



**OFFSHORE
WIND R&I**
RESEARCH & INNOVATION
PROGRAMME

**£1
MILLION
PROGRAMME**

**DELIVERING OFFSHORE WIND
FASTER, CHEAPER AND
AT LOWER RISK**

offshoreinnovation.scot



APPLY NOW
INNOVATION CALL OPEN

AGENDA

Welcome

EMEC

West of Orkney Windfarm

R&I Programme overview

Challenge areas

Innovation calls

How to apply

Q&A

EMEC



Lisa MacKenzie
Communications
Manager



Abbie Sinclair
R&I Project
Manager



Andy Baldock
Associate



Richard Sey
Senior Metocean
Engineer



Erika Kemp
Client Relationship
Officer



**£1
MILLION
PROGRAMME**

APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot



AGENDA

Welcome

EMEC

West of Orkney Windfarm

R&I Programme overview

Challenge areas

Innovation calls

How to apply

Q&A

West of Orkney Windfarm



Mike Hay
Deputy Project Director



Lewis Kirkwood
Project Engineer



Gwenna Corbel
Deputy Technical Manager
and Functional Lead



Neill Jeffrey
Senior Transport &
Installation Manager



Ian Phillips
Construction Manager



Jake Royle
Senior Metocean
Engineer



**£1
MILLION
PROGRAMME**

APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot



R&I PROGRAMME

Aim

Embed economic benefits in Scotland, supporting companies to explore ways to overcome specific technical challenges in offshore wind development.

Objectives

- Reduce time, cost and risk of offshore wind roll out in high energy environments
- Accelerate innovation, enhancing R&I capacity in Scotland
- Create jobs and help businesses grow, bringing skills, capabilities and economic benefit closer to wind farm projects



OFFSHORE
WIND R&I
RESEARCH & INNOVATION
PROGRAMME



£1
MILLION
PROGRAMME



APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot



EMEC
THE EUROPEAN MARINE ENERGY CENTRE LTD



West of Orkney
Windfarm



**£1
MILLION
PROGRAMME**

APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot



INNOVATION CALLS

Closing date: 1pm, Wednesday 9 April 2025

**SEARCHING FOR NOVEL SOLUTIONS TO HELP DELIVER
OFFSHORE WIND FASTER, CHEAPER AND AT LOWER RISK**

PROJECT SPONSORSHIP

up to £300,000

(funding intensity from 10% to 100%)

Get access to

**TECHNOLOGY
DEMONSTRATION SITES**

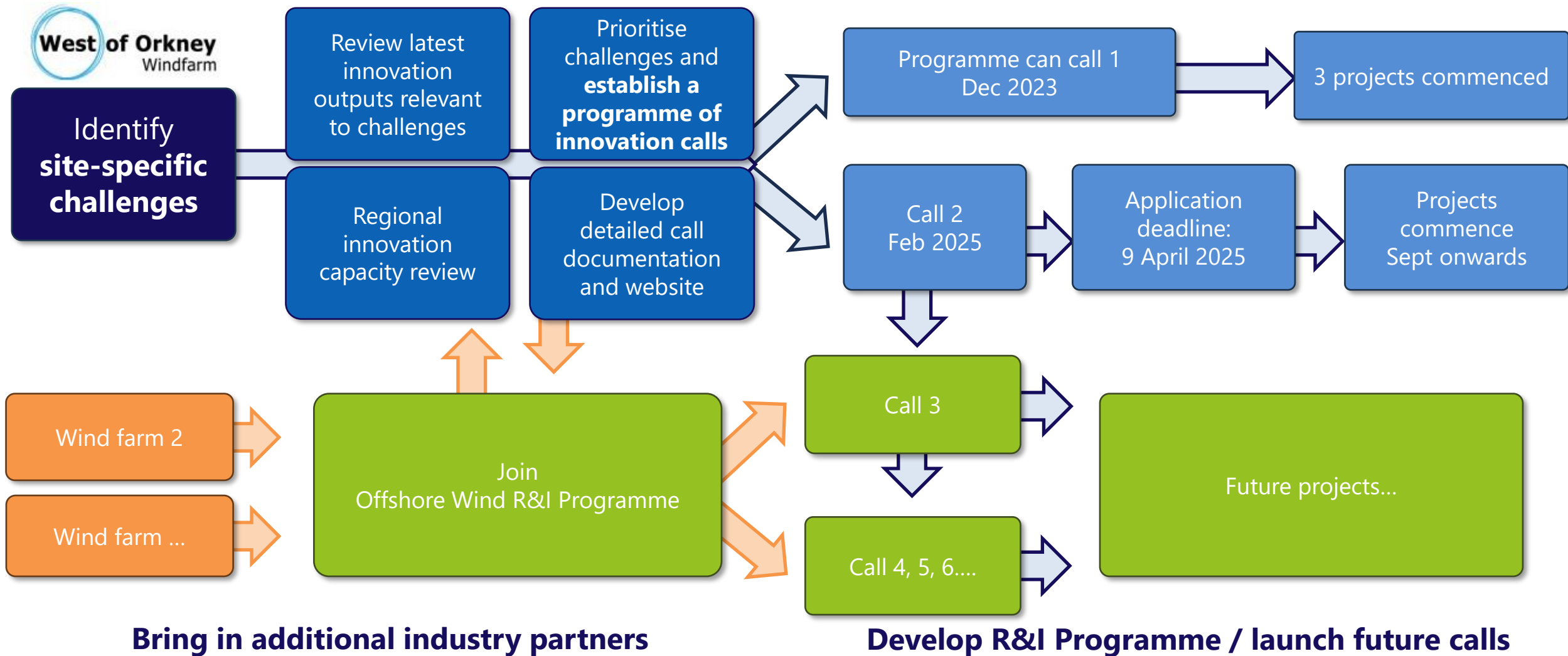
**FUNDING APPLICATION
SUPPORT**

**GROWING MARKET
OPPORTUNITIES**

R&I PROGRAMME

Establish R&I Programme

Launch R&I Innovation call



GET INVOLVED



£1 MILLION PROGRAMME

APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot



Apply to innovation call:

- Projects need to be innovative and targeted to the wind farm (detailed call packs in development)
- Looking for Scottish impact
- Programme priorities will shift over time

Project sponsor:

- Accelerate innovation in key challenge areas
- Engage constructively with the supply chain
- Deliver lease and other commitments such as collaboration, local content, supply chain and skills development, and environmental sustainability
- Get exposure to industry supply chains
- Access world-leading offshore energy testing and demonstration expertise

The collage features several documents from the Offshore Wind R&I Programme. One document is titled 'SPONSOR PROSPECTUS' and includes the text: 'A FLAGSHIP INNOVATION COMPETITION SUPPORTING OFFSHORE WIND PROJECT DEVELOPERS AND INNOVATORS WITHIN THE SUPPLY CHAIN'. Another document is titled 'DELIVER PROJECTS FASTER, CHEAPER AND AT LOWER RISK THROUGH RESEARCH AND INNOVATION' and includes a quote from Gemma Cuthbert, Director Technical Innovation & Commercial Lead, EMEC: 'We are looking forward to collaborating with other UK and Scottish project developers on the programme and bringing new and innovative technologies to the industry'. A third document is titled 'CHALLENGE AREAS' and lists categories such as 'BETWEEN' (Understanding site and resources), 'TURBINES' (Structural, generators and layout), 'FOUNDATIONS' (Foundations, piles and structure), 'LIFE EXTENSION AND DEMONSTRATION' (Life extension, power and supply), 'ACCESS' (Access, offshore and onshore), and 'EMEC-CP' (Cross-cut and customer support). The collage also includes photos of offshore wind turbines and workers in safety gear.

CHALLENGE AREAS

An aerial photograph of the ocean's surface, showing a series of waves with white foam. The water is a deep teal color, and the foam is bright white. The waves are moving from the bottom right towards the top left of the frame.



OFFSHORE WIND R&I
RESEARCH & INNOVATION
PROGRAMME

£1 MILLION PROGRAMME

APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot

EMEC
THE EUROPEAN MARINE ENERGY CENTRE LTD

West of Orkney
Windfarm



BACKGROUND



Considerations

- Address specific concerns for development and operation of the West of Orkney Windfarm - reducing time, cost and risk
- Be relevant to West of Orkney Windfarm development timescale
- Align with West of Orkney Windfarm Scottish/UK content & other ambitions
- Beneficial if relevant to wider offshore wind sector – help attract co-sponsors

**£1
MILLION
PROGRAMME**

 **APPLY NOW**
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot

8 KEY CHALLENGE AREAS



METOCEAN
Understanding site
and metocean



TURBINES
Wind turbine
generators and layout



FOUNDATIONS
Foundations, piles
and secondary steel



GRID
Cables, offshore
substation platforms
and transmission



**TRANSPORTATION
AND INSTALLATION**
Vessel choice, logistics
and weather prediction



**OPERATIONS
AND MAINTENANCE**
O&M, vessel design
and supply



**LIFE EXTENSION
AND DECOMMISSIONING**
Life extension, re-powering
and decommissioning



CROSS-CUTTING
Cross-cutting
and outside-the-box
thinking

32 SPECIFIC CHALLENGES



METOCEAN

A1 Seabed, sub-bottom & strata

A2 Weather forecasting and live metocean measurements

OPEN for application NOW

A3 Fish, mammals, birds & benthic

A4 Long-term effects of climate change



TURBINES

B1 Optimised layout & control strategies

B2 Redundancy, fault tolerance & ride-through

B3 Condition monitoring & structural health monitoring

B4 Blade treatments for performance & longevity



FOUNDATIONS

C1 Novel design(s) for reduced mass

C2 Serial production & local capability

C3 Condition monitoring & structural health monitoring

C4 Digital twins for fatigue, life & life extension



GRID

D1 Low fault cable-lay in tough conditions

D2 Proving reliability of HVAC equipment

D3 Unmanned fully automated offshore substation platforms

D4 Advanced down-cable analytics



TRANSPORTATION AND INSTALLATION

E1 Design for short weather window installation

E2 Construction flow, logistics and project management

E3 Techniques for large components

E4 Removing/separating people from risk



OPERATIONS AND MAINTENANCE

F1 Automation, robotics & removing the human

F2 SOV design for turbine access

OPEN for application NOW

F3 Blade maintenance in tough conditions

F4 Zero emission O&M vessels & equipment



LIFE EXTENSION AND DECOMMISSIONING

G1 Understanding health for life extension decision-making

G2 New approaches for best-practice decommissioning

G3 New equipment for cable extraction, recovery & recycling

G4 Watching brief for early re-powering and site lease extension



CROSS-CUTTING

H1 Sustainable materials and recyclability designed-in from start

H2 Machine learning and artificial intelligence for automated monitoring & diagnosis

H3 Remote sensing & operations, robotics and 'removing the human'

H4 Local capabilities: education, skills and human resources

OFFSHORE WIND R&I
RESEARCH & INNOVATION
PROGRAMME

£1 MILLION PROGRAMME



APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot

emec@offshoreinnovation.scot

EMEC
THE EUROPEAN MARINE ENERGY CENTRE LTD

West of Orkney
Windfarm

INNOVATION CALLS

An aerial photograph of ocean waves, showing white foam and deep blue water, serving as a background for the text.

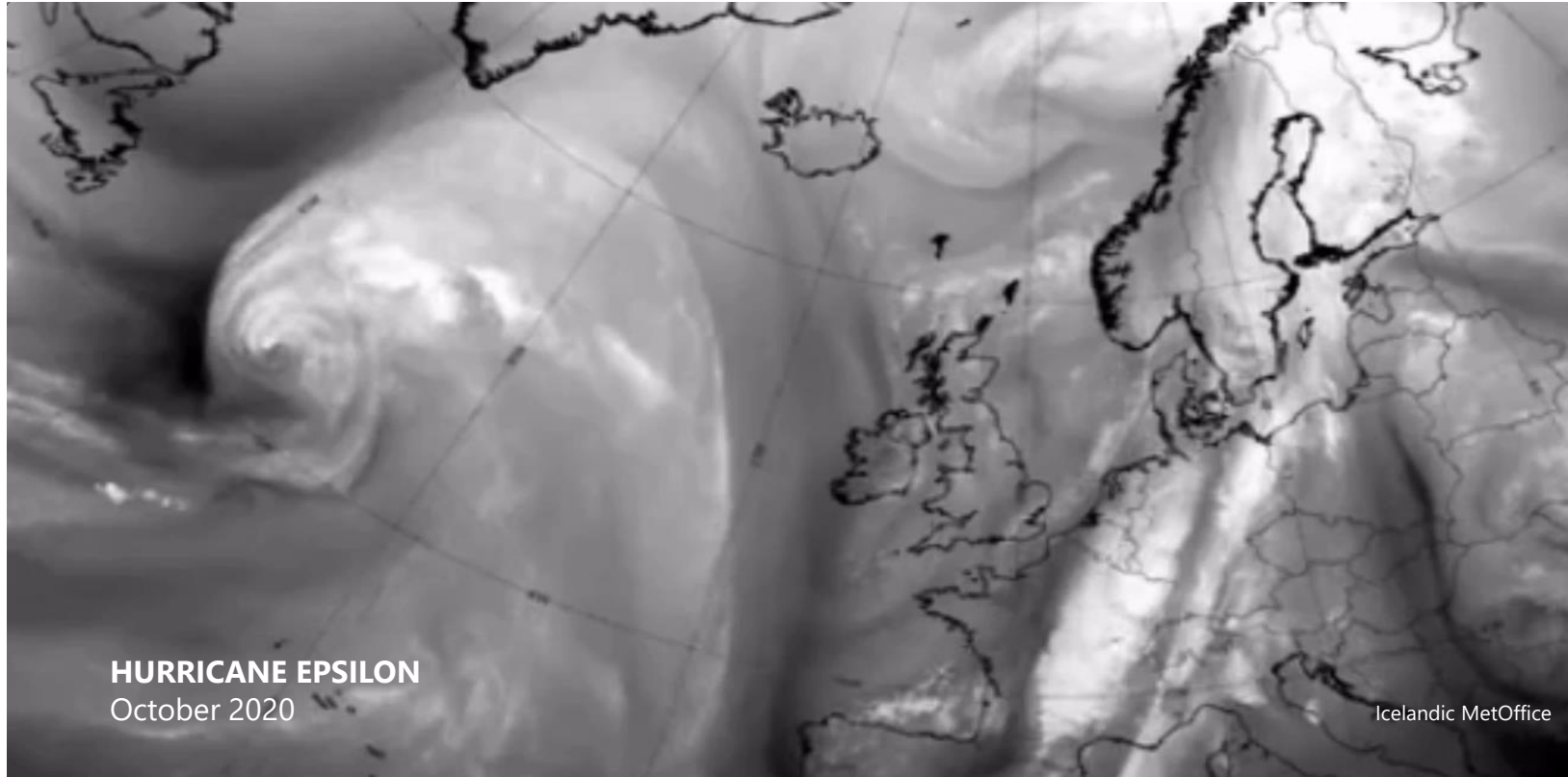
THE METOCEAN CHALLENGE



**£1
MILLION
PROGRAMME**

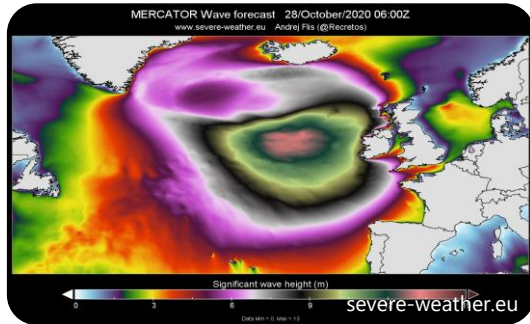
 **APPLY NOW**
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot



HURRICANE EPSILON
October 2020

Icelandic MetOffice



INNOVATION CALLS

Closing date: 1pm, Wednesday 9 April 2025



£1 MILLION PROGRAMME

APPLY NOW
INNOVATION CALL OPEN

A2

Weather forecasting

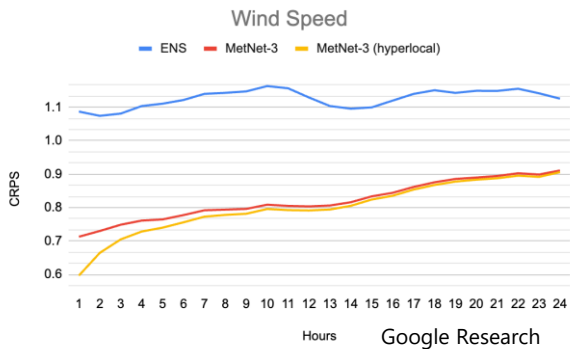
Understanding site and metocean

- CHALLENGE**
- Persistent periods of high wind speeds and sea states.
 - Short weather windows for offshore activities

AIM Improve quality of weather forecasts, specifically weather windows, to improve safety, operations and reduce costs.

EXAMPLES

- > Improved weather forecasts using AI / ML.
- > Innovative techniques for predicting weather windows at short, medium, or long timescales.
- > Integration of forecasted wave spectra to go/no-go forecast.
- > Techniques for better use of forecast uncertainty.
- > Improvements to forecasts by using far field wind and wave measurements.
- > Use of satellite products to visualise or improve weather forecasting and interpretation.
- > Downscaling and coupling of ensemble forecasts.
- > Advanced modelling and prediction techniques.



offshoreinnovation.scot
emec@offshoreinnovation.scot



INNOVATION CALLS

Closing date: 1pm, Wednesday 9 April 2025



**£1
MILLION
PROGRAMME**

APPLY NOW
INNOVATION CALL OPEN



E1

SOV design for turbine access

O&M, vessel design and supply

CHALLENGE

- Exposed location experiencing high windspeeds and sea states.
- Personnel access is a critical safety risk, yet essential for installation, commissioning and operations.

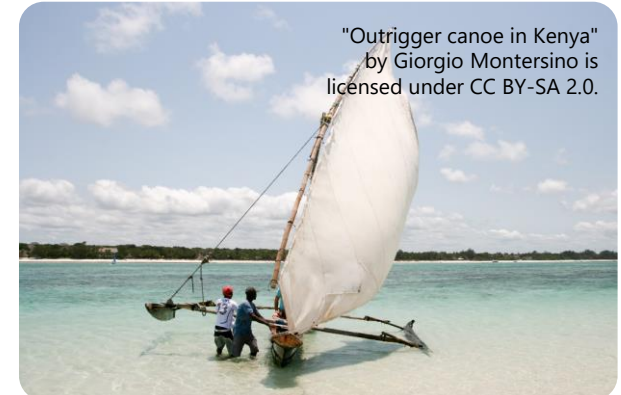
AIM Increase safety of personnel transfer while maximising opportunities for turbine access.

EXAMPLES

- > Innovative service operation vessel (SOV) design (and ancillary equipment) to facilitate safe turbine access in significantly higher wave conditions, longer swell and/or higher windspeeds than those expected from SOVs currently deployed or in the new vessel build pipeline.
 - > Novel hull designs.
 - > Modifications to existing hull designs.
 - > Stabiliser systems.
 - > Stability control systems.



"Cutty Sark.2013" by Bartholomeus Thoth is marked with CC0 1.0.



"Outrigger canoe in Kenya" by Giorgio Montersino is licensed under CC BY-SA 2.0.

offshoreinnovation.scot

emec@offshoreinnovation.scot

EMEC
THE EUROPEAN MARINE ENERGY CENTRE LTD

West of Orkney
Windfarm

APPLY NOW

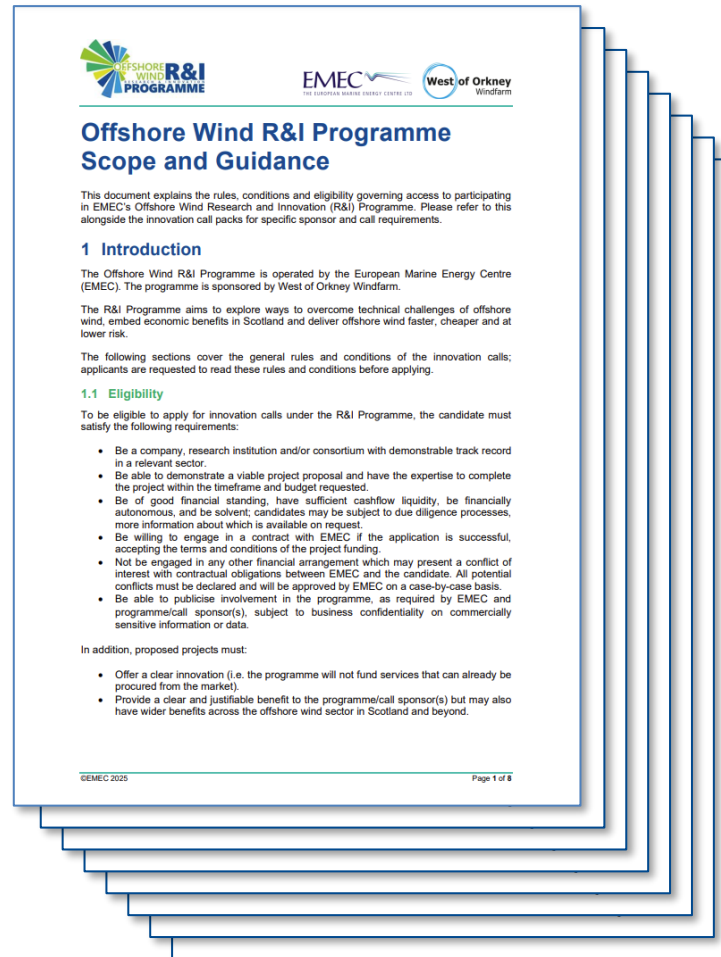


APPLICATION CRITERIA

Go to: offshoreinnovation.scot/innovation-calls

Scope and Guidance

Key impact (scoring) criteria



- > Relevance to challenge area
- > Genuinely innovative
- > Technical feasibility
- > Project deliverability
- > Benefit to call sponsor(s), including impact on project schedule/timescales, costs, operations, and project deliverability
- > Funding request and value for money
- > Benefit to wider offshore wind sector
- > Scottish and UK benefit, including impact on supply chain capacity
- > Risk assessment, mitigations and potential impacts on call sponsor safety, reputation and assets

OFFSHORE
WIND R&I
RESEARCH & INNOVATION
PROGRAMME

£1
MILLION
PROGRAMME



APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot

emec@offshoreinnovation.scot

EMEC
THE EUROPEAN MARINE ENERGY CENTRE LTD

West of Orkney
Windfarm

APPLICATION PROCESS AND TIMINGS

APPLICATION

STAGE 1

QUERIES	Wed 2 Apr 2025
DEADLINE	1pm, Wed 9 Apr 2025
APPLICANTS NOTIFIED OF OUTCOME	Fri 9 May 2025

DETAILED PROJECT PROPOSAL

STAGE 2

DEADLINE	Fri 6 June 2025
APPLICANTS NOTIFIED OF OUTCOME	Fri 11 July 2025

PITCHES

STAGE 3

PITCH (Aberdeen)	Wk comm 21 July 2025
APPLICANTS NOTIFIED OF OUTCOME	Fri 19 Sept 2025
CONTRACTING & PROJECTS COMMENCE	Sept-Dec 2025



£1 MILLION PROGRAMME

APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot



**£1
MILLION
PROGRAMME**

APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot

STAGE ONE - APPLICATION

www.offshoreinnovation.scot/application-form

APPLICATION
STAGE 1

QUERIES	Wed 2 Apr 2025
DEADLINE	1pm, Wed 9 Apr 2025
APPLICANTS NOTIFIED OF OUTCOME	Fri 9 May 2025



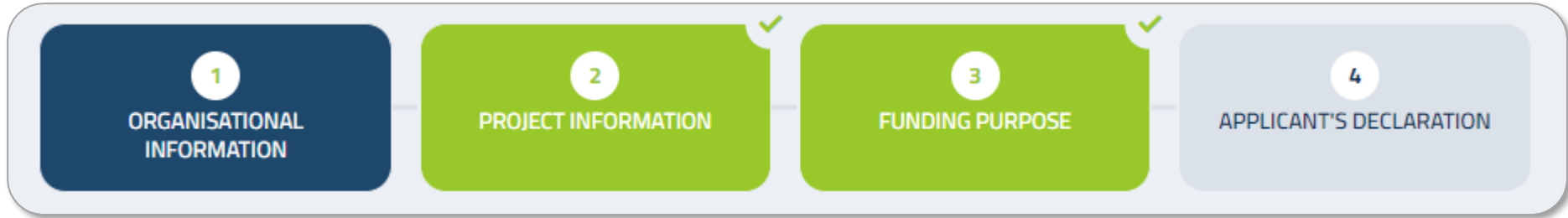
OFFSHORE WIND R&I PROGRAMME

APPLY NOW

APPLICATION FORM GUIDANCE

Application form guidance
Section 1 – Organisational information

- Contact name
- Job title
- Organisation name
- Phone number
- Email address
- Website
- Address
- Location where majority of work will be completed?
- Number of employees (FTE)
- Annual turnover



⚠ Progress will save automatically



£1 MILLION PROGRAMME

APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot



STAGE TWO/THREE DETAILED PROJECT PROPOSAL & PITCH

DETAILED PROJECT PROPOSAL STAGE 2

DEADLINE	Fri 6 June 2025
APPLICANTS NOTIFIED OF OUTCOME	Fri 11 July 2025

PITCHES STAGE 3

PITCH (Aberdeen)	Wk comm 21 July 2025
APPLICANTS NOTIFIED OF OUTCOME	Fri 19 Sept 2025
CONTRACTING & PROJECTS COMMENCE	Sept-Dec 2025

Key impact (scoring) criteria

- > Detailed information relating to the project proposal.
- > Background experience of the candidate demonstrating the ability to achieve project success.
- > Proposed timeline for the project and any constraints known at the time of submission.
- > Funding value requested.
- > Details of any information required to complete the project.
- > Overview of identified risks and proposed mitigations.
- > CVs of personnel who will undertake the work.

FAQS

What funding is available? ▼

Who can apply? ▼

Do I need to be based in Scotland to participate? ▼

How do I apply? ▼

When do applications close? ▼

How long will it take to receive feedback on your application? ▼

I don't have a project idea as yet, can I still register my interest? ▼

When will future innovation calls be launched? ▼

Who owns the intellectual property of innovations going through the R&I Programme? ▼

 OFFSHORE
WIND R&I
RESEARCH & INNOVATION
PROGRAMME

**£1
MILLION
PROGRAMME**



APPLY NOW
INNOVATION CALL OPEN

offshoreinnovation.scot
emec@offshoreinnovation.scot

EMEC
THE EUROPEAN MARINE ENERGY CENTRE LTD

West of Orkney
Windfarm

Call us on

01856 852060

Email

emec@offshoreinnovation.scot



**OFFSHORE
WIND R&I**
RESEARCH & INNOVATION
PROGRAMME

**£1
MILLION
PROGRAMME**

**DELIVERING OFFSHORE WIND
FASTER, CHEAPER AND
AT LOWER RISK**

offshoreinnovation.scot



APPLY NOW
INNOVATION CALL OPEN