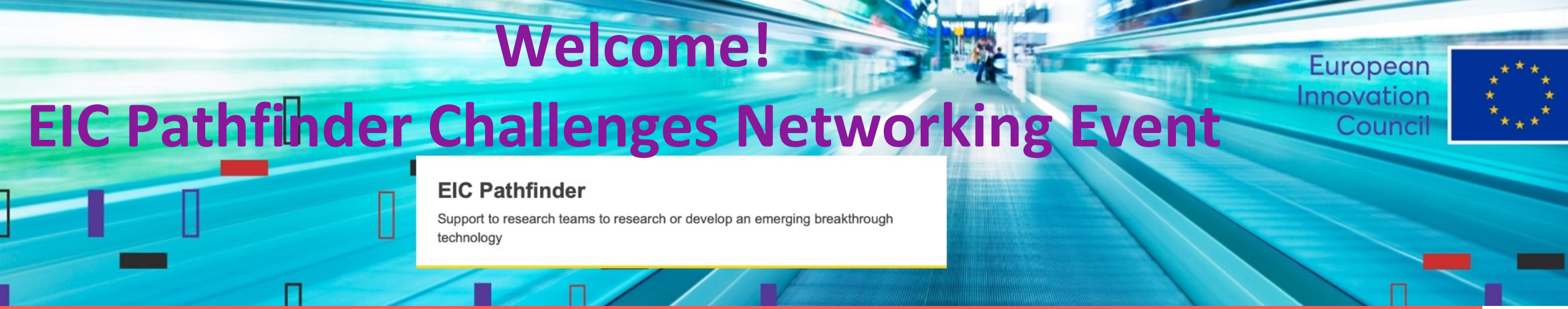
Welcome!
EIC Pathfinder Challenges Networking Event



European Innovation Council

Housekeeping

- To avoid background noise all participants will be muted, and cameras will be off.
- We will allow delegates to unmute themselves and share their cameras during the breakout rooms.
- Please use the **chat** to introduce yourself. Please note due to GDPR we cannot share the chat.
- Please also use the **Q&A function** to submit your questions.
- Register in the **Networking Platform** for post-event networking

  https://eicpathfinderbrokerageevent.meeting-mojo.com

- If you have any technical problems, please use the chat to seek advice from the host **(Michael Foster)**

UKRI Innovate UK KTN

PLEASE NOTE – THE WEBINAR IS BEING RECORDED

Agenda

European Innovation Council

EIC Pathfinder

Support to research teams to research or develop an emerging breakthrough technology

Time (UK timings)		Speakers
10:00	Welcome, introduction and aims of the day	Belen Rebollo - Innovate UK
10:10	EIC Pathfinder “Challenges” call requirements	Claire Griffin - Innovate UK
10:35	UK Participation in Horizon Europe & UK Guarantee	Chris Young - Innovate UK
10:55	Case Study: Swansea University	Eva Sonnenschein - Swansea University
11:10	Q&A	
11:25	BREAK	
11:35	Breakout Rooms & Pitching parallel sessions: - COOLING: Clean & efficient COOLING (Conall McGinley) - DIGITALISATION: E8Architecture, Engineering and Construction DIGITALISATION for a novel triad of design, fabrication, and materials. (Cherie Gardiner) - NUTRITION: Precision NUTRITION. (Helen Sweeney) - ELECTRONICS: Responsible ELECTRONICS. (Craig Sharp) - SPACE: In-SPACE solar energy harvesting for innovative SPACE applications. (Jane Watkins). Consultation Breakout room - NCPs: National Contact Points - (Claire Griffin, Ann Marie Reid and Chris Young)	Innovate UK: Belen Rebollo Conall McGinley Cherie Gardiner Helen Sweeney Craig Sharp Jane Watkins Claire Griffin Chris Young Ann Marie Reid - Scottish Enterprise
12:35	Wrap-up	Claire Griffin & Belen Rebollo - Innovate UK
12:50	**CLOSE**	

UKRI Innovate UK KTN

Innovate UK KTN – European Programmes Activity and support

Belen Rebollo-Garcia
Knowledge Transfer Manager
belen.rebollo-Garcia@iuk.ktn-uk.org

UKRI Innovate UK KTN

Global Alliance: European Programmes

We support UK organisations in **engaging with International R&I initiatives** (i.e. Horizon Europe and EUREKA, among them) and help shape future funding priorities by:

- Organising consortium building activities / events in selected topics
- Offering “Travel Grants” to attend European brokerage events
- Managing international collaboration platforms
- Engaging with International Partnerships and Technology Platforms
- Providing sector specific advice on market opportunities and project impact

We work closely with the National Contact Points, Innovate UK Edge and the FCDO / Science Innovation Network.

UKRI Innovate UK KTN

Our Network

46,229 Unique Organisations

72% Small
15% Medium
13% Large

234,478 innovators

Every university in the UK

Our Outputs

66%

introduced by KTN go on to **collaborate**

42%

reach outcomes **faster** (1-2 years)

60%

increased **investment** in R&D direct result from KTN engagement

£100m

per year increased **investment** in R&D

UKRI Innovate UK KTN

Innovate UK KTN exists to connect innovators with new partners and new opportunities beyond their existing thinking – accelerating ambitious ideas into real-world solutions.

Cross-Sector Expertise

Agrifood
Biotechnology
Chemistry
Creative Industries
Design
Digital
Electronics
Energy
Geospatial
Health
Industrial Maths
Infrastructure
Manufacturing
Materials
Photonics
Quantum
Robotics & AI
Security & Defence
Sensors
Space
Transport
Water

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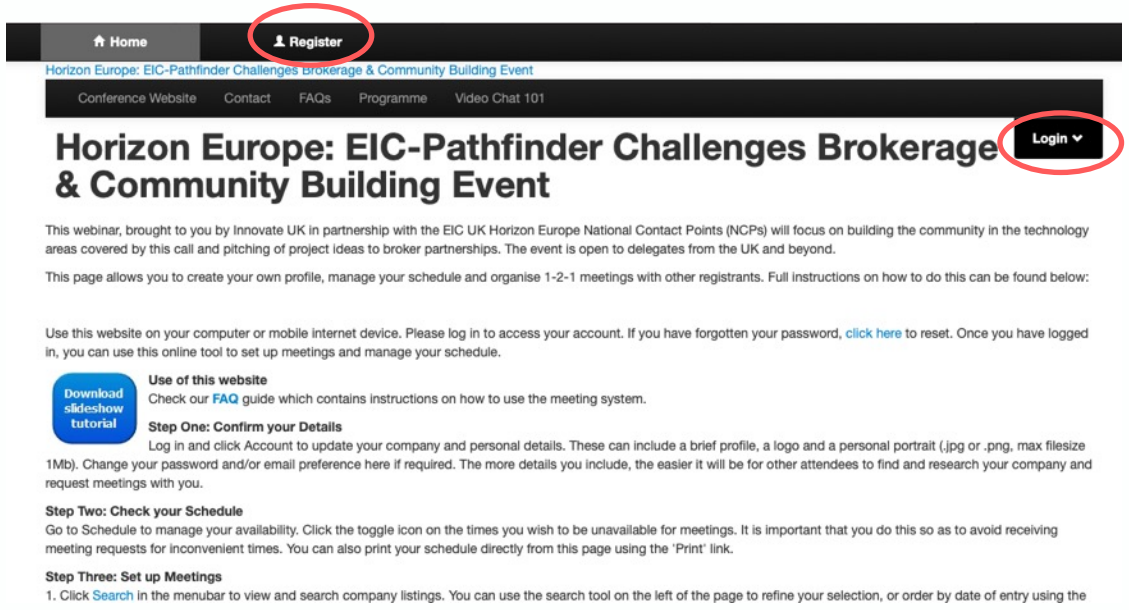
Post-Event Networking Platform: how to.....

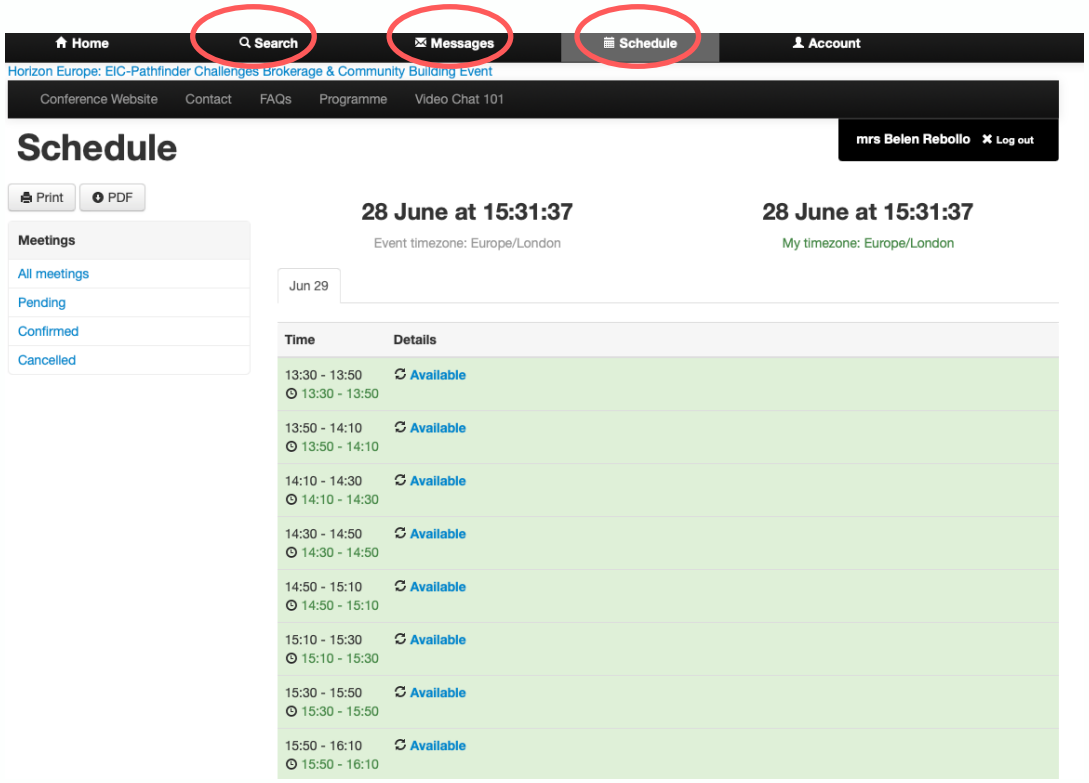
How to....:

- ✓ Register and then Log in

- ✓ SEARCH for other delegates
- ✓ MESSAGE them
- ✓ SCHEDULE 1:1 Meetings

https://eicpathfinderbrokerageevent.meeting-mojo.com





Innovate UK KTN

Horizon Europe
EIC Pathfinder – Challenges Call

Claire Griffin
UK NCP EIC

Ann Marie Reid
Scotland NCP EIC

UKRI Innovate UK

UKRI Innovate UK KTN

European Innovation Council Pathfinder Challenges Brokerage Event

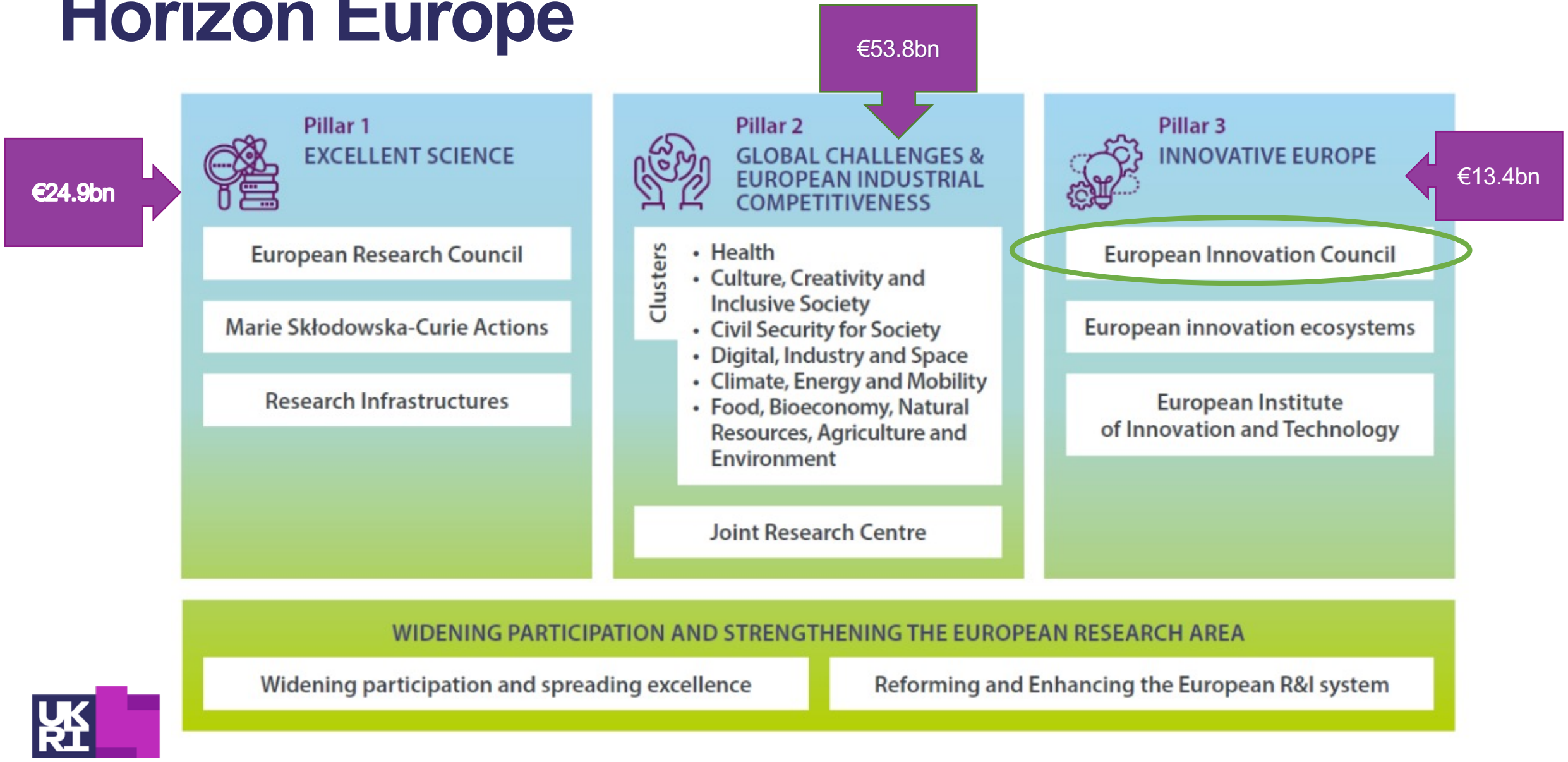
Claire Griffin, UK National Contact Point for EIC

29th June 2023

THE EU RESEARCH & INNOVATION PROGRAMME 2021 - 2027

#HorizonEU

Horizon Europe



Budget figures exclude UK and other Associate Country contributions

European Innovation Council (EIC) need for activities

Need for activities

- Europe is good at generating ideas and visions of breakthrough tech
- Not successful at pushing these ideas into concrete innovations
- EIC here to help- with this paradox

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What is the EIC?

- The EIC is Europe's flagship innovation programme to identify, develop and scale up breakthrough technologies and game changing innovations
- Budget of 10.1 Billion over Horizon Europe
- Annual Work Programme - 1.6B € in 2023

- Three main funding streams:
  - **EIC Pathfinder** – identify - TRL 1-4
  - EIC Transition – develop - TRL 4-6
  - EIC Accelerator – scale-up - TRL 5/6-9

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Can UK Participate?

- **Yes**
- EU response – The UK is expected to become an associated country to Horizon Europe. The UK will have the same rights and obligations as other countries associated to the Programme
- UK response – UK-based applicants can apply – no need to wait until Association is formalised.
- Guarantee Notice and Guidance
- Supporting the UK R&D and collaborative research programmes beyond European Programmes.

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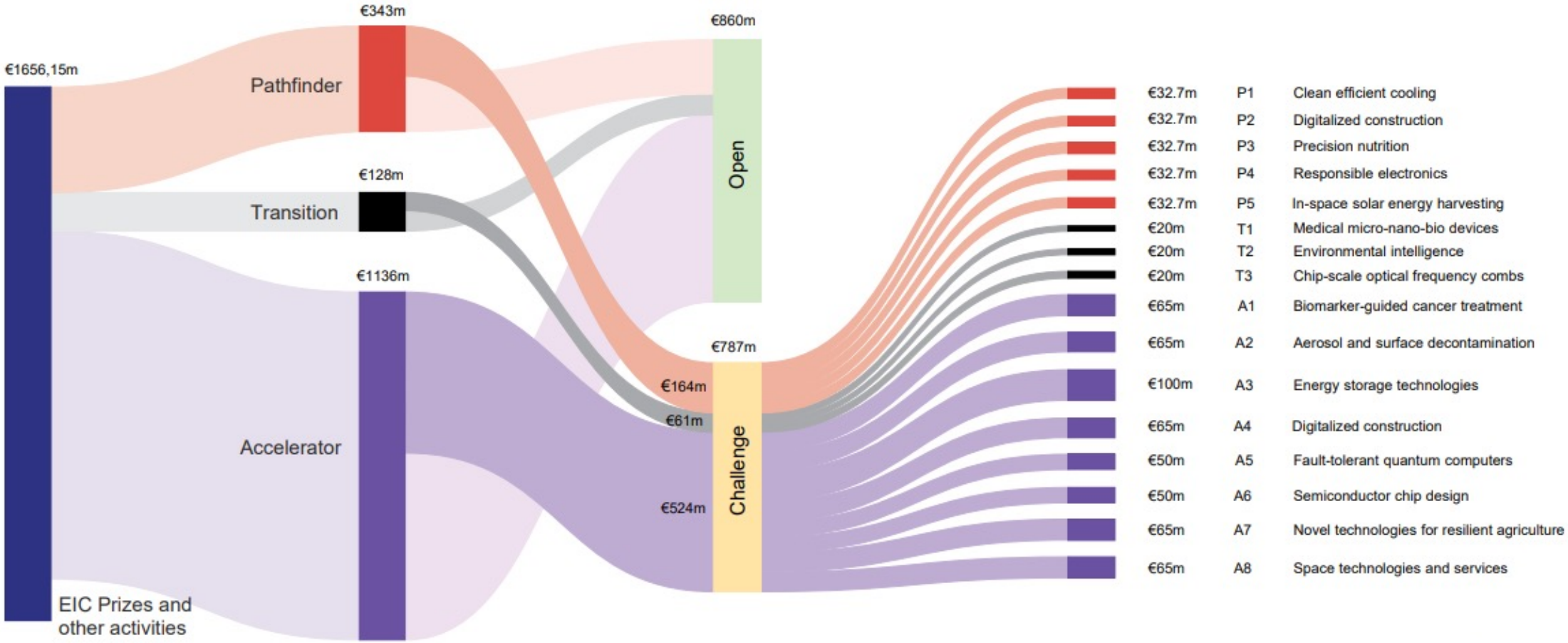
EIC Work Programme 2023



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EIC Main characteristics

- Identify, develop and deploy high risk innovations of all kinds
- From Idea to Market (TRL 1- 9)
- Focus on breakthrough, market-creating, deep-tech
- Steered by EIC Board of leading innovators – advice on strategy (entrepreneurs, investors, researchers, ecosystems)
- Business Acceleration Services (coaches/mentors, corporates, investors, ecosystem)
- Pro-active management (roadmaps, reviews, reorientations, etc) with EIC Programme Managers
- Follow-up funding for results from Horizon (e.g. ERC, EIT)

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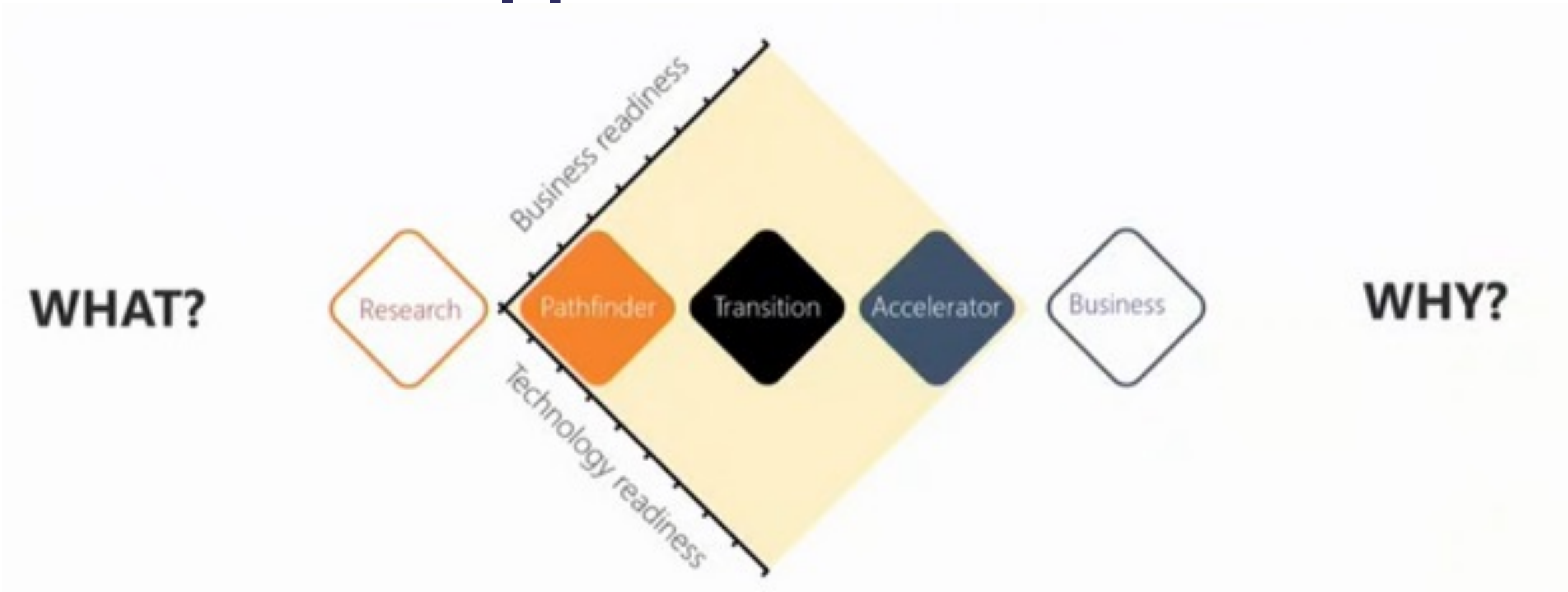
The EIC Support



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HORIZON EUROPE

What are Technology and Business Readiness

Technology Readiness Levels (TRL)

- Measure the maturity of your technology

- Pathfinder - TRL 1-4

1 – Basic Research – basic principles observed

4 – Small Scale Prototype: Technology validated in lab

Business Readiness Levels (BRL)

- Maturity of the business considerations developed alongside the technical development
- Can also include:
  - Customer Readiness
  - IPR readiness
  - Team readiness
  - Funding readiness
- Pathfinder - BRL 1 – 4

  1 - Basic research – describe your needs but have no evidence

  4 - Small scale stakeholder campaign – run a campaign with stakeholders

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EIC Pathfinder

What is the EIC Pathfinder?

- Funds research to develop the scientific basis to underpin breakthrough technologies
- Supports earliest stages of scientific, technological or deep-tech R&D
- Aims to build on new, cutting-edge directions in science and technology to disrupt a field and a market or create new opportunities
- Realises innovative technological solutions to identify, develop and scale up breakthrough technologies and disruptive innovations in Europe

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EIC - Open or Challenges

Focus of today

Open

- Bottom-up.
- Any field of science, technology or application without predefined thematic priorities

Challenges

- Top-down, challenge driven, portfolios of project approach.
- To support proposals within a predefined thematic area and addressing specific objectives

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EIC Pathfinder Challenges

Challenges - introduction

- Build on new, **cutting-edge directions in science and technology**
- Disrupt a market or to create new opportunities by realising **innovative technological solutions** grounded in high-risk/high-gain research and development;
- Establish a portfolio of **projects** for each Challenge that explore different perspectives, competing approaches or complementary aspects;
- Proactively steered by **EIC Programme Managers**

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EIC Programme Managers

Ivan Stefanic

Food chain technologies, novel & sustainable food

Carina Faber

Renewable energy conversion and alternative resource exploitation

Samira Nik

Quantum tech and electronics

Isabel Obieta

Responsible electronics

Franc Mouwen

Architecture engineering construction technologies

Stella Tkatchova

Space systems and technologies

Francesco Matteucci

Advanced materials for energy and environmental sustainability

Antonio Marco Pantaleo

Energy systems and green technologies

Enric Claverol-Tinturé

Medical technologies and medical devices

Iordanis Arzimanoglou

Health and biotechnology

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EIC Challenge Guide

- Objectives of the specific challenge
- Technical information underpinning the objectives
- Portfolio considerations used for the final selection of proposals to be funded

- Programme Manager will have written the challenge

- All available - [EIC Pathfinder (europa.eu)]

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Expected project outcomes

- Defined in the respective **Challenge Guide**
- Project results should **include top-level scientific publications** as well as **Intellectual Property**
- Projects are encouraged to involve key actors that have the potential to **become future leaders**
  - **e.g.** early-career researchers or promising high-tech SMEs
- Project particularly encouraged to **empower female researchers** and;
- Gender balance among the work package leaders

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Pathfinder Challenges for 2023

- Clean and efficient cooling
- Architecture, Engineering and Construction digitalisation for a novel triad of design, fabrication, and materials
- Precision nutrition
- Responsible electronics
- In-space solar energy harvesting for innovative space applications

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Who can apply?

- **Single legal entities** established in a Member State or an Associated Country (mid-caps and larger companies **will not be permitted**)
- **Consortia of two entities** must be two independent legal entities from two different Member States or Associated Countries
- **Consortia of three or more entities** must include as beneficiaries at least three legal entities, independent from each other and each established in a different country as follows:
  - at least one legal entity established in a Member State; and
  - at least two other independent legal entities, each established in different Member States or Associated Countries.
- The legal entities may for example be universities, research organisations, SMEs, start-ups, industrial partners or natural persons

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What support is received?

- A **grant** for a Research and Innovation Action (RIA) to cover ***eligible*** costs – 100% of eligible costs
- **up to € 4 million -** larger amounts possible, if duly justified
- Total budget for call: € 163.5 million **~ €32.7 per Challenge**
- Access to **Business Acceleration Services**;
- Interactions with **EIC Programme Managers** and other portfolio projects

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Business Acceleration Services (BAS)

- All awardees have access to EIC Business Acceleration Services
- Procured from external contractors:
  - Business coaching,
  - Business advice
  - Networking opportunities to expand client base
  - Access to testing / scale-up facilities

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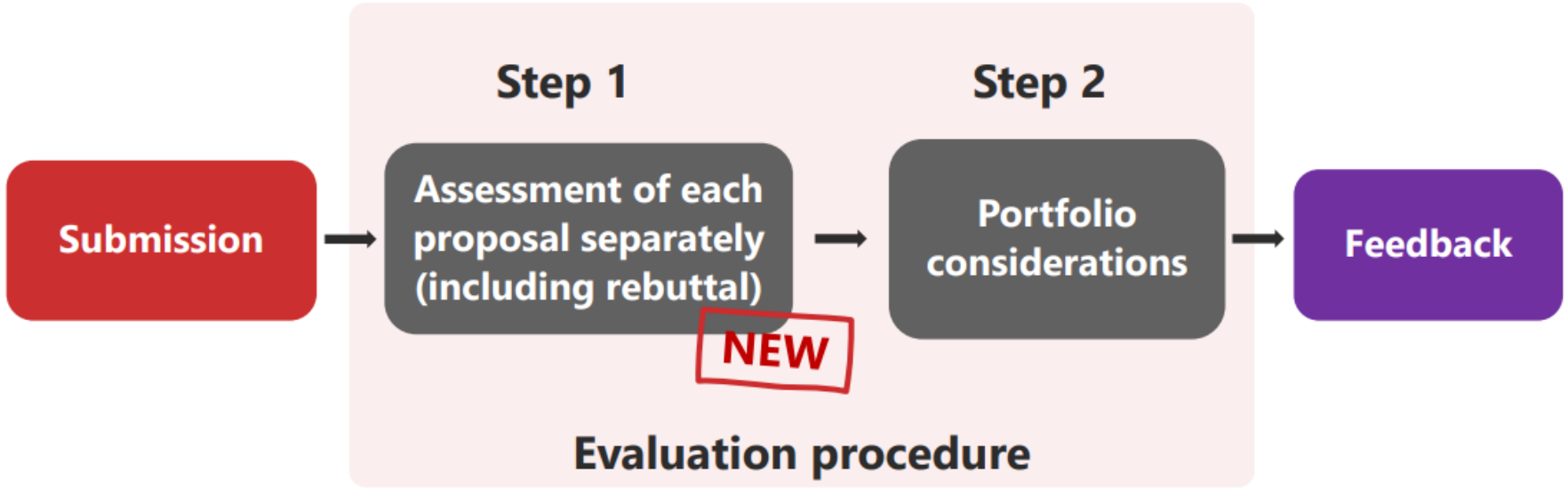
Deadline

- 18th October 2023 at 17:00 Brussels time (16:00 UK time)

2021 – Successful proposals

2022 – Successful proposals

Evaluation Process



Read the EIC 2023 Work Programme!

EIC Work Programme 2023_F&T.pdf (europa.eu)

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Step 1: Assessment of each proposal separately

- EIC Expert evaluators to assess **each application separately** against the defined award criteria
- **Remote score** for each award criterion is the median of the evaluators scores
- **Overall remote score** is weighted sum of three median scores from the award criteria
- The **evaluation committee** decide on **final score** on basis of remote score and outcome of its consensus discussions, taking into consideration comments from **rebuttal procedure**, if any

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NEW

Award criterion – 1 - Excellence

Threshold: 4/5 **Weight: 60%**

- **Objectives and relevance to the Challenge:**
  - How clear are the project's objectives? How relevant are they in contributing to goal and objectives of the Challenge?
- **Novelty:** to what extent is the proposed work ambitious / goes beyond the state-of-the-art?
- **Plausibility of the methodology:**
  - How sound is the proposed methodology, including underlying concepts, models, assumptions, appropriate consideration of the gender dimension in research content, and the quality of open science practices

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Award Criterion -2 - ‘Impact’

Threshold: 3.5/5
Weight: 20%

- **Potential impact:** how credible are pathways to achieve outcomes and impacts? To what extent would project contribute?
- **Innovation potential:** How adequate is **results protection**? Other **exploitation measure** to facilitate future translation of research into innovations with +ve societal, economic or environmental impact? How suitable are measures for involving/empowering key actors?
- **Communication and dissemination**: how suitable are comm. activities, to maximize outcomes and impacts for raising awareness about results’ potential to establish new markets and/or address global challenges?

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3 - ‘Quality and efficiency of the implementation’

Threshold: 3/5 **Weight: 20%**

- **Work plan:** how coherent and effective are the work plan (work packages, tasks, deliverables, milestones, timeline, etc) and risk mitigation measures
- **Allocation of resources:** how appropriate and effective is the allocation of resources (person months/ other costs) to work packages and consortium members
- **Quality of the applicant / consortium** (depends if mono or multi-beneficiaries) what extent do(es) the applicant / consortium members have high quality expertise for project tasks?

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Rebuttal – right-to-react

- ~1.5 – 2.5 months after submission, opportunity to reply with 8 calendar days (at 17:00 Brussels local time), max two A4 page response to evaluators' comments
- Cannot alter or add to the content; must focus on misunderstandings or errors
- Replies made available to the evaluation committee
- Take into consideration the comments from the rebuttal procedure (if any) to arrive at their final scores

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Step 2 – Portfolio Considerations

- All proposals that meet thresholds in Step 1, will be considered in Step 2
- Mapping of proposals in categories
  - Following goal and specific objectives of the Challenge
  - Building blocks or sub-systems, technical area and/or competing technologies, platforms, applications areas, risk level and TRL, size
- A suitable portfolio of proposals by applying portfolio considerations
  - Coherent set of projects to achieve expected outcomes and impacts of challenge
  - **In all cases** the overall balance and composition of the portfolio will be taken into consideration

NEW

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Activities within a portfolio

- ***Suggested***
  - Add a dedicated Work package for portfolio activities with at least **10 person months**
- **Potential Activities**
  - Contributing to improve the current regulatory framework
  - Effectively communicate key outcomes – to general public, conferences, trade-fairs
  - Market Analysis
  - Discussions on IPR, business model, commercialisation strategy
  - Open Innovation test beds / clinical trials
  - Standardisation activities
  - Access to new markets through multipliers – KTN of InnovateUKEDGE / EEN

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Feedback to applicants

- Applicants will receive an Evaluation Summary Report (ESR) that will comprise of:
  - the final score
  - A comment that summarises the assessment by the evaluation committee
  - Additional comments
  - How the rebuttal was taken into consideration
  - Underlying portfolio considerations

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If retained for funding!

- Contacted and supported by the **Project Officer** and relevant **EIC Programme Manager** during grant preparation
- Planning of portfolio activities – all projects in Challenge are **expected to collaborate with each other**
- Start of preparation of **Challenge Roadmap** – define collective deliverable, activities and objectives of portfolio of projects
- **Continuous interaction** with Project Officer and Programme Manager

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Pathfinder Challenges for 2023

- Clean and efficient cooling
- Architecture, Engineering and Construction digitalisation for a novel triad of design, fabrication, and materials
- Precision nutrition
- Responsible electronics
- In-space solar energy harvesting for innovative space applications

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Clean and Efficient Cooling

EIC Programme Manager – Antonio Marco Pantaleo

Aims

- advancing scientific knowledge and technological development of novel, clean and efficient cooling solutions that fully underpin ‘cold economy’ vision

- Projects should explore the potentials of new devices, processes, components and materials for clean cooling generation, storage and /or transport

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Architecture, Engineering and Construction Digitalisation for a novel triad of design, fabrication and materials

EIC Programme Manager – Franc Mouwen

Aims

- Develop research and early innovations with a breakthrough potential related to design, fabrication and materials for AEC value chain enabled by novel algorithms and advanced digitalisation

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Precision Nutrition

EIC Programme Manager – Ivan Stefanic

Aim

- To investigate and provide scientific evidence of the role of diet in obesity and NCDs, to provide scientific evidence for alleviating the consequences of obesity and NCDs on health and well-being and to pave the way towards the design of novel foods, tailored to individual dietary needs.

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Responsible Electronics

EIC Programme Manager – Isabel Obieta

Aim

- To create opportunities for discovery of new environmentally friendly electronic materials, thus reducing the environmental impact and the need for critical raw materials and hazardous chemicals.

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In-space solar energy harvesting for innovation space applications

EIC Programme Manager – Stella Tkatchova

Aim

- Looking for breakthroughs in the areas of in-space energy harvesting and transmission and of novel propulsion concepts that will use such harvested energy.

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Key Tips - Summary

- Read the work programme - EIC Work Programme 2023_F&T.pdf (europa.eu)
- Read the Challenge guide - EIC Pathfinder (europa.eu)
- Watch back the Challenge Info day for the specific challenge - EIC Challenges information days (europa.eu)
- Follow the Programme Manager on LinkedIn and listen to their public Tech Talks!

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Thank you

Claire Griffin – UK wide enquiries
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Twitter:@InnovateUK **Facebook:** Innovate UK **YouTube:** Innovate UK

UK Research and Innovation

Horizon Europe and the UK situation

Chris Young
Horizon Europe UK Legal and Financial National Contact Point
christopher.young@iuk.ukri.org

Points to discuss

- Official UK status with regards to Horizon Europe
- How UK applicants should be represented in proposals
- What happens post-evaluation
- UK Government Horizon Europe Guarantee
- Practical matters including:
  - The Consortium Agreement
  - How UK partners are funded
- Questions and Answers

UK Research and Innovation

UK Government continues to seek Association to Horizon Europe

- In reference to Horizon Europe, Copernicus and Euratom: "We never wanted to leave those programmes and we still don’t. We’re still pushing for that association to be formalised“

11th January 2023

UK Research and Innovation

UK is a ‘third country negotiating association to the programme’ (1)

- List of Participating Countries in Horizon Europe states:

“Until association agreements start producing legal effects either through provisional application or their entry into force … transitional arrangement apply” while “association negotiations are being processed or where association is imminent” as set out in the General Annexes to the Horizon Europe Work Programme 2023-2024 (for the entire Programme, including ERC, EIC (grant only), EIT and the institutionalised European partnerships)”

UK is a ‘third country negotiating association to the programme’ (2)

- General Annexes states:

“… third countries can also become associated to Horizon Europe during the programme. For the purposes of the eligibility conditions, applicants established in Horizon 2020 Associated Countries or in other third countries negotiating association to Horizon Europe will be treated as entities established in an Associated Country, if the Horizon Europe association agreement with the third country concerned applies at the time of signature of the grant agreement.”

UK Research and Innovation

UK is a ‘third country negotiating association to the programme’ (2)

- General Annexes states:

“In addition, other third countries can also become associated to Horizon Europe during the programme. For the purposes of the eligibility conditions, applicants established in Horizon 2020 Associated Countries or in other third countries negotiating association to Horizon Europe will be treated as entities established in an Associated Country, if the Horizon Europe association agreement with the third country concerned applies at the time of signature of the grant agreement.”

UK Research and Innovation

UK is a candidate Associate Country:

- UK organisations **are** fully eligible to apply to Horizon Europe and **must** request funding from the EU as a potential Beneficiary
- UK organisations **are** eligible to coordinate proposals
- UK organisations **are** classed as one of the minimum three different legal entities from three different eligible countries as long as at least one consortium member is also from a Member State for proposal eligibility

If the UK's association has not completed at the date of Grant Agreement signature:

- UK organisations are **not** eligible to receive funding from the EU, but UK organisations can still take part!
- UK organisations **cannot** coordinate projects
- UK organisations **are not** classed as one of the minimum three different legal entities from three different eligible countries and so another country needs to be included for project eligibility
- UK Horizon Europe Guarantee funds UK partners https://www.ukri.org/apply-for-funding/apply-for-horizon-europe-guarantee-funding/

UK Research and Innovation

Your cat seems to have thought outside the box
Dr Schrödinger

In Practice for Proposals

- UK organisations must be included as potential beneficiaries and request funding from the EU
- UK organisations must complete the budget tables in full (Part A and Part B)
- If coordinator, ensure a back up – can remain technical/scientific coordinator
- Organisations from Associate Countries, including the UK, can be Work Package Leads – see FAQ 18452
- Note any Topic Specific points: almost all Topics are open to UK participation, any exceptions will include this information in the Topic Description
- Ensure eligibility conditions are fulfilled (non association) – 2/3xMS/AC + UK

Post-Evaluation if proposal successful

- Once the celebrations are over, all entities, including those from UK, sign the Declaration of Honour (but note timing of Commission standard success letter)
- Preparation for Grant Agreement signature proceeds with no change to UK partner status until signature becomes imminent - hope is that UK association will complete first
- UK partner status is then changed to that of Associated Partner (standard success letter issued by EC prompts this change)
- UK partner applies for UK Horizon Europe Guarantee (post GA signature)

UK Research and Innovation

Standard European Commission text following successful evaluation

1. If Consortium ineligible due to too few eligible partners: identify and add new eligible participant (anticipated at submission)
2. Change UK partner to Associated Partner

   or

2. Redistribute tasks to existing beneficiaries and/or new participant and UK partner removed

Accordingly, your proposal will be declared ineligible and the Grant preparation terminated, unless you consider the steps suggested below.

To address the ineligibility of your proposal, I am inviting you to take the following possible actions so the Grant preparation of your proposal can continue:

Step1. Identification of new participant

Identify a new participant(s) established in a Member State or an Associated Country not present in the original proposal to make sure that the proposal complies with the minimum eligibility conditions for participation. This new participant must take over some of the tasks (possibly including the tasks of the UK participants).

The redistribution of the budget and tasks will be accepted as non-substantial change unless these changes would put into question the results of the evaluation.

Step2. Change of status of the participant from beneficiary to associated partner

Provided that the legal entities established in the United Kingdom are able to fund their tasks, their status may change from a beneficiary into an associated partner within the meaning of Article 9.1 of the Horizon Europe Model Grant Agreement. The total EU funding to the project will be reduced accordingly, except for tasks taken over by the new or existing eligible beneficiaries.

A redistribution of the remaining budget and tasks may be requested and should be accepted as non-substantial change unless it would put into question the results of the evaluation.

The entity may be later re-established as a beneficiary through a grant amendment if the association agreement with the United Kingdom becomes applicable and if requested by the consortium. If the association agreement provides for retroactive application prior to the start of the action and if the status changes to beneficiary, such conditions will apply.

Alternative step 2: Withdrawal of the legal entities from participation in the proposal

The tasks of the legal entities established in the United Kingdom are taken over either by the remaining other beneficiaries of the proposal, subject to the fulfilment of the minimum eligibility conditions for participation of the proposal, or by one or more additional new beneficiaries established in a Member State or an Associated country. The legal entity established in the United Kingdom is withdrawn from the project. The total EU funding to the project may remain unchanged.

Clarification of ‘Associate’ definitions

- Organisations from Associate Countries participate in projects as Beneficiaries and receive funding from the EU
- Organisations that do not receive funding from the EU are called Associate Partners:
  - Do implement action tasks
  - Do not sign the Grant Agreement but are full members of the consortium
  - Grant Agreement mentions them and defines their responsibilities in the project
  - Do sign the Consortium Agreement with some clauses from the Grant Agreement included

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The Consortium Agreement

- UK participants change from potential Beneficiaries to Associated Partners, note access rights on portal, no right to Grant Agreement
- No direct right of EC to enforce - Consortium is responsible for the implementation of the actions tasks by the Associated Partner
- Provisions from the Grant Agreement inserted in the Consortium Agreement – Many projects use DESCA (AP version 1, July 2022)
  - Grant Agreement - Article 9.1
- Associated Partners sign the Consortium Agreement – director or equivalent
- Belgium law applies (insurance)

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The UK Horizon Europe Guarantee

- Implemented by UKRI – over £1billion committed already by end April 2023
- Funds successful UK partners to deliver their tasks within the existing project
- Funding at same rate, using very similar rules (only exception is no pre-financing, always quarterly in arrears on proof of costs incurred)
- There is a publicly available webinar Grant Preparation for Projects with UK Organisations produced by UKRO, UKRI's team in Brussels

UK Research and Innovation

Latest statistics for the Horizon Europe guarantee

Number of applications and grant offers made through the Horizon Europe guarantee up to 30 April 2023.

Guarantee Grant Type	Applications submitted and verified	Value of grants requested in verified applications	Grant offer letters issued	Value of grant offers issued
Collaborative Horizon Europe Guarantee Grants (on Innovation Funding Service)	1503	£661.3 million	1429	£613.7 million
European Research Council Guarantee Grants	246	£346.9 million	244	£344.6 million
Marie Skłodowska-Curie Actions Guarantee Grants	405	£90.7 million	390	£88.2 million
TOTAL	2154	£1098.9 million	2063	£1046.5 million

Note: figures to the nearest £0.1 million.

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If UK Association is finalised, agreed, approved

- UK contributes funding to the EU (approx. 15% addition to existing Horizon Europe budget)
  - EU decides where to allocate UK government contribution (paragraph 50 of Regulation establishing Horizon Europe) “When allocating associated countries' financial contributions to the Programme, the Commission should take into account the level of participation of legal entities of those third countries in the different parts of the Programme.”
- Except in *very* few Topics that are restricted to Member States only:
  - UK organisations **are** fully eligible to coordinate proposals **and** projects
  - UK organisations **are** classed as one of the minimum three different legal entities from three different eligible countries, as long as at least one consortium member is also from a Member State, for proposal **and** project eligibility
  - UK organisations **would** be funded by EU as project participants/beneficiaries

If UK does not Associate to the Programme

- UK organisations **can** continue to participate in those parts of the programme open to Third Countries
  - Cannot (usually) coordinate proposals or projects
  - Do not count as one of the three different organisations for consortium eligibility
  - Would not be funded by EU (except in exceptional circumstances)*

UK Government Policy Paper published July 2022: **Supporting UK R&D and collaborative research beyond European programmes**

"…*the government will fund all eligible UK entities participating in any such consortia signing grant agreements before 31 March 2025*. The government will consider our approach to funding for Third Country Participation beyond this date and make an announcement by October 2024…"

UK Research and Innovation

Supplementary Frequently Asked Questions about UK participation

- Horizon Europe FAQ 18452 "Associated partners can become work package leaders in collaborative projects."
- GDPR: "Commission concludes that the United Kingdom ensures an adequate level of protection for personal data transferred within the scope of Regulation (EU) 2016/679 from the European Union to the United Kingdom."
- EU/UK Security Agreement "Against this background, the EU and the UK have concluded a Security of Information Agreement. The Agreement will allow the EU and the UK to exchange classified information, applying strong guarantees as to the handling and protection of the exchanged information."
- State Aid/Subsidy – For Enterprises, UKRI considers the grant awarded to any recipient acting economically (an Enterprise) as a compliant subsidy under the UK-EU TCA and where the recipient is not an enterprise or in not acting as an enterprise (HRO, government bodies, charities etc), UKRI will not consider the grant awarded to the recipient to be a subsidy

UK Research and Innovation

UK Research and Innovation

Questions?

Biocatalytic membranes for micro/nano plastic degradation within wastewater effluents

Dr. Eva Sonnenschein
Associate Professor
Marine Microbial Ecology Group
Swansea University

29th of June, 2023

Innovate UK
European Innovation Council
Funded by the European Union

This project has received funding from the European Union's Horizon Europe EIC Pathfinder Open programme under Grant Agreement N. 101099528 (BMRex). This work is supported by UK Innovation funding agency (UKRI) under Grant Agreement N. 10062709.

BMRex – project background

8 mio. tons of plastic waste entered the oceans in 2010

Jambeck *et al.* 2015 Science

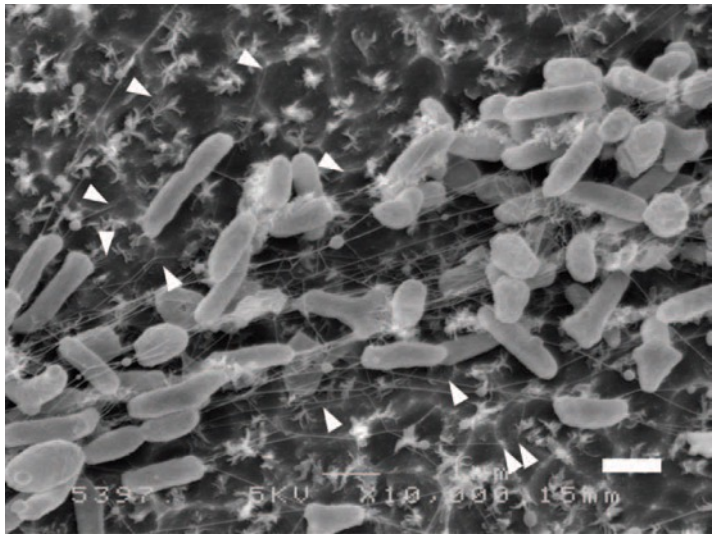
BMRex – project background

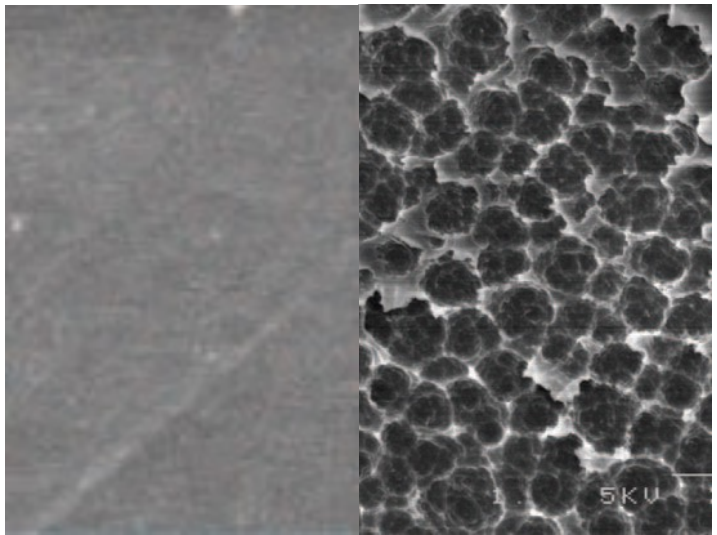
Micro- and nanoplastics pose a great threat to life

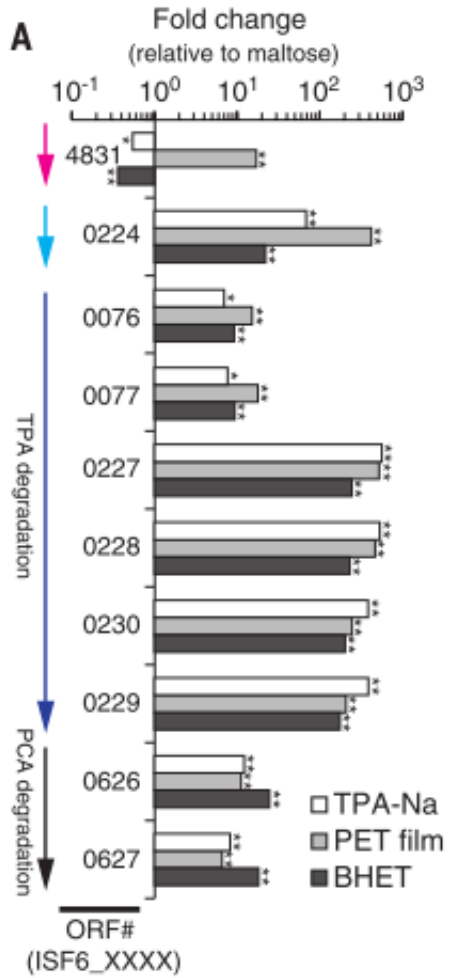
Law *et al.* 2014 Science

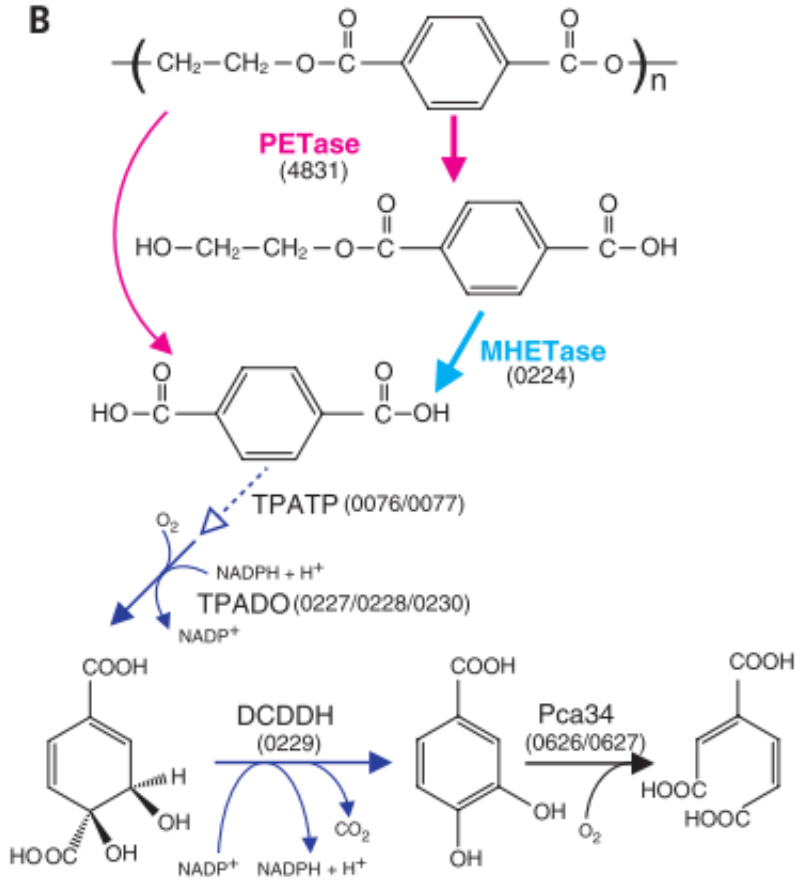
BMRex – project background

Microbial enzymes can degrade plastic







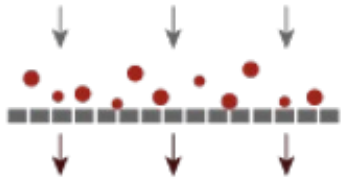


Yoshida *et al.* 2016 Science

BMRex – project aim: a membrane reactor

State of the art technologies

Dead-end/Cross-flow inorganic ultrafiltration membranes



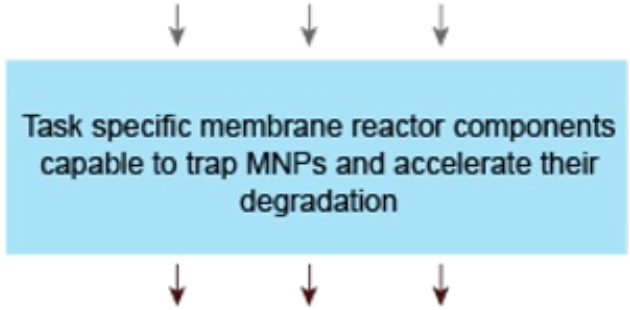
- ✓ Fast
- ✓ Can be easily scaled up
- ✗ Does not deteriorate microplastic pollutants
- ✗ Rapid blockage via biofouling
- ✗ Rapid blockage via MNP accumulation

Wetlands for biological treatment

- ✓ Deteriorates microplastic popllutants
- ✗ Very slow process (complicated to scale up)

Beyond the state of the art

BMRex Membrane Reactor

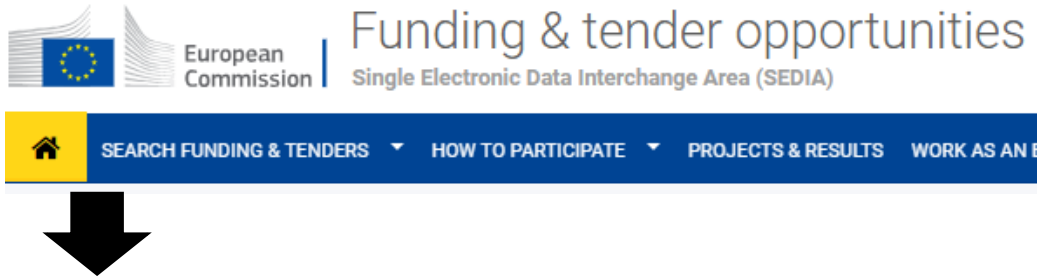


- ✓ Deteriorates nano- and micro-plastic pollutants (MNPs)
- ✓ Rapid filtration with negligible pressure buildup
- ✓ Adapted to domestic or industrial use
- ✓ Antimicrobial to prevent biofouling blockages

BMRex Consortium

- HORIZON-EIC-2022-PATHFINDEROPEN-01
- 42 months
- 3.2 mio Eur + £ 268 K
- 9 participants incl. 3 industrial partners
- 4 countries

BMRex – the timeline



Submission (EIC): **May 2022**

Submission (UKRI): Jan 2023

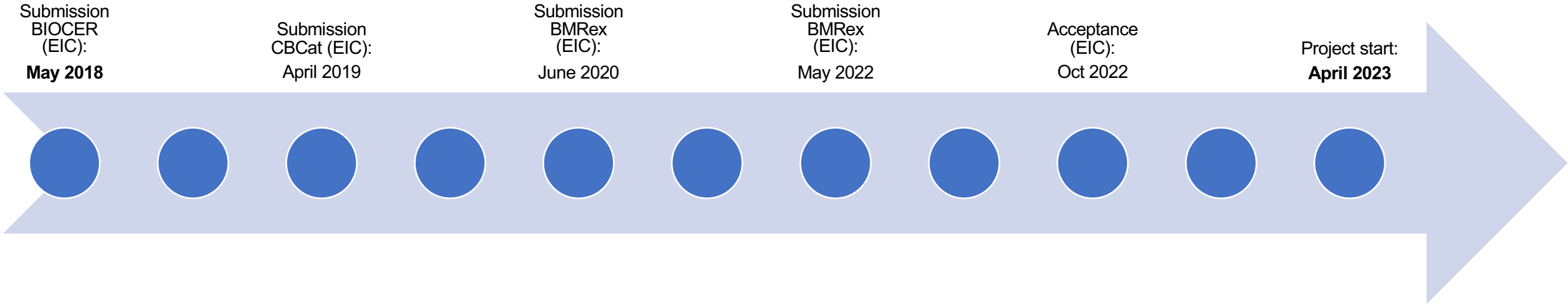
Acceptance (EIC): Oct 2022

Grant Agreement: Dec 2022

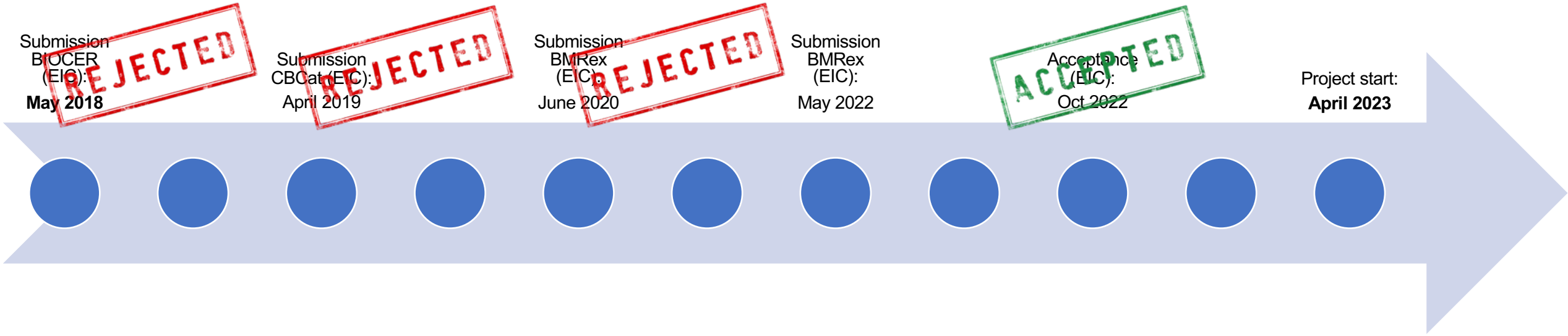
Acceptance (UKRI): Feb 2023

Project start: **April 2023**

BMRex – the real timeline



BMRex – the real timeline



Lesson learned

- Choose the right partners for the project
- Include industrial partners
- Be convincingly interdisciplinary
- Be innovative and ambitious
- Have an applicable impact (Europe and beyond)
- Define the challenges
- Pathfinder is high risk/high reward, but be clear on feasibility
- Measurable outcomes
- Be persistent!

Dr. Eva Sonnenschein
Swansea University, UK
Email: e.c.sonnenschein@swansea.ac.uk

Innovate UK
European Innovation Council
Funded by the European Union

This project has received funding from the European Union's Horizon Europe EIC Pathfinder Open programme under Grant Agreement N. 101099528 (BMRex). This work is supported by UK Innovation funding agency (UKRI) under Grant Agreement N. 10062709.

BREAK

Option of watching UKRI video on experiences from Horizon 2020 and Horizon Europe UK grantees

https://www.youtube.com/watch?v=gdxHQ_7VRFg&list=PLkjB0VcEl5P_zFLV2oKywwXzZ4Vz2I8Zu

UKRI Innovate UK KTN

Innovate UK KTN exists to connect innovators with new partners and new opportunities beyond their existing thinking – accelerating ambitious ideas into real-world solutions.

Cross-Sector Expertise

Agrifood
Biotechnology
Chemistry
Creative Industries
Design
Digital
Electronics
Energy
Geospatial
Health
Industrial Maths
Infrastructure
Manufacturing
Materials
Photonics
Quantum
Robotics & AI
Security & Defence
Sensors
Space
Transport
Water

UKRI Innovate UK KTN

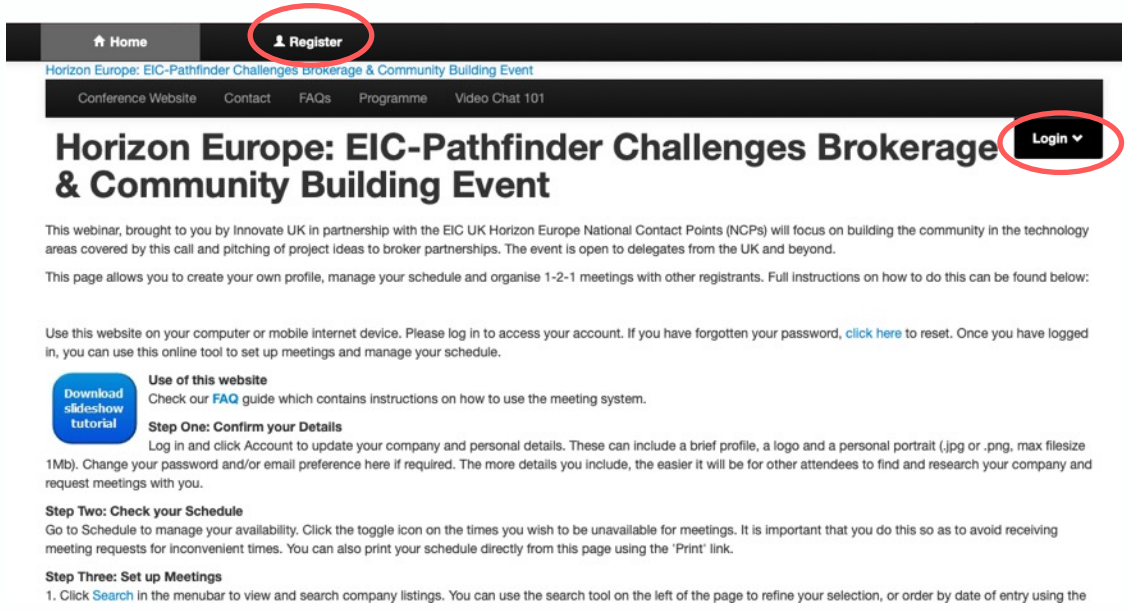
Post-Event Networking Platform: how to.....

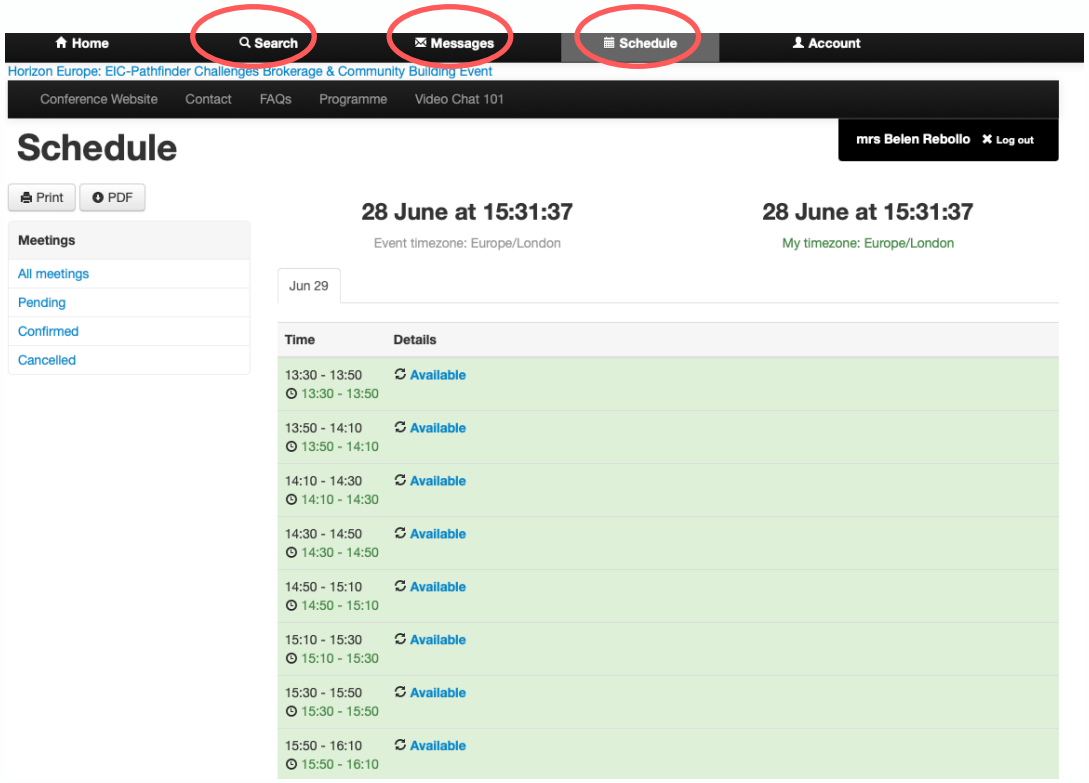
How to....:

- ✓ Register and then Log in

- ✓ SEARCH for other delegates
- ✓ MESSAGE them
- ✓ SCHEDULE 1:1 Meetings

https://eicpathfinderbrokerageevent.meeting-mojo.com





Innovate UK KTN

Breakout Rooms

- EIC Challenges Breakout rooms

- **COOLING:** Clean & efficient cooling (Conall McGinley)

- **DIGITALISATION:** Architecture, Engineering and Construction Digitalisation for a novel triad of design, fabrication, and materials. (Cherie Gardiner)

- **NUTRITION:** Precision Nutrition. (Helen Sweeney)

- **ELECTRONICS:** Responsible Electronics. (Craig Sharp)

- **SPACE:** In-Space solar energy harvesting for innovative Space applications. (Jane Watkins).

- EIC & Legal UK NCP Room

Chris Young: Legal & Financial NCP
Ann Marie Reid: EIC NCP

Rotating

Claire Griffin: EIC NCP
Belen Rebollo: KTN support

- Networking breakout rooms

Room 1
Room 2

- *"Plenary Room"*

Michael Foster: Innovate UK KTN Events Manager

UKRI Innovate UK KTN

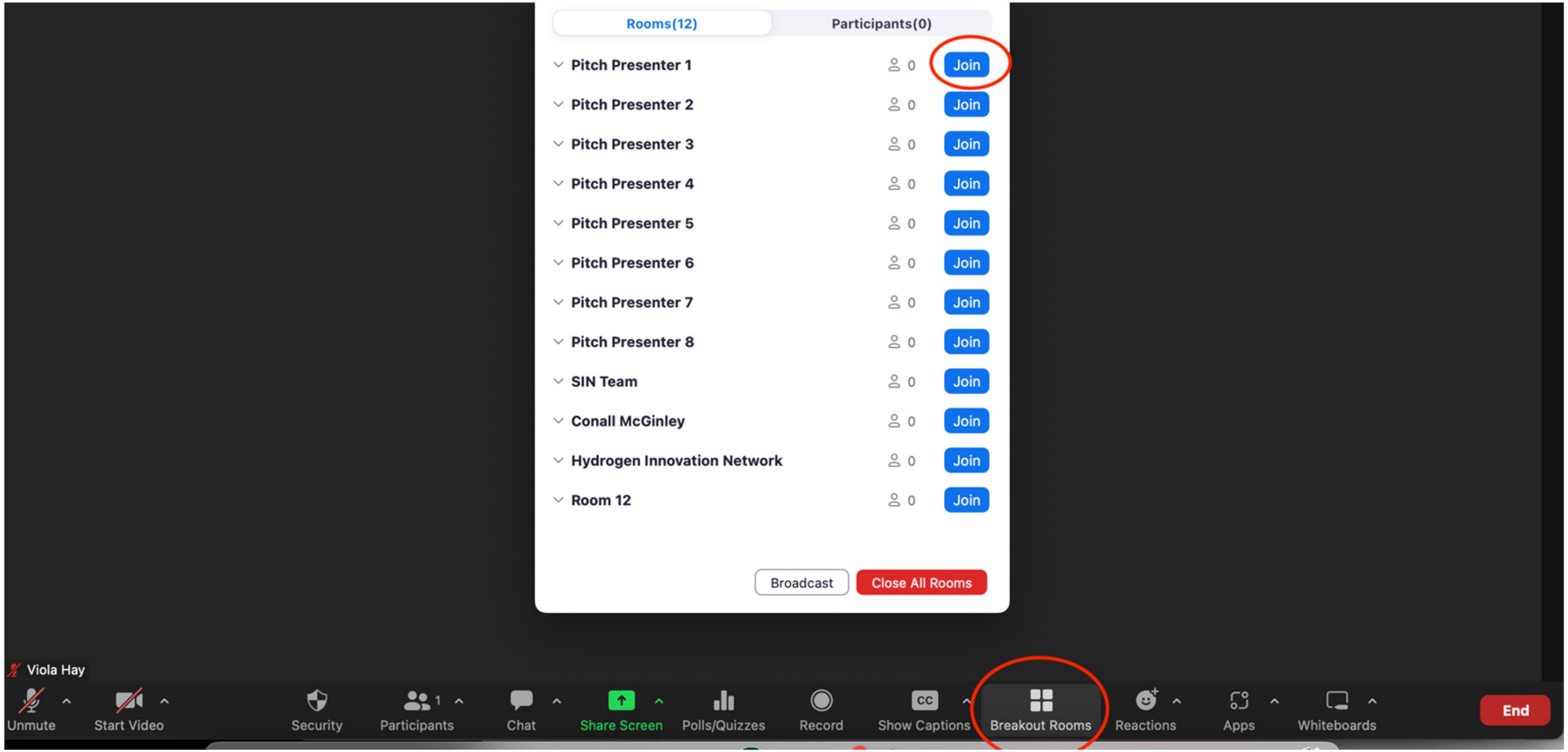
How does it work?

- About 45 minutes for Breakout room discussions.
- You select which breakout room you'd like to join
- You can move around and go to more than one breakout room
- Opportunity for networking and engaging in new collaborations
- If you drop out, you can join the webinar again in the main room and we can help you join breakout rooms of interest to you.

PLEASE NOTE: BREAKOUT ROOMS ARE NOT BEING RECORDED.

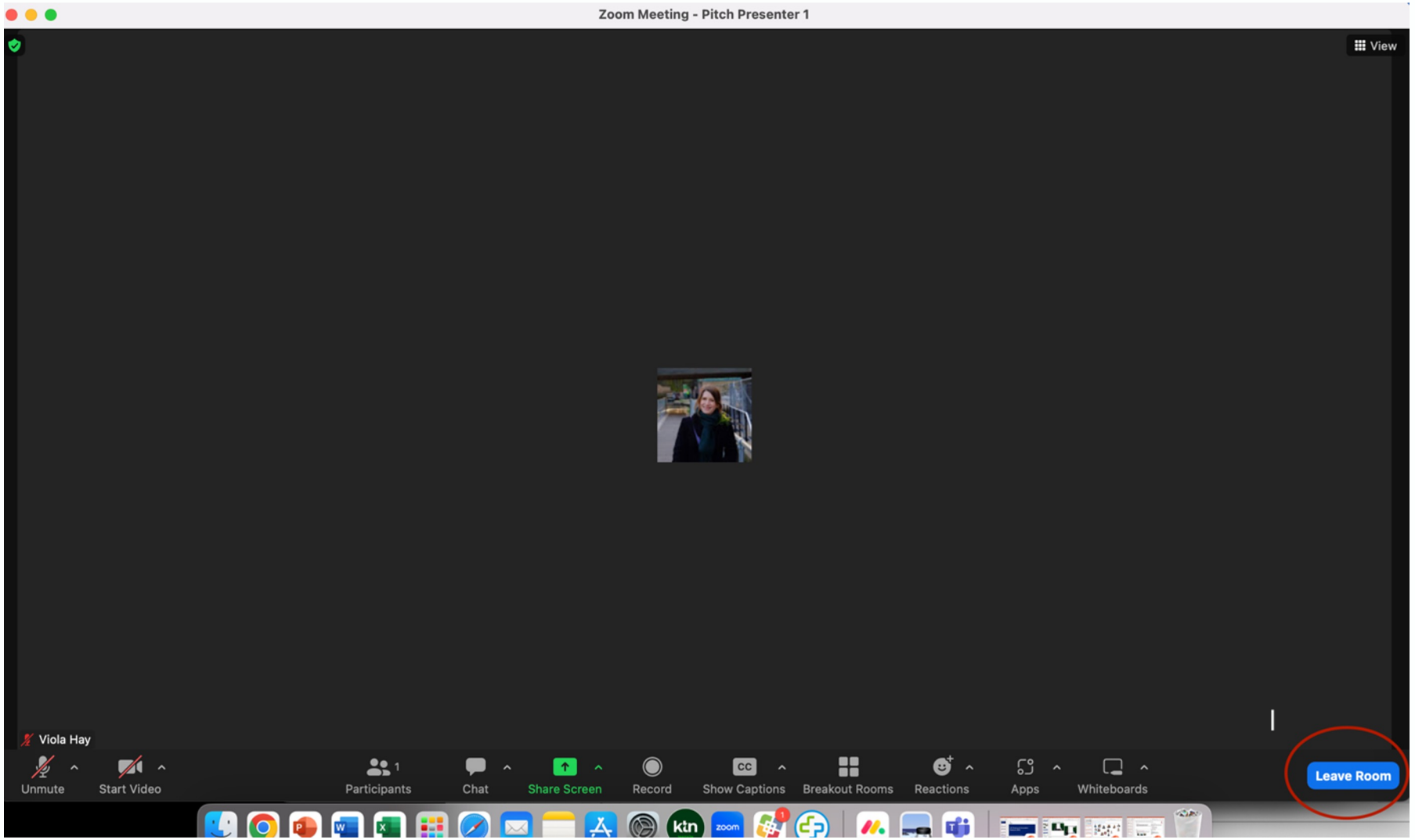
UKRI Innovate UK KTN

How to JOIN a breakout room



Innovate UK KTN

How to LEAVE a breakout room



Innovate UK KTN

Breakout Rooms

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Rotating

Claire Griffin: EIC NCP
Belen Rebollo: KTN support

- Networking breakout rooms

Room 1
Room 2

- *"Plenary Room"*

UKRI Innovate UK KTN

Pitches presented in the EIC-Challenges Breakout rooms

Organisation	Speaker
	Precision Nutrition
Geromics: Clinoverse Infrastructure	Dan Bolser
Babylat	Zina Yudina
Amply Discovery	Dermot Tierney

Organisation	Speaker
	Cooling
Sound Mathematics Ltd.	Larissa Fradkin

Innovate UK KTN

HORIZON-EIC-2023-PATHFINDERCHALLENGES-01-03:

Precision nutrition: Clinoverse Infrastructure

We have developed a "Precision Health Data and Consent Infrastructure" inspired by blockchain technology.

Useful across study recruitment, consent, secure and compliant personal health data storage, analysis, PPIE and data reuse (and re-consent). Solves the problem of 'trust' on the participant side.

Modular and reusable architecture for re-use across a range of studies and data types, developed in collaboration with Citizen Science organisations. Company founded by Cambridge Bioinformatics PhDs and Professors.

Partners:

Looking for partners with:

- A LARGE, personal omics component to their research.
- A CLEAR tech transfer and commercialisation strategy.

We are Interested in projects studying the relationship between nutrition and Mental Health.

Organisational Capabilities

We have a solution for 'Precision Consent' that puts participants in control of their data. Can easily broker data and consent to third parties for analysis. Smart Consent complies with, and goes beyond, the upcoming EHDS regulatory enforcement.

We can manage participant recruitment, ethics approval, secure and compliant data storage, data management and data analysis. Experienced bioinformatics analysis for multiomics, data integration and GWAS (and ML).

Administrative Information

Geromics is a Cambridge based SME with a 'sister' legal entity in Hungary (Clinomics Europe).

We can apply with additional UK partners / coordinators.

Contact details:
Dan Bolser, dan@geromics.co.uk +44 (0)7428 571 119
UK (PIC:881452096), but sister legal entity in
Hungary (PIC:881451514).

BABYLAT

Proposed Approach & Experience

The precision nutirtion for very early preterm neonates plays cricial role to decrease the mortality and morbidity and reduce severe effects of the prematurity.

In case of very early preterm neoanates (<1.5kg) so called fortificaiton of human milk should be done in order to prevent the delays in growth. Now still suboptimal methods are used (standard fortification, cow-milk origin products for protein fortification)

In Babylat we had established the method and device to prepare onsite human milk-origin fortifiers locally (prepared from donor milk or own mother milk).

It will eliminate the need to use cow milk products for very fragile neonates and thus enables the WHO recommendation to meet a 100% human –milk-based diet during first six months of live, which is a must for any neonate

Partners

-research organization
-commercial service provider (software)
-hospitals with NICUs

We want to run a detailed pre-clinical study in vitro and in vivo for our novel product with interested research partners to demonstrate the beneficial effect of our human milk origin products over cow-milk ones and verify its feasibility

Additionally we want to further develop our algorithm to calculate the individual nutritional regimes for the preterm neonate based on the age, volume of consumed milk and individual weight's gain dynamic

Organisational Capabilities

We provide to our partner the prototype of our novel device, Babylat Enricher, making the human milk-origin products (protein fortifiers) from human milk onsite

The output (fortifier) is planned to be used for the human milk fortification to feed very early preterm neonates in order to prevent the protein deficiency and avoid growth delays
We also established the future feeding regimes based on the output's macronutriental content and we provide these predictions to any interested party for future joint study

Pilot data regarding proteomic, hygiene, osmolarity and macronutriental content are available as well and need to be further expanded in joint project

Administrative Information

Babylat GmbH is a Swiss-based startup, founded in 2020 in Sitem Insel, Bern.

We can be as Coordinator as a Partner

Contact details:
Dr. Zina Yudina
CEO of Babylat
+41 76 495 02 29
Weyremannstrasse 36,
Bern
3008 Switzerland

PATHFINDER CHALLENGE: PRECISION NUTRITION (18-Oct-2023): HORIZON-EIC-2023-PATHFINDERCHALLENGES-01-03

AMPLY DISCOVERY

Novel Biologics. Designed by Evolution. Discovered by AI.

PROPOSED APPROACH & EXPERIENCE:

- AMPLY Discovery deploys machine learning and synthetic biology to mine vast biological data to discover novel bioactives and nutraceutical candidates. Using a proprietary in silico and in vitro hybrid platform to discover best-in-class molecules AMPLY is helping tackle some of humankind's greatest health challenges.
- AMPLY adopts a deep-mining approach, scanning regions of genetic code no other tool can, exploring the “dark matter” of genomic and metagenomic datasets to find natural molecules shaped by thousands of years of evolution.
- Our platform, the AMPLYfolioAI, can identify and extract millions of putative molecules from each dataset it processes, characterise them across 400+ data-points, and extract useful regions based on the defined target product profile required, before further modelling these regions.
- AMPLY can deploy its computational approach in the microbiome and nutraceutical domain, to i) identify microbiome related relationships to disease and ii) discover and validate novel food ingredients and additives (and combinations) which can beneficially support human health.

PARTNERS:

- AMPLY is seeking to develop or work within consortium partnerships with partners of all sizes, whether SMEs, MNCs or academic groups. Of particular interest are partners who have:
  - an interest in or understanding of biological or microbiome disease pathways, particularly those which are traditionally hard to treat;
  - access to novel sources of food ingredients, particularly unique breeds or species of botanicals or insects;
  - access to downstream testing facilities or programmes for in vivo trials;
  - capability in protein and molecule extraction from natural sources;
  - access to supply chains and distribution in the food product and FMCG markets and an interest in new products targeting Food related Health Conditions;
  - experience of the regulatory and approval process for new dietary ingredients within the EU; and
  - an understanding of the commercial landscape for personalised dietary products.

ORGANISATIONAL CAPABILITIES:

- AMPLY Discovery is an innovative Northern Ireland TechBio spin-out exploiting a proprietary computational biology platform developed within Queen’s University Belfast.
- The AMPLY team have strong competence in bioactive and biologic drug discovery, metagenomic analysis, high-throughput in vitro screening, in vitro assay design, project management and collaborative R&D. Within a consortium AMPLY can deliver key activities such as:
  - Bioinformatics, in silico compound discovery, computational biology and data modelling;
  - Next-gen sequencing;
  - Metagenomic and genomic data analysis;
  - In vitro testing and assay design in key areas including antimicrobial and metabolic diseases;
  - Toxicity testing;
  - Pre-formulation studies, including stability and solubility;
  - Mechanism of action studies; and
  - Generation of biologic compound libraries across proteins and peptides through to RNA.

ADMINISTRATIVE INFORMATION:

- Company type: SME
- Position in consortia: Partner
- Country: UK (Northern Ireland)
- Address: 63 University Road, Belfast, Northern Ireland. BT7 1NF
- Company Number: NI676691
- PIC Number: 881450156
- Contact Point: Mr Dermot Tierney (Co-Founder and Chief Commercial Officer)
- Email: dermot.tierney@amplydiscovery.com
- Tel: +44 (0) 778 830 0279

EIC Accelerator Challenges: Energy Storage

∫ ound Mathematics Ltd.

Proposed Approach & Experience

We propose to develop explainable AI for the automatic processing of images of anomalies and automatic generation of relevant reports.

We have many years experience working on ultrasonic modelling and also developing explainable AI (in the form of decision trees) for utilising PAUT (Phased Array Ultrasonic Transducers) data for generating and analysing TFM images of cracks in solid components as well as corrosion maps of pressure vessels.

Partners

We are looking for partners who develop inspection instrumentation, such as Phased Array Ultrasonic probes. Any other instrumentation that collects data for creating images of damage in industrial components is of interest. We are particularly interested in partners who can supply us with real data for training and testing our AI software, such as operators of wind turbines.

Organisational Capabilities

Prof Larissa Fradkin is project manager and senior researcher. For more than 20 years now Larissa has been collaborating with British Energy – now EDF, CEA, Doosan Power Systems and TWI developing novel codes for use in the ultrasonic NDT of nuclear pressure vessels. For the past several years Prof Fradkin has been working on the expert system AUTONDE for semi-automatic crack characterisation and NDT report writing. *Mr Callum Moscrip* is AI and Machine Vision Research Engineer has wrote core software FFS_ASSESS for the automated assessment of fitness for service of pressure vessels using ASME and BS EN industrial standards.

The proposed project will be carried using our existing computer resources:

1. Workstation 3XS Deep Learning G4000C Fluid
2. HP EliteBook 840 G8 Notebook PC
3. Laptop Dell G3 3579.

Administrative Information

Sound Mathematics is a micro business.
It is planning on being a Partner.

The contact details:
Professor Larissa Fradkin
E-mail: l.Fradkin@soundmathematics.com
Mobile: +44(0)7885543003
UK
PIC: 887414589

III.2.2 EIC Transition Challenge: Environmental Intelligence

∫ ound Mathematics Ltd.

Proposed Approach & Experience

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We have many years experience working on ultrasonic modelling and also developing explainable AI (in the form of decision trees) for utilising PAUT (Phased Array Ultrasonic Transducers) data for generating and analysing TFM images of cracks in solid components as well as corrosion maps of pressure vessels.

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It is planning on being a Partner.

The contact details:
Professor Larissa Fradkin
E-mail: l.Fradkin@soundmathematics.com
Mobile: +44(0)7885543003
UK
PIC: 887414589

Clean and Efficient Cooling

EIC Work Programme reference: HORIZON-EIC-2023-PATHFINDERCHALLENGES

UKRI Innovate UK KTN

Clean and Efficient Cooling

- Info day - Pathfinder - "Clean and Efficient cooling" challenge. (europa.eu)
- Challenge Guide - Challenge Guide 2023_clean cooling_v2_0.pdf (europa.eu)
- Programme Manager – Antonio Marco Pantaleo
- Who – Consortium or mono-beneficiary
- How – before 18 October 2023 @17:00 (Brussels Time)
- What – up to 4M€ from 32.7M
- Why – to create opportunities for discovery of new environmentally friendly electronic materials, thus reducing its environmental impact and the need for critical raw materials and hazardous chemicals

UKRI Innovate UK

Construction Digitalisation

EIC Work Programme reference: HORIZON-EIC-2023-PATHFINDERCHALLENGES

UKRI Innovate UK KTN

Construction Digitalisation

- Info day - Pathfinder Challenge "Architecture, Engineering and Construction digitalisation for a novel triad of design, fabrication, and materials". (europa.eu)
- Challenge guide - Challenge Guide 2023_AEC_v2.pdf (europa.eu)
- EIC Programme Manager - Franc Mouwen (europa.eu)
- Who – Consortium or mono-beneficiary
- How – before 18 October 2023 @17:00 (Brussels Time)
- What – up to 4M€ from 32.7M
- Why – to achieve the

UKRI Innovate UK

EIC Pathfinder Challenge
Architecture, Engineering + Construction Digitalisation

Useful Links:

- Info Day Pathfinder Challenge "Architecture, Engineering and Construction digitalisation for a novel triad of design, fabrication, and materials". (europa.eu)
- Challenge Guide 2023_AEC_v2.pdf (europa.eu)

Introductions

- Who are you?
- What is your specialism / focus area?
- Why are you here today?

Deadline 18th October 2023

Innovate UK

Categories/ Subcategories

The three major categories and subcategories are depicted in the table below. The lists of subcategories aim to provide exemplary guidance and considerations for the evaluation committee and are non-exhaustive.

COMPUTATIONAL DESIGN	DIGITALIZED FABRICATION	MATERIALS
Algorithmic design, AI	AM[1]: extrusion 3D printing	Concrete/cement[2]
Topology optimization	AM[1]: other technologies	Timber derivatives[3]
Agent-based modelling	Subtractive manufacturing	Bio-based materials
Parametric design	Weaving, braiding, knitting	Natural materials
Physical simulation engines	Macro-, meso-, microscale	EM[4]: fibre composites
Biomimicry	Industrialized automation	EM[4]: fabric composites
Macro-, meso-, microscale	Robotics	EM[4]: metamaterials
Digital Twin	QA/QC scanning at scale	Discrete blocks, archimats[5]
Other	Other	Other

Precision Nutrition

EIC Work Programme reference: HORIZON-EIC-2023-PATHFINDERCHALLENGES

UKRI Innovate UK KTN

Precision Nutrition

- Info day - EIC Pathfinder Challenge: Precision Nutrition - information day (europa.eu)
- Challenge guide - EIC Pathfinder Challenge - Precision nutrition (europa.eu)
- EIC Programme Manager – Ivan Stefanic
- Who – Consortium or mono-beneficiary
- How – before 18 October 2023 @17:00 (Brussels Time)
- What – up to 4M€ from 32.7M
- Why – to investigate and provide scientici evidence of the role of diet

UKRI Innovate UK

Responsible electronics

EIC Work Programme reference: HORIZON-EIC-2023-PATHFINDERCHALLENGES

Innovate UK
KTN

Responsible electronics

- Info day - EIC Pathfinder Challenge "Responsible Electronics" - Information Day (europa.eu)
- Challenge guide - Challenge Guide 2023_Responsible Electronics-v2.pdf (europa.eu)
- EIC Programme Manager – Isabel Obieta
- Who – Consortium or mono-beneficiary
- How – before 18 October 2023 @17:00 (Brussels Time)
- What – up to 4M€ from 32.7M
- Why – to create opportunities for discovery of new environmentally friendly electronic materials, thus reducing its environmental impact and the need for critical raw materials and hazardous chemicals

UKRI Innovate UK

Responsible Electronics

- Info Day (recording) – EIC Pathfinder Challenge ”Responsible Electronics” Information Day (europa.eu),
- Challenge Guide – Challenge Guide 2023 Responsible Electronics –v2.pdf (europa.eu)
- EIC Programme Manager – Isabel Obieta
- Why – to create opportunities for discovery of new environmentally friendly electronic materials, thus reducing its environmental impact and the need for critical raw materials and hazardous chemicals
- Who – consortium or mono-beneficiary
- When – before 18 October 2023 (17:00 Brussels time)
- Budget – up to €4m (from €32.7m budget)

Responsible Electronics

- Introductions/Tour de table
- What are you looking to get out of the day?
- Key specialisms
- Key categories/areas interested in? (evaluation criteria)

Sustainability arguments for SEMICONDUCTORS

Design, manufacturing, use, repair, reuse, and recycling

Novel Materials

From fossil based to Bio/based, biodegradable, abundant, etc..

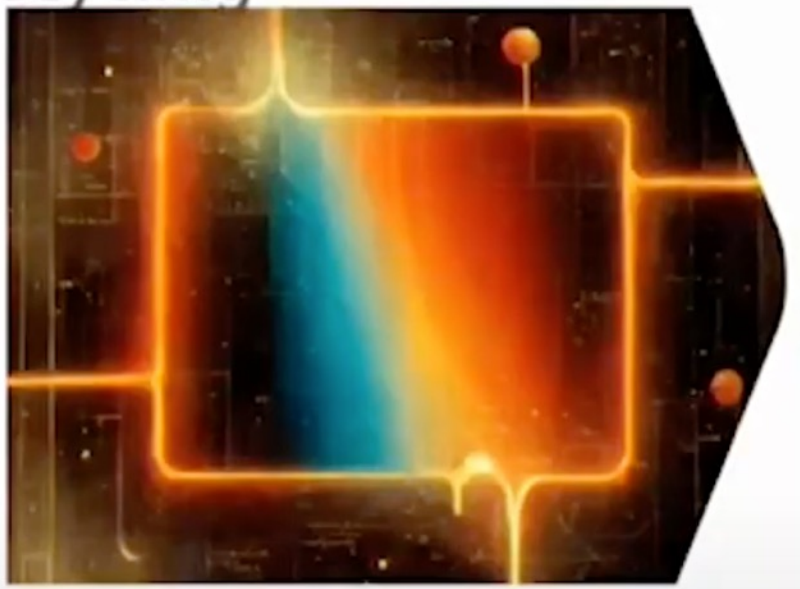
Manufacturing changes:

Novel processes. From etching-based to additive

Others reducing the energy or water consumption and avoiding the use of certain chemicals

Hybrid Integration

Packaging or Interconnections for easy recyclability or reuse



(Design) radically new devices

Sensors or lighting devices inspired by nature

Overall goal and specific objectives

- The overall goal of this Challenge is to create opportunities for discovery of new environmentally friendly electronic materials, thus reducing its environmental impact and the need for critical raw materials and hazardous chemicals .

- Projects supported under this Challenge are expected to offer:

- materials with improved properties (such as flexibility, durability, end of life recyclability/reusability),

- materials processed with low energy consumption and low carbon footprint processing (such as printing instead of photolithography, avoiding use of fluorinated gases for patterning), or alternatives, including nano-sized ones, to replace common electronic materials such as silicon and silicon nitride.

Specific objectives of this Challenge are to support the scientific community in reaching breakthroughs in development/discovery of:

Advanced electronic materials for unconventional devices :

- small-molecule and polymeric organic materials,
- solution-processable inorganic materials,
- hybrid organic-inorganic materials,
- polymer-matrix nano-composite materials,
- bio-based and nature-inspired materials
- for the manufacturing of n- and p-semiconductors, dielectrics, conductors, including transparent conductors, particularly those suitable to make functional inks, passivation/encapsulation/packaging materials, flexible/stretchable substrates, etc.

Advanced processes:

- production methods based on solution processing such as blade coating, slot die coating, spray coating, screen
- printing, inkjet printing, offset, gravure and flexo-printing, or
- other techniques particularly suitable for sheet-to-sheet or roll-to-roll manufacturing.

Unconventional applications including e-textile/e-skin:

- backplane and logic circuits,
- microprocessors (4-8 bits),
- sensors,
- Displays
- power supplies
- wireless transmitters/receivers, etc.
- particularly those suitable for Internet-of-Thing (IoT) applications while applying the life-cycle thinking approach

Expected outcomes and impacts

This Challenge is expected to contribute to the development of materials with new properties or replacing materials used in current electronic devices with materials, which:

- reduce dependency on critical raw materials,
  are sustainable: having a low environmental footprint and developed recurring to the life cycle thinking approach.

The overall outcome of this Challenge is to support the move from traditional materials and manufacturing processes to less environmental impactful ones. It is expected that the Challenge will lead to the development of **lab-scale validated proof of concept devices based on the developed innovative materials and manufacturing processes**, which may represent a potential application of a more sustainable, trusted and secure electronics.

•Projects with **multidisciplinary and cross-sectorial approaches**, looking for inspiration, ideas and knowledge in a broad range of disciplines are particularly welcome.
•The safe and sustainable use of non-critical raw materials or the full recycle/reuse of them is mandatory.
•**All projects are expected to conduct a full life cycle analysis of the proposed solutions and they shall apply or identify a methodology to measure the environmental and/or carbon footprint of the proof of principle/s** that will be developed during the project.
•Applicants should ensure that the proposed method/technology/material/s is not harmful to the natural ecosystems.
Packaging and durability should be taken into consideration.

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•**Evaluation (see Challenge Guide) - Mapping of proposals in 5 categories** stemming from overall goal and specific objectives of the Challenge (e.g., building blocks or subsystems, technical areas and/or competing technologies, platforms, applications areas, risk level and stage of technology readiness level, size)

Category

i) Organic small molecule and/or polymeric materials

ii) Solution or vapor processable inorganic materials

iii) Hybrid organic-inorganic materials and/or nanocomposites

iv) Nature inspired solutions

v) Other radically new materials or processes for Electronic Devices particularly those suitable for functional inks, passivation/encapsulation/packaging and/or flexible/stretchable substrates

Devices

- Novel discrete analog components especially those for power devices
- Optoelectronic devices
- Sensors and Actuators (with at least the following sub- categories: chemical, mechanical, temperature, physiological and biosensing)
- Displays and illumination solutions
- Logic circuits, microprocessors and memories
- Wireless transmitters/receivers and other devices for Communication

Technological Approach

•Printing techniques for flexible devices: Inkjet, aerosol jet, etc..

•Solution- based coating

•techniques: slot-die, spray-coating, blade-coating dip-coating, etc..

•3D printing

•Vapor or other energy- efficient source based processes

•Low-energy low-carbon emission patterning

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IN-SPACE SOLAR ENERGY HARVESTING FOR INNOVATIVE SPACE APPLICATIONS CHALLENGE GUIDE

EIC Work Programme reference: HORIZON-EIC-2023-PATHFINDERCHALLENGES-01-05

UKRI Innovate UK KTN

Overview

- **Why** – breakthroughs in the areas of in-space energy harvesting and transmission, and of novel propulsion concepts that will use such harvested energy.
- **Who** – Consortium or mono-beneficiary
- **How** – before 18 October 2023 @17:00 (Brussels Time)
- **What** – up to 4M€ from 32.7M (up to 10 projects)

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The Challenge should address

The proposals submitted to this Challenge should address at least one of the fields below.

- Scalable solutions (e.g. on-board spacecraft large deployable photovoltaic panels to collect the solar energy, wireless power transmission (WPT) devices, wireless receiver devices that re-convert to usable energy, batteries, etc.) for in-orbit efficient solar energy collection and storage.

- Conversion DC-to-RF of the harvested energy in a form, appropriate for transmission at long distances in empty space.

- Efficient wireless and secure power transmission of the transformed energy between in-space harvesting devices on spacecraft and re-translation stations or other final receivers, including laser and/or microwave-based solutions (e.g. large beam pointing antennas for transmission, rectennas for the final receivers). This may require a grid of re-transmitting stations, which not only amplify the wireless transmission, but also redirect the transmission as necessary.
- Innovative green propulsion solutions for in-space mobility, resulting into low cost or eco-friendly innovative concepts.

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The Impact

- Design and laboratory validation of new concepts and technologies for energy harvesting in space e.g. in-space utilisation of this energy for transportation and other related research and innovation activities, in particular for cleaning space debris;

- Development and laboratory validation of breakthrough technologies for wireless power transmission of energy, e.g. through power grid, for energy beam pointing and control;

- Development of eco-friendly and innovative green propulsion solutions for in-space applications (e.g. spacecraft orbital corrections, in orbit satellite servicing, active debris removal, end-of-life services, etc.) addressing the barriers to the use of in-space solar energy harvesting for innovative propulsion.

- Development of innovative in-space robotic solutions for in-space manufacturing and assembly of space-based solar units will be considered too.

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In-space solar energy

- Info day - EIC Pathfinder Challenge: In-space solar energy harvesting for innovative space applications - Information day (europa.eu)
- Challenge guide - Challenge Guide Space 2023_v2.pdf (europa.eu)
- EIC Programme Manager – Stella Tkatchova
- Who – Consortium or mono-beneficiary
- How – before 18 October 2023 @17:00 (Brussels Time)
- What – up to 4M€ from 32.7M
- Why – breakthroughs in the areas of in-space energy harvesting and transmission, and of novel propulsion concepts that will use such harvested energy.

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Horizon Europe
EIC Pathfinder – Challenges Call

Key Dates and messages

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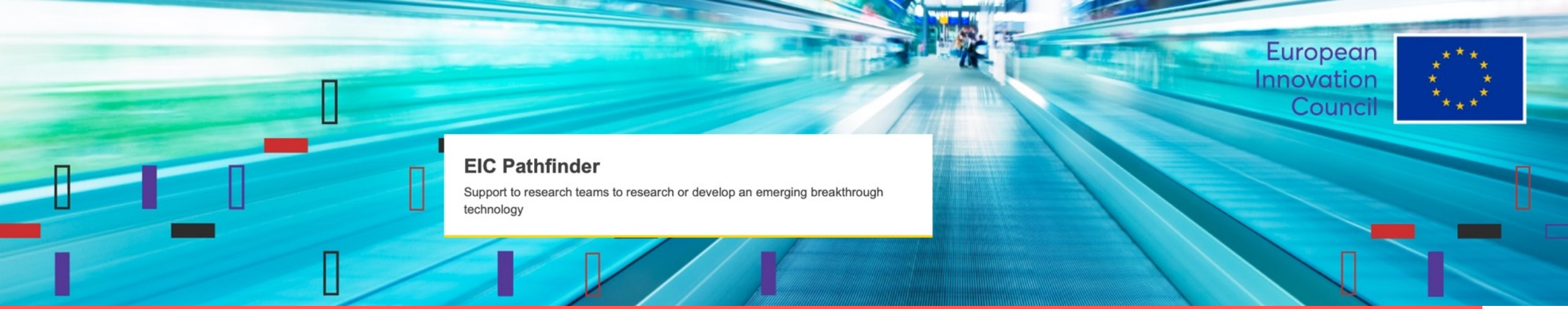

Deadline

18th October 2023 at 17:00 Brussels time (16:00 UK time)

News

News article | 31 May 2023

Health and biotech at the EIC: video from Conquering cancer event

EIC Programme Manager gives an overview of the European Innovation Council and its funding and investment opportunities for health and biotech sectors.

News article | 10 May 2023

Commission announces partners in European Innovation Council action to support the Ukrainian deep tech community

The Commission announced today the partners in a pan-European network who will implement a €20 million European Innovation Council (EIC) action supporting Ukraine's innovation community.

EIC Challenges information days

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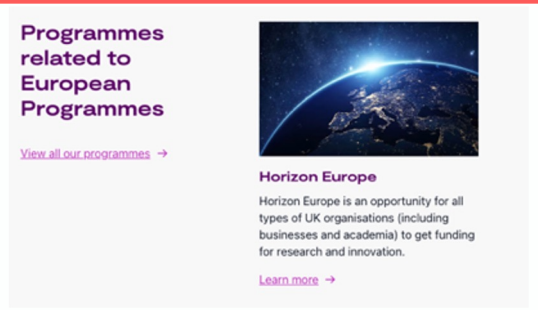
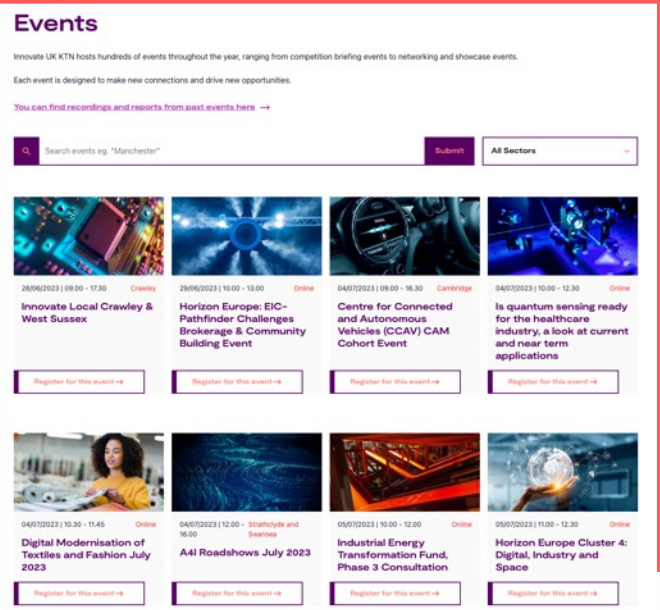
https://eic.ec.europa.eu/eic-funding-opportunities/eic-pathfinder_en



UK Horizon Europe Hub

https://ktn-uk.org/programme/european/



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