



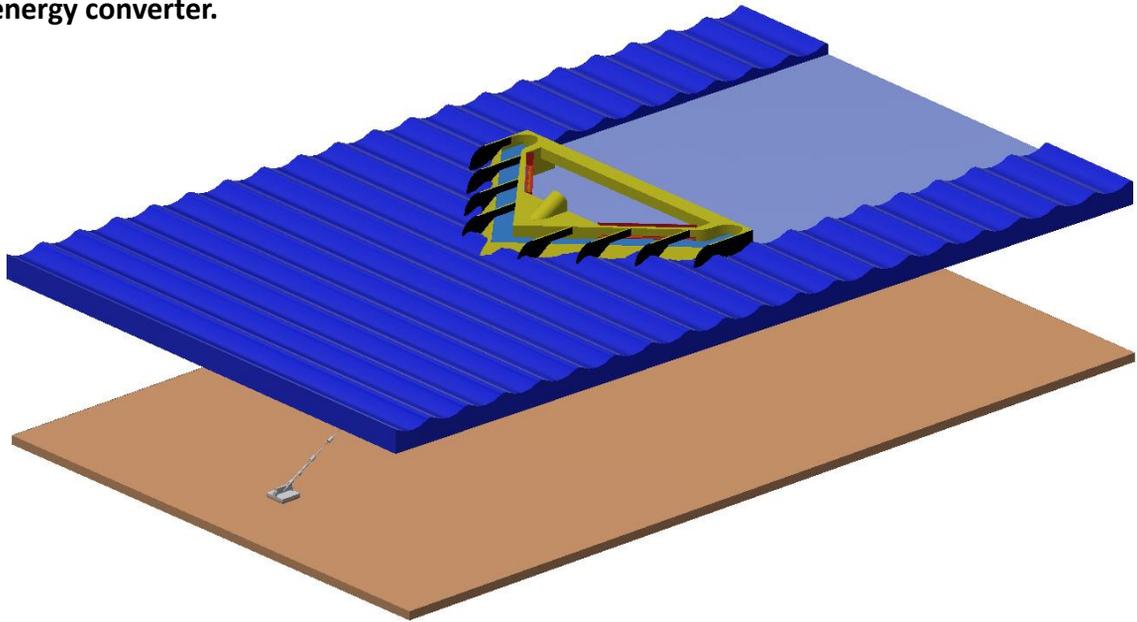
SCOTSTREAM



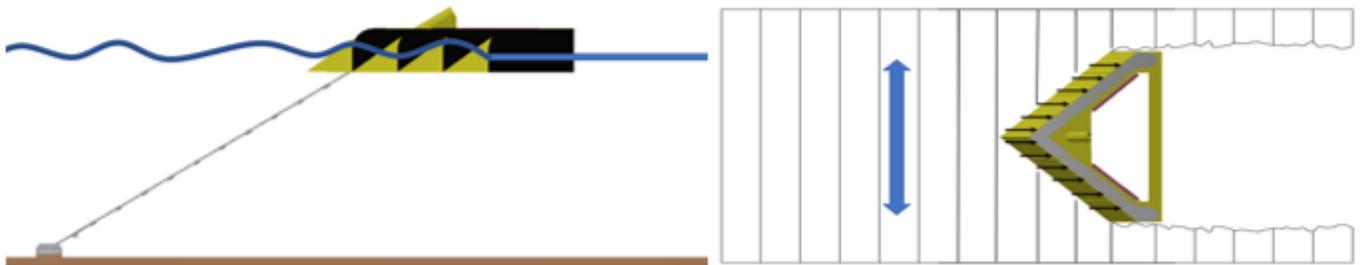
Wave Energy Converter

The Scotstream wave energy converter is a floating Overtopping type device. The design is classified as a Terminator as it collects energy from the waves facing it.

The device comprises of a weathervaning floating capture structure coupled with a Hydrobox water wheel energy converter.



The wave energy collector structure weathervanes on a single point mooring system to ensure that device always rotates to face into the oncoming waves.



The waves impacts the capture ramp on the front of the structure and flow upwards, over the top, into an impoundment reservoir. The ramp converts the waves horizontally directed energy flux into vertically directed potential energy by lifting the incoming water into the reservoir, where it forms a positive water head.

Once captured, the potential energy of the trapped water in the reservoir is extracted using gravity, via a Hydrobox water wheel energy converter, as the water returns to the sea .

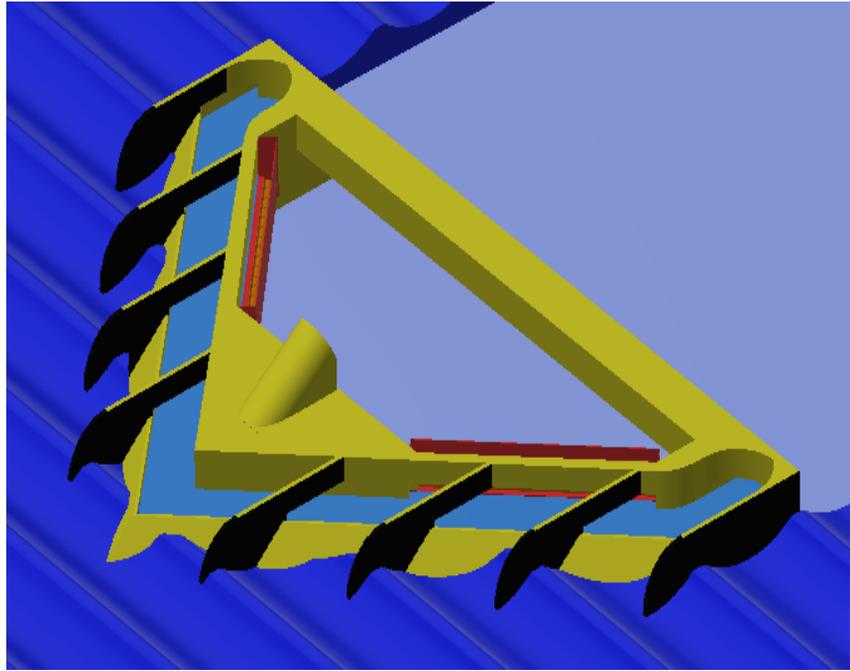
The calm area at the stern of the structure can be used for personnel access.



The specification of the wave energy converter is flexible and can be adapted to suit the wave regime on the operating site.

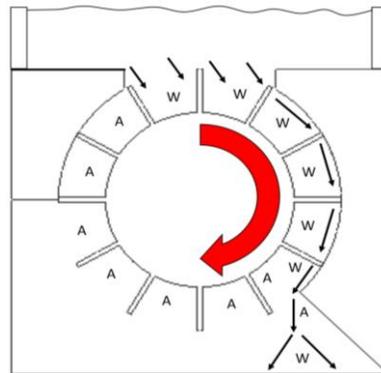
The width of the structure, the capture ramp angle and impoundment reservoir can be dimensioned to suit the wave height and period. The operating draft of the structure can also be adjusted as required to suit the weather conditions.

The floating structure will have a high survivability as the main wave impact will be accommodated in the capture ramp. The structure works with the waves, rather than against them, to reduce loadings.



The Hydrobox energy converter is basically an overshoot water wheel packaged into a steel box structure. The water wheel has a high efficiency of over 80%. The wheel diameter and length will be specified to match the height and capacity of the impoundment reservoir.

A direct drive Generator will be mounted on the end of the wheel centre shaft. The wheel is the only moving part in the Wave Energy Converter.



The Scotstream wave energy converter is novel and provides a number of benefits;

- Floating structure weathervanes to always face into the oncoming waves
- Optimised capture slope, coupled with variable buoyancy to maximise energy capture
- Highly efficient Hydrobox energy converter. Only one moving part
- High Survivability
- Insensitive to wave direction, height and period
- Large capture area to lower LCOE

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