



Innovate  
UK

# Opportunities for collaborative R&D funding in Energy

Host: Kamran Choudhury  
Knowledge Transfer Manager  
Innovate UK Business Connect  
[kamran.choudhury@iuk.ktn-uk.org](mailto:kamran.choudhury@iuk.ktn-uk.org)

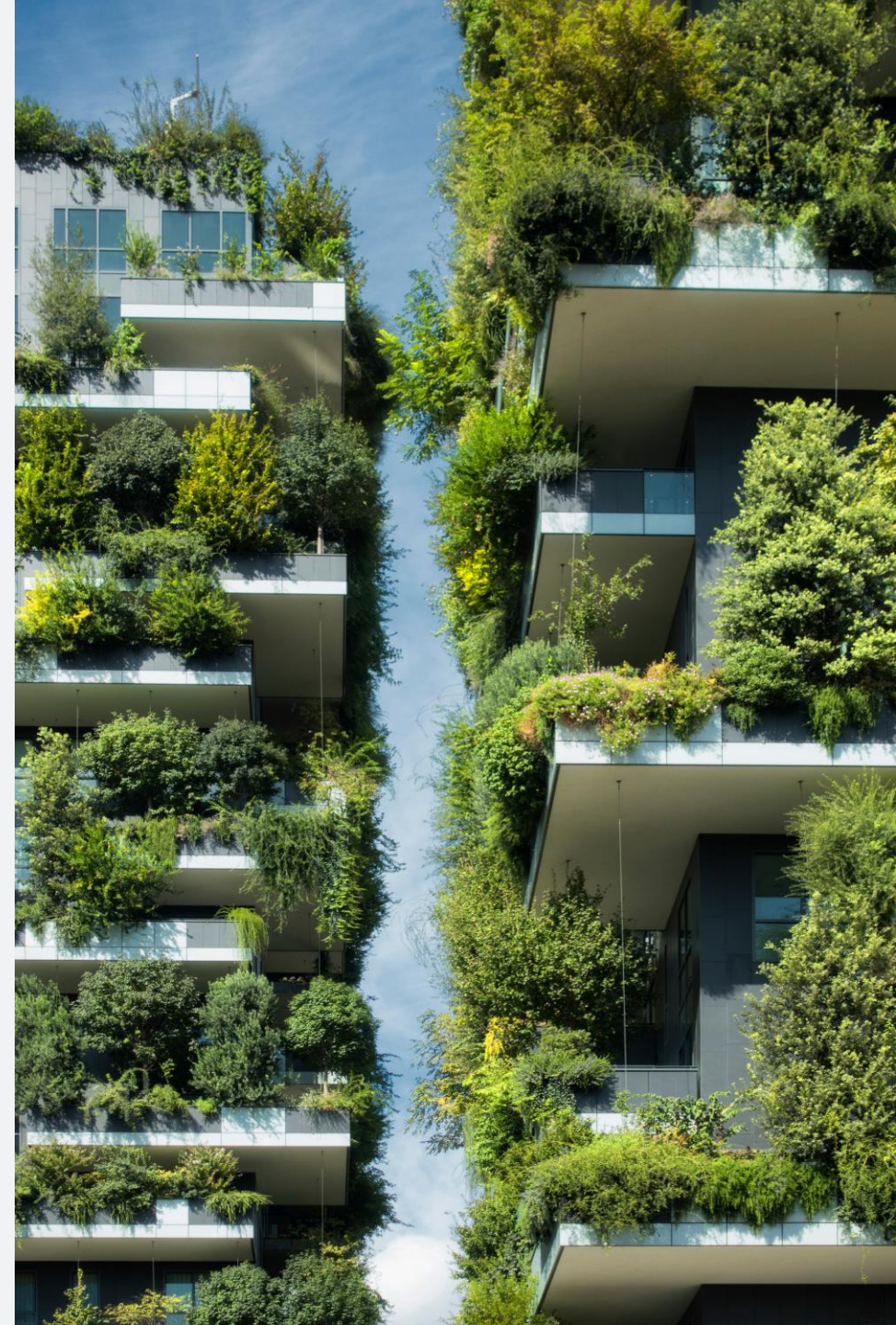
Visit the UK Horizon Europe Hub



# Introduction

## House Keeping

- **Microphone off** unless speaking please.
- Please post Q using the **Q&A FUNCTION**.
- Use the **Zoom-Chat for connections**.  
**Save the zoom chat** – we will not be sharing this.
- Please message **Michael Foster** in the Zoom chat if you are having technical issues.
- **The webinar is being recorded** and will be shared with the slides afterwards.



# Innovate UK Business Connect Team

From innovate UK Business Connect we help you accelerate your innovation. We do this by **connecting ideas, people and communities to respond to challenges** and **drive positive change**. We can make introductions to new business partners and funders; help you find collaborators for grants and project delivery and introduce you to new market opportunities.

## How we can help



Make powerful  
connections



Secure funding



Get expert  
insight



Keep up  
to date



Innovate  
UK



TIME	TOPIC	SPEAKER
10:00 (5min)	<b>Welcome &amp; Introduction</b>	Kamran Choudhury – Knowledge Transfer Manager at IUK BC
10:05 (15min)	<b>Horizon Europe, UK Association to the programme &amp; funding opportunities</b>	Conall McGinley – National Contact Point for Energy at IUK
10.20 (20min)	<b>Eureka Overview – Eurogia Cluster</b> (Low carbon energy technologies)	Ben Morris – UK National Programme Manager
10:40 (20min)	<b>Q&amp;A</b>	
11:00 (30min)	<b>Pitching Session (3min each) &amp; Close</b>	Top 10 Pitches

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# Agenda

# Horizon Europe energy collaborative R&D funding opportunities webinar 19<sup>th</sup> Aug 24

Conall McGinley  
Horizon Europe UK National Contact Point for Energy  
[Conall.McGinley@IUK.UKRI.org](mailto:Conall.McGinley@IUK.UKRI.org)



# Benefiting everyone through knowledge, talent and ideas

UK Research and Innovation brings together the 7 Research Councils, Innovate UK and Research England.

As part of UK Research and Innovation, Innovate UK drives productivity and economic growth by supporting businesses to develop and realise the potential of new ideas including those from the UK's world-class research base.



**UK Research  
and Innovation**

# Plan

- What is Horizon Europe?
- How to apply
- Top tips
- Public support for applicants
- Live Calls
- Q&A

# Horizon Europe National Contact Points (NCPs)

Team of national advisors, appointed by the Government to support UK organisations to successfully participate in Horizon Europe by:

- Raising Awareness of the programme
- Helping you find the right Topic
- Identifying the best ways to find partners
- Navigating the EU funding & tender opportunities portal
- Developing the proposal
- Answering any other Horizon Europe related questions

<https://www.gov.uk/business-finance-support/horizon-europe-funding>

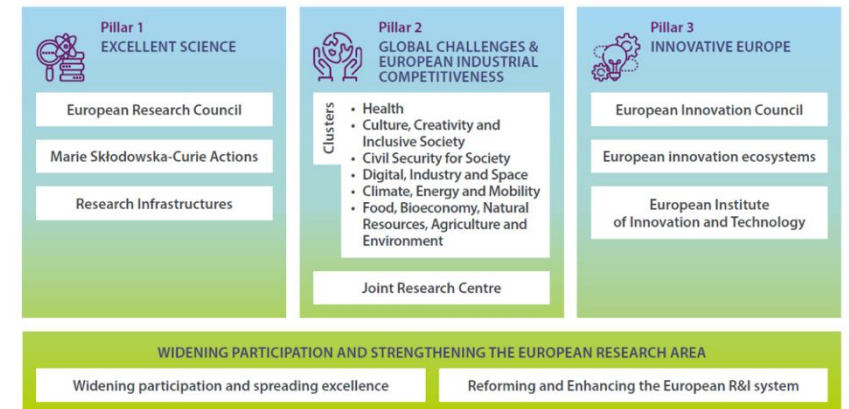


Find National Contact  
Points from all  
participating countries



# What is Horizon Europe?

- Horizon Europe is the current EU's Framework Research and Innovation funding programme.
- It is the largest R&I funding programme in the world, with a budget of over £81bn for 2021-27.
- The programme is divided into three main parts:
  - Pillar 1 supports excellence in science
  - Pillar 2 focuses on solving global challenges through collaborative research & innovation
  - Pillar 3 supports business growth and competitiveness
- Other parts of Horizon also include support for research infrastructure and widening participation.
- Key priority areas include food, bioeconomy, climate change, health, digital, transport and mobility, space, energy, industry, civil security and humanities. The programme is open to all types of organisations of all sizes.



# Energy Innovation Funding Landscape

Global Business Innovation Programme

- Innovate UK Smart Grant
- Targeted Innovate UK/DSIT Calls
- Energy Catalyst Challenge Calls
- Knowledge Transfer Partnership funding
- EIC Accelerator



- Scottish Enterprise SMART Grant
- Scottish Enterprise CETP Grant
- Enterprise NI Grants
- Wales SMART Partnerships funding

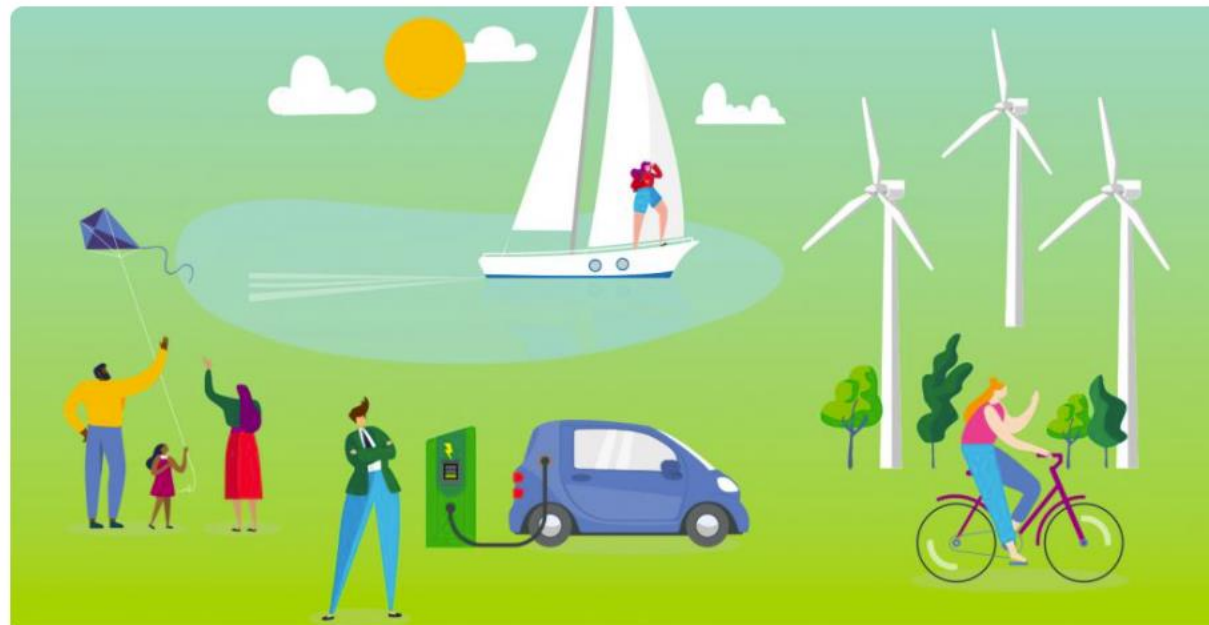
- Targeted Innovate UK/DSIT Calls
- **Horizon Europe**
- Eureka Eurogia
- Eureka Eurostars
- OFGEM Strategic Innovation Fund
- Innovate UK Smart Grant

- Energy Innovation Council Challenges
- Innovate UK Innovation Exchange

Innovate UK Innovation Loans

# Cluster 5: Climate, Energy and Mobility

Addresses issues relevant to the twin green and digital transitions and the post-COVID 19 recovery, focussing on the transformation of our economy, industry and society with a view to achieving climate neutrality in Europe by 2050.



# Cluster 5: Climate, Energy and Mobility

## Six Destinations

1. Climate sciences and responses
2. Cross-sectorial solutions for the climate transition
3. Sustainable, secure and competitive energy supply
4. Efficient, sustainable and inclusive energy use
5. Clean and competitive solutions for all transport modes
6. Safe, resilient transport and smart mobility services for passengers and goods



# Why is Horizon Europe relevant to me?

- Another source of funding for innovative organisations
- Higher funding rates & the only innovation funding for some sectors
- Collaborate with world leading organisations to enhance UK capabilities
- Influence standards, regulations and research policies
- Collaborative relationships frequently become transactional ones - exports
- Creating UK jobs, growth and stronger supply chains

# The fundamentals of Horizon Europe

- Must apply as part of a consortium representing at least three member states/associate countries
- Projects generally last 2-5 years
- Projects must advance cutting-edge innovation at a European level
- Projects must benefit all Europeans
- Proposal preparation can take 6-12 months
- Key steps:
  - Identify relevant call
  - Build consortium or join existing consortium
  - Develop proposal



# What does a Horizon Europe project look like?

- An integrated typology-based approach to guide the future development of European historic buildings towards a clean energy transition (**FuturHist**)
- Topic: Future-proofing historical buildings for the clean energy transition
- €3.9m across 14 partners
- Running from Jan 24 – Dec 27
- Involving Edinburgh World Heritage Trust and University of Strathclyde



# What does a Horizon Europe project look like?

- **CarbOn Neutral cluSters through Electricity-based iNnovations in Capture, Utilisation and Storage**
- Aims to provide an industrial plan for a net-zero carbon reality.
- To this aim it will utilise 3 electricity-based innovations:
  - carbon capture based on alkali absorption
  - methods for conversion of CO<sub>2</sub> to formate and formic acids for market uses
  - a safe cyclic loading system of CO<sub>2</sub> into salt formations and aquifers for storage purposes.
- **UK Beneficiaries:**
  - Net Zero Technology Centre
  - Robert Gordon University
  - Heriot-Watt University
  - UKRI
- 18 participants representing 7 countries



**Consensus**





# UK success in Horizon - Energy

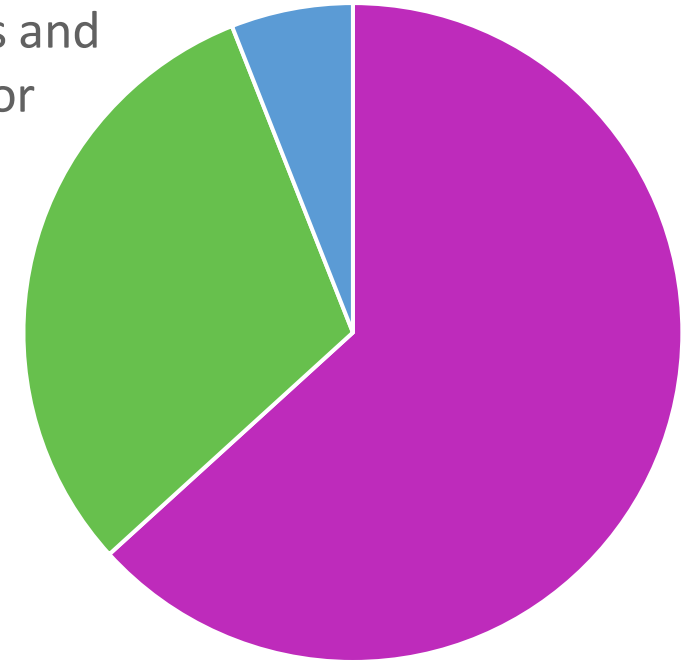
- The equivalent sector in the Horizon 2020 programme was “Secure, Clean and Efficient Energy” with a budget of €4.99bn
- The UK attracted **€410m of this** – equivalent to 8%
- 441 unique UK participants involved in 491 projects
- Of the 441 successful applicants
  - 285 were businesses
  - 58 Universities
  - 29 public agencies
  - 15 Research Centres
  - 54 were miscellaneous
- Horizon Europe has benefited both major corporations, small businesses and micro-businesses in all regions of the UK.
- Top two areas benefiting from this funding were London and Scotland



Net EU Contribution by Country/Region

# UK success in Horizon Europe - Energy

- In Horizon 2020, most beneficiaries were Businesses. In Horizon Europe, most beneficiaries have been Universities
- Horizon Europe has benefited both major corporations, small businesses and micro-businesses in all regions of the UK with **£106m of funding so far** for Energy R&D
- Horizon Europe funding
  - 104 Universities/Research Agencies
  - 90 Businesses
  - 20 Other
- Association means:
  - UK organisations can lead consortia from 2024
  - UK organisations can receive funding **directly from the European Commission**



- Universities/Research Agencies
- Businesses
- Public Sector

# Built Environment Examples



UNIVERSITY OF  
BIRMINGHAM



# Energy Supply Examples

**IMPERIAL**

**EMEC**  
THE EUROPEAN MARINE ENERGY CENTRE LTD



# Hydrogen Examples



# Upcoming Live Calls

# Built Environment

Call Title	Topic ID	Deadline	Type of action	Budget (€)	Number of projects to be funded
<a href="#"><u>Industrialisation of sustainable and circular deep renovation workflows (Built4People Partnership)</u></a>	HORIZON-CL5-2024-D4-02-01	04-Feb-25	IA	8m	2
<a href="#"><u>Robotics and other automated solutions for construction, renovation and maintenance in a sustainable built environment (Built4People Partnership)</u></a>	HORIZON-CL5-2024-D4-02-02	04-Feb-25	RIA	4m	2
<a href="#"><u>BIM-based processes and digital twins for facilitating and optimising circular energy renovation (Built4People)</u></a>	HORIZON-CL5-2024-D4-02-03	04-Feb-25	IA	4m	2
<a href="#"><u>Design for adaptability, re-use and deconstruction of buildings, in line with the principles of circular economy (Built4People Partnership)</u></a>	HORIZON-CL5-2024-D4-02-04	04-Feb-25	RIA	4m	2
<a href="#"><u>Digital solutions to foster participative design, planning and management of buildings, neighbourhoods and urban districts (Built4People)</u></a>	HORIZON-CL5-2024-D4-02-05	04-Feb-25	IA	5m	2

# CCUS

Call Title	Topic ID	Deadline	Type of action	Budget (€)	Number of projects to be funded
<a href="#">CCU for the production of fuels</a>	HORIZON-CL5-2024-D3-02-11	04-Feb-25	IA	7m	2
<a href="#">DACCS and BECCS for CO2 removal/negative emissions</a>	HORIZON-CL5-2024-D3-02-12	04-Feb-25	IA	5-7m	2



# Low Carbon Fuels

Call Title	Topic ID	Deadline	Type of action	Budget (€)	Number of projects to be funded
<a href="#">Development of smart concepts of integrated energy driven bio-refineries for co-production of advanced biofuels, bio-chemicals and biomaterials</a>	HORIZON-CL5-2024-D3-02-03	04-Feb-25	RIA	3.5m	2
<a href="#">Development of next generation synthetic renewable fuel technologies</a>	HORIZON-CL5-2024-D3-02-02	04-Feb-25	RIA	4m	3

# Offshore Wind

Call Title	Call ID	Deadline	Type of action	Budget (€)	Number of projects to be funded
<a href="#"><u>Minimisation of environmental, and optimisation of socio-economic impacts in the deployment, operation and decommissioning of offshore wind farms</u></a>	HORIZON-CL5-2024-D3-02-08	04-Feb-25	RIA	5m	2
<a href="#"><u>Demonstrations of innovative floating wind concepts</u></a>	HORIZON-CL5-2024-D3-02-09	04-Feb-25	IA	15m	2

# Solar

Call Title	Call ID	Deadline	Type of action	Budget per project (€)	Number of projects to be funded
<a href="#">PV-integrated electric mobility applications</a>	HORIZON-CL5-2024-D3-02-05	04-Feb-25	IA	7m	2
<a href="#">Innovative, Community-Integrated PV systems</a>	HORIZON-CL5-2024-D3-02-06	04-Feb-25	IA	5m	2
<a href="#">Resource Efficiency of PV in Production, Use and Disposal</a>	HORIZON-CL5-2024-D3-02-07	04-Feb-25	CSA	3m	1
<a href="#">Digital tools for CSP and solar thermal plants</a>	HORIZON-CL5-2024-D3-02-01	04-Feb-25	IA	3m	2

# Wave & Tidal

Call Title	Topic ID	Deadline	Type of action	Budget (€)	Number of projects to be funded
<a href="#">Critical technologies for the future ocean energy farms</a>	HORIZON-CL5-2024-D3-02-04	04-Feb-25	RIA	4m	2

# Support for applicants

# Horizon Europe Support – Travel Grant

- Innovate UK Business Connect is offering [travel support](#) for UK SMEs to attend consortia building events in Europe.
- If successful in your application for travel and accommodation costs, you will receive pro-active support from Innovate UK to help you maximise the benefit of attending.
- Travel Grants currently available for upcoming conferences across Europe (up to £700 per SME), include:
  - [Sustainable Places 2024](#), 23-25 September, Luxembourg
  - [Wind Energy Hamburg](#), 24-27 September 2024, Hamburg, Germany
  - [Low Carbon Technologies: EUROGIA Partnering Day](#), 30 September 2024, Paris, France
  - [EU Hydrogen Week](#), 18-22 November 2024, Brussels, Belgium



**HORIZON EUROPE**

# Horizon Europe Support – Pump Priming

- UK SMEs that are considering submitting a proposal to Horizon Europe competitions can apply for a ['pump priming'](#) grant of up to £6,000 (inc. VAT) to help them prepare.
- Successful applicants are advised to work with a UK National Contact Point in support of their project.
- This could be used for
  - membership fees towards a European association
  - attending a networking event or consortium meeting
  - paying staff time while they write the proposal (but not for paying a professional bid writer)



**HORIZON EUROPE**

# Building networks to form successful consortia

- Use your own professional networks – LinkedIn, Trade Bodies, Universities, etc
- Use [Cordis](#) to identify recently funded projects and their consortium members
- Join the relevant partnerships and associations
  - Batteries for Europe ([Batt4EU](#))
  - Built4People Partnership ([B4P](#))
  - Zero Emission Waterborne Transport ([ZEWT](#))
  - Connected Cooperative Automated Mobility ([CCAM](#))
- Attend networking events in Europe
- Register and then search [GREENET](#) partner search tool



# Funding Strategy Tips

- Define triggers and match opportunities to your R&D interests
- Shape the future by being proactive and connected
- Make your application problem-centric





UK Research  
and Innovation

# Any Questions?

Newsletter Subscription: <https://eufunding.ukri.org/subscribe>



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UK



## Innovate UK Participation

**Ben Morris**

National Project Coordinator (NPC) for Eureka  
Innovate UK

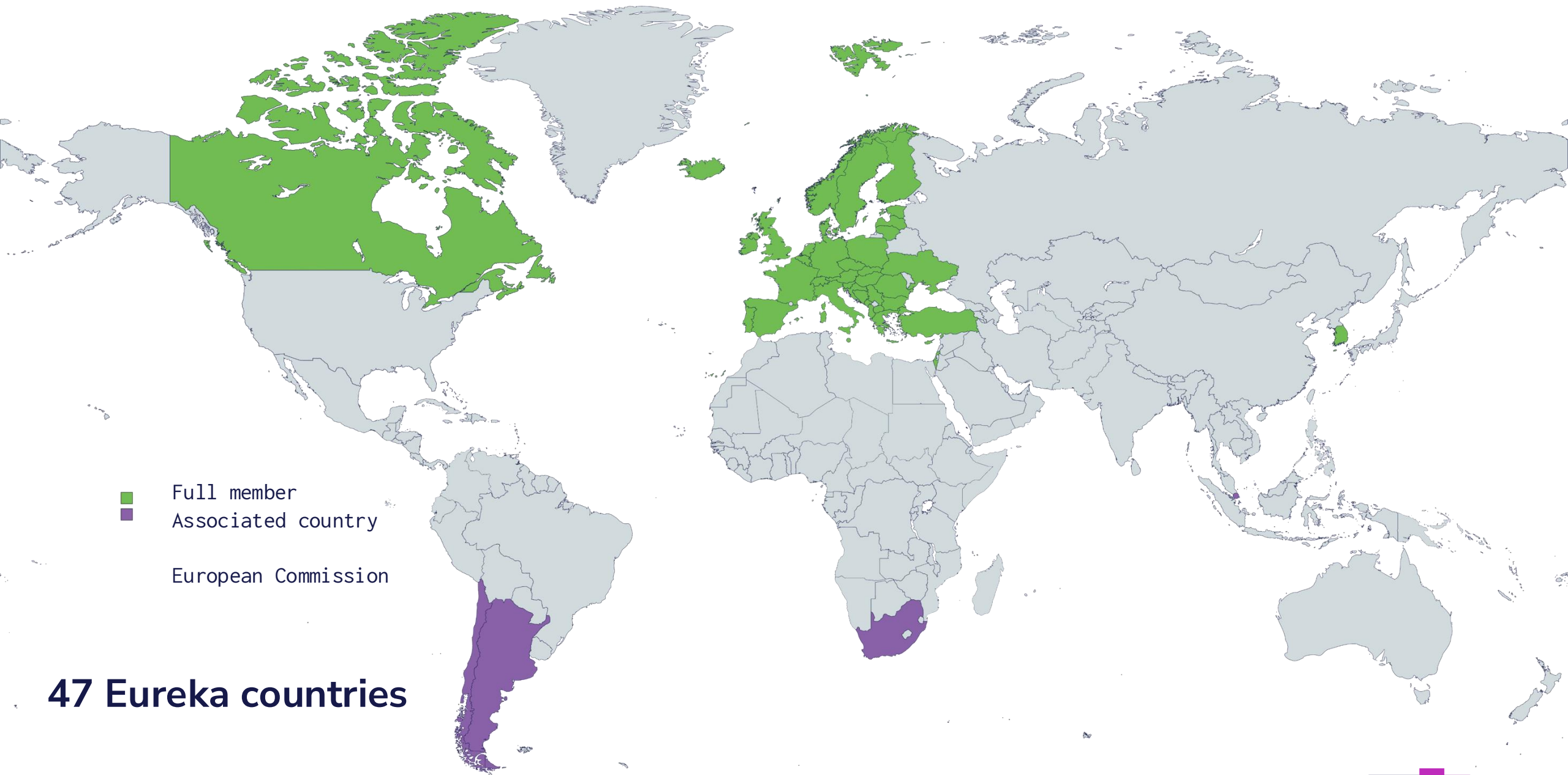
**Teresa Arumardi**

Deputy NPC for Eureka  
Innovate UK



# A tool for international Research and Development (R&D) and innovation:

Projects between partners in any  
two (or more) Eureka countries



■ Full member  
■ Associated country  
■ European Commission

**47 Eureka countries**

# Eureka programmes

**Network projects** flexibility for international partners

**Globalstars** flexibility for international partners (non-Eureka countries)

**Eurostars** innovative Small or Medium-sized Enterprises (SMEs) aim higher

**Clusters** thematic industry-led communities

**Innowwide** supports research and business ventures in new markets

**Investment readiness** drives companies towards private investment



# Clusters

- Industry-led communities consisting of leading companies, knowledge institutes and end-user organisations
- Strategic technology areas
- Market-oriented, aiming to solve economic, technological and societal challenges

# Clusters



## **CELTIC-NEXT**

Next-generation secure communications for a trusted and sustainable digital society

## **EUROGIA 2030**

Low-carbon energy technologies

## **ITEA 4**

Software innovation and digital transition

## **SMART**

Advanced manufacturing and production technologies

## **Xecs**

Sustainable digital transformation in electronic components and systems



The background of the image is a photograph of a wind farm. Several large, three-bladed wind turbines are visible, standing on a flat, green field. The sky is filled with large, white, fluffy clouds. The entire image has a semi-transparent green overlay. The logo for Eurogia 2030 is positioned in the upper right quadrant. The logo consists of a stylized green leaf with a white lightning bolt inside, followed by the word "Eurogia" in a bold, green, sans-serif font, and the year "2030" in a smaller, blue, sans-serif font to its right.

# Eurogia 2030

*The Eureka Network Cluster on **Low-Carbon Technologies***

# EUROGIA<sup>2030</sup> The Cluster of energy transition

a 19-year cluster history  
from fossile to renewables



# EUROGIA<sup>2030</sup> within



01

**The EUREKA  
Cluster dedicated to  
Low-Carbon Energy  
Technologies**

02

**Includes  
the full energy mix and  
value chain**

03

**Labelled for the  
MAP 2021-2025**

04

**EUROGIA2030  
promotes and facilitates  
partnerships between  
Industry, Universities  
and Governments**

## OUR VISION

Some of the Eurogia targeted challenges to achieve the sustainability goals are necessary, but not limited to:

- **Carbon-free energy supply**
- **Green mobility and Smart cities**
- **Smarter housings and constructions**
- **Bio resources and environment**

## The Eurogia2030 Purpose

EUROGIA2030 is on the front line in the Energy field to achieve **carbon neutrality goals.**

Through low carbon technologies R&D solutions Eurogia2030 aims to contribute for a **sustainable environment**, for the **reduction of climate change** and for a **sustainable growth.**

# The Eurogia2030 5Ds Strategy



## ***DECARBONIZATION***

- **Renewable Energy resources & integration with the existing grid,**
- **Electric vehicles and charging infrastructure,**
- **Green and zero emission buildings,**
- **H2 technologies and Storage.**

## ***DECENTRALIZATION & DIGITALIZATION***

- **Microgrids**
- **Smart Grids**
- **ICT, AI**
- **IOT.**
- **IT&OT cybersecurity**

## ***DEREGULATION & DEMOCRATIZATION***

- **Blokchain Technologies**
- **Flexibility Management**
- **Virtual Power Plants**
- **Network Stability**
- **Peer to Peer Energy Trade**
- **Demand Side Management**

# Eurogia <sup>2030</sup> Supporting Countries

**Europe**




Flags of supporting countries in Europe: Belgium, France, Denmark, Germany, United Kingdom, Netherlands, Poland, Czech Republic, Portugal, Spain, Switzerland, Israel, and Turkey.

**Americas**



Flags of supporting countries in the Americas: Canada and Chile.

**Asia**




Flags of supporting countries in Asia: Singapore and South Korea.

**Africa**



Flag of supporting country in Africa: South Africa.

# The Eurogia2030 Website



The screenshot shows the website's header with the Eureka logo (Σ eureka innovation beyond borders) and the Eurogia 2030 logo. A navigation menu includes: HOME, EUROGIA ASSOCIATION, EUROGIA2030, BROKERAGE TOOL, FUNDING, NEWS & EVENTS, CONTACT, and FAQ. Below the header is a large image of wind turbines in a field. The main content area features the following text:

**EUROGIA2030**  
**THE EUREKA CLUSTER FOR LOW CARBON TECHNOLOGIES SOLUTIONS**

**UPCOMING:**  
CALL27 02 SEPT- 15 NOV 2024  
EUROGIA PO DAY IN PARIS 30TH SEPTEMBER

Project submissions will be based on the two steps process (1<sup>st</sup> step PO/ 2<sup>nd</sup> step FPP) accessed through the Eurogia Call Info website: <https://eurogia.eu/>

Call guidance is available on the website

Call submission support will be provided by the Eurogia cluster

It is essential for each partner to contact their supporting Public Authority at the earliest opportunity to verify eligibility

Funding rates/Rules of participation are subject to National policy

# Submit your Project Proposal

**Submission Deadline Call27: November 15th, 2024 17:00 CET**

**01**

**Log in the Tool:**

<https://cluster-projects.eurestools.eu/>

**02**

**Fill in the web forms in the Tool**

**03**

**Download the proposal templates in the Templates section of the Eurogia website (<https://eurogia.eu/templates/>)**

**04**

**Upload your proposal and all the relative documents in the Tool**

**If it is the first submission with Eurogia you have to present only the PO, Project Outline**



## Eurogia2030 Call Process (two steps)

- 1st Step: submission of a **Project Outline (PO)**

*Evaluation of the PO by the Eurogia Technical Committee + recommendation from Public Authorities*

- 2nd Step: Submission of a **Full Project Proposal (FPP)** in the following CALL
- Granting of the Eurogia2030 LABEL
- National Application to the Funding Bodies  
**InnovateUK Funding decision on an annual basis (Mid-year)**

**Open Now: CALL27**

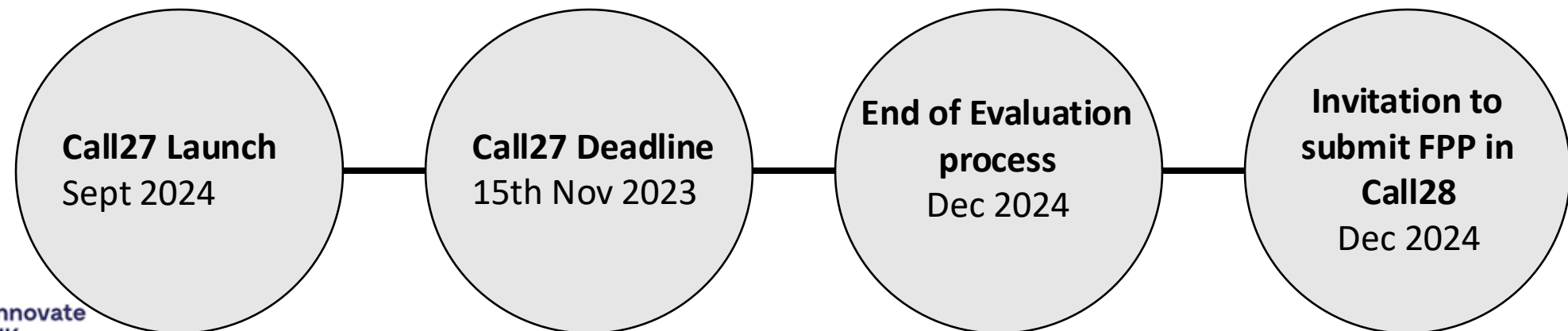
Deadline 15th Nov 2024

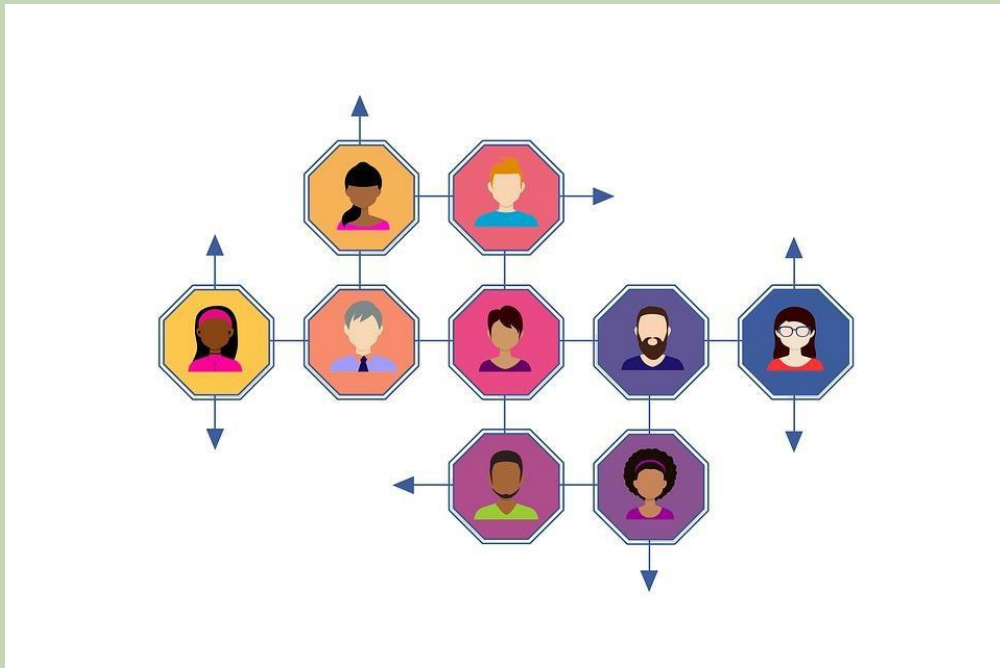
**Upcoming Call : CALL28**

Launch: Jan 2024

Deadline: Mar 2024

## CALL24 TIMELINE





## EUROGIA BROKERAGE TOOL

<https://eureka-eurogia-green.eu/eurogia-brokerage-tool/>

• *In order to support you in preparing your project proposal for EUROGIA Calls, we have created an online Brokerage tool. It enables you to:*

- ***Upload your Project idea***
- ***Upload your Expertise Offering***
- ***Look for partners via the Partner Expertise search***
- ***See the Project Ideas of others***
- ***Contact Project Idea owners or partners***



# Eurogia<sup>2030</sup>

Thank you!



For more info:

Niccolò Cividini, *Eurogia2030 Programme & Office Manager*

- [www.eurogia.eu](http://www.eurogia.eu)
- [contact@eurogia.com](mailto:contact@eurogia.com)
- +32468164766

# UK Scope & Eligibility

## Your project

- UK applicants can apply for total grant of up to £750,000 (depending on Cluster) for each project partner.
- All types of UK registered organisations can apply for funding.
- Expected duration 12 – 36 months
- Your project must be collaborative.
- [Further guidance](#)

## Funding

We have allocated up to £5,000,000 to fund innovation projects in this call.

For industrial research projects, you could get funding for your eligible project costs of:

- up to 70% if you are a small enterprise
- up to 60% if you are a medium enterprise
- up to 50% if you are a large enterprise
- UK registered [research organisations](#) in your consortium can share up to 30% of the UK total eligible project costs. If your consortium contains more than one UK research organisation, this maximum will be shared between them.

Of that 30% you could get funding for your eligible project costs of up to:

80% of full economic costs (FEC) if you are a Je-s registered institution such as an academic

# EUREKA Clusters



[CELTIC-NEXT – Next Gen  
Comms](#)



[Eurogia 2030](#)



[Xecs](#)



[SMART](#)



**I T E A 4**

[ITEA 4](#)

Eureka | Home ([eurekanetwork.org](http://eurekanetwork.org))

[eurekanpc@iuk.ukri.org](mailto:eurekanpc@iuk.ukri.org)



Innovate  
UK



Department for  
Science, Innovation  
& Technology

**EUREKA**   
innovation across borders

# Pitch Session

Name	Organisation	Attendance
<b>Matt Storey</b>	European Marine Energy Centre (EMEC)	Confirmed
<b>Dr Reza Andalibi</b>	Lancaster University	Confirmed
<b>Mark Gronnow</b>	Bio Renewable Development Centre	Confirmed
<b>Martin Holley</b>	Centre for Sustainable Energy	Confirmed
<b>Prof David Jenkins</b>	Heriot-Watt University	Confirmed
<b>Koji Muto</b>	Ki Hydrogen	Confirmed
<b>Frazer Ely</b>	Latent Drive	Confirmed
<b>Elvin Aliyev</b>	University of Birmingham	Confirmed
<b>Seumas MacKenzie</b>	Nova Innovation	Confirmed
<b>Duncan Brown</b>	Hitachi	Confirmed

# CCU for the production of fuels (HORIZON-CL5-2024-D3-02-11)



THE EUROPEAN MARINE ENERGY CENTRE LTD

## Proposed Approach & Experience

### Approach:

- Proposed demonstration of CCU activities utilizing access to available renewable energies from EMEC's owned grid connected test site.
- Lessons learned from previous projects within synthetic fuel production and green hydrogen.

### Experience

- Demonstrated synthetic fuel technologies previously
- Production of synthetic gasoline from Hydrogen
- Multiple demonstrations of renewable technologies on EMEC sites.
- Numerous synthetic fuel projects focused on synthetic fuel technologies
- Green hydrogen production and hydrogen ecosystem in [Orkney](#).
- Access to extensive supply chain – potential project partners

### Partners

- CCU developers
- Academic institutions
- National laboratories
- CCU and synthetic fuel supply chain partners



## Organisational Capabilities

What skills, capabilities, facilities does your organisation have that will be vital for this project?

### Facilities:

- Hydrogen ecosystem: electrolysis, compression, storage, transportation.
- Local synthetic fuel offtakers
- Caldale facility including access to renewable energy.

### Capabilities:

- Hydrogen and synthetic fuel engineers and technical experts
- Electrical and operational engineers
- Full project management team
- Business support including marketing, stakeholder engagement and commercial modelling.

## Administrative Information

RTO, innovation partner, real world MRE test facility.

Your contact details including:

**Matthew Finn**

Commercial Director

+44 (0)1856 852064

[Matthew.Finn@emec.org.uk](mailto:Matthew.Finn@emec.org.uk)

Orkney, Scotland.

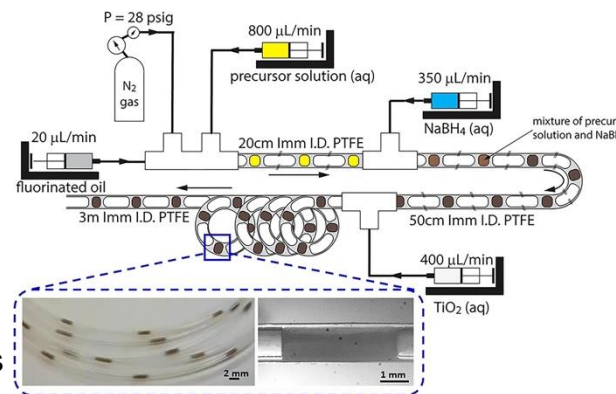
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### Proposed Approach & Experience

- **Goal:** innovating bimetallic nanocatalysts composed of earth-abundant elements, leveraging Sabatier principle to achieve low-temperature efficiency comparable to current Ru-based catalysts.
- **Synthesis approach:** sol immobilisation in flow using triphasic milli-fluidic reactors.
- **How:** accelerated discovery using model-based design of experiments and machine learning.
- Expertise in computer-aided materials & process engineering, spanning molecular to macroscopic scales, and embracing both data-driven and mechanistic techniques, with a mix of academic and industrial experience.



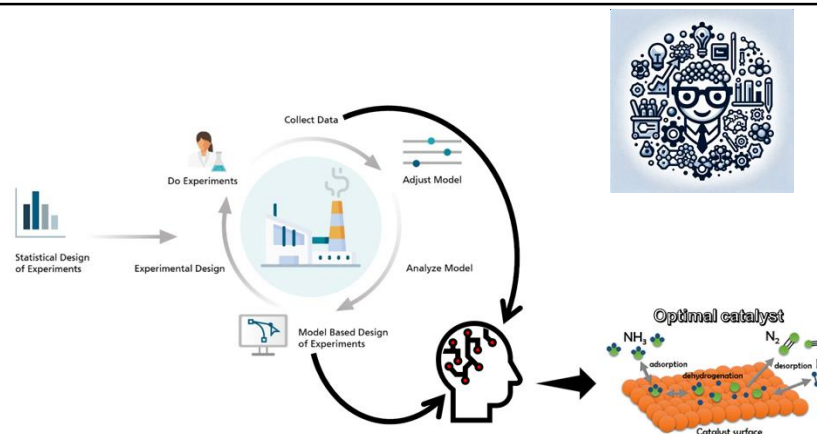
Wong et al. (2022). Chem. Eng. J., 430, 132778.

### Partners and potential opportunities

- Looking for both academic and industrial partners with interest in one or more aspect of the proposed project.
- Open to other relevant collaboration opportunities aligned with our expertise.
- Project scope—green economic catalysts for energy applications—can readily be extended to systems that share similar challenges, such as Fischer-Tropsch synthesis and CO<sub>2</sub> conversion, among others.
- Sol immobilisation in triphasic milli-fluidic flow reactors is generally applicable to heterogeneous catalyst syntheses, offering closely-controlled, large-scale, and reproducible production.
- Computer-aided catalyst design and optimisation tools are broadly applicable to practically any material discovery problem.

### Organisational Capabilities

- Our group (Laboratory of Intelligent Materials & Process Engineering) possess a dedicated in-house high-performance computing server, useful for both molecular simulation and machine learning applications
- We are seeking funding to set up a general-purpose flow reactor for catalyst production and a catalyst testing rig useful for a wide range of gas phase reactions.



### Administrative Information

- We are an academic research team part of the Chemical Engineering group at the School of Engineering.
- Depending on the specific project and target scheme, we are open to being either the coordinator or a partner.

### Contact details:

Dr Reza Andalibi | Lecturer in Chemical Engineering  
Email: [r.andalibi@lancaster.ac.uk](mailto:r.andalibi@lancaster.ac.uk)  
Phone: +44 (0)73 0554 1866  
Lancaster University, United Kingdom  
(PIC 898688705)

<p><b>Proposed Approach &amp; Experience</b> What is your understanding of the part of the problem/challenge you can solve? What previous, relevant, work or track record can you bring to the team?</p> <p>Experience team of chemists, chemical engineers, biologists, biochemists and business developers who have taken numerous biorefinery, bioenergy and bio-based products from lab scale to larger scale. We have previously participated in 4 Eu projects including being work package leader - two projects involved transfer to kilo scale and transfer to continuous processing. Our team have designed, built and operated bespoke pilot plant equipment for thermochemical processing and used existing plant for chemical and bioprocessing (enzyme processing and fermentation). Associated downstream purification has been developed and trialled at multi kilo scale. Experience of developing bespoke demonstrator (1 T) plant as part of IUK funded work on protein isolation.</p>	<p><b>Partners</b> If you are looking for partners, what type of partners are you looking for?</p> <p>Any projects looking to include bioeconomy or circular economy scale up work including chemical and biological processing plus associated downstream processing.</p>
<p><b>Organisational Capabilities</b> What skills, capabilities, facilities does your organisation have that will be vital for this project?</p> <p><b>Pragmatic approach to scale up and problem solving. £10m pilot plant with highly experienced team of technologists to develop, transfer and operate through pilot phase. Experience with wide range of biomass feedstocks including straws, woods and biowaste from EU and non-EU sources plus seaweed and non-biological waste such as hard plastic.</b></p>	<p><b>Administrative Information</b> Is your organisation academic, SME, big business, etc. <b>RTO</b> Are you planning on being the Coordinator or a Partner? <b>Partner</b></p> <p>Your contact details including: <b>Mark Gronnow</b>, <a href="mailto:mark.gronnow@york.ac.uk">mark.gronnow@york.ac.uk</a> +44 (0)7508016358 What country are you from <b>United Kingdom</b> <a href="#">Participant Identification Code (PIC)</a> : 951852174</p>

# CSE pitch to Horizon Europe energy collaborative R&D funding opportunities webinar

## CL5-2024-D4-02-05 Digital Solutions and CL5-2024-D3-02-10 Market Uptake Measures of Renewables



### Proposed Approach

- **CSE's work** – tackling the dual challenges of cutting carbon emissions and helping those struggling with their energy needs.
- Flexible, transparent and cross-disciplinary approach supporting national and local net zero planning and delivery in the context of a just energy transition.
- Integrated approach across demand reduction, heat and power decarbonisation, community engagement, consumer advice and policy development support to achieve optimum outcomes.

### Experience

- Experience of coordinator and partner roles in FP7/EU Horizon 2020 projects.
- Extensive track record during CSE's 45-year history of working with public and private sector orgs supported by diverse funding sources.
- Large portfolio of impactful projects around the uptake of renewables, tackling fuel poverty and exploring local impacts and public perception of heat decarbonisation measures.

### Organisational Capabilities

- Complementary skills around technical analysis, software & modelling, research methods and community engagement techniques.
- Sophisticated building heat decarbonisation modelling capabilities including heat network planning and renewable energy resource assessment.
- Robust data analysis, GIS mapping and tool development skills.
- Deep understanding of low carbon housing retrofit using a people-centred approach
- CSE is an Independent Research Organisation (IRO) with highly developed social research and evaluation skills.

### Example projects

(visit [www.cse.org.uk](http://www.cse.org.uk)):

#### Energy modelling and tools

- *Solar Wizard*
- *THERMOS*
- *Impact (Community Carbon Footprint)*
- *Heat network zoning model*

#### Community energy and local leadership

- *Future Energy Landscapes*
- *Next Generation Community Energy*
- *Community-led Retrofit*
- *Aurora*

#### Smart energy system, flexibility and energy justice

- *Smart and Fair*
- *Energy Choices Tool*
- *Crowd Flex*
- *Demand Flexibility evaluation*

### Partners

We are looking to partner with organisations seeking innovative solutions to the climate emergency through collaboration and ambitious-thinking.

CSE particularly interested in the following calls from the topics being discussed at today's webinar:

- HORIZON-CL5-2024-D4-02-05 - *Digital solutions to foster participative design, planning and management of buildings, neighbourhoods and urban districts (Built4People Partnership)*
- HORIZON-CL5-2024-D3-02-10 - *Market Uptake Measures of renewable energy systems.*

### Administrative Information

Jennifer Mitchell  
Senior Development Manager  
[jennifer.mitchell@cse.org.uk](mailto:jennifer.mitchell@cse.org.uk)

Centre for Sustainable Energy  
[www.cse.org.uk](http://www.cse.org.uk)

CSE is a not-for-profit SME based in Bristol, UK  
PIC: 999790641

# Built Environment/Energy Cluster calls

## Proposed Approach & Experience

There is a need to work at the boundaries of disciplines to support research: e.g. policy/governance working with technical research of energy/buildings; different actors/disciplines across energy systems utilising same models/assumptions.

The **Urban Energy Research Group (UERG)** is a multi-disciplinary group in areas of building physics, energy modelling, and energy behaviour, including three current Horizon projects: **CrossCERT**, looking to test and validate next-generation Energy Performance Certificates across Europe; **FEDECOM**, identifying methods of increasing renewable energy penetration in local energy systems; and **InterPED**, designing and monitoring Positive Energy Districts. Furthermore, the £20M **Reflex** InnovateUK project explored methods of aligning local renewable supply with energy demand of communities in Orkney. UERG is also part of the UK EPSRC **H+C Zero Network**, focussing on decarbonising heating and cooling.

## Organisational Capabilities

Within Heriot-Watt University's Institute of Sustainable Built Environment, UERG has a long track record of funding in the area of energy and buildings.

The team have experience in building energy modelling, energy system modelling, the role of simulation and modelling within energy policy, and the interaction of behavioural science with energy analyses.

This is also supported by the iNetZ+ Institute, a cross-university initiative looking to respond to the challenges of Net Zero. This institute has research support, commercialisation, and dissemination facilities to utilise.

## Partners

Interested in:

- Role of building **Energy Performance Certificates** in supporting zero carbon policy and linking modelling expertise with implementation of the **Energy Performance of Buildings Directive** (looking for academic partners, energy agencies, municipalities, practitioners/consultants)
- Partners looking to enhance understanding of relationship between **energy supply and demand in community energy projects**

## Administrative Information


Academic organisation, looking to partner a bid

Contact details:

Prof David Jenkins, Heriot-Watt University, Scotland, UK  
[D.P.Jenkins@hw.ac.uk](mailto:D.P.Jenkins@hw.ac.uk)

PIC: 999853400

# Green H2 & Biogenic CO2 Utilisation

<p><b>Proposed Approach &amp; Experience</b></p> <p>Approach</p> <ul style="list-style-type: none"><li>• Novel biomass electrolysis technology to co-produce <b>green hydrogen</b> and <b>biogenic CO2</b> in separate parts of the reaction, no post-separation or capture required</li><li>• Feedstock is abundant <b>lignocellulosic biomass</b></li><li>• <b>Electrochemical</b> process powered only with renewable electricity</li><li>• 50% reduction in energy requirement for green hydrogen, down to <b>25 kWh/kg</b></li><li>• Targeting <b>\$2/kg</b> green hydrogen and <b>\$100/tonne</b> biogenic CO2</li></ul> <p>Experience</p> <ul style="list-style-type: none"><li>• CTO research at the University of Cambridge on waste-to-hydrogen technologies</li><li>• CEO industrial experience developing the UK's largest hydrogen project worth \$800 million while at ExxonMobil</li><li>• COO 10+ years startup experience commercialising emerging technologies</li><li>• Technology is lab demonstrated and currently building an MVP (1 kgH2/day) by the end of the year with paid off-take (TRL 4 to 5)</li></ul>	<p>Partners</p> <p>SMEs and corporates piloting utilisation cases:</p> <ul style="list-style-type: none"><li>• E-fuels from H2 and/or CO2, including e-SAF, green methanol, and green ammonia</li><li>• Bio-ethanol integration</li><li>• CO2 geologic storage or sequestration into building materials</li></ul> <p>Biomass producers:</p> <ul style="list-style-type: none"><li>• Breweries</li><li>• Distilleries</li><li>• Paper recycling</li><li>• Agriculture waste</li><li>• Sugar production</li></ul>
<p><b>Organisational Capabilities</b></p> <ul style="list-style-type: none"><li>• Team of nine with expertise in hydrogen, electrochemistry, biochemistry, catalysis, and engineering; six with PhDs</li><li>• London laboratory facilities with testing rig and analytical equipment</li><li>• Birmingham site for MVP and larger engineering testing, with safety systems and hydrogen off-take setup</li><li>• Collaborative network of interested biomass producers in the UK</li></ul>	<p><b>Administrative Information</b></p> <p>Ki Hydrogen Ltd UK-based SME Coordinator or Partner</p> <p>Contact information:</p> <ul style="list-style-type: none"><li>• Koji Muto, CEO &lt;<a href="mailto:koji@ki-hydrogen.com">koji@ki-hydrogen.com</a>&gt;</li></ul> 

- HORIZON-CL5-2024-D3-02-09** - Demonstrations of innovative floating wind concepts
- HORIZON-CL5-2024-D3-02-04** - Critical technologies for the future ocean energy farms



### Technology Offer

#### SeaStack™

- Direct seawater-to-hydrogen electrolyser for use in marine environments
- Suitable for offshore installation
- Minimal balance of plant
- Small footprint, compact and robust
- NO desalination required

### Looking for partners in

- Offshore Hydrogen Production Pilot Projects
- Offshore Wind Operators
- Ports and Harbours

### Organisational Capabilities

Latent Drive are a small start-up specialising in innovative green hydrogen technologies aimed at **mass production** and **scalability**.

We can offer facilities to provide our SeaStack technology, associated control systems and balance of plant.

Our team combines 40+ years of engineering expertise. We are well-equipped to scale production, drive technology development, and secure key opportunities for our hydrogen technologies.



### Administrative Information

Organisation: SME Partner, United Kingdom

PIC: 878494081

Frazer Ely, [frazer.ely@latentdrive.co.uk](mailto:frazer.ely@latentdrive.co.uk), 07766 752501

# Development of next generation synthetic renewable fuel technologies (HORIZON-CL5-2024-D3-02-02)



## Proposed Approach & Experience

What is your understanding of the part of the problem/challenge you can solve?  
We are planning to develop a new zero-gap electrochemical cell technology to reduce carbon dioxide in order to solve the mass transport and ohmic loss problems that the current CO<sub>2</sub>RR suffer. We will develop novel catalyst-coated membranes, an electrochemical cell, and a short stack to produce methanol and formic acid that will be used in fuel cell technology.

What previous, relevant, work or track record can you bring to the team?  
We have successfully developed membranes, bipolar plates, electrochemical cells, and stacks that will be actively used in this project. Thus, novel proton conductive fibre-reinforced membranes will be developed, and new CO<sub>2</sub> electrochemical cells and a 4-cell short stack will be manufactured based on our expertise.

## Partners

If you are looking for partners, what type of partners are you looking for?  
CIIAE (Spain) will develop proton conductive fibres for the composite membrane fabrication.  
C2CAT B.V. (The Netherlands) will develop catalysts for electrochemical CO<sub>2</sub> reduction.  
GENESINK (France) will formulate catalyst inks and fabricate catalyst-coated membranes.  
SAATI (Italy) will develop woven meshes for the reinforced membranes.

## Organisational Capabilities

What skills, capabilities, facilities does your organisation have that will be vital for this project?  
Our group has expertise in fuel cell and water electrolysis technologies. We will develop new technology based on water electrolysis results that we got. Thus, water will be purged into the cell from the anode side to be oxidized into oxygen, protons and electrons on Ir or non-Ir catalysts. The formed protons will move through the polymer electrolyte membrane, while electrons will transfer through the external circuit. The humid carbon dioxide will be introduced into the cathode side and reduced on the novel catalysts using the protons and electrons travelling from the anode side in order to produce HCOOH and CH<sub>3</sub>OH. The products will be tested on the fuel cell devices.

## Administrative Information

Is your organisation academic, SME, big business, etc.  
Academic  
Are you planning on being the Coordinator or a Partner?  
Coordinator  
Your contact details including:  
**Name:** Elvin Aliyev  
**Email:** e.aliyev@bham.ac.uk  
**Phone number:** 07587127560  
What country are you from: United Kingdom  
Your organisation's [Participant Identification Code \(PIC\)](#) if your organisation has one: 999907526

# Nova Innovation – Shetland Tidal Array

HORIZON-CL5-2024-D3-02-04: Critical Technologies for the Future Ocean Energy Farms



## Project Opportunity

- Deliver sector leading marine energy projects at the world's first offshore tidal array:
  - Operational tidal array, fully consented, highly reliable, grid-connected (with available capacity).
  - 10+ years of environmental, operational and marine data.
  - Site features microgrid, including energy storage and EV charger.

## Organisational Capabilities

- Expertise in:
  - › Marine energy technology development, deployment and operation.
  - › Data management and optimisation.
  - › Environmental monitoring.
  - › Device instrumentation and condition monitoring.
  - › Global asset management.

## Partners

- Successful partnerships with:
  - › Blue Chip industrials.
  - › Leading European academic institutions.
  - › Sector leading SMEs.

## Administrative Information

- Nova is a global leader in marine energy looking to partner with academic and industrial partners.
- Contact:
  - › Seumas MacKenzie
  - › +44 131 241 2000
  - › [seumas.mackenzie@novainnovation.com](mailto:seumas.mackenzie@novainnovation.com)
  - › PICs: 895593823 (IE) 938084770 (UK)



**[Nova Tidal Short Video](#)**



# NEXUS for Energy resilience in rural bioregions

Duncan Brown  
Futurist at [Hitachi Europe R+D](#)  
Trustee at [TCN](#)  
Core member of [ODEC](#)

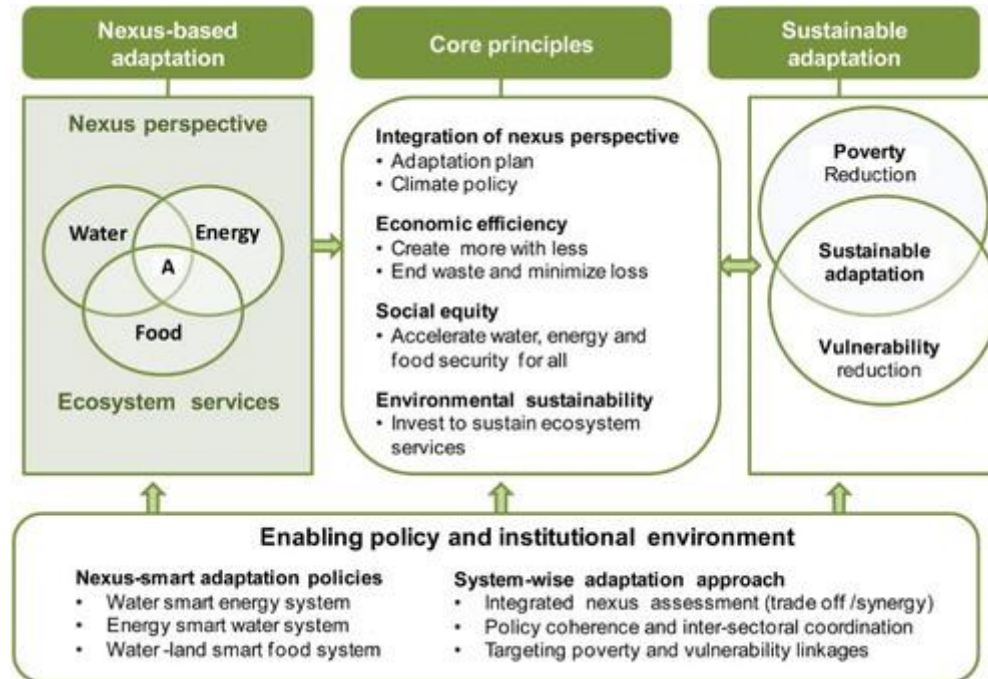


## Proposed Approach

We will apply the NEXUS framework to a UK bioregion to deliver a resilient energy system as part of an integrated approach we will explore economic efficiency of local energy markets.

## Experience

Duncan Brown is currently a design strategist and futurist at Hitachi Europe R+D labs in UK focussed mainly on transition design and localised place-based solutions to society resilience and fairness.



## Partners

We are actively looking for ambitious, future focussed partners.

We will look for partners with national, international and place-based service providers aligned to the NEXUS framework across:

- Water system
- Energy system
- Food system

Given the interrelated nature of the NEXUS approach we will look for a diverse range of partners aligned to the core principles.

## Combined Organisational Capabilities

- **Duncan Brown** brings R+D expertise across community energy and transition design
- **Transition Chipping Norton** is a place-based charity focussed on [transition movement](#)
- **Oxfordshire [Doughnut Economics](#) Collective** is reimagining 21st century economics in Oxfordshire

## Administrative Information

We would establish a new business entity as an SME/CIC to coordinate the delivery of this project.

Contact details:

**Duncan Brown**

duncan.brown@hitachi-eu.com,

+44 (0)7971589981

UK

Hitachi: [999958645](#)