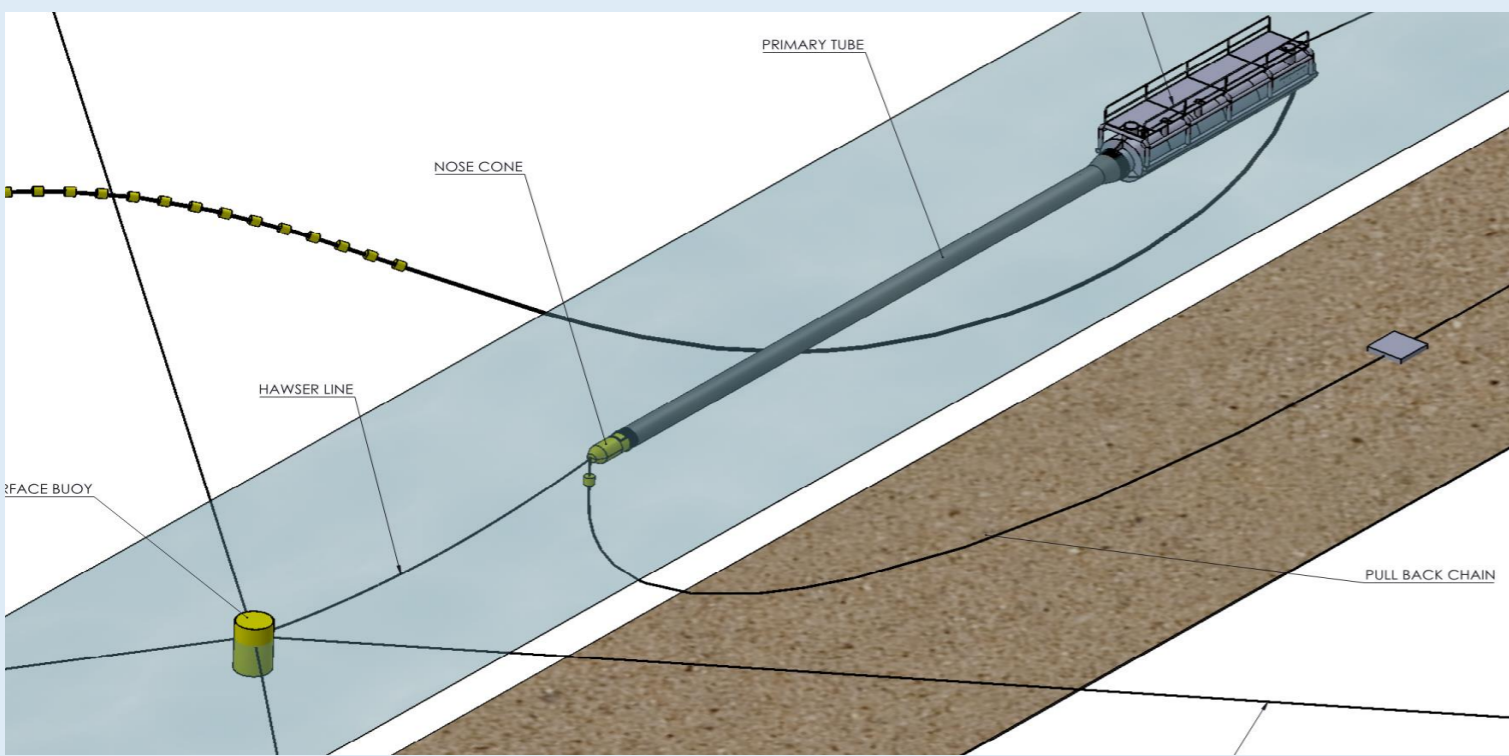


Anaconda WES NWECC Stage 2



What is Anaconda?

The wave energy absorption principle of Anaconda is based on the response of a water-filled distensible “bulge tube” placed within an incident ocean wave field. The tube sits just below the water surface and is aligned approximately perpendicular to the oncoming wave front. The waves excite a propagating “bulge-wave” modal response of the tube. Given certain elastic properties, the result is a broad-banded, low impedance, omni-modal oscillation that delivers a highly-amplified oscillatory flow potential at the tube’s stern.



Mk2S Front End Engineering Design

Project Achievements

Stage2 development saw extensive laboratory testing successfully completed over 3 tank test campaigns and the use of that data to underpin:

1. Extensive iterative concept engineering to develop a technology configuration that can achieve the step change economic objective demanded of the WES programme;
2. A Front End Engineering Design (FEED) of a sea-going test platform that takes the technology forward in Stage 3;
3. Economic projections showing a commercial path to delivering affordable utility scale electricity.

What are we doing next?

For Stage 3, Checkmate proposes to deploy a prototype “Anaconda Mk2S”, a sea-going test platform, proposed for deployment at Scapa Flow for 1:4 (to 1:4.5) scale tests.

The Mk2S deployment will be underpinned by extensive experimental engineering and numerical analysis. The objective for Stage 3 is to develop an attractive commercial proposition to fund Stage 4 validation of a full scale “Early Adopter” Anaconda Mk2EA product that will be further defined and assessed during Stage 3.



Proposed Anaconda Mk2S mobilisation and deployment site, Scapa Flow

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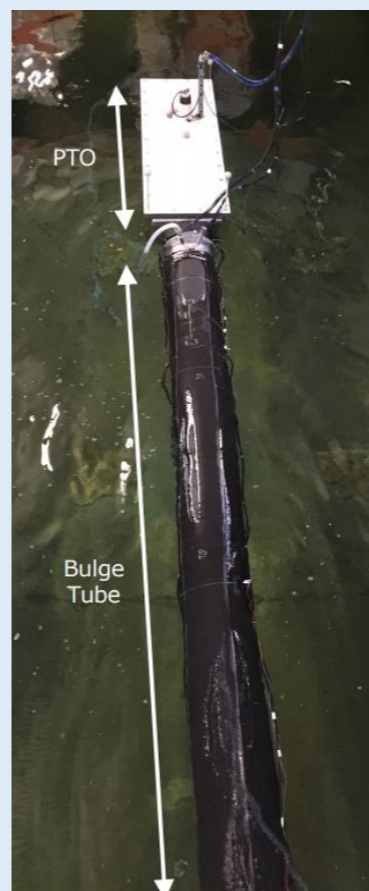
Anaconda – Breakthrough Potential?

The Anaconda is a radical change from other families of WEC devices, with potential for step-change improvements in several aspects that impact overall LCOE:

- A self-referencing primary absorber based on flexible materials avoids the need for any articulated joints, reference bodies and/or end stops.
- Broad-banded oscillator, independent of power conversion control.
- The fundamental scalability of bulge tubes is better understood and lends itself to a modularisation of the bulge tube function.
- The low draft, horizontal orientation permits the use of installation and maintenance principles for optimising OPEX and installation costs.
- Potential for further step changes in structural costs with future innovation potential of the primary bulge tube design.
- There is a drastic reduction in the criticality of structural failure modes of the primary absorber, relative to large steel structural failures.



Anaconda Mk1 under test at Flowave TT



Anaconda Mk2 under test at Kelvin Lab Strathclyde (Left) and Lir (Right)

