ITEG: Integrating Tidal Energy into the European Grid

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Orkney – H2 growth

2016

- 1 project
- 0.5MW electrolysis
- £3 million projects

2019

- 9 projects
- 2 MW electrolysis
- £63 million projects

2022

- 1 ferry
- 1 major FC installation
- ?? MW electrolysis
- Projects + transition

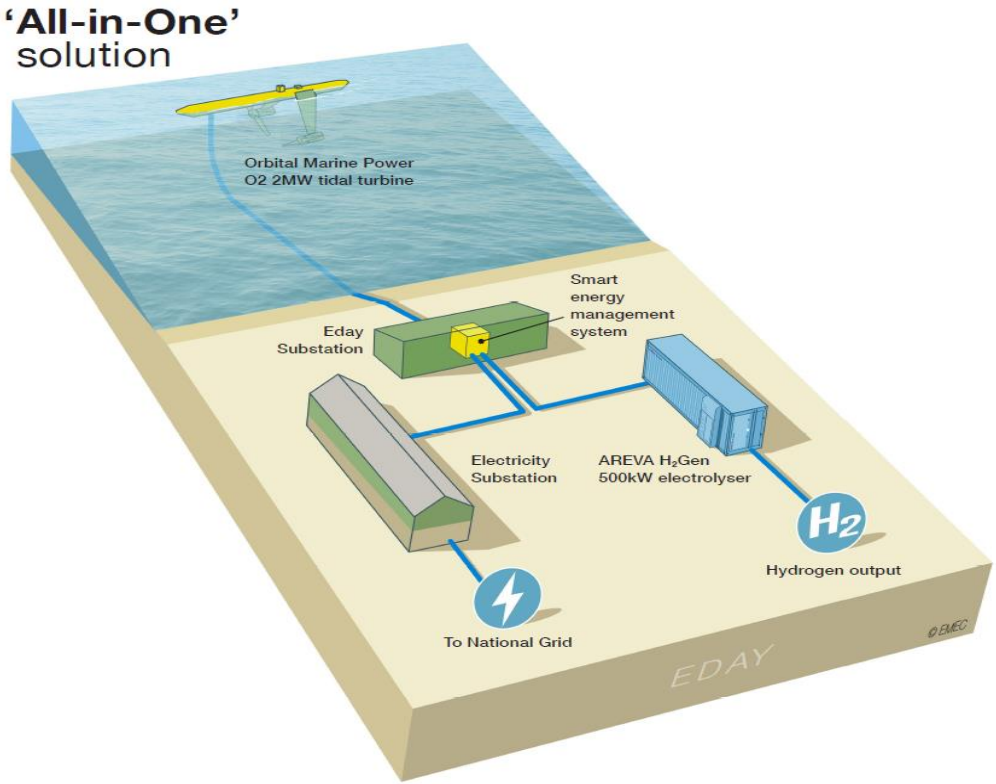
2.5 Tpa H_2	5 Tpa H_2	25+ Tpa H_2

ITEG - Overview

- Demonstrate a combined tidal energy and hydrogen production solution
- Clean energy generation in remote areas facing grid export limitations.
- 3 year project, ending December 2020
- € 11m budget contributes to the programme's Low Carbon priority.
- Led by EMEC, with a consortium partners from UK, France, Netherlands and Belgium.

ITEG Location

EMEC HYDROGEN

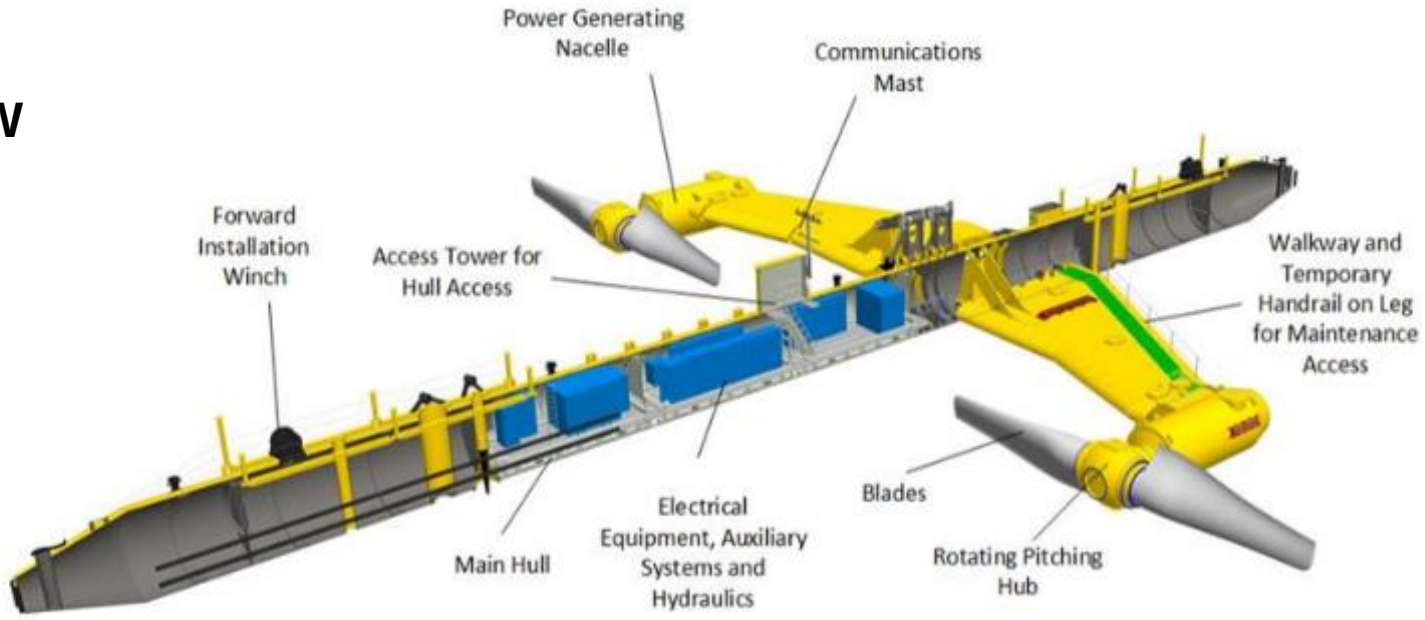


Interreg North-West Europe ITEG
European Regional Development Fund

ITEG – Tidal Turbine

ORBITAL MARINE POWER

O2 2MW



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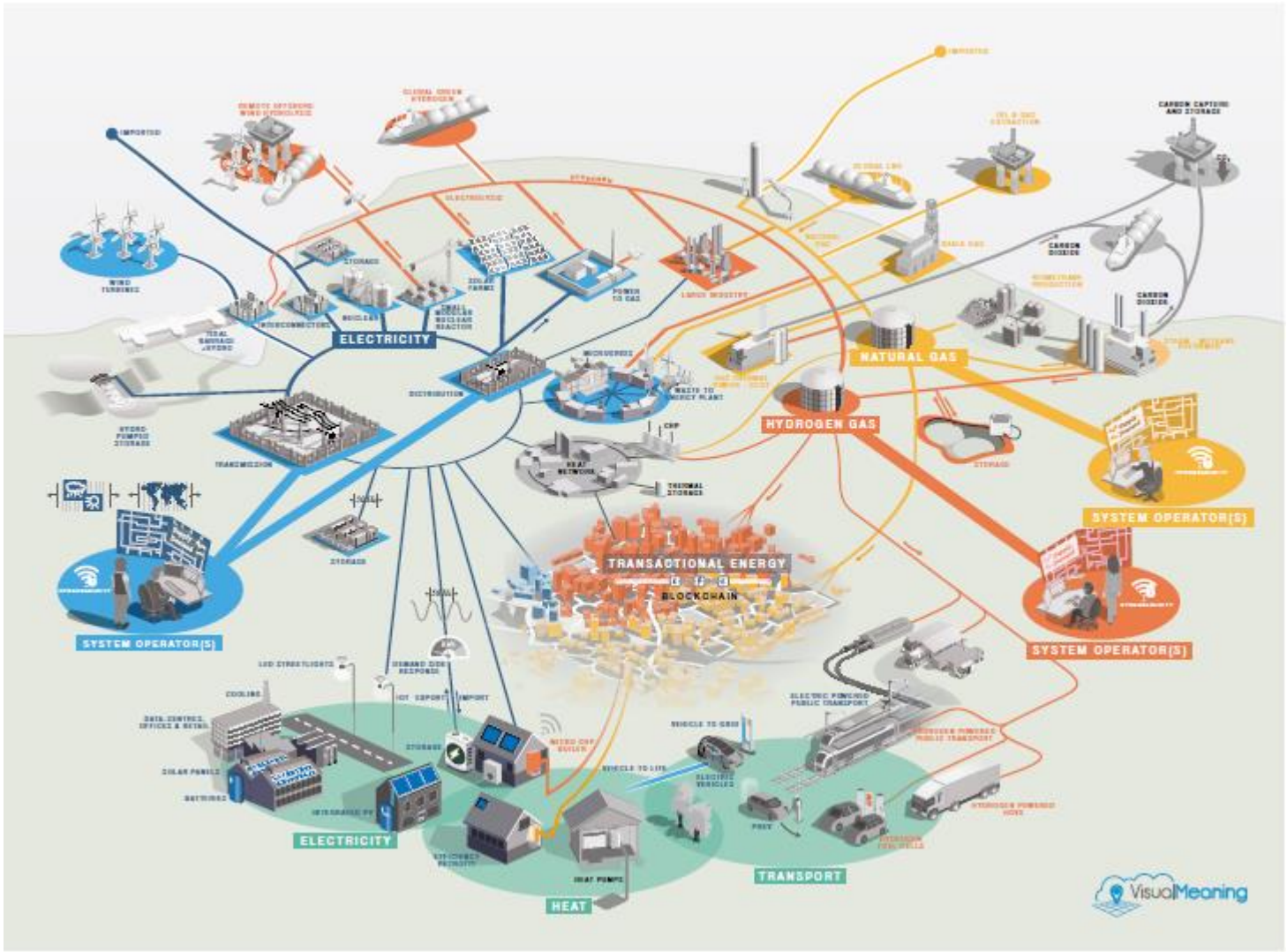
ITEG – Tidal Turbine

ORBITAL
MARINE POWER

Energy Management

- Optimise the EMS
- Fast-track a clean energy generation, management and storage solution towards commercialisation
- Control whether power is fed to national grid or to electrolyser to produce hydrogen.

EMS is challenging



ITEG - Electrolyser

- 500kW PEM Electrolyser
- Ability to ramp up to 1MW for short durations
- Producing green hydrogen
- Resilience for Orkney hydrogen ecosystem

Interreg North-West Europe ITEG

ITEG - Conclusions

- Clean energy generation in remote areas
- ‘All-in-one’ holistic energy system
- New market opportunities for ocean energy sector

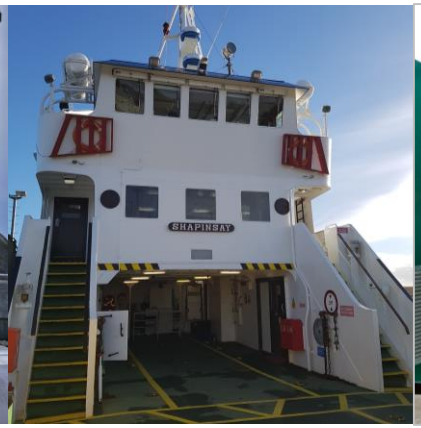
A peedie storm

It’s Not Easy Being Green

“I am green and it'll do fine, it's beautiful, and I think it's what I want to be”

https://www.youtube.com/watch?v=rRZ-IxZ46ng

EMEC HYDROGEN



THANK YOU

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