



CETO Development Update

MRIA Forum, Dublin

12 February 2016

Kieran O'Brien, Executive Director



Disclaimer

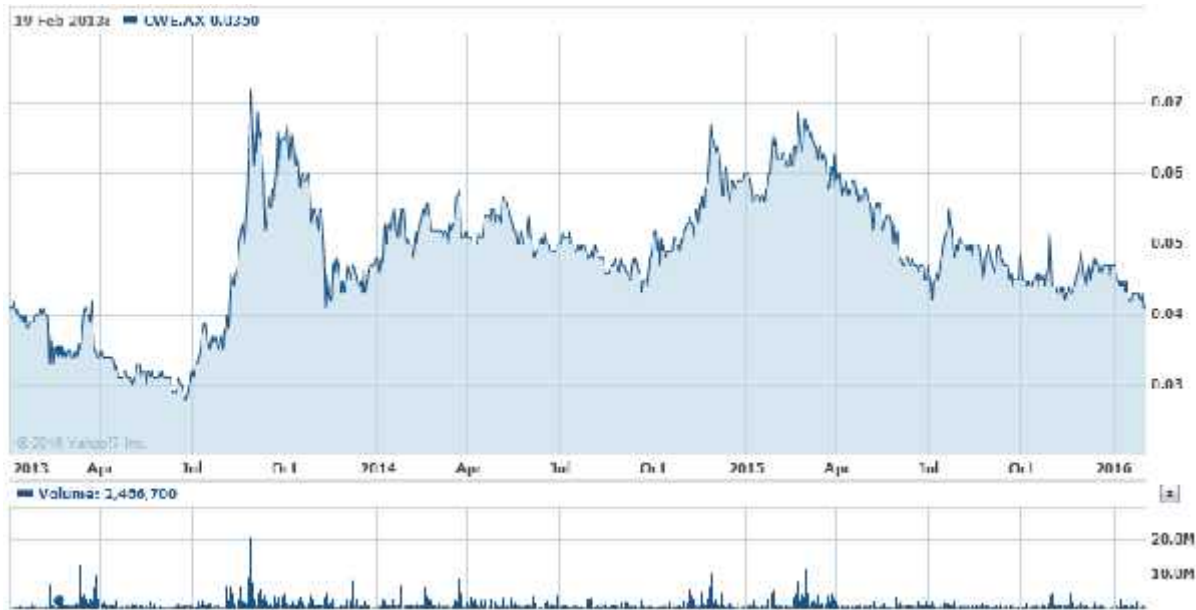
The information contained herein has been prepared solely for informational purposes and is not an offer to buy or sell or a solicitation of any offer to buy or sell any security or to participate in any trading strategy or to enter into any transaction. If any offer of securities is made, it shall be made pursuant to a definitive offering memorandum prepared by or on behalf of any fund or other issuer which would contain material information not contained herein and which would supersede this information in its entirety.

Carnegie Overview



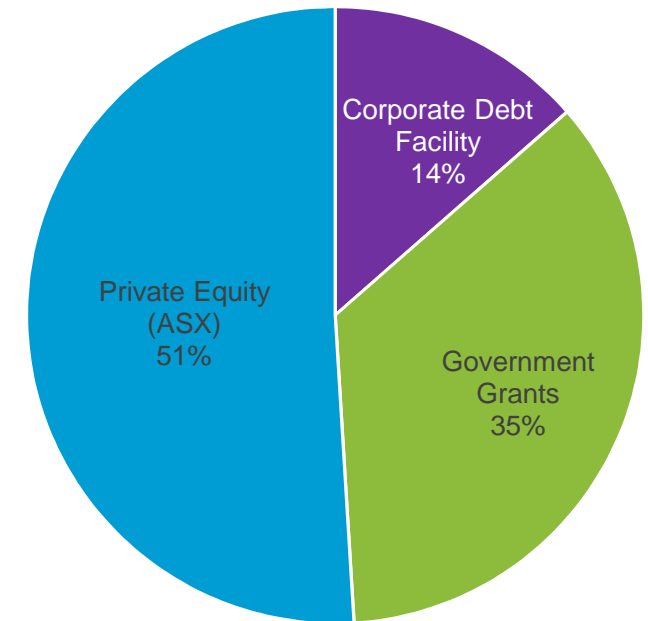
Carnegie Trading Snapshot (ASX:CWE)

- \$85m market capitalisation
- \$20m net cash (Nov 15, \$7.5 capital raise)
- \$14m undrawn Government grants
- \$21m undrawn debt facility (converted to CBA)



Commercial in Confidence

CWE Capital Raisings
AU\$155m (€100m)



© Copyright Carnegie Wave Energy Limited 2015

Board of Directors



L-R: Kieran O'Brien (ex ESB), Mike Fitzpatrick (ex Hastings), John Leggate (ex BP), Jeffrey Harding (Chairman, ex Pacific Hydro), Michael Ottaviano (MD & CEO), Grant Mooney (NED, Joint Company Secretary)

Carnegie Team



Increasing Industry Recognition & Media



Top 100 Global Sustainable Solutions, 2015



BANKSIA
SUSTAINABILITY AWARDS 2015
CATEGORY FINALIST

Banksia Sustainability Awards, Innovation Category Finalist, 2015



Clean Energy Council

Innovation Award Winner, 2015



Renewable energy
Looks swell

WAVE **NO**
A new project off the coast of Australia may make wave power a reality.
NOT LAND stands between Australia and Australia's west coast — not a vast ocean, rugged and riddled by the towering waves. For centuries, those waves, which blow across latitudes 40° S and 60° S, swayed old-world seafarers
travelling west, to avoid getting stranded. The same applies to home-
from today. For nature, though, the swell is enough to generate power: each buoy's rising and falling drives, as the di-
sturbance down, a piston attached to the wa-

The New York Times

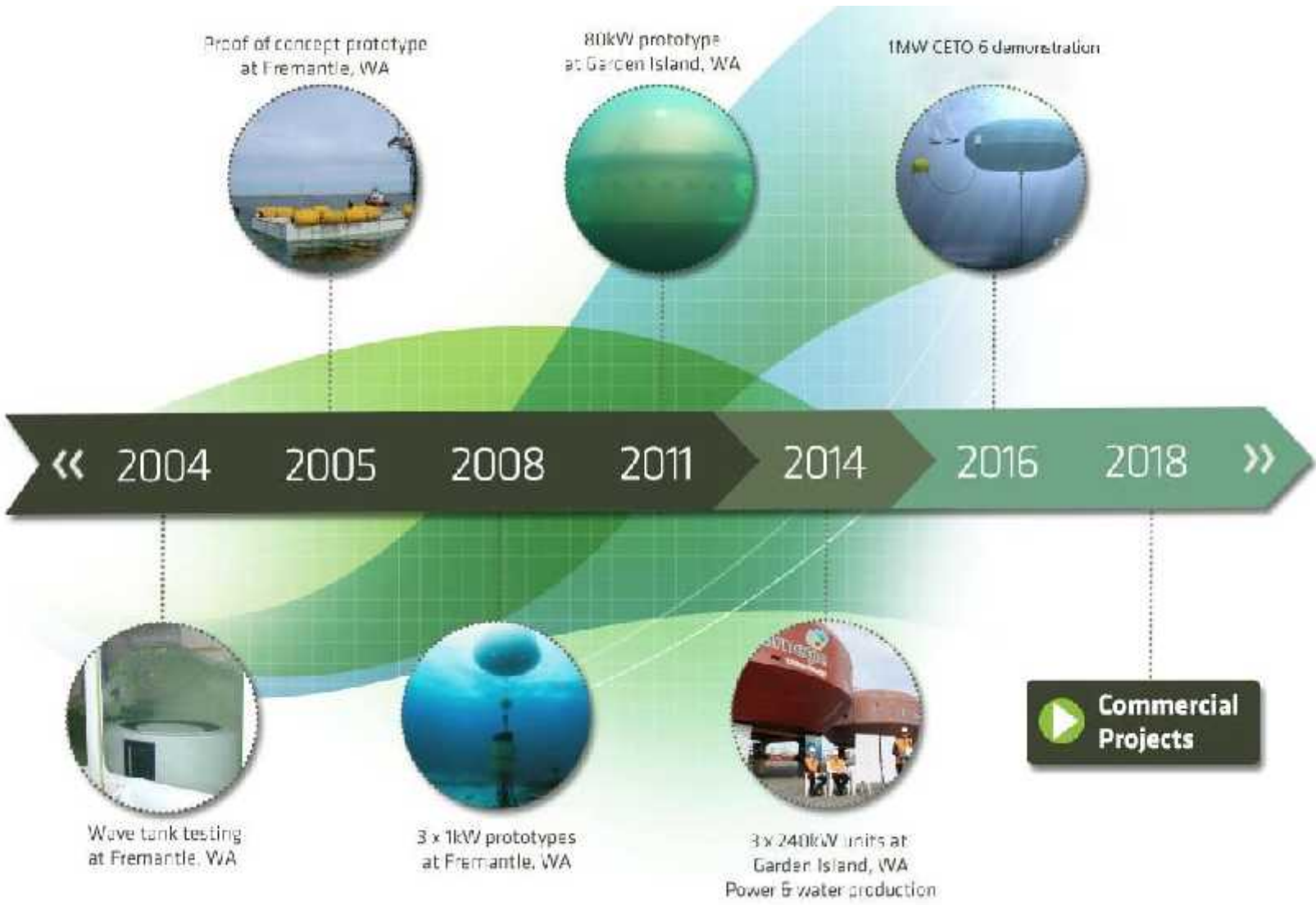
ENERGY & ENVIRONMENT

Catching Waves and Turning Them Into Electricity

By AMY YEE APRIL 22, 2015

MELBOURNE, Australia — Off the coast of Western Australia, three big buoys floating beneath the ocean's surface look like giant jellyfish tethered to the seafloor. The steel machines, 36 feet wide, are buffeted by the powerful waves of the Indian Ocean. By harnessing the constant motion of the waves, the buoys generate about 5 percent of the electricity used at a nearby military base on Garden Island.

Carnegie's Technology Development



An aerial photograph showing three wave energy converters (CETO 5) in the ocean. Each device consists of a central buoy-like structure with a vertical mast, surrounded by a circular, shallow, greenish-brown mat. The ocean is dark blue with small, choppy waves. The text "The Perth Wave Energy Project" and "CETO 5" is overlaid in the bottom left corner.

The Perth Wave Energy Project
CETO 5



The Perth Wave Energy Project
Onshore Infrastructure

Perth Wave Energy Project – Onshore Power & Desalination Plant

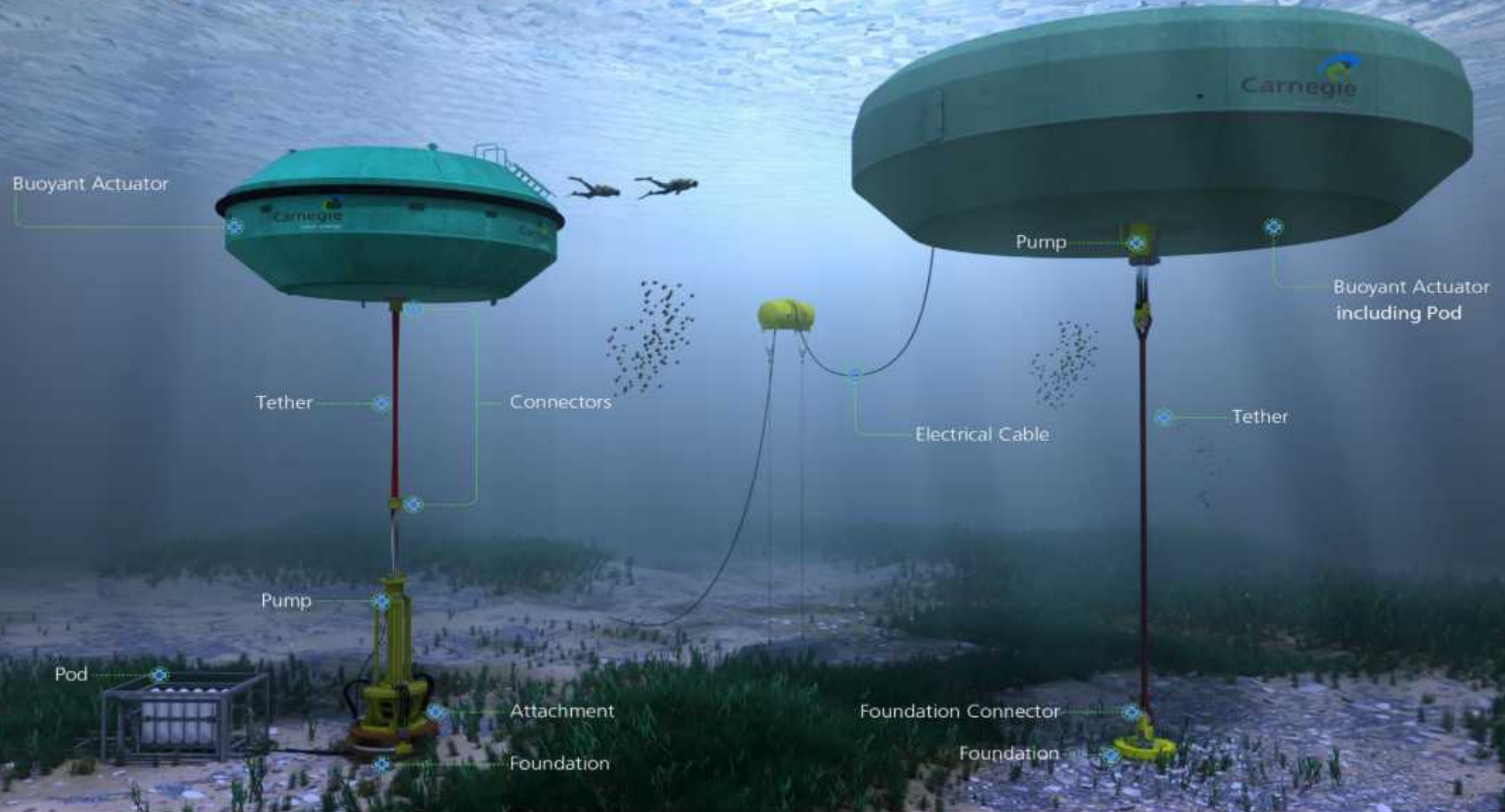


Perth Wave Energy Project – only wave array project in the world

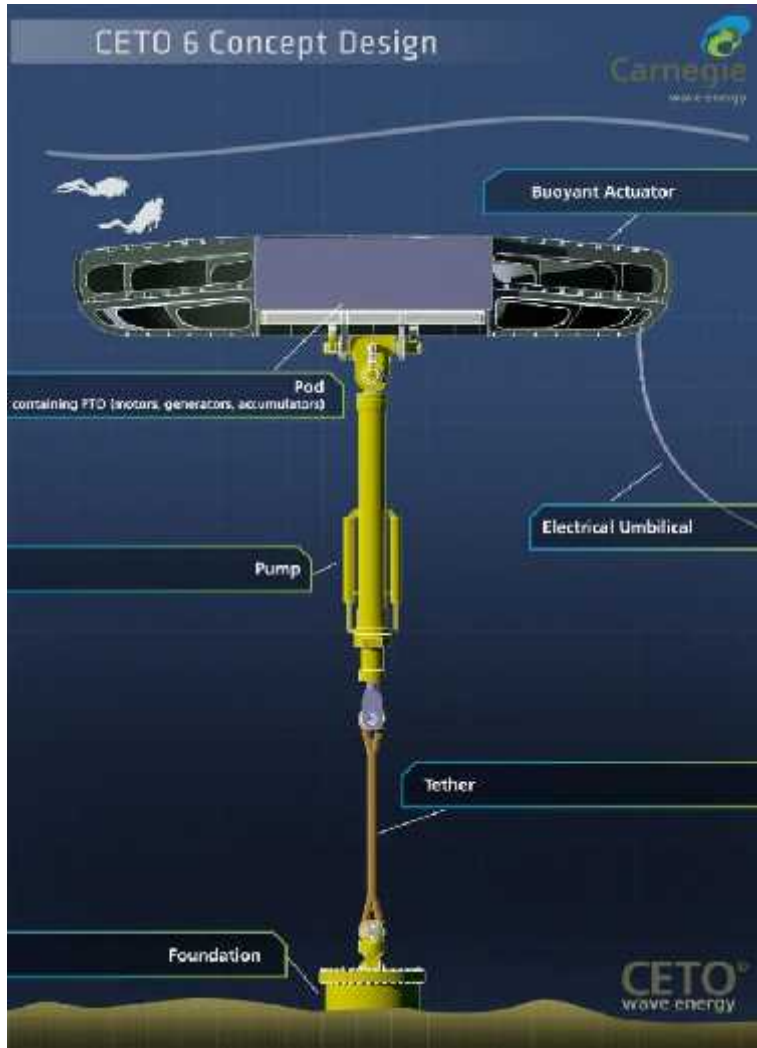


- Demonstrated CETO 5 technology including:
 - Three WECs
 - Power delivery to grid
 - Wave powered, reverse osmosis desalination
 - <1 day CETO WEC installation
- >14,000 operational hours since November 2014
- Designed and delivered by Carnegie
- Measured CETO 5 results confirmed modelled forecasts
- Measured results confirm CETO 6 forecasts

CETO 5 (240kW) *to* CETO 6 (1000kW)

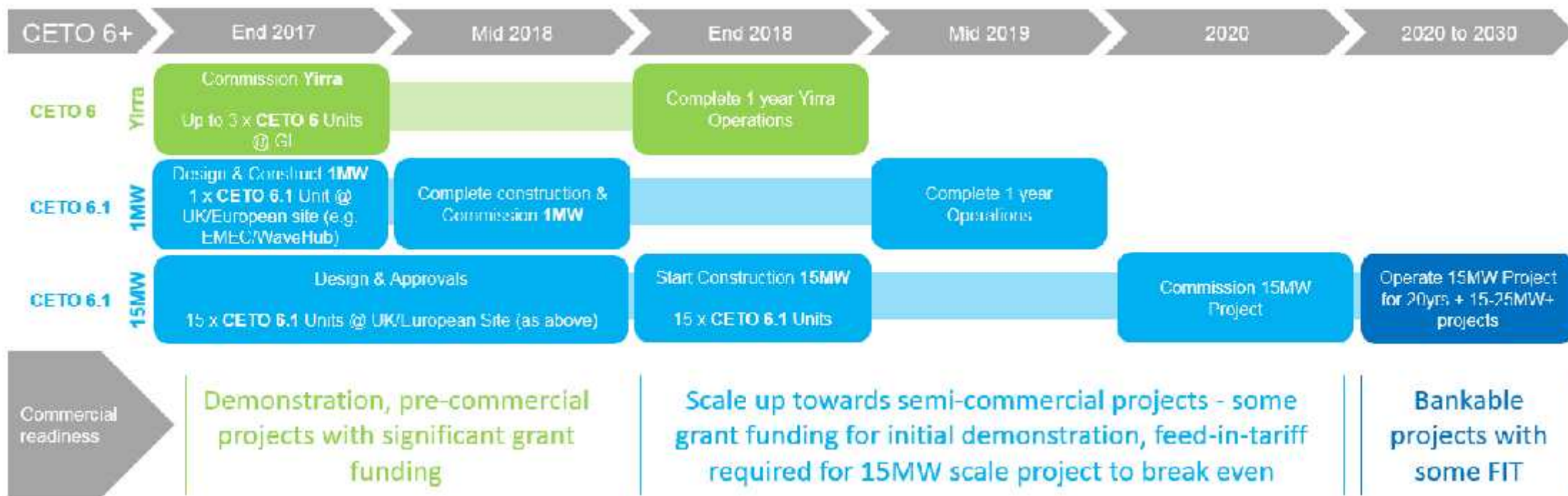


The Next Generation – CETO 6



- To be located offshore at Garden Island, Western Australia.
- First commercial production design of CETO technology.
- Project construction start 2016, project commissioning 2017.
- Development based on:
 - CETO 5's 14,000 in-ocean operational hours
 - CETO 6 wave tank testing at FloWave, Scotland
 - Internal modelling and design development undertaken with Carnegie's supply chain both here and in Europe.
- CETO 6 will deliver approximately four times the rated capacity of CETO 5 generation.
- Other advancements include: more advanced control capability, rapid installation and delivering onshore power via an electrical export capable thus avoiding hydraulic transmission losses.

CETO Commercialisation Pathway



- CETO 6 at Garden Island site is initial demonstration of technology
- CETO 6.1 progression will feature:
 - Design to suit site-specific features
 - Improvement in performance, predominantly achieved through tuning optimisation
- Subsequent CETO 6.1 projects to be built at 25MW+ scale will therefore benefit from cost reductions and performance improvement

CWE European activities to date

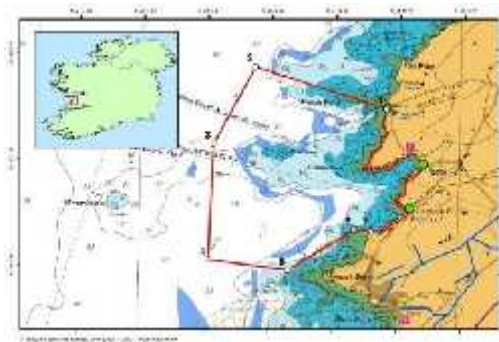


OEE Board Member,
DECC MEPB, ReUK &
MSG member, SR
member, CA with SEAI



CWE UK Established,
UK based CEO &
MD, Preparation for
2016 AIM listing

CETO 6 testing at FloWave, Edinburgh



Ireland site selection &
concept design study, Clare
foreshore licence,
collaboration on West Wave



Wave Hub Berth secured,
ongoing discussions with
EMEC



Collaboration
agreement with
Atlantis



Collaborative
PTO
development

Collaborative R&D Opportunities

- Subsea drilled & grouted **foundations** for commercial arrays (mono, mini and screw piles)
- Low cost **electrical junction box** (interconnects) with wet-mate connectors
- **Dynamic cables**
- **Wet-mate** hybrid power/optic fibre connectors
- **Condition based monitoring** for WEC arrays
- Passive **bio-fouling** control. i.e. allowing benign growth to the exclusion of problematic growth
- **Composite buoy construction** - reducing weight, improving logistics (quayside assembly), more efficient manufacture (moulded construction), reduced O&M (reduced corrosion)
- **Operation & Maintenance** – experience, condition monitoring, predictive maintenance etc
- **WEC array design** to manage energy capture, conversion and downstream affects

2015/16 Key Achievements & Upcoming Milestones

CETO 5 Perth Wave Energy Project

- ✓ 3 units installed, with > 14,000 hours of operation
- ✓ Exported power and water to DoD

CETO 6 Project, Western Australia

- ✓ CETO 6 concept design complete
- ✓ \$20m CETO 6 debt facility to CBA
- ✓ \$11m CETO 6 ARENA grant
- Construction start 2016

- CETO 6 Project, UK

- Project financing progressing
- Site selection pending
- Design started 2015, 1MW install 2018

