk for a wind farm with 40 story turbines with a 70 ton nacelle and 41 ton rotor (total 111 tons) perched 80 metres above ground on a slender column.

Mr Alexander in his rebuttal evidence has based his assessments on the Ministry for the Environment document "Planning for Development of Land on or Close to Active Faults" (2003), where it states no construction should occur within 20 metres of a known fault. This Ministry document applies to residential subdivision and it is simply absurd to apply it to a wind farm. The Christchurch earthquakes have alerted the entire country to seismic hazards, but apparently not the Board of Inquiry. "Fault rupture is not expected to be an issue" is a brave statement to make and is not backed up by empirical evidence. Furthermore, the claim by Mr Alexander that both fault lines are outside the project area is contradicted by him in his third statement quoted above.

This press release was included in a submission on the Draft Decision.

Seismic study for lower North Island

STACEY KIRK

Last updated 12:00 06/05/2011

An earthquake "as big as Japan" would devastate much of the lower and central North Island, if the Pacific and Australian plates were to rupture releasing all their energy, a GNS scientist says.

But a coast-to-coast seismic study of the plates will be the first time the boundary zone underneath the Wellington region has been studied in such detail. The project is being done by a team of New Zealand, United States and Japanese scientists, using equipment which GNS geophysicist and project co-ordinator Dr Stuart Henrys said would effectively provide a CAT scan of the earth's crust.

It is hoped information about the nature of the tectonic plates' activity would help prepare people for "whenever the big one hits".

"Without wanting to alarm anyone, if they ruptured and all of the built up energy was released in one go, it would be as big as the one in Japan, so yes the effects would be felt in the likes of Palmerston North and probably far further in all directions," he said. The information would be used to improve building design and help communities be better prepared.

Now, the Pacific Plate, to the east of the North Island, was being forced underneath the Australian Plate, but Dr Henrys said the two plates were not sliding past each other as they should. Rather, they were locked together in some places and it was only a matter of time before the built-up energy would be released.

"We want to understand a little more about that locking process with the plates so that before the day comes, we'll have knowledge of the type of shake that would be felt by people."

The project would see a number of "controlled earthquakes" – less than 1.0 magnitude – stretching between Paekakariki on the Kapiti Coast to Glendu Rocks in Wairarapa.

Explosives will be placed in 50-metre deep boreholes near seismographs, and scientists will be able to build a three-dimensional image of rock structures and the tectonic plate boundary beneath the lower North Island.

The earthquake-recording equipment will be deployed tomorrow.

The outcome I am seeking is that the Final Decision be withdrawn, revised and reissued to specifically state that *the wind farm is on the Wellington and Ohariu fault lines and that no one really has any idea when either could rupture.* Note that the Ohariu fault is not mentioned by name at all in the Final Decision, yet it runs through the eastern section of the wind farm. The Wellington fault is only covered off by name in the Final Decision by Ms Lucas under 'Natural Science' factors, in a general physical description of the area.

Mighty River Power will be partially sold off in the relatively near future with Turitea as an "asset" on its books It was incumbent on the Board of Inquiry to include a precautionary disclaimer to avoid potential litigation by disgruntled investors, as many hundreds of millions of dollars are at stake.

Yours sincerely,
Paul Stichbury