

From: Rex Smith <info@bluedgeworld.com>
Sent: Wednesday, 4 September 2019 5:54 p.m.
To: Hydrogen
Subject: Formal submission to Green Paper "A Vision for Hydrogen in NZ"

Feedback area 1C

(What are the opportunities for using hydrogen for storage and distribution?)

Generation powers covered in the Green Paper include **Wind** (*Tawhiri-matea*), **Geothermal** (*Ruamoko*), **Hydro** (*Waitaki*) and **Solar** (*Te Ra*).

But **Wave/Tidal** power (*Tangaroa*) is unaccountably omitted.

Yet this remarkable renewable generation power is patently the most efficient when it comes to electrolysing sea water to produce hydrogen. It is also the most logical generator to be built in juxtaposition to national ports, given it is a wave/tidal technology. Such juxtaposition allows direct powering-up of small maritime vessels, direct powering-up of on-shore port vehicles and direct facilitation of hydrogen for export. Wave/tidal generation power (*Tangaroa*) is not affected by dry year risk, nor lack of wind or sunshine, but operates 24/7. And it can now operate virtually on quayside meaning there is no problem with survivability or severe corrosion of the equipment; access for maintenance is ready and non-hazardous; the system is fully non-polluting of the eco-system; the CapEx & OPEX are incredibly reduced.

There are now very exciting opportunities and recent advances in both regenerative harvesting of wave/tidal energy and in electrolysis that utilises new forms of MagnetoHydroDynamics (MHD). Both of these highly innovative technologies are extremely relevant to the stated purpose of the Green Paper ie:

"Green hydrogen is the focus of this paper: it is produced by splitting water molecules into the constituent elements of hydrogen and oxygen, using renewable electricity to power an electrolyser".

It is disappointing that informed comment on either regenerative harvesting of wave/tidal power and/or electrolysis involving MHD, appears to have been totally ignored by contributors to the present paper. One hopes that such important decisions regarding NZ's national interest have not already been set in concrete.

Kind regards
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