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11 January 2007

**Submission in respect of the resource consent application by Crest Energy Ltd for a marine turbine generation project in the Kaipara Harbour, (Under section 96 of the Resource Management Act 1991).**

**Re. Resource consent application numbers;  
CON20061607601 (NRC), 32842, 33726, 33277 (ARC) and RMA51068 (RDC)**

**Although Kaipara Forest and Bird prefers renewable energy options, we OPPOSE the application for the following reasons;**

1. Potential adverse environmental effects on the marine ecosystem of the Kaipara Harbour through the use of unproven technology;
2. Potential adverse environmental effects on marine mammals;
3. Potential adverse hydrodynamic effects on the Kaipara Harbour; and
4. Potential adverse environmental effects of the proposed cable on the seabed from the turbine site to the mouth of the Tauhoa Channel.
5. Potential adverse effects on the natural character of the coastal environment

1. Potential adverse environmental effects on the marine ecosystem of the Kaipara Harbour through the use of unproven technology;  
The Rotech tidal turbine design proposed by Crest Energy has not been field tested and has no track record in the habitat of the proposed location, or any other marine location. The scale of the proposed installation of 200 of these untested turbines with no prior substantiated experience and data, of the actual effects on the Kaipara Harbour, or any other site, is therefore entirely inappropriate.

2. Potential adverse environmental effects on marine mammals.

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The adverse impact of the propellers hitting any dolphins, small whales or large sharks passing through the turbine has not been properly assessed. This is a potential effect of low probability, but one that has a high potential impact. It could have significant adverse effects on threatened marine species using the harbour, including Maui dolphin and Great white shark (both of which are absolutely protected).

3. Potential adverse hydrodynamic effects on the Kaipara Harbour. Taking energy out of the tides can impact hydrodynamic flows. Where flows are significantly affected we are concerned that this could result in the tidal flow changing course and changes in channel location with the potential for coastal erosion and siltation in various locations.

4. Potential adverse environmental effects of the proposed cable on the seabed from the turbine site to the mouth of the Tauhoa Channel. The area near the turbine site known as the Graveyard, is constantly changing as sand waves move through the area, changing the seabed profile. The cable across this area may need to be buried deeper than proposed, to minimise on-going benthic community disturbance from repeated cable relaying.

5. Potential adverse effects on the natural character of the coastal environment. This relates in particular to the landscape and visual effects on the coastal landscape from the transmission lines and pylons where they come out of the water and path across the landscape. The infrastructure associated with the proposed Crest energy project could adversely affect high natural character coastal and rural landscape values.

### **Kaipara Forest and Bird seeks the following decision from the Consent Authorities;**

- The applicant designs a field trial to assess the impacts of the tidal turbines in situ at the Kaipara Heads site. This trial installation would need to be monitored for effects on the immediate marine ecology of the turbine site, and surrounding areas, including sand dynamics and marine mammals.
- The applicant makes the propellers more visually and audibly apparent to deter marine mammals and fish from passing through the turbines.
- The applicant put in place an on-going monitoring programme to assess the impact of the turbines on marine mammals and sharks, in particular Maui dolphin.

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- The applicant employ independent experts to assess **the long term impacts** of the tidal turbines on the hydrodynamic effects and potential siltation of the Kaipara Harbour, before undertaking construction of the project.
- The applicant increase the depth of the buried cable by an amount agreed by independent hydrological experts.
- Avoid landscapes that have a high natural character and high rural amenity values. Mitigate effects where possible.
- F&B requests a copy of all monitoring data in digital format and hard copy as soon as it becomes available. This should include all raw data so that the society is in a position to properly evaluate the data.

**Kaipara Forest and Bird wishes to be heard in support of its' submission.**

If other groups make a similar submission, we will consider presenting a joint case with them at the hearing.

Yours sincerely,  
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