

# Energy Technology Partnership

*Norman Morrison (WES / ETP)*



# SFC Academic Research Pools



Provide Scotland's universities with a competitive advantage through dynamic **collaborations**, and encourage their researchers to **pool their resources** to respond to increasing **international** competition.

- SFC research pooling initiative started in 2003 to respond to international competition
- ETP one of 11 Scottish research pools
- ETP research pool made up of 13 universities



Physics Scotland



# What is ETP?



**200**

**Academics**

**700**

**Researchers**

# ETP...



Helps develop a Scottish energy **research** base that is internationally competitive and improving its global reputation and standing

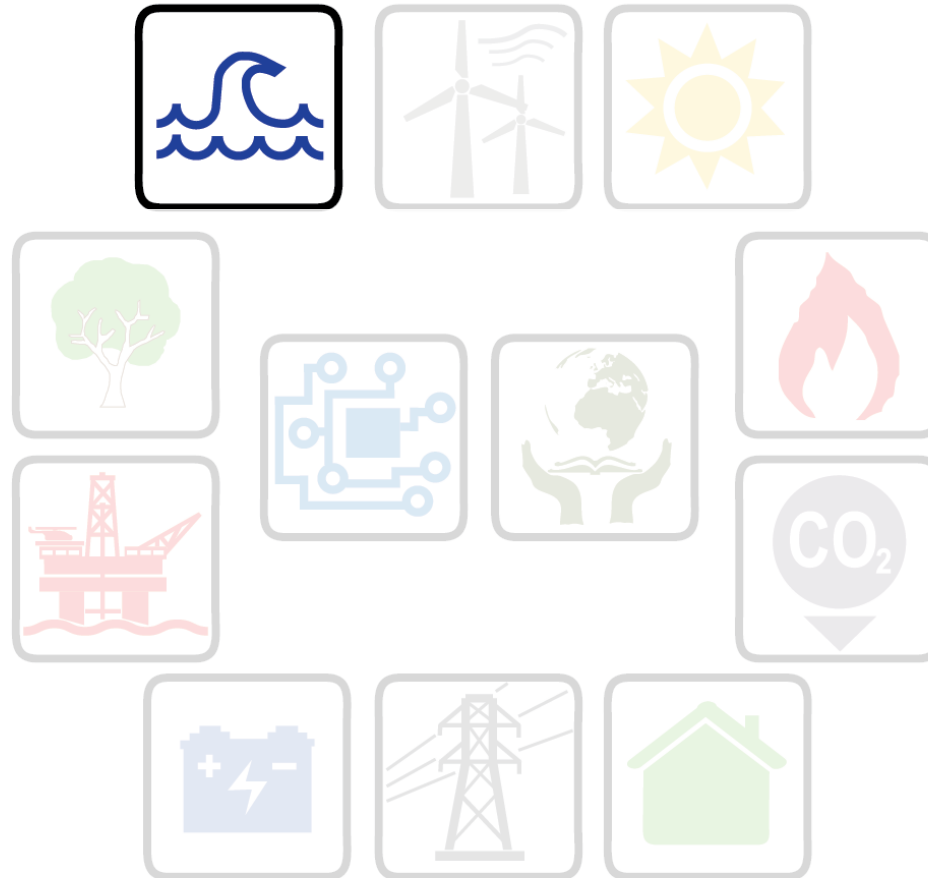
Creates value for the Scottish economy & society:  
**Communication**, conferences, seminars, workshops

Supports the energy sector with the **skills** it needs

# ETP Energy Themes



energy  
technology  
partnership



# Marine theme

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## Marine energy expertise

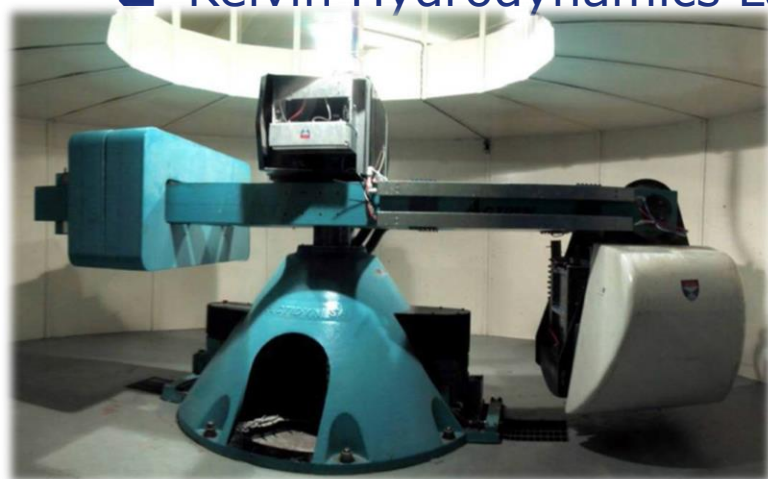
- Resource assessment
- Resource modelling
- Tank testing
- CFD modelling
- Economic modelling and assessment
- Moorings and foundations
- Subsea engineering
- Machine design
- Array design
- Environmental impact modelling



# Marine theme

## Facilities

- OceanLab sea testing facility
- Curved wave tank and wave flumes
- Machine and power electronics test laboratory
- Geotechnical labs
- Concrete Technology Unit
- Wind tunnel
- FloWave TT
- Heriot Watt University wave basin
- Kelvin Hydrodynamics Laboratory



# ETP Programmes



## ETP Energy Industry Doctorate Programme

Funded by SFC & the Scottish Government

**102** studentships supported over 5 years

**18** studentships over the next 4 years

## PECRE (Post-Graduate Early Career Researcher Exchanges)

Bursaries of £3k available for international exchanges

Available to all PECRs in ETP universities

**16** grants awarded so far

## KEN (Knowledge Exchange Network)

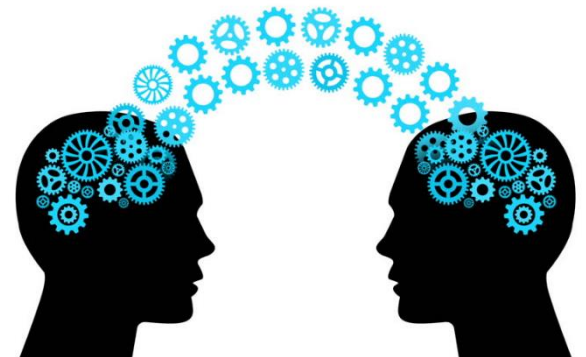
Team of 7 BDMs covering low-carbon sector

Foster and manage collaboration between industry and academia



# KEN (Knowledge Exchange Network)

- Support Scottish Government on meeting targets for the energy sector
- Increase innovation capacity
- Improve industry access to academic capability
- £525k investment in collaborations, supports and consultancy
- Supports small projects <£10k (engagement fund)
- Open to Scottish SMEs / ETP Universities
- Promotes knowledge exchange



# Engagement fund - Requirements

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Scottish SME

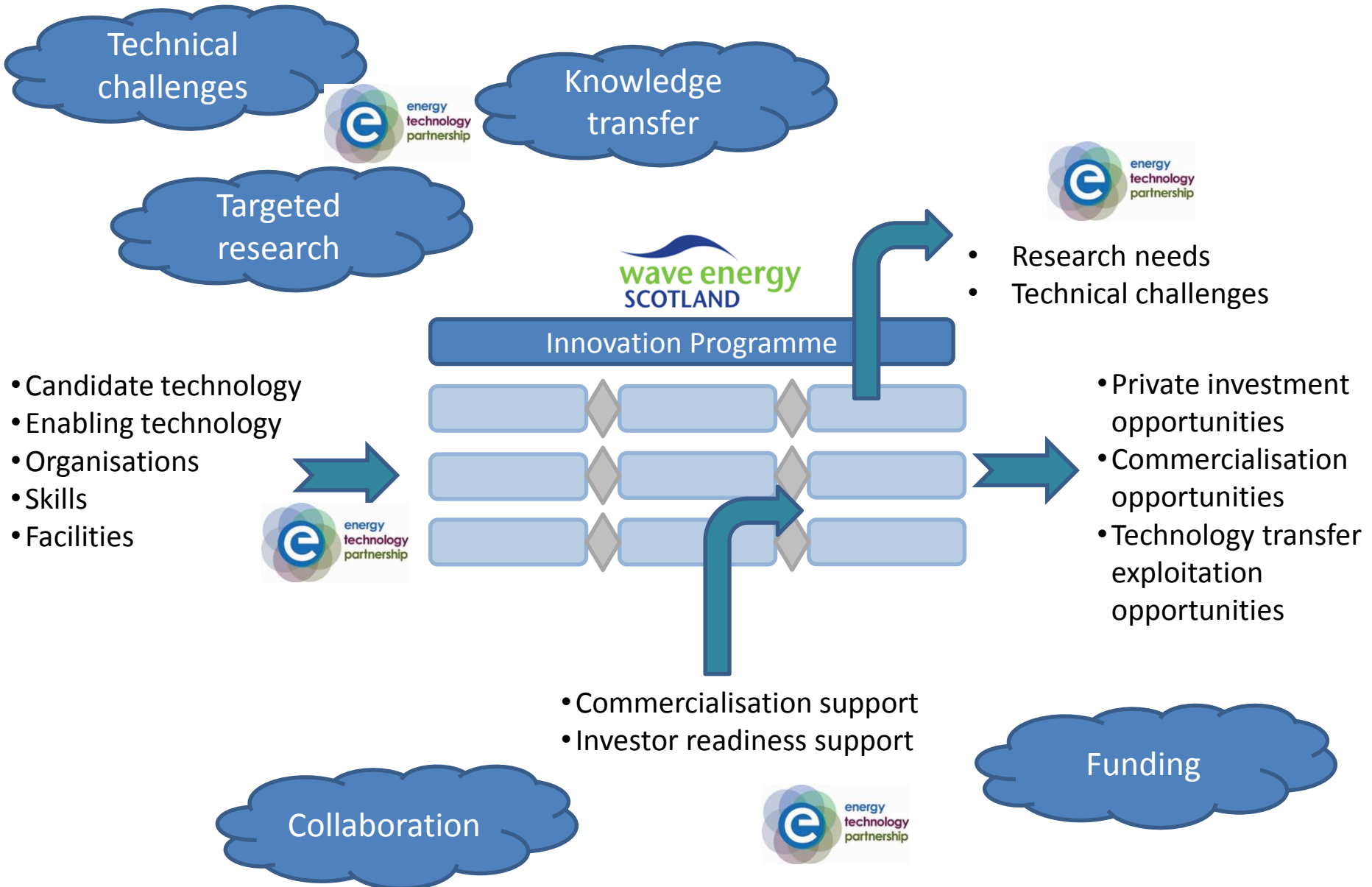
Low carbon project for new product or process

Innovative + knowledge exchange

>30% contribution to costs

University partner

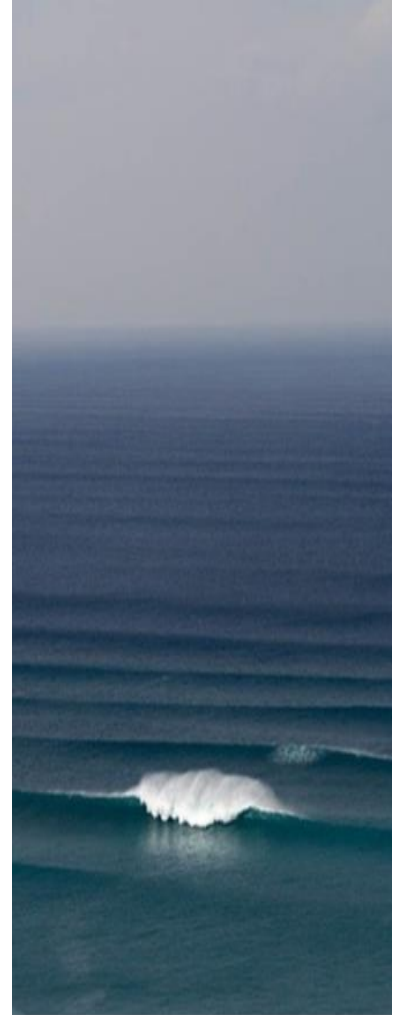
# Working together



# Flex-funded projects

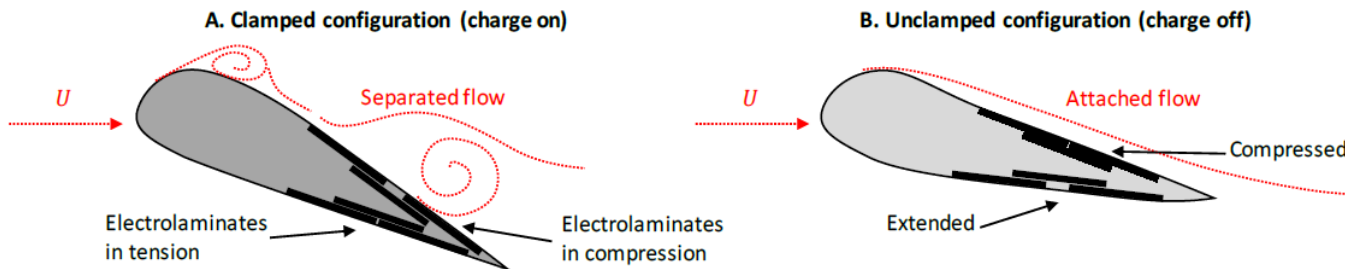
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- ❑ In July, UKCMER & WES announced a call for short research projects
- ❑ Open to UK universities
- ❑ Research support or Flowave TT time could be funded
- ❑ Encouraging collaboration between companies and research institutes
- ❑ Industrial participation was actively encouraged
- ❑ We'd have liked to have seen more direct industrial involvement in the applications
- ❑ 5x research projects awarded 3x FloWave test campaigns



## □ MetaTide: A new meta-material for enhanced fatigue life of tidal energy converters

- PI - Dr Ignazio Maria Viola
- Partners
  - University of Cambridge
  - Nova Innovation
  - SRI International

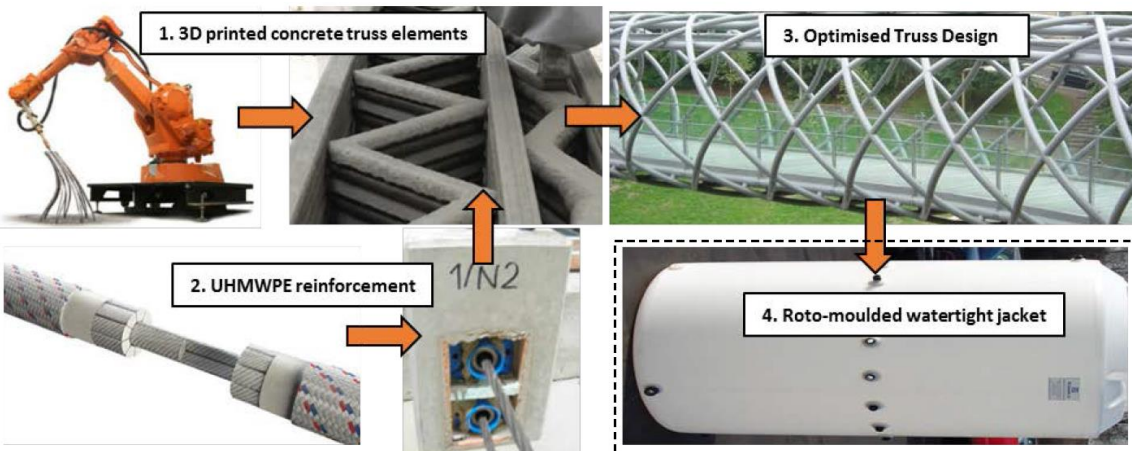


## □ Digital Design and 3D Additive Manufacture of UHMWPE-Reinforced Concrete Composite Structures (AD-CON)

- PI – Prof. Rod Jones
- Partners
  - Quoceant
  - DSM Dyneema
  - Advisory group

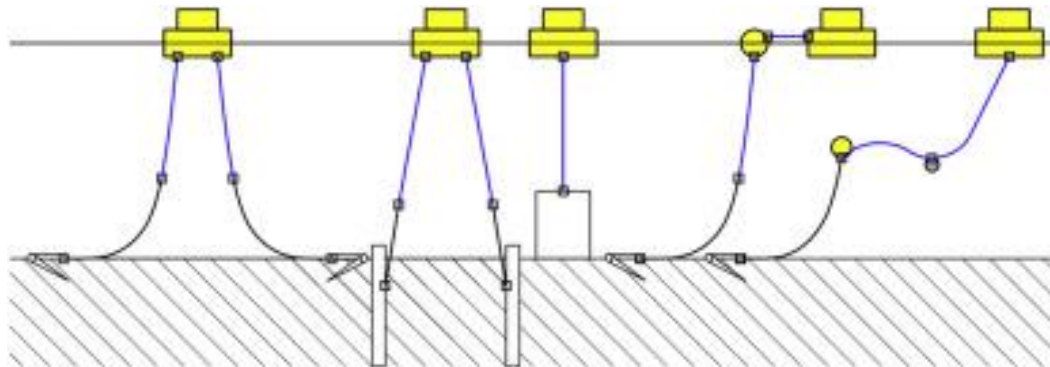


**Dyneema**<sup>®</sup>  
With you when it matters



## □ Synthetic ropes for Marine Renewable Energy mooring systems (SynMaRE): Improving performance and durability analysis techniques

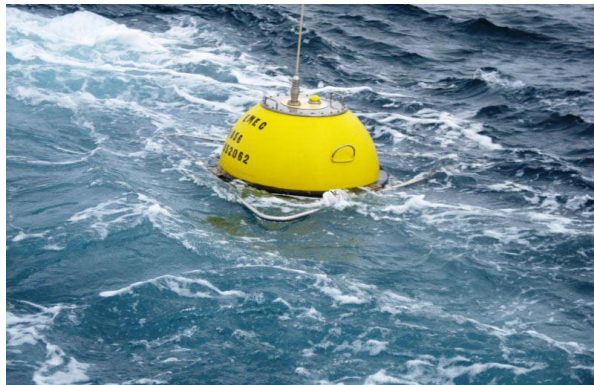
- PI – Dr Sam Weller
- Partners
  - Tension Technology International
  - Lankhorst
  - Orcina



# University of Oxford/Edinburgh

□ A robust framework for nonlinear probabilistic extreme wave loading design and testing: from buoy to WEC + 5 days in FloWave

- PI – Ton Van den Bremer
- Partners
  - Carnegie Clean Energy
  - Datawell BV
  - BP





- Speak to me to find out how ETP can support your organisation
- Speak to me about your research enquiries

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