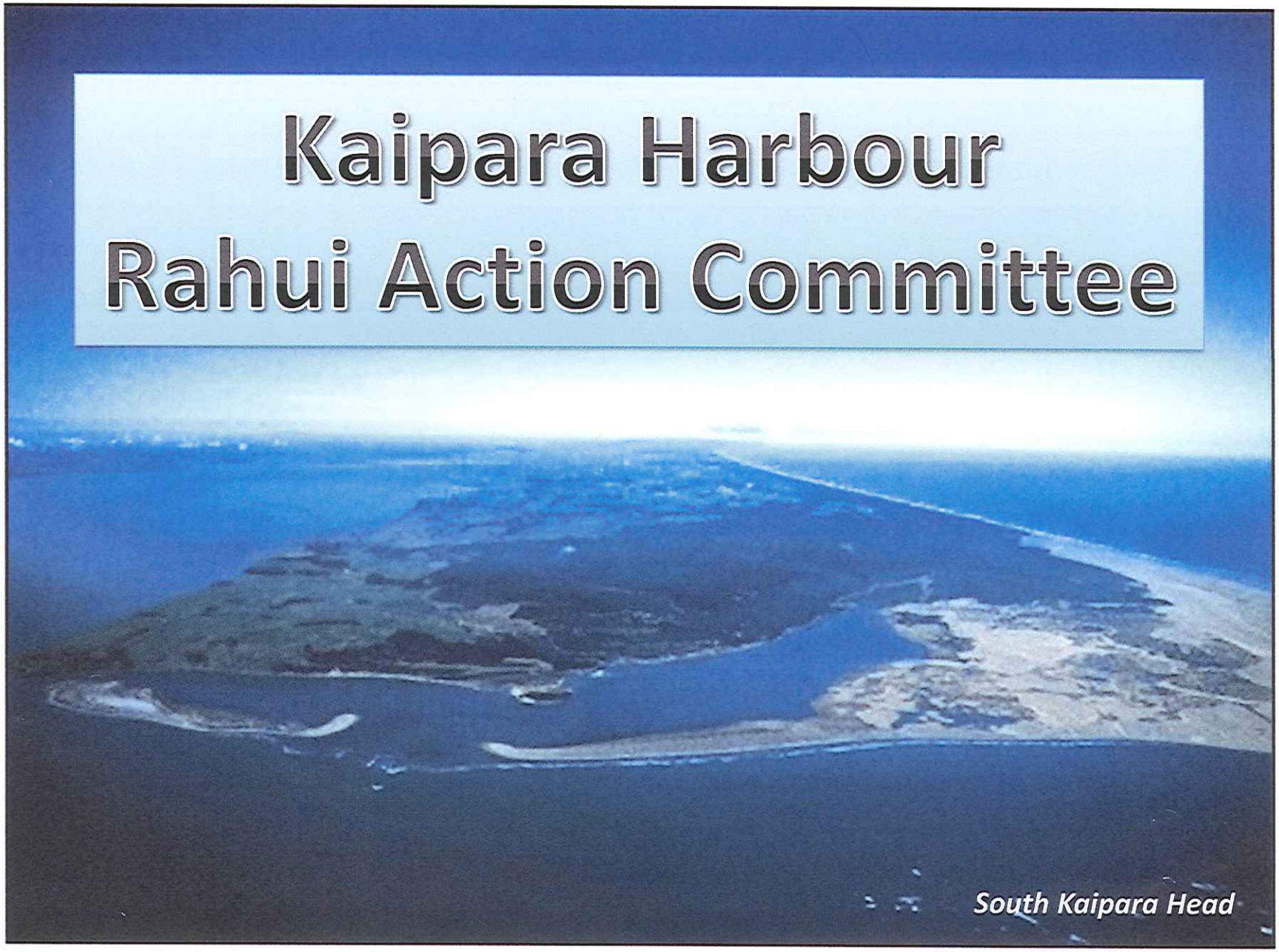
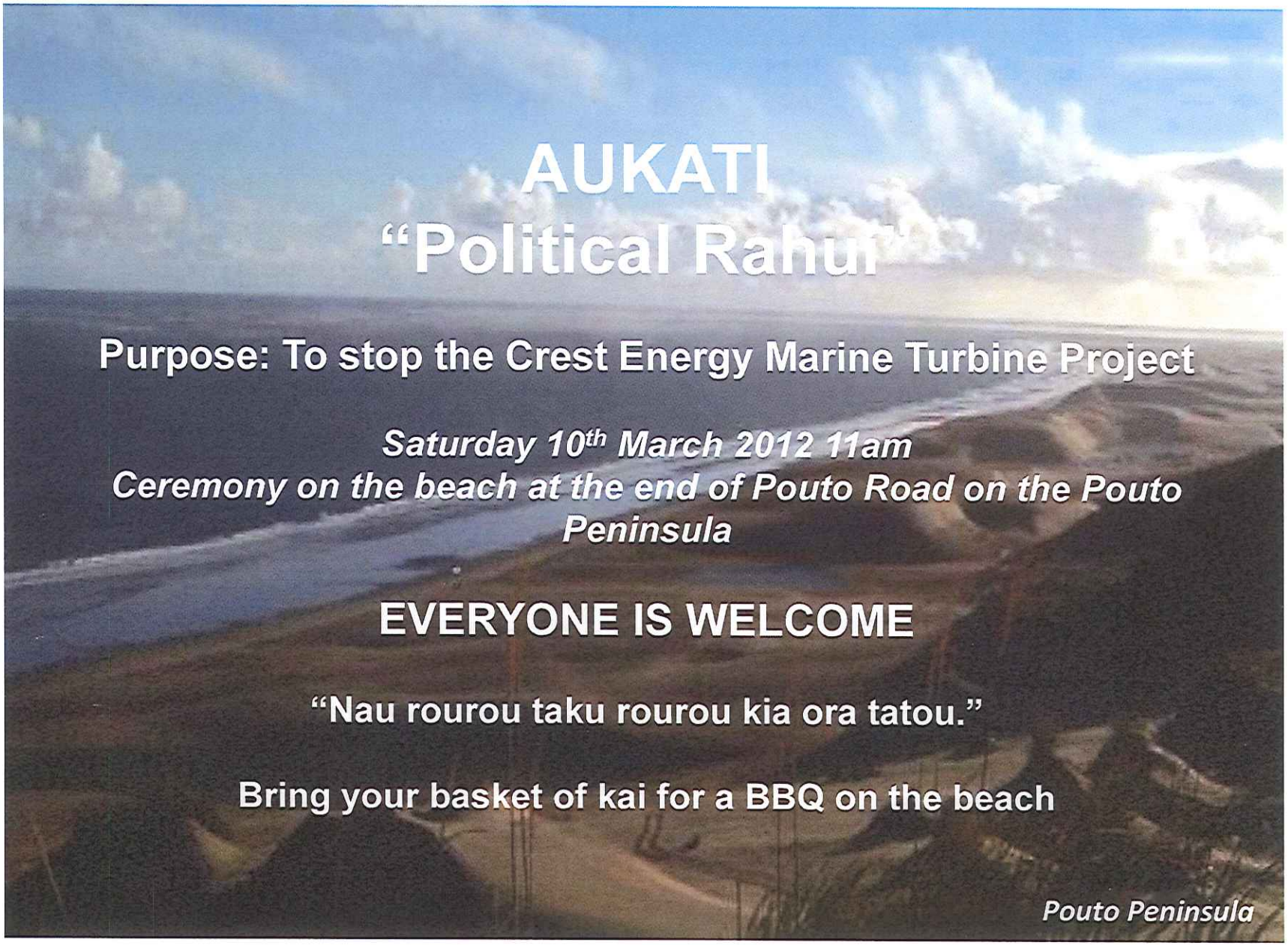
Kaipara Harbour
Rahui Action Committee




AUKATI
"Political Rahui"
Purpose: To stop the Crest Energy Marine Turbine Project
Saturday 10th March 2012 11am
Ceremony on the beach at the end of Pouto Road on the Pouto Peninsula
EVERYONE IS WELCOME
"Nau rourou taku rourou kia ora tatou."
Bring your basket of kai for a BBQ on the beach
Pouto Peninsula

TE URI O HAU
SETTLEMENT TRUST
ENVIRONS HOLDINGS LTD

Threats to Climate and Sea: Kaipara Harbour

ECO Annual Conference
Saturday 2nd July 2011

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ENVIRONS HOLDINGS LTD

Pouto
North Head Peninsula

Resource Consent Has Been Granted to:

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- Placement of 200 underwater turbines on the seafloor in the entrance to the Kaipara Harbour

- A submarine tidal powerstation of this size is totally untried and untested anywhere!

What is Planned?

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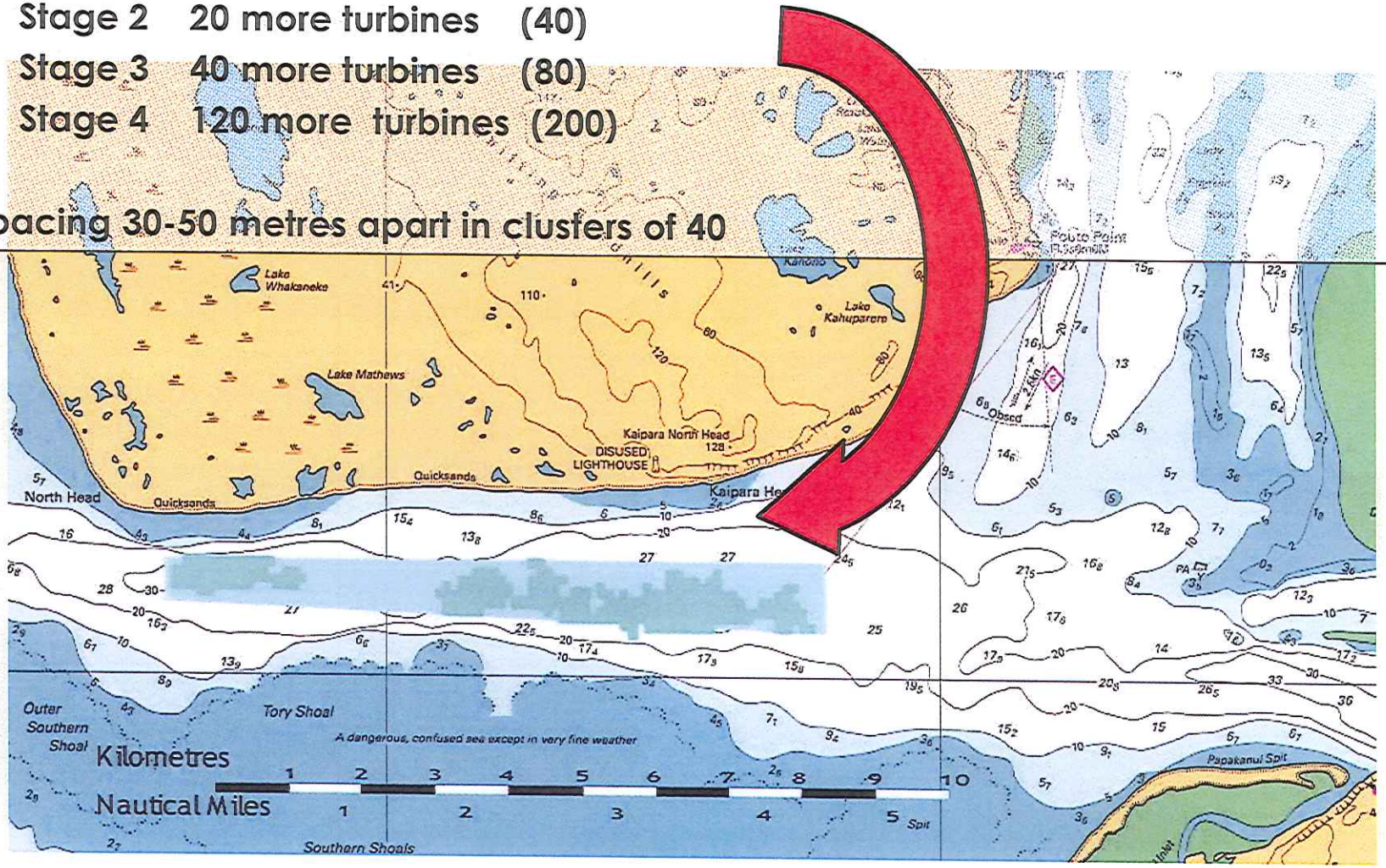
SETTLEMENT TRUST
ENVIRONS HOLDINGS LTD

- Stage 1A 3 turbines (3)
- Stage 1 17 more turbines (20)
- Stage 2 20 more turbines (40)
- Stage 3 40 more turbines (80)
- Stage 4 120 more turbines (200)

Spacing 30-50 metres apart in clusters of 40



How Submarine Turbines Look

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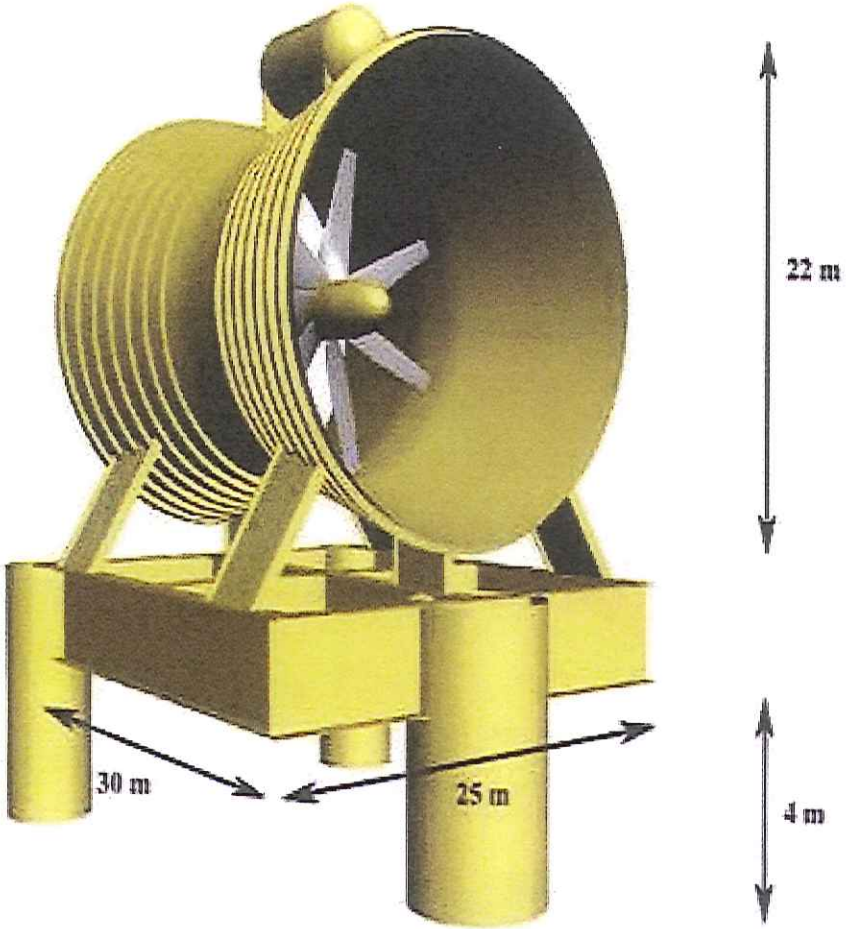
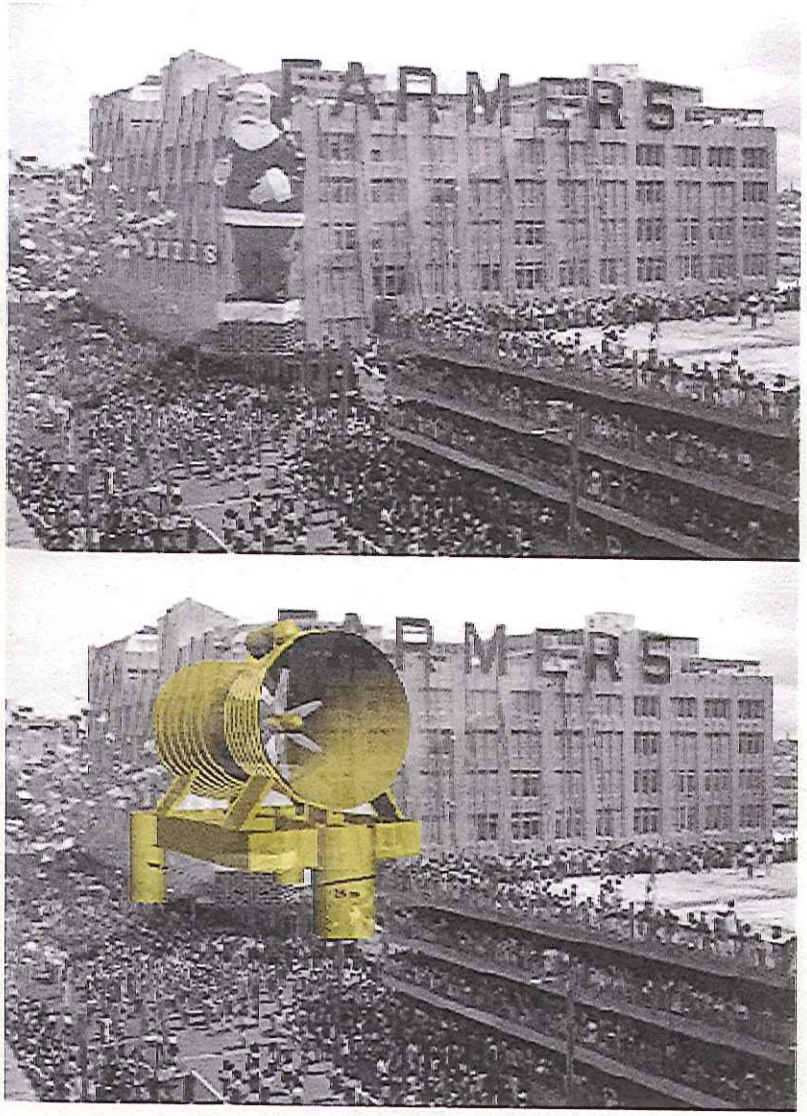
Artist impression courtesy RTT Rotec Tidal Turbine





Artists Impression of Powerstation

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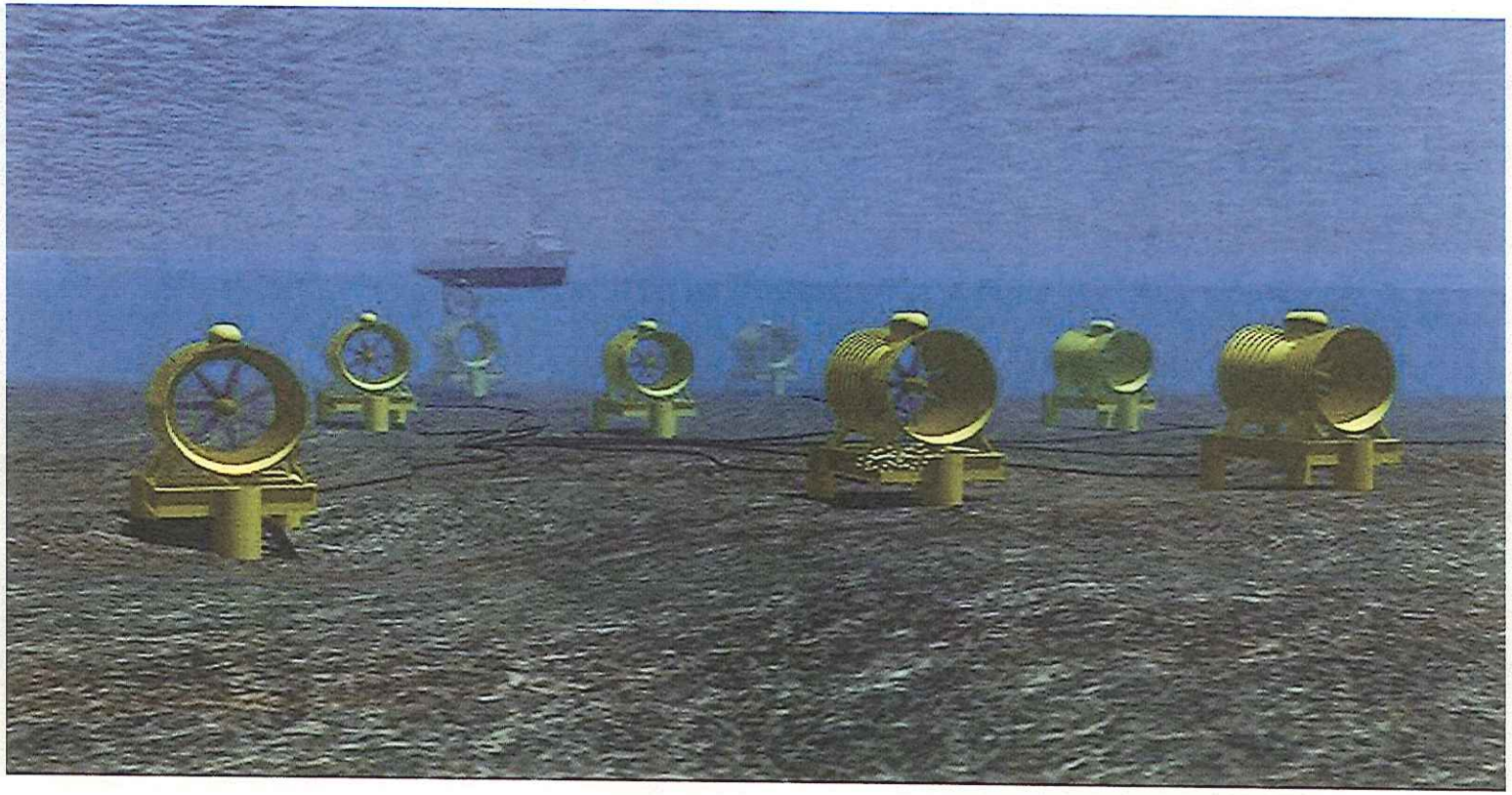

The Kaipara is ALREADY Impacted

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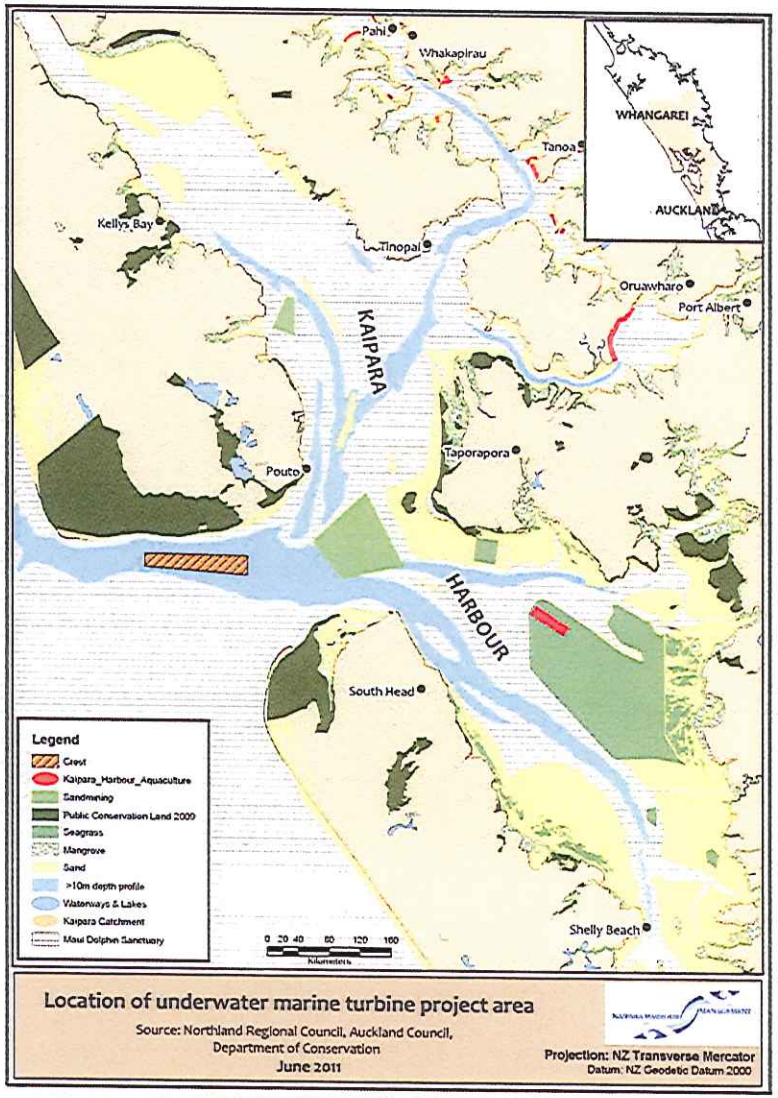
ENVIRONS HOLDINGS LTD

Cumulative effects of:

- Sandmining
- Commercial fishing
- Recreational fishing
- Multiple land-based stressors
- Invasive species & disease
- Coastal Development
- Climate Change
- Deforestation



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What are we risking now?

Critcally Endangered Maui Dolphin

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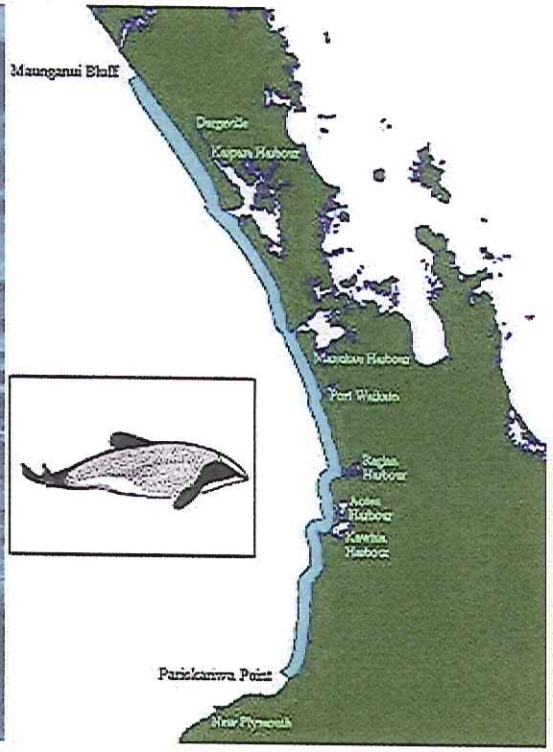

Kaipara's Important Marine Biodiversity

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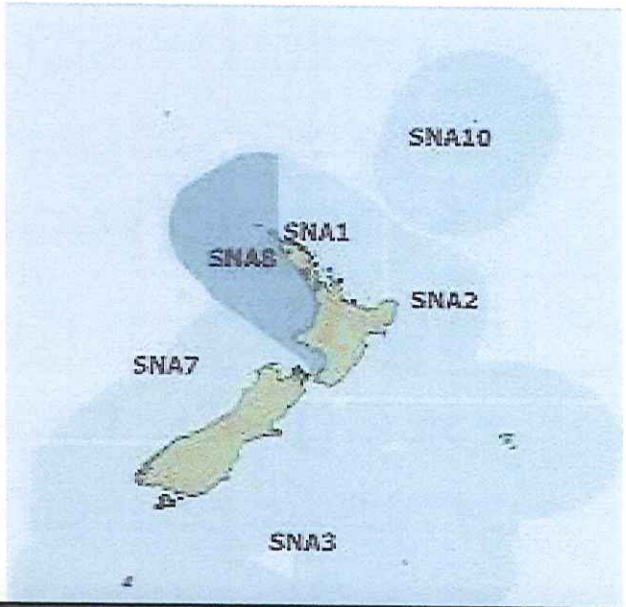
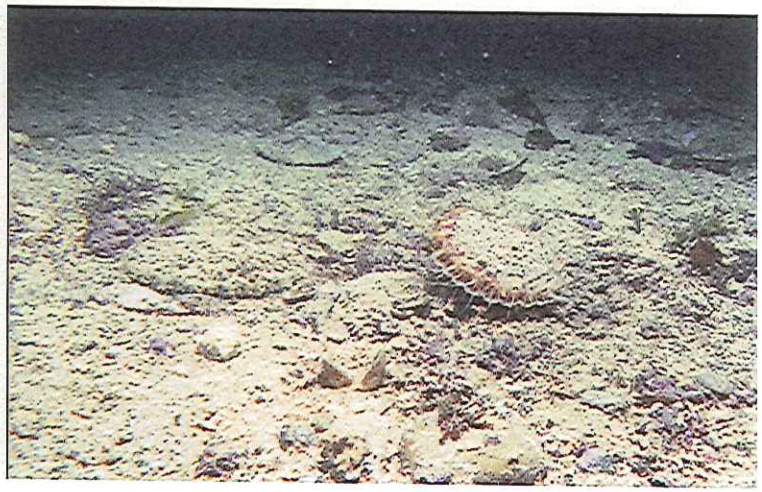
- Sharks – habitat and nursery
- Skates and rays – habitat and nursery
- Snapper-nursery & spawning grounds
- Trevally, Gurnard, Mullet, Flounder
- Dolphins & Orca home range
- Tuna & inganga



Kaipara's Important Marine Biodiversity

- Shellfish – scallop, greenlipped mussel, pipi, cockle, pupu, toheroa, tuatua
- Significant marine ecosystems – seagrass, mangroves, saltmarsh, mudflats, sandflats, dunelands
- Significant seabird habitat – feeding & breeding



Customary

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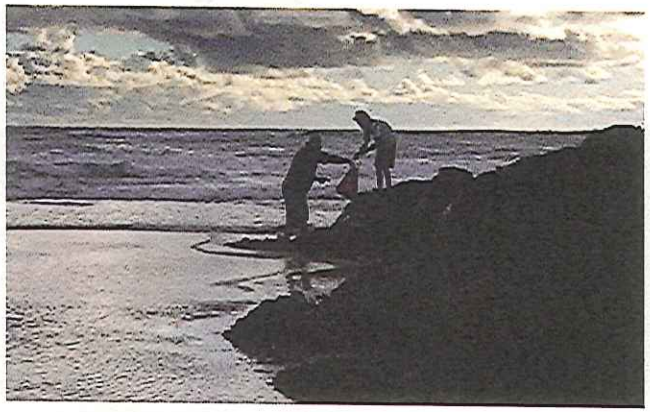
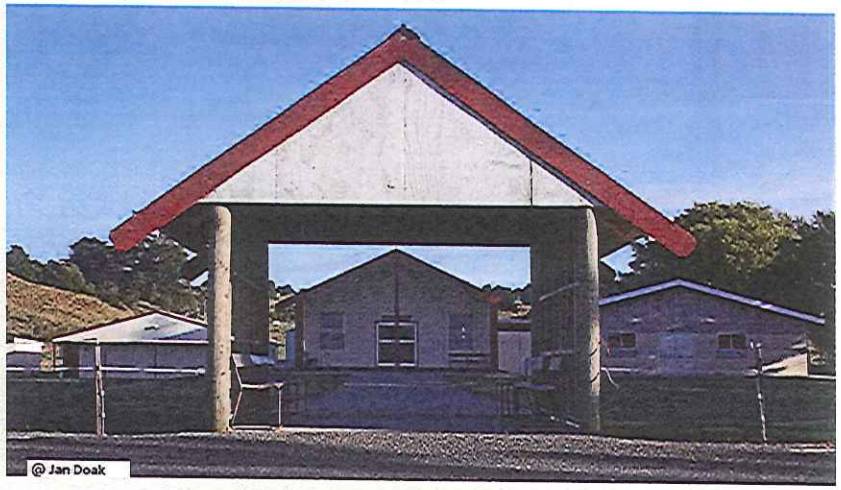
- Fishery
- RMA process
- Kaitiakitanga
- Rangatiratanga
- Deed of Settlement
- Statutory Acknowledgments





Promote integration

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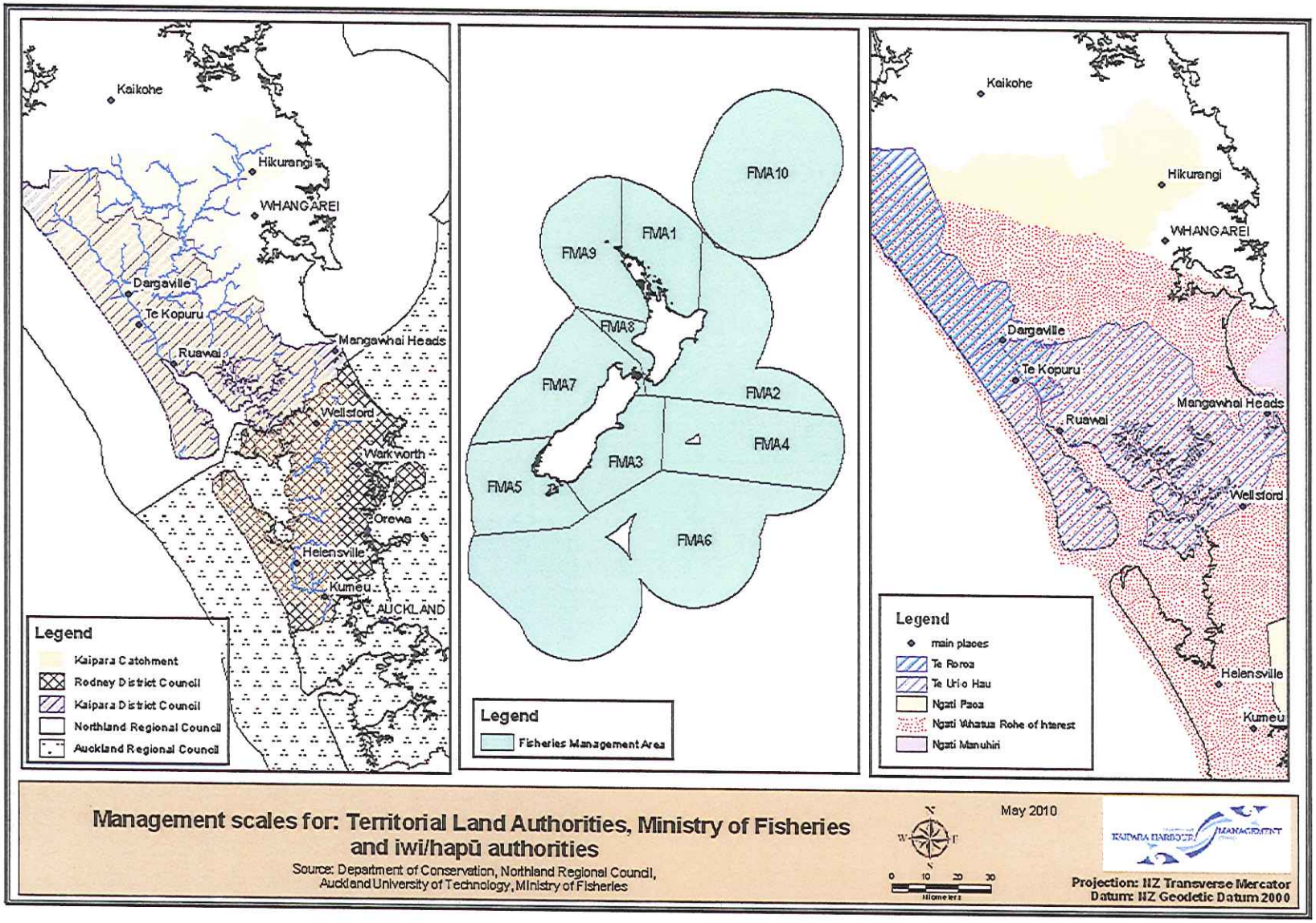

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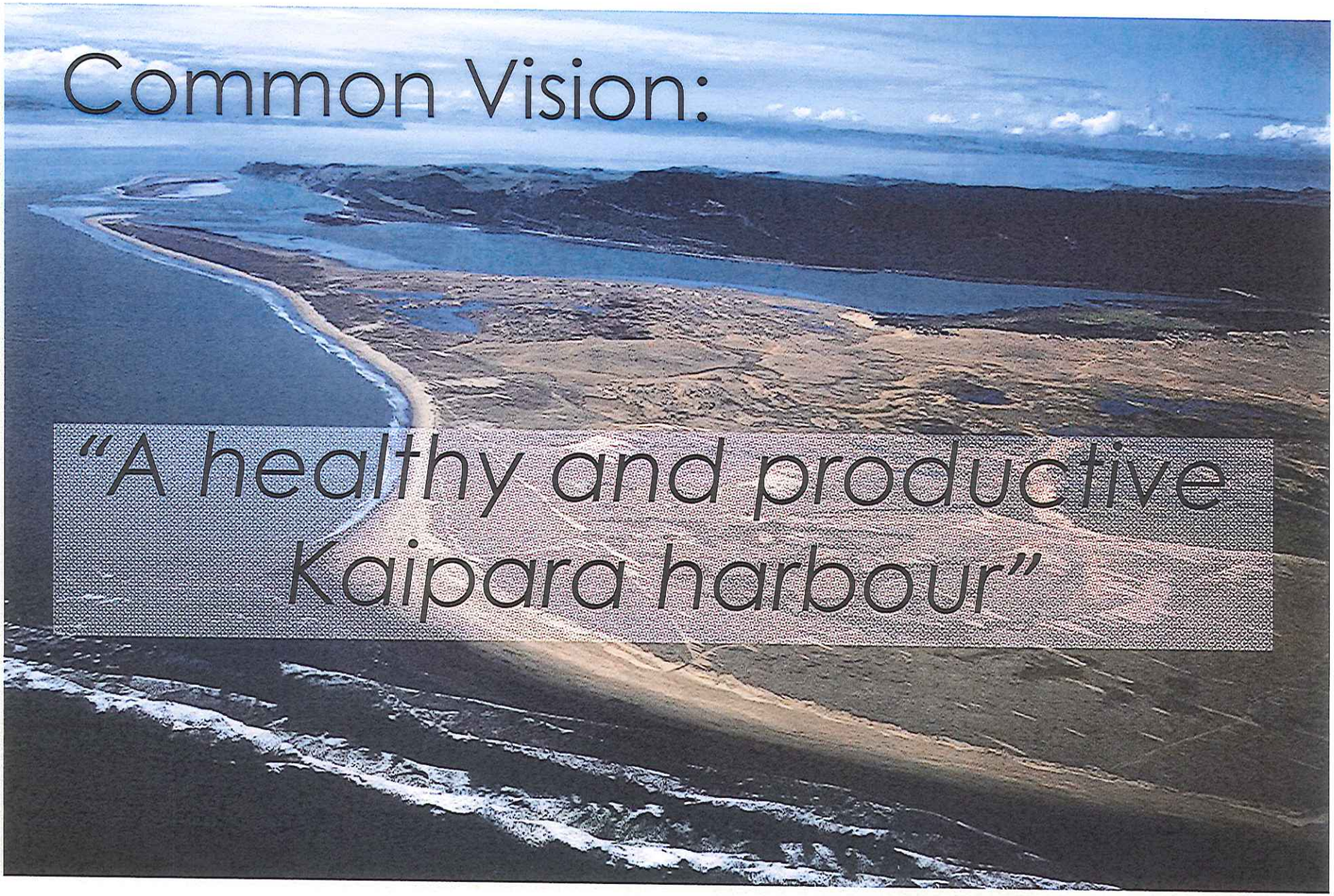
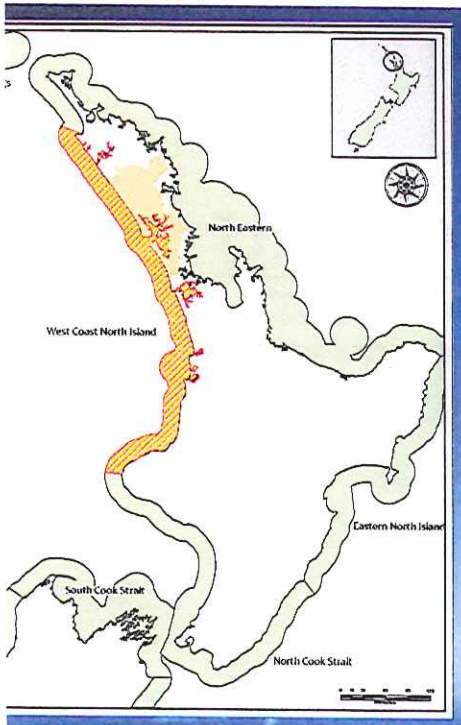
The World of Kaipara

Information Review & Gap Analysis

www. kaiparaharbour.net.nz

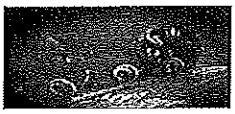

Common Vision:
"A healthy and productive Kaipara harbour"



Kaipara Harbour

TE URI O HAU
SETTLEMENT TRUST

ENVIRONS HOLDINGS LTD
Level 3, 3-5 Hunt Street, PO Box 657 Whangarei
P: 09 4389 316, F: 09 4389 318, E:
environs@uriohau.co.nz



2nd June 2011

PRESS RELEASE

WAIKARETU MARAE, POUTO HUI A IWI
29th May 2011

The hui at Waikaretu Marae to consider placing a rahui (ban) over the area where Crest Energy plan to install turbines saw a large turnout and included leaders such as Northland Regional Council member Graeme Ramsey, Labour Party MP Kelvin Davis and past chairman of the Ngapuhi Runanga, Rudy Taylor.

Local kaumatua Ben Hita focused on the initial discussions with Crest Energy early in 2006 to place 200 water powered turbines in the mouth of the Kaipara and advised that "the iwi response in 2006 was a resounding no".

Ben de Thierry from Oruawharo Marae and Richard Nahi from Puatahi Marae provided feedback from the three public meetings that were held at Dargaville 7th March, Wellsford 11th April and Helensville 12th April 2011 to discuss the Crest Energy Proposal.

Resolutions drawn from the three public meetings reported that participants were overwhelming against the Crest proposal and wanted the Crest proposal stopped.

Questions during the meeting included;

- what is a rahui?
- if a rahui was put down, how long would it last?
- how would the rahui be policed?
- would people be excluded from fishing in the graveyard?

Explanations were provided by facilitator Mikaera Miru to the different types of rahui and their application. "Basically, the rahui is a means of prohibiting a specific human activity from occurring or continuing" and went on to explain that a rahui:

- might be directed at a group of people or it might be focused upon a single individual;
- there might be a visible sign, such as a post, to let people know that a rahui has been placed.
- There may be a special ceremony to introduce it, or it may be simply announced or proclaimed.
- Similarly its conclusion might be marked by ritually pulling down something- the post, or the leaves or cloth tied around it or by an appropriate announcement.

Mikaera advised that the most common types of rahui are in relation to a drowning in a particular area and for the conservation of a particular taonga e.g food source or

species. He also acknowledges another type that is referred to as the political rahui or as the "punitive rahui" known as "aukati". This is the no trespass rahui.

The placement of rahui is provided for in legislation ie, the Resource Management Act 1991 where it is acknowledged as a matter of National Importance in section 6(e) where it states that the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga shall be recognized and provided for.

The meeting decided to take the following actions:

1. To place an "aukati" over the area that Crest Energy has been given resource consent to place their 200 turbines in the mouth of the Kaipara. This is to stop Crest Energy from entering into the area to commence any development. People will "not" be excluded from going anywhere in the mouth of the harbour to catch fish. In other words the "aukati" is a prohibition upon Crest Energy only.

2. An action committee will be established to drive the aukati placement, public consultation, and the flotilla of boats. This is a matter that affects everyone so the wider community will need to be involved.

Iwi throughout New Zealand are watching very carefully at what happens here in the Kaipara. As kaitiaki they have a responsibility to protect their harbours from exploitation so that they can be preserved for the coming generations.

Any enquiries please contact:
Mikaera Miru 094597001

Kaitiaki o Kaimātakitaki? (Guardian or Spectator?)

Case Study: Te Tiriti o Waitangi & the Kaipara Harbour Tidal Turbine Project

Maori have a saying, *"korero kanohi ki te kanohi"* (speaking face to face). It incorporates more than physically being present, but also having the ability to empathise. I have begun to understand the value of this when meeting face to face with the people of Te Uri o Hau. This Ngati Whatua hapu has faced, and continues to face, an uphill battle to protect their harbour from a tidal turbine development project.

This essay explores whether te Tiriti o Waitangi ("te Tiriti") is being upheld to respect Maori as kaitiaki (guardians) of the Kaipara harbour. First, the extent of the tidal tubine project will be described. Then Te Uri o Hau will be introduced, and why they are concerned with the project. This will be followed by an analysis of the obligations owed to Te Uri o Hau under te Tiriti and the Resource Management Act 1991, and to what extent those obligations have been honoured. Consideration will then be given to what options the hapu now has subsequent to the Environment Court and Minister of the Environment deciding in favour for the project.

My thesis is that the developers (Crest Energy), the resource consent authorities (the Northland Regional Council and Environment Court), and the Crown (the New Zealand Government) have *all* failed to meaningfully speak face-to-face. They have taken (or omitted) actions that will adversely affect both TUOH and the Kaipara region. Furthermore, Maori nationwide are concerned that precedents set in this case will be used to assist decision making in the similar future endevours.[1]

I The Project

The Minister of the Environment, Kate Wilkinson has hailed the Kaipara harbour tidal turbine project as "the first large-scale commercial approval for tidal power generation".[2] Tidal turbines operate similarly to wind turbines; however there are some added benefits. Unlike wind, it is possibly to forecast the tides and therefore the level of generation and time of day for the production of power. Also, seawater is 830 times denser than air, so the same velocity generates several hundred times more power in water than in air. Furthermore, tidal turbines are totally submerged, invisible and silent.[3] Two other marine energy projects are currently under development in New Zealand in the Cook Strait and Waitara River mouth in Taranaki. Both are small-scale projects consisting of only one turbine.[4]

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[1] Angeline Ngahina Greensill "Inside The Resource Management Act: A Tainui Case Study" (MSocSc Thesis, University of Waikato, 2010) at 23.
[2] Kate Wilkinson "Kaipara Harbour Tidal Turbine Project Approved" (press release, 17 March 2011).
[3] Crest Energy "Home" (2011) Crest Energy <www.crest-energy.com>.
[4] Greater Wellington Regional Council "[Neptune Power] Non-notified Resource Consent Application

A New Zealand company, Crest Energy ("Crest"), has received resource consent for 35 years (the longest resource consent can be granted for) to construct three 25 metre high turbines, eventually building up to 200 turbines. The plan is to install turbines 30 metres deep along a 10 kilometre stretch of the main channel into the Kaipara. The Kaipara harbour is the most appropriate harbour as it has the greatest tidal flows of any New Zealand harbour. The harbour covers 900 square kilometres, with 3,000 kilometres of shoreline extending 60 kilometres north to south.[5] The harbour is rarely used for commercial shipping due to the dangerous tides and sand bars at the mouth of the harbour. This turbine project would power quarter of a million homes, which is enough electricity to power the whole region from Albany to Cape Reinga.[6] It is predicted to cost NZ$600 million, offset by modest but growing revenue from year four.

II Te Uri O Hau

The Kaipara harbour is on the north-western side of the North Island. Maori have settled around the Kaipara harbour for hundreds of years as the waterways provided, and still do provide, Maori with resources and a means of travelling between marae.[7] Most marae in the area are associated with the Ngati Whatua hapu (subtribe) of Te Uri o Hau ("TUOH") and Te Taou.[8] TUOH have maintained control of the Northern Kaipara and Te Taou the South. The turbine project is predominantly in the northern area, hence TUOH have taken on the onus to prevent the project from proceeding.

Environs Holdings Ltd, the environmental subsidiary of TUOH Settlement Trust, were given the mandate to oppose the turbine project at the Northland Regional Council hearing stage and at the Environment Court on behalf of TUOH. When the people of TUOH were first made aware of Crest's plans the tribal council responded with a "resounding no".[9] This continues to be their response for two main reasons: environmental and spiritual.

A Environmental

There is a strong interconnectedness between Maori and the environment. The environment is seen as a gift necessitating reciprocity by humans to maintain

---

Report and Decision" (GWRC, Wellington, 2008); BG Chamberlain "Consents and Regulatory Committee Notice of Meeting" (TRC, Stratford, 2010) at 13.

[5] F Fahy, P Irving and S. John *Coastal Resource Inventory First Order Survey* (Department of Conservation, 1990).

[6] Crest Energy, above n 3.

[7] Claudia Orange "Northland Places: Upper Kaipara Harbour" (2009) Te Ara: The Encyclopaedia of New Zealand <www.teara.govt.nz/>.

[8] Rawiri Taonui "Ngati Whatua: The Tribes of Ngati Whatua" (2009) Te Ara: The Encyclopaedia of New Zealand <www.teara.govt.nz/>.

[9] Interview with Mikaera Miru and Alycsse Ranger, Te Uri o Hau Settlement Trust (the author, Whangarei, 28 September 2011).

sustainability, as opposed to being a resource for human exploitation.[10] The governing principle is kaitiakitanga (guardainship or trusteeship), and TUOH are kaitiaki of the Kaipara. This status has been affirmed by Statutory Acknowledgement.[11] The harbour is a primary source of life and wellbeing, providing kai-moana (seafood) and communication routes. This is evident in the placement of marae at the headlands and on the foreshores of the harbour.[12]

A report in June 2011 described the Kaipara harbour as nearing environmental crisis. The harbour is "in significant decline", with decreasing fish and shellfish stocks, and declining water quality with "99 per cent of the rivers in the catchment polluted".[13] TUOH are concerned that an already fragile environment could suffer more if the turbines go ahead. This is not a question about TUOH saying "not in my backyard" it is about "the Kaipara Harbour ecology not being robust enough to absorb the risks associated with an experimental energy project".[14]

Kai-moana is an important part of life for the TUOH people. In 2009 the National Institute of Water and Atmospheric Research ("NIWA") found that the Kaipara harbour is the breeding ground for 98 per cent of west coast snapper.[15] Snapper is New Zealand's largest recreational fishery, and is also a large commercial fishery with an annual export value of $32 million. Dr Mark Morrison who conducted the research stated, "any negative impacts on the production of juvenile fish in the harbour will cascade through into a much larger coastal ecosystem, ultimately having a huge effect on the abundance of fish over a 700-kilometre coastline".[16] Other fish stocks including mullet, flounder, gurnard and school sharks also use the harbour as a suitable breeding ground and habitat for juvenile fish.[17] Turbines on the seafloor would harm those grounds: disturbing the sediment, eroding the shoreline, and generating electromagnetic waves. This is also the home of the critically endangered Maui dolphins, of which there are less than 150 left in the wild.[18]

TUOH are not being given the opportunity as kaitiaki to care for their harbour. Ben Hita, a TUOH elder, is concerned: "We'll end up with a harbour that's not functioning, not feeding people".[19] Despite some scientists claiming that the risk to the habitat and fish stocks is low, the fact is they really don't know. Essentially this is an untested activity at the proposed scale. There is no empirical evidence that environmental effects of a 200 marine turbine project will be acceptable or minor. Crest proposes to monitor these

[10] M Roberts and others "Kaitiakitanga: Maori perspectives on conservation" 2 *PCB* 7 at 14.
[11] Te Uri O Hau Claims Settlment Act, s59.
[12] Ibid, Schedule 9.
[13] "Kaipara facing 'ecological crisis'" *The New Zealand Herald* (New Zealand, 24 June 2011).
[14] "Crest Energy: The Great Kaipara Harbour" (2011) Te Uri o Hau Settlement Trust <www.uriohau.com>.
[15] Mark Morrison "Baby snapper all grew up in one big nursery" (2009) NIWA <www.niwa.co.nz>.
[16] Ibid.
[17] Fahy et al, above n 5.
[18] Interview with Miru and Ranger, above n 9.
[19] Interview with Ben Hita, Te Uri o Hau Elder (Julian Wilcox, Native Affairs, Maori TV, 25 July 2011).

unknown effects, but TUOH argue some environmental effects might be irreversible.[20]

B Spiritual

The Kaipara harbour is a sacred area for TUOH. It is where Ngati Whatua's waka, Mahuhu, arrived from Polynesia.[21] Rongomai, who captained the waka, settled in Taporapora, an island that then existed inside the Kaipara Heads. Rongomai took a wife from the people of Taporapora. He then went to live further north at Manukapua and at Okahukura. On one occasion Rongomai neglected some uru-uru-whenua ceremonies (ceremonies to preserve the title to the land). He then drowned near the mouth of the Kaipara harbour. Rongomai's death was attributed to the jealousy of his brothers-in-law and their acts of witchcraft. Consequently, some of Rongomai's people left Taporapora. Then came a great tupuhi (storm), supposedly by the witchcraft of Rongomai's people in revenge for their father's death. During the great storm Taporapora was completely washed away. Only the sandbanks at low tide mark the site of this former island. The people, their houses, and ancestral belongings were washed away.[22]

These historic events mean that the site is a wahi tapu (sacred place) and urupa (burial ground). The tidal turbine project will exclude access to these parts of the Harbour through the proposed navigation exclusion zone. Such exclusion impinges on TUOH's access to a taonga and in turn adversely affects their mana.[23] The sense of estrangement from the total resource is an issue itself, as well as the practical effects such as not being able to exercise kaitiakitanga.

III Legal Obligations & Breaches

The tidal turbine project has undergone a four-year consent process. In July 2006 Crest applied for the necessary resource consents through the Northland Regional Council ("NRC"). Crest then withdrew its original applications and made revised applications in July 2007. A hearing was held by the Northland Regional Council in May 2008 and recommended to the Minister of Conservation to grant consent under certain conditions in August 2008.[24] In September 2008 two parties, including Environs, appealed to the Environment Court requesting the project be declined in its entirety. Two further appeals centred on consent conditions rather than the whole project. In June 2009 the Environment Court reconsidered the Council's decision and in December 2009 they indicated a positive recommendation for the project in their interim decision. [25] A year of

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[20] DR Clay "Closing Submissions Of Counsel On Behalf Of Environs Holdings Limited" (17 January 2011) at [5]-[7].
[21] Interview with Miru and Ranger, above n 9.
[22] Ibid; Geo Graham "The ancestral canoe of Ngati-Whatua (Kaipara)" 48(192) *JPS* 186 at 187-188.
[23] Clay, above n 20, at [13].
[24] Garry Venus, "Crest Energy Kaipara Harbour Marine Turbine Project" (paper presented to RMLA Auckland Branch Seminar, November 2009).
[25] *Crest Energy Kaipara Ltd & Ors v Northland (Interim Decision)* ENC Auckland A132/2009, December

negotiations and mediations ensued between various parties to work out the finer issues. The project gained resource consent in February 2011 from the Environment Court and was given final approval by the Minister of Conservation, Kate Wilkinson, 17 March 2011.[26]

Throughout this process there are legal obligations that the Crown has established under te Tiriti, legislation, and case precedent, which must be adhered to. This essay focuses on three obligations: consultation, providing for Maori values in the resource consent process, and the Crown's active protection of Maori interests.

A Consultation

There is no statutory requirement in the Resource Management Act 1991 ("RMA") for a resource consent applicant, such as Crest, to make contact with tangata whenua. However the Courts have said that applicants should consult with tangata whenua when their applications for resource consents may affect Maori taonga (treasures) or kaitiakitanga.[27] Consultation is also seen as "good practice" and a consent authority may require information from the applicant about what consultation, if any, they carried out with Maori.[28] There are no set procedures in the RMA to guide the consultation process, but there are some guidelines from the Courts.

Justice McGechan well knowingly defined consultation in *Air New Zealand Ltd v Wellington International Airport Ltd*:[29]

> Consultation must be allowed sufficient time, and genuine effort must be made...to 'consult' is not merely to tell or present. Nor, at the other extreme, is it to agree...I cannot improve on the description attempt, which I made in *West Coast United Council v Prebble* at p405:
>
> > 'Consulting involves the statement of a proposal not yet finally decided upon listening to what others have to say, considering their responses and then deciding what will be done'.

Crest claim to have had the philosophy to work with tangata whenua from the outset.[30] Crest held over 100 consultative meetings over five years with interested parties. Judge Newhook of the Environment Court noted in his December 2009 Interim Decision that "attempts by Crest to consult were extensive, considerable and meaningful".[31] An example of this was as a result of the consultation processes Crest withdrawing its July

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2009.

[26] Wilkinson, above n 2.

[27] *Paihia & District Citizens' Assn v Northern Regional Council & Anor* EnvC Auckland A77/95.

[28] Resource Management Act 1991, s92.

[29] *Air New Zealand Ltd v Wellington International Airport Ltd* HC Wellington CP 403/91, 6 January 1992. Approved on appeal *Wellington International Airport Ltd v Air New Zealand Ltd* [1993] 1 NZLR 671.

[30] Venus, above n 24.

[31] *Crest Energy Kaipara Ltd & Ors v Northland (Interim Decision),* above n 25, at [198].

2006 consent applications and making revised applications in July 2007. The revised application included reducing the main sea floor cabling from 33 to 7 kilometres, increasing the clearance above the turbines from 5 to 7 meters, and reducing the area covered by the turbines from 1,300 to 300 hectares. In addition the revised application was for a staged development with detailed monitoring at each stage rather than starting with 200 turbines upfront.

On the face of it, it may seem Crest have appropriately consulted with TUOH. However, Hita believes "they haven't done enough consultation".[32] Paki Kena of TUOH stated that Crest was "informing the iwi, not consulting with them". The consultation definition above requires Crest to listen and respond to concerns and to keep an open mind to change or even start again. Ms Simons, counsel for Crest at the NRC hearing in May 2008, argued that while careful consideration had been made "there was still uncertainty, in her view, about what adverse effects have been identified by Tangata Whenua".[33] If counsel for Crest was still unsure in 2008 what the adverse affects to TUOH would be then clearly the changes Crest made to their application were not in direct response to consultation with TUOH. The consultation was merely token and protests fell on deaf ears.

Consultation also requires that enough information be provided to the party being consulted. Justice Cartwright stated "consultation will be successful only when those consulted themselves have adequate information on which to signify reasoned consent".[34] Mikaera Miru, TUOH Settlement Trust Kaiarahi, argues that Crest has given no straight answers, "every time we turned around the goal posts were changing". [35] Not all of the hapu's questions have been answered and vital details of the project, such as the turbines' design, have yet to be fleshed out. This dissuades the consultation from having any meaning.

Consultation itself can also be biased towards the interest of developers as opposed to Maori. Developers, such as Crest, have more time, money, resources, staff and skill to develop a comprehensive proposal. They are more familiar with the western environmental ethic and resource consent process.[36] Furthermore, even if consultation is framed as a clash between different, but *equally* valid, interests, the eventual compromise is often closer to the underlying interests of the developer, as opposed to the other side who is usually advocating for no development to occur at all.[37] In this case TUOH are

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[32] Interview with Hita, above n 19.
[33] Northland Regional Council "Report, Decision and Recommendation of the Council" (NRC Application No.CON20061607601, Whangarei, 26-30 May 2008) at 13.
[34] *Worldwide Leisure Lt v Symphony Group Ltd* [1995] NZAR 177 at 189.
[35] Interview with Mikaera Miru, Te Uri o Hau Kaiarahi (Julian Wilcox, Native Affairs, Maori TV, 25 July 2011).
[36] Stuart R Waddel "Restoring Kaitiakitanga: Evaluating the Recognition of Indigenous Rights in Assessment of Environmental Effects" (Report for MSc, Lincoln University, 1998) at 27.
[37] Douglas J Amy quoted in Kate Mitcalfe "Fronting Up Mediation under the Resource Management Act 1991" (2001) 5 *NZJEL* 195 at 213.

against Crest's project in its entirety, but Crest do not see it as an option to completely abandon their project.

B Resource Consent Process

Since there is no statutory requirement for consultation, the consent process is an important part of recognising indigenous rights. The resource consent process incorporates clear commitments to Maori values and te Tiriti in the RMA's purposes and principles. Decision makers must:

> s6(e): recognise and provide for, as a matter of national importance, "the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wahi tapu, and other taonga";
> s7(a): "have particular regard to kaitiakitanga"; and
> s8: "take into account the principles of the Treaty of Waitangi".

The NRC and Environment Court both claim to have adhered to these RMA provisions and taken into account TUOH's spiritual and environmental concerns.

The NRC's hearing report stated that under section 6 "the Hearing Committee recognises TUOH as kaitiaki and has provided for this by requiring three representatives of TUOH on a 'Kaipara Harbour Environment Trust' as a consent condition."[38] The Trust was offered in recognition of financial mitigation issues which TUOH raised. The Trust shall initially comprise of eight members, with the other five representative members being someone from Crest, the Pouto local community, the Kaipara recreational fishing community, the commercial fishing community, and the regional business development community. It will be funded $100,000 per year from Stage One and more once the full turbine project is running. The objective of the Trust is to distribute funds to "improve the environmental health of the Kaipara Harbour, [and] provide associated socio-economic opportunities."[39]

TUOH argue this is not good enough. First, the funding is insufficient to cover a project where the environmental impacts are unknown and could be irreversable. Secondly, the Trust is established on the terms defined by Crest undermining the Maori relationship with their "ancestral lands, water, sites, wahi tapu, and other taonga". With only three representatives on the Trust TUOH would not have a majority to effectively exercise kaitiakitanga. The Maori voices on the Trust may be ignored by the other five members.

Most importantly the establishment of a Trust fails to address TUOH's spiritual concerns. This is inconsistent with the case of *Aqua King Ltd (Anakoha Bay) v Marlborough District Council* where marine farming proposal was declined due to the effects on the

[38] Northland Regional Council, above n 33, at 29.
[39] Venus, above n 24.

ability of iwi to access special parts of the coastal marine area. The Court stated:[40]

> For we have concluded that the effect of this marine farm on this site will have a major adverse effect on the iwi which cannot be avoided... From our assessment of the evidence [the proposed consent condition to allow iwi to continue to catch kaimoana] is not enough. It is the sense of alienation from the total resource which is in issue, as well as the effects of the practicalities of that alienation.

Hence, the establishment of a Trust does not fulfil the requirements of section 6 of the RMA.

The NRC report goes on to state that the Hearing Committee had regard to section 7 and 8 of the RMA. However, the sweeping statements in the report are not backed up with *how* the Hearing Committee actually took these principles into account. The courts have found that when there is a duty to 'take into account' the decision maker must "effect a balance between the matters at issue and be able to show he or she has done so".[41] The Environment Court also reports to have considered these same principles and concluded Maori interests are important, but:[42]

> In our ultimate weighting of matters, and in light of the significant advances in the construction of the proposed conditions and Environmental Management Plan, we have found that other matters outweigh them.

The NRC and Environment Court has all the arbitrary power to decide whether they have fulfilled Maori principles. Maori have no power to enforce their tikanga or laws on others, and are left in "an unenviable position of being unable to fulfil cultural obligations of kaitiakitanga".[43] Stuart Waddel argues, "as Kaitiakitanga is respected within tikanga Maori, a governing authority cannot expect to define it, nor can they be expected to show how they have had particular regard to kaitiakitanga."[44] If they did, this would undermine tangata whenua rights to speak and define their own tikanga.

The acknowledgment by the NRC and Environment Court is token. Maori values and te Tiriti are recognised but then ignored through the manipulation of legislation. Maori academic, Sir Mason Durie, states, "some provisions [have] dual objectives, either intentionally or by implication... the RMA provides for the recognition of a Maori environmental ethic but limits the application of that ethic by an over-riding requirement for sustainable development."[45] While legislation may appear to *give* Maori recognition and rights, it is all on the Government's terms; therefore it is *taking away* from Maori.

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[40] *Aqua King Ltd (Anakoha Bay) v Marlborough District Council* EnvC Wellington W71/97.
[41] *Haddon v Auckland Regional Council* [1994] NZRMA 49, at 61.
[42] *Crest Energy Kaipara Ltd & Ors v Northland (Final Decision)* [2011] EnvC 26 at [22].
[43] Greensill, above n 1, at 23.
[44] Waddel, above n 36, at 25-26.
[45] Mason Durie "Law Reform And Indigeneity Session: Maori-Specific Provisions In Legislation" (paper presented at Australian Law Reform Agencies Conference, Wellington, 15 April 2004) at 13.

C Crown's Active Protection

The landmark case of *New Zealand Maori Council v Attorney General (1987)* defined the principles of te Tiriti that govern the relationship between Maori and the Crown. A key principle is that of partnership, which includes acting reasonably, in the utmost good faith, and actively protect Maori interests. In that case President Cooke stated, "The duty of the Crown is not merely passive but extends to active protection of Maori people in the use of their lands and waters to the fullest extent practicable."[46] This was principle was specifically acknowledged in the Crowns settlement with TUOH in 2002, "the Crown also acknowledges that it did not ensure that there was sufficient protection from alienation for the few reserves that were provided. This failure … was a breach of [te Tiriti] and its principles".[47] TUOH's settlement included further acknowledgements for past breaches by the Crown, an apology, the return of some land, and $15.5 million to help with welfare, unemployment, education and health.

The Crown's protection was not evident during the tidal turbine consent process. Minister of Conservation, Kate Wilkinson, prides herself that, "the potential environmental impacts of this development have been carefully worked through during a robust four-year consent process, during which the Department of Conservation had its concerns addressed".[48] The consent process has led to the project's approval, but with a number of conditions including: the installation to be staged to allow for the monitoring of effects; and the turbines to be removed if significant environmental impacts are detected during monitoring.[49] However, these 'significant wins' were due to TUOH appealing the NRC decision to the Environment Court. TUOH had to divert more that $300,000 from their Settlement money to a legal battle TUOH never sought in the first place. Miru highlights that TUOH "are again fighting against the Crown who promised they would whaka-mana TUOH, but instead the Crown is trampling upon TUOH". [50]

The Crown had the power to address issues outside of the courts, keeping legal fees and tensions between parties minimal. However, instead of the Crown actively protecting TUOH, it was TUOH fighting to protect the harbour for all New Zealanders. The original consents would have allowed Crest to put all 200 turbines in place at one time, with little knowledge of the risks. Kaipara Mayor, Neil Tiller, commends TUOH's efforts but raises the question: "Who else was representing New Zealanders in Court? Nobody".[51]

The Crown has gone a step further in *actively supporting* Crest's endeavours. In 2008 former Prime Minister, Helen Clark, launched Labour's New Zealand Energy Strategy,

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[46] *Attorney General v New Zealand Maori Council* [1987] 1 NZLR 641 at 664.
[47] Te Uri o Hau Claims Settlement Act 2002, s8.
[48] Wilkinson, above n 2.
[49] Ibid.
[50] Interview with Miru, above n 35.
[51] Mike Barrington "Ngati Whatua to Discuss Crest Energy Tidal Turbine" *The Northern Advocate* (New Zealand, 28 April 2011).

which includes a target to generate 90% of electricity from renewable resources by 2025. There is limited scope for further large scale hydroelectric power generation, geothermal and wind are well positioned but have their opposition, so newer technologies such as wave and tidal are an attractive option. In May 2008 Crest was awarded $1.85 million from the New Zealand Marine Energy Deployment Fund by the Energy Minister.[52] Whilst the funds can only be used for turbine construction and installation as opposed to their legal battles, the sponsorship clearly shows the Government's position on this issue.

The Government does not put Crest and TUOH on a level playing field. TUOH are currently in consultation with Meridian over establishing a wind farm at Pouto peninsula. This is a clean and renewable energy source, but the Government has shown no interest in funding this project.[53] Also, Michael McNamara, managing director of ECO-Auger New Zealand, has approached TUOH saying his company's tidal turbine model carries less risk of environmental damage than other designs and is easy to lift out of the water for maintenance.[54] This opportunity has also failed to get any Government funding and support. The Labour Party's Kelvin Davis has come out in opposition to the project saying that it is sad there are alternative solutions people could live with but these are being ignored. He states "this decision proves the shallowness of the Government's commitment to protect the foreshore and seabed for everyone."[55]

IV Future Action

Although TUOH are pleased that the Environment Court has placed additional restrictions on the project, they remain gravely concerned for their harbour.[56] The hapu could take their case to the High Court, but cannot afford to expend more money and resources. TUOH are determined to uphold their mana in any way they can. The legal pursuits may not always be effective and a political tactic may be more successful. Many future avenues remain unclear especially, as to TUOH's knowledge; no progress on the project has been made since the consent gained approval in March.

B Marine and Coastal Area Act

The Marine and Coastal Area (Takutai Moana) Act 2011 repeals the Foreshore and Seabed Act 2004. Under the new legislation there are three new forms of legal rights and interest:

1. A "right for all affected iwi, hapu or whanau to participate in consultation processes" of the Coastal Marine Conservation Area ("CMCA").[57]
2. A "protected customary right" which allows holders to delegate or transfer such

[52] Crest Energy, above n 3.
[53] Interview with Miru and Ranger, above n 9.
[54] Barrington, above n 51.
[55] Imran Ali "Refuse Kaipara turbines consent: Hapu" *The Northern Advocate* (New Zealand, February 14, 2011).
[56] Ibid.
[57] Marine and Coastal Area (Takutai Moana) Act 2011 ("MCAA"), s51.

rights in accordance with tikanga, and derive commercial benefits from such rights. However, holders have no title over the land.[58]

3. A "customary marine title" which is conceptually a new form of legal title. It cannot be alienated apart from in accordance with tikanga to other persons in the same iwi/hapu. It can be used for commercial gain and includes ownership of minerals (other than Crown minerals). A customary marine title group can prepare a planning document, which sets strategy and approach for the management of that area and must then be taken into account by local authorities in making decisions.[59]

Most importantly, holders of customary marine title have veto powers over some activities on the CMCA, including applications under the RMA.[60] TUOH are seeking customary title under this new Act and are currently engaged with Minter Ellison Rudd Watts regarding their application.[61] However, it is unlikely this will have any impact on the turbine project as section 64 lists 'accommodated activities' which can be carried out in a CMCA despite marine title being recognised. This includes "an activity authorised under a resource consent".[62] However, the customary title may prevent further unwanted developments in the Kaipara harbour and give TUOH more recognized legal rights as kaitiaki. Also, whilst the Act cannot apply retrospectively for TUOH, pursuing this avenue may be a worthwhile endeavor for other iwi/hapu facing a similar situation.

B Rahui

When legal means are to no avail it is necessary to turn to the political arena to rally support. Since approval for Crest's project TUOH have actively engaged with the community receiving significant support in opposing the project. Three public meetings have been held in Dargaville, Wellsford, and Helensville, with around 300, 100, and 150 people respectively. This shows the enormous support that there is for putting a stop to this project. In May 2011 at a hui held at Waikaretu Marae it was agreed a rahui, (a temporary cultural closed area) would be placed over the harbour area where the tidal turbines are planned. The rahui will apply to Crest Energy only and will last until the project is completely prevented.

There is debate over whether a rahui has any legal standing. Crest says they will ignore it as they have the "legal right to carry on".[63] Conversely there is a wealth of precedent for a rahui being respected. One example is a rahui put in place in 1997 in front of the Waiaotea Marae in a 15km^2 area off Tinopai. Miru said residents were "sick to death of

[58] MCAA, above n 57, ss55-57.
[59] Ibid, ss60-64.
[60] Ibid, s65.
[61] "Crest Energy: The Great Kaipara Harbour", above n 14.
[62] MCAA, above n 57, s64(2)(a).
[63] Interview with Anthony Hopkins, Crest Energy Representative (Julian Wilcox, Native Affairs, Maori TV, 25 July 2011).

commercial fisherman raping the fish resource".[64] Fisheries Minister, Pete Hodgson, officially endorsed this in 2000. The officially sanctioned rahui carried with it the risk of a $100,000 fine for commercial fishers caught in the area. However, this recognition was under the terms of section 186 of the Fisheries Act 1996 (the only statutory recognition of rahui), therefore it applied only with regards to fishing and the legal status had a maximum term of two years.[65]

It is offensive and undermining that a rahui is defined on the terms of the Crown. The legislature have no right to determine the limits such as the geographical parameters, duration, and who can establish and remove a rahui. At the hui in May an Action Committee was set up to oversee the establishment of a rahui. The iwi has yet to decide when to set that in place.[66] If the rahui is ignored the committee will investigate setting up a protest flotilla.[67] One can be sure TUOH will not go down easily; the Kaipara harbour is the jewel of this hapu.[68]

C Other Initiatives

Other schemes TUOH have embarked on include developing a Hapu Environmental Management Plan ("EMP") and a Memorandum of Understanding ("MoU") with NRC. Currently TUOH's EMP is at a draft stage and is being discussed at marae hui. EMPs identify and describe the environmental aims and desires of a hapu and establish methods for achieving these.[69] These can be useful, as the RMA requires local authorities to have regard to relevant planning documents of iwi/hapu and having a comprehensive EMP could prove to be an effective tool for empowering hapu or iwi in their RMA dealings. A MoU can also help in establishing an effective working relationship with local authorities. A MoU has existed between TUOH and the NRC since TUOH's claims settlement in 2002.[70] However, it was constantly being disregarded. In August 2011 a new MoU was signed which requires a more rigorous engagement between the two, including an annual meeting. It is hoped this will provide more clarity of where both parties are coming from and it will be the base document to govern the relationship. These initiatives will not alter the current turbine project, but could prove effective in future developments and may set an example for other hapu and iwi in how they could avoid a similar project in their own harbour.

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[64] New Zealand Press Association "Activist Urges Use Of Guns To Protect Fishing Grounds" (press release, 9 October 2003).
[65] Ibid.
[66] Delwyn Dickey "Iwi to seek customary title in harbour" *Rodney Times* (New Zealand, 9 June 2011) at 5.
[67] Interview with Miru and Ranger, above n 9.
[68] Ibid.
[69] Kristen Maynard "Ki Te U O Te Hiahia: A Guide to the Resource Management Act 1991" (1999) Ministry for the Environment < www.mfe.govt.nz>.
[70] "Management Implementation of Memorandum Understanding Between Kaipara District Council and Te Uri O Hau, Ngati Whatua" (2002) Kaipara District Council <www.kaipara.govt.nz>.

V Conclusion

TUOH are being treated as spectators of their environment as opposed to kaitiaki. Crest Energy, the NRC, the Environment Court, and the Crown have failed to meaningfully uphold te Tiriti and respect TUOH's mana through the consultation and resource consent process. The effort has not been made to speak face-to-face and truly understand the spiritual and environmental concerns of TUOH. Had the correct process been followed, with the Crown acting as a faithful Tiriti partner, it is likely a different outcome would have ensued. In looking forward it will be interesting to see how Crest's project actually eventuates or whether TUOH are successful in their battle to save the Kaipara. This may set a precedent of how other hapu protect their own harbours.

ROGER DEWHURST

M.App.Sc.

CREST ENERGY KAIPARA PROJECT

Abstract:

The Crest Energy Kaipara Project will fail for two reasons. Magnetic sands will damage the turbines and reduced tidal currents in the turbine field will result in deposition of sand around the turbines with resulting loss of performance and possible destruction of the undersea cables.

Introduction:

It appears to me that certain issues in relation to this project have been un-noticed, ignored or given insufficient weight by the Environment Court, the Northland Regional Council and the Department of Conservation, the authorities principally concerned with the protection of the environment and the people.

Although much emphasis was put on environmental issues certain technical issues appear to have been largely or wholly disregarded. Among these are the post glacial and historical development of the coast and the harbour, the mineralogy of the sediments in and around the harbour entrance, the nature of the sands forming North Head, the effect of artificial structures in the Graveyard channel and the effect of magnetic particles in the magnetic fields surrounding the turbines.

The principals involved are all so fundamental that I am surprised that they have escaped due attention. In my view a combination of these omissions will lead to the total failure of the project with consequent adverse effects to Northland.

Post glacial history:

Let us consider the Kaipara 20,000 years ago at the climax of the last glaciation. Sea level was nearly 100 metres lower and the coast many kilometers to the west of its present position. The shore was probably fringed with sand dunes much as it is today. The land, now swallowed by the sea, was probably forested. One might surmise that the Kaipara and Northern Wairoa Rivers

meandered through forested valleys to join somewhere north of what is now South Head before flowing west to the sea.

16,000 to 18,000 years ago the climate began to warm and as it did the sea level began to rise. This continued until about 11,000 years ago when the climatic reversal known as the Younger Dryas took place. Warming and sea level rise recommenced about 10,000 years ago before reaching a climatic maximum about 6,000 years ago when sea level was several metres higher than it is now as we can see from the raised beaches at Kaiaua. As the sea rose and inundated the lowland forest the coastal dunes migrated inland to form North Head as it now is.

By now the Kaipara Harbour had formed. As the silting of the harbour was, as yet, little advanced and sea level was higher, tidal flows were greater. The gap between South Head and North Head was probably formed to accommodate this greater flow. As the harbour silted and sea level fell slightly the Tory Shoal and the Southern Shoal formed limiting the main flow though the narrow channel which came to be known in recent times as the Graveyard because of the hundred or so ships that foundered there.

Recent history:

There are now two coastal currents. One flows north along the west coast of the North Island and the other flows south along the west coast of Northland. They converge off Northland. When North Head was formed I surmise that the southbound current predominated. Now the northbound current is dominant off the Kaipara Harbour. These currents control the movement of sand along the coast. I surmise that the southbound current may have been dominant until perhaps until the end of the Little Ice Age. I doubt that the sailing ships of one hundred and fifty years ago with their relatively primitive navigation equipment could have regularly got through the harbour entrance as it now is. I surmise that the shoals that now bound the south side of the entrance channel are of relatively recent formation and due to the increasing dominance of the northbound current. Evidence was given to the Environment Court that the south-west of North Head has been eroded since the harbour was a major port.

Magnetic sands:

There are deposits of titanomagnetite, black ironsand, from Wanganui northwards. This titanomagnetite originates largely from the andesite volcanoes of Taranaki and to a lesser extent

from central North Island andesites and transported down the ancestral Waikato River. This highly magnetic mineral is transported northwards by the northbound coastal current and by wave movement. Evidence was given to the Environment Court that deposits of this mineral occur around the entrance to the Kaipara Harbour after storms. The significance of this evidence escaped due attention. I surmise that the magnetic mineral enters the Graveyard channel, where the turbines will be located, via the southern shoals on a rising tide particularly when there is a strong swell from the south west.

Generators:

A universal characteristic of electrical generators is a very strong magnetic field between the stator and the rotor. The proposed turbine rotors are some metres in diameter with a large hole in the centre. Thus the bearing surface must lie between the rotor and the stator which is the peripheral housing of the rotor. For efficiency the stator and the rotor should be as close together as possible but there must be some gap. How will the design, if indeed it does, prevent particles of titanomagnetite which will vary between 0.1mm and 0.3mm getting into the intense magnetic field between the stator and the rotor? Does the rotor behave like a giant sanding disk when the magnetic mineral adheres to it? What protection do the coils in the stator have? These questions should have been asked. It is not sufficient for the Department of Conservation and the Northland Regional Council to say "It is not our job to question the design". If the ultimate outcome of design failure results in damage to the environment or the population of Northland is adversely affected it is within the job specifications of these authorities.

North Head:

North Head is composed principally of wind blown dune sand. There are two cemented layers within it visible from a boat in the Graveyard channel. These layers are probably, I say probably because I have only seen them from a boat, ancient soil horizons dating from periods of dune stability. The marine chart shows quicksands in the south-west part of North Head. Unconsolidated wind blown sands are particularly prone to erosion by water. That the North Head has been formed as I have suggested earlier can easily be demonstrated with one or more reverse circulation bore holes drilled to about 40 metres below sea level, or perhaps less. Such a bore, or bores, will show, I anticipate, the remains of a forest which can be carbon dated to six thousand years old or a little more.

Channel hydraulics:

Structures, natural or otherwise, on the floor of a channel slow the flow of water. That is a simple fact. The structures that Crest Energy propose to emplace in the Graveyard channel will slow the flow. Crest could not abstract any energy if it is otherwise. The volume of water flowing into and out of the Kaipara Harbour with each change of tide will not immediately be changed by the proposed structures. However, as the velocity is decreased in one part of the channel cross section it will increase somewhere else. That is simple. I suggest that it will increase to the north of the Graveyard channel because the sands are finer and because they are not being incremented by coarser sands passing over the southern shoals. The size of particles moved by currents depends on their size and density as so well described in Stoke's Law. The unconsolidated sand of the southern part of North Head will removed elsewhere by the faster current and sands will be deposited where the turbines are located. As the water shallows and the velocity declines barnacle, mussel, oyster and weed growth on the turbine substructures increases and further slows the tidal flow through the turbine field while it increases velocity to the north and erodes North Head.

The main cables:

The steadily growing body of sand on the channel floor will cover the mesh of cables connecting the turbines and make it increasingly difficult, and eventually impossible, to maintain the network and lift the turbine generators for maintainance. As the new channel cuts into North Head the main cables will be exposed. These will be, according to the evidence, be held on the bottom with large pieces of concrete. When the bottom is no longer there the cables, laden with their lumps of concrete, will swing freely in the tide some metres above the bottom.

An interesting and quite relevant aspect of the metallurgy of copper is that of annealing and stress hardening. Annealed copper is very soft and flexible. Bend it repeatedly at the same point it becomes stress hardened and brittle. Then it bends no further but it breaks. You may try this for yourselves. Take a short strand of copper wire, about as thick as a pencil lead or a little less, and heat it to red heat. That anneals it. When it has cooled bend it. It will bend easily. Now try and straighten it. It will not straighten at the bend because it has been stress hardened. That will happen to the weighted cables swinging in the tide. I suggest that they will break. You may visualize the consequences.

May 2011.

Te Runanga Papa Atawhai o Tamaki Makaurau

AUCKLAND CONSERVATION BOARD

4 March 2011

Hon Kate Wilkinson

Minister of Conservation

Freepost Parliament

P O Box 18 888

WELLINGTON

Re: Turbine installation in the Kaipara Harbour Marine Mammal Sanctuary

Dear Minister

The Auckland Conservation Board (the Board) most strongly urges you to decline the CREST Energy application to proceed in this location. I refer to the Board's previous letter of 9 February 2010 which is attached. The Board has a statutory duty to advise you of our concerns in relation to the approval to install tidal powered generation devices in the entrance channel to the Kaipara harbour, which we have advised repeatedly, is totally inappropriate in this highly significant location.

The Board is appalled and incredulous that this project has been allowed to usurp not only the Marine Mammal Sanctuary but also the ecologically important harbour entrance channel. The area locally known as "The Graveyard" has critical significance as a "foodbowl" to support the many species which rely on the harbour as a breeding ground, and is not only the most significant area for recreational and subsistence fishers, but also the very doorway through which all migratory species must pass.

We are also deeply concerned that this development has been progressed in advance of the proposed National Policy Statement for Renewable Energy Generation (NPSREG), in the absence of any robust legislation, and without rigorous independent technical reviews. As outlined in our attached letter, the Board has previously submitted to the Electricity Commission, and NPSREG, that any new energy projects should be small, locally owned and managed generation schemes which are clearly

more environmentally sensitive and easier to decommission in any new reality. Your attention is particularly drawn to Policy 3 of the proposed NPSREG:

"When considering proposals to develop new renewable electricity generation activities, decision-makers must have particular regard to the relative degree of reversibility of the adverse environmental effects associated with proposed generation technologies."

The Department of Conservation has a statutory obligation to protect marine Taonga. A single Maui's dolphin death is not acceptable for a critically endangered species, as it may significantly increase the risk of extinction. As yet to be published research conducted by students under the supervision of Associate Professor Elizabeth Slooten show that Maui enter the Kaipara Harbour and this significant waterway forms part of their home range. This puts them at direct risk of harm from the turbines. The Board has repeatedly voiced its concerns about the plight of Maui dolphin and do not wish to see this species further endangered in any way.

The turbines are purported to rotate "slowly" at ten revolutions per minute, however if the turbine is 20 metres in diameter, then the outside edges of the turbines will travel about 66 metres in each revolution: 40 km/hr. Furthermore, we think trialling turbines within the range of Maui dolphin will jeopardise New Zealand's international reputation as a nation that cares for its unique wildlife.

While "adaptive management" has been touted as a mechanism for allowing this project to proceed, in our view there are many unknowns, such as the impact of increased noise levels for marine mammals which have hearing as well as sonar. In our view there are many unknowns which even the most comprehensive monitoring programme may not adequately elucidate, given the time frames of the EMP and the subsequent staging of turbine installation. The risk to Maui dolphin alone, and also to white sharks, a protected species, should be sufficient grounds alone for the Minister to veto this project.

The Board advises that the government needs to be more cautious about supporting up to 200 potentially very large turbines which pose considerable risks to native biota and the environment. For example, the turbines will be highly vulnerable to the forces of nature, such as the recent cyclone and storm surge events which affected Queensland. Two recently published studies conclude that climate warming is already

causing extreme weather events (Min, S.K. et al. Nature 470, 378-381 (2011); Pall, P. et al. Nature 470, 382-385 (2011)), so we can expect an increasing frequency of such events in the lifetime of these turbines.

The Board has also been involved with Maritime NZ consultation for the development of policy for the decommissioning of oil rigs in New Zealand's Extended Economic Zone, for which I have attended two hui in Wellington. This has parallels with the issues of capability to decommission the tide turbines at any time should it become necessary and the Board notes that Maritime NZ must retain full jurisdiction over issues of maritime safety.

The Board is unconvinced that much of the investment in this project will come into the NZ economy as it seems that most of the equipment, expertise and raw materials will need to be imported, which would take local investment funds out of our economy. It is further noted that there seems to be no clear requirement to measure or monitor the volumes of anti corrosive paint coatings and cathodic protection (zinc anodes) that the steel structures will require to prevent them from rusting, that will inevitably be ablated and deposited into the harbour. The lack of clear technical specifications and detail around these fundamental environmental issues is extremely concerning and totally unacceptable.

The Board again most strongly recommends that you must decline this application to fulfil the statutory duties which are vested in you.

Yours sincerely

Bruce Davies

Chairperson

cc Director General of Conservation

Environs Holdings Ltd

Northland Regional Council

NZCA

AUCKLAND CONSERVATION BOARD

Te Runanga Papa Atawhai o Tamaki Makaurau

9 February 2010

Hon Kate Wilkinson

Minister of Conservation

Freepost Parliament

P O Box 18 888

WELLINGTON

Re: Turbine installation in the Kaipara Marine Mammal Sanctuary

Dear Minister

The Auckland Conservation Board considers that it has a statutory duty to advise you of it's wide ranging concerns in relation to the proposal to install tidal powered generation devices in the entrance channel to the Kaipara harbour, which we understand is now before you for consideration.

The Board is concerned that this development has slipped through ahead of the National Policy Statement and formation of the Environmental Protection Agency.

In June 2009 the Board made submissions to the Proposed national policy statement for renewable electricity generation.

ACB consider that marine power generation is fundamentally at odds with the designation and purpose of a Marine Mammal Sanctuary, Marine Protected Area or Marine Reserve.

In addition to the risks to already critically endangered Maui's dolphin and marine life in general, including the entire West Coast snapper fishery which NIWA have found to spawn in the harbour, the Board also have concerns about the unknown effects of changed magnetic fields which such large diameter marine turbine units may cause to affect the navigation of the many migratory species of birds for whom survival depends on the extensive shell bank feeding grounds around the Kaipara harbour and at Papakanui Spit which is a Conservation Stewardship Area, as well as the risk of contamination of these feeding grounds from the anti corrosive coatings that will be necessary to protect the units.

The Board have been made aware of the results of many years of investigative research under taken by Professor Michael Walker, who was the recipient of an O.N.Z.M. for services to science in the 2009 Queens Birthday honours list, concerning how marine mammals and migratory bird species navigate using small amounts of magnetite:

"Seeking Nature's Inner Compass" published in Science 9 November 2007: Vol. 318. no.
5852, pp. 904 - 907 DOI: 10.1126 / science.318.5852.904.

The Board advises that it considers the tide turbine development to be totally inappropriate in this highly sensitive location, and that you should decline to approve the installation in the Marine Mammal Sanctuary.

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However should you consider it desirable to proceed with baseline monitoring, then
the Board strongly recommends that you direct the Department to ensure this covers all components of the eco system and all wildlife species by adopting a joint
agency approach e.g enlist the support of the present Auckland Regional Council with monitoring water quality in the southern half of the harbour which will be most affected, and the Defence Department who are also stakeholders in this area,
with monitoring of the current local magnetic field properties.

The Board draws your attention to the pre cautionary approach adopted for the development of this technology in Nova Scotia where just one 10 metre diameter turbine unit will be deployed for an initial trial period of two years:

http://www.nspower.ca/en/home/aboutnspi/mediacentre/NewsRelease/2009/tidalturbine.aspx

"The 10-metre turbine will be deployed in the Minas Passage of the Bay of Fundy this fall as
part of the FORCE tidal test site. Testing will last up to two years. Operational data will be
collected and shared by Nova Scotia Power and OpenHydro to determine the environmental
performance and future feasibility of tidal power in the Bay of Fundy. The testing will focus
on the robustness of the turbine in the harsh environment of the Bay of Fundy, close
monitoring of any environmental impacts of the turbine, and the energy production
capabilities of the technology."

The Board recommends that in the light of testing of these units being undertaken
at the European Marine Energy Centre in the Orkney islands and at Nova Scotia,

that it would be wise to wait until the technology is further developed and comprehensively tested at those locations, before exposing such a sensitive site as
the entrance channel to the Kaipara Harbour, and the NZ taxpayer to any unnecessary risk.

A number of the Board's concerns relate to the very high potential for extreme adverse and irreversible effects from unproven marine electricity generation, which New Zealand simply cannot afford. ACB note that marine energy generation has the highest current output cost, and considers there is a real risk
that the actual installation and maintenance costs in the New Zealand marine environment will dramatically increase output costs to the point where these devices will be totally uneconomic and projects abandoned. Ultimately the Crown will inherit the project and have to decommission the devices, at huge expense to the tax payers.

One aspect of the proposal which the Board strongly objected to in its submissions was that the units which the developers seek to install consist of two
parts, a central turbine pod about 20 metres in diameter which is designed to be

lifted out for servicing, and a much larger triangular base unit which may be up

to 60 metres long and wide which is apparently intended to be ballasted and sunk into position on the seabed and left there "for the life of the project" (45
years?) i.e it is not intended to be removable.

The Board submitted to the draft National Policy Statement that non operational generation units of any type, in any location should be dismantled promptly, and

recommends to you that should you see fit to allow it to proceed then any approval must be subject to a comprehensive decommissioning plan to ensure all trace of the marine turbine units can be removed, with a performance bond for each unit installed, to be assessed by an independent marine salvage expert.

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We further recommend that a primary condition for any approval for installation of one test turbine, is that all elements of the installation i.e the generator pod and the base structure, as well as associated cables and junction boxes, must all be lifted and brought ashore for comprehensive inspection at regular intervals to facilitate open and transparent visual inspection by all concerned parties, and permit accurate measuring of the rate of
ablation of anti corrosive coatings, and any corrosion that is evident, as such inspection will not be possible in the near zero visibility of the Kaipara Harbour.
We would prefer that these inspections take place at three monthly intervals initially, certainly not longer than six monthly and if this condition is not able to
be complied with then no further turbine units are permitted to be installed.

Other major concerns relate to the relatively shallow depth at which turbines would be installed in the Kaipara, compared to the test site in Nova Scotia, and

the close proximity to conservation areas in Auckland Conservancy: including Papakanui Spit and Okahukura , Tapora Wildlife Management Reserve / Manukapua (Big Sand Island) in addition to being within the Marine Mammal Sanctuary. The Nova Scotia government and local communities share similar concerns about potential impacts on the ecosystem and fisheries although those turbines will be at much greater depth.
http://www.nationalpost.com/story.html?id=2012361

The Board would also like to draw your attention to small scale community based renewable energy projects in Nova Scotia, which are in line with other submissions
the Board has made to the draft National Policy Statement and to the Electricity

Commission. Copies of those submissions can also be forwarded for your information if required.

http://www.nspower.ca/en/home/aboutnspi/mediacentre/NewsRelease/2010/smallrenewable.aspx

Yours sincerely

Denise Yates

Chairperson

cc Director General of Conservation

Northland Conservator

NZCA

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