

Pathfinder + Transition

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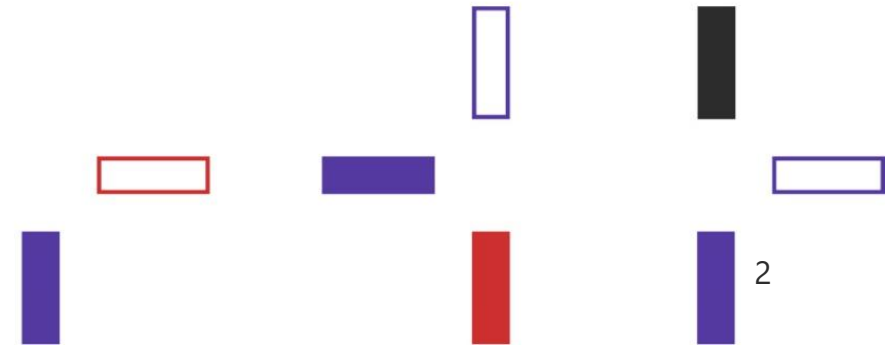
European
Innovation
Council





Agenda

- Intro
- EIC Pathfinder
 - EIC Pathfinder Open
 - EIC Pathfinder Challenges
- EIC Transition
 - EIC Transition Open
 - EIC Transition Challenges
- Q&A





What's holding back European innovation?

Innovation performance

- **Strong research performance not translated** into innovation
- **Lack of breakthrough/ disruptive innovations** that create new markets

Innovation **funding**

- Financing gaps (2 "valleys of death") in
- **Transition** from lab to enterprise
 - **Scaling up** for high-risk innovative start-ups

Innovation **ecosystem**

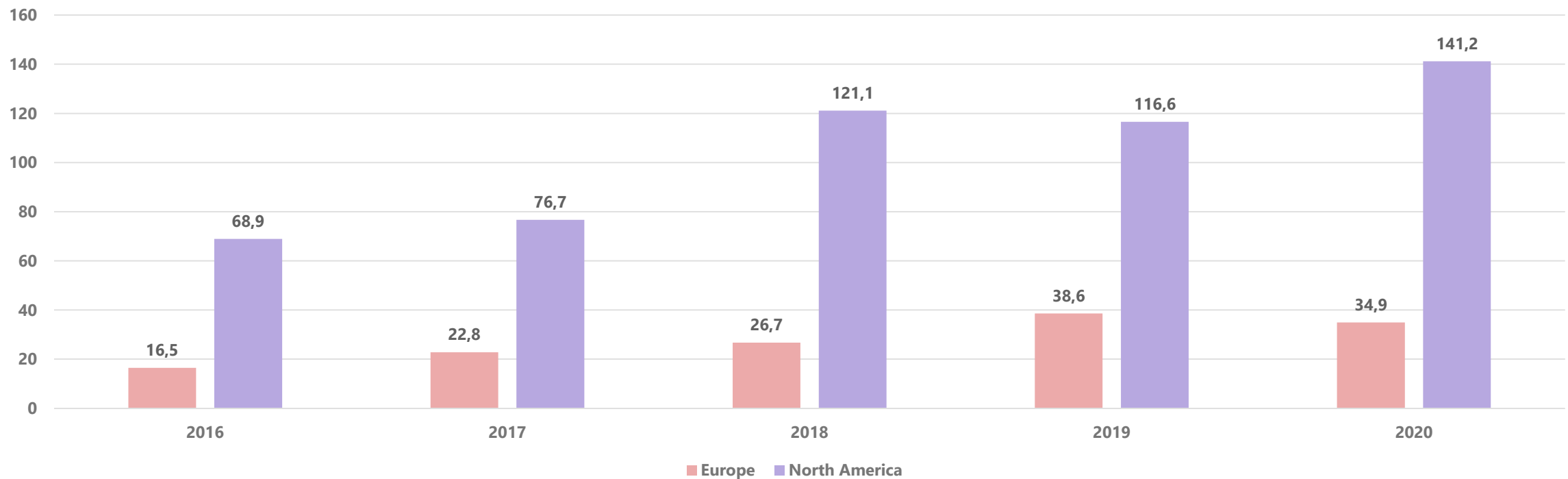
- Many national & local ecosystems, but **fragmented at European** level
- Need to **include all regions and all talent** (especially female)



Funding gap for scaling up highly innovative startups and SMEs

US venture capital investments are 4-5 times higher than EU

Capital invested by year (B\$)

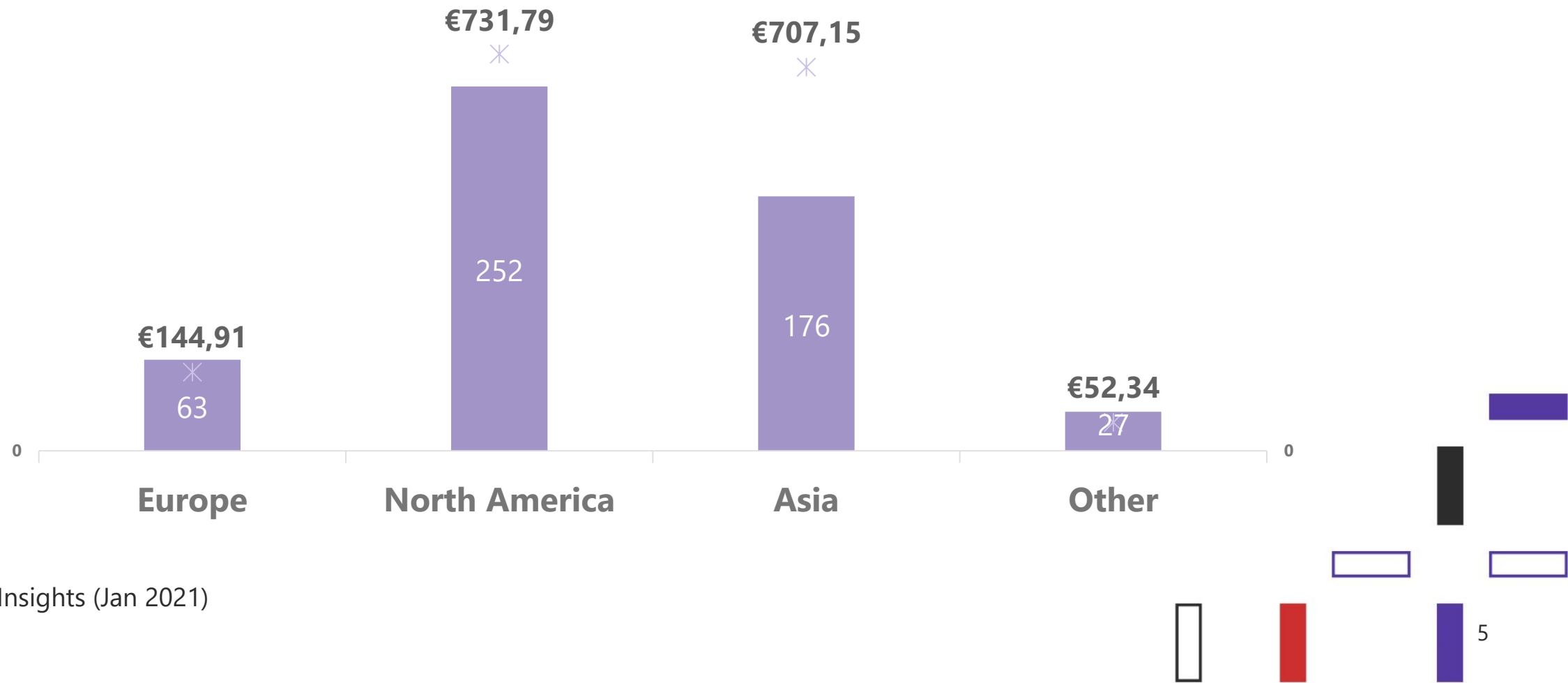


Source: [Invest Europe, Pitchbook]

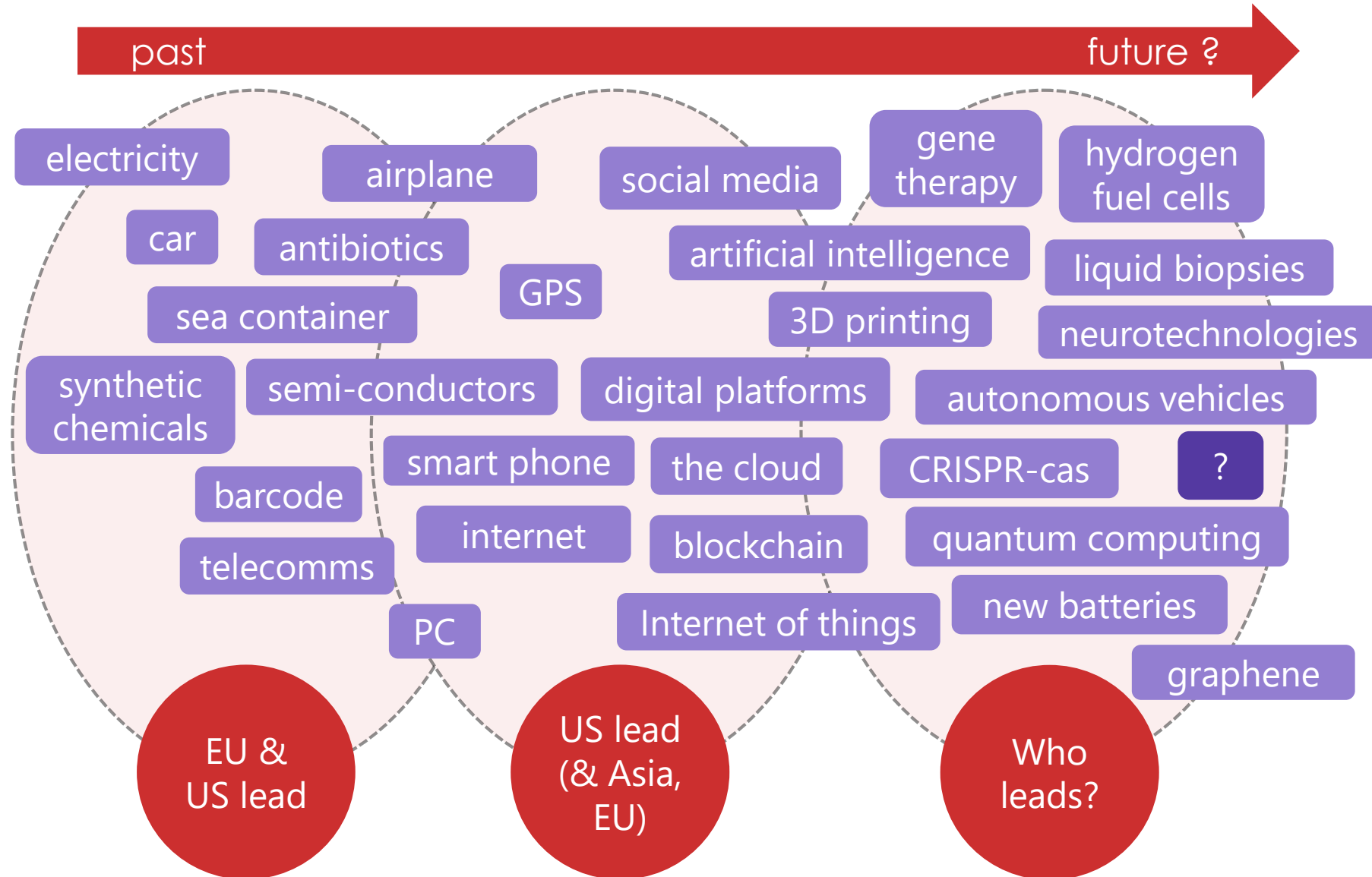


What is at stake: will Europe be home to future « unicorns »?

Number and market value of "unicorn" companies (valued at over €1 billion) by regions



What is at stake: who will lead on the next wave of strategically important technologies?

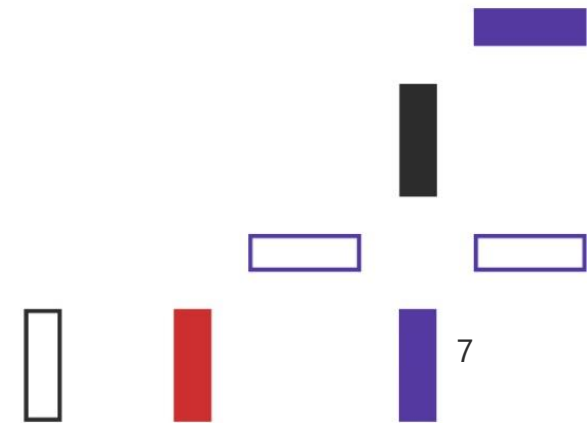


Examples taken
from WIPO, MIT,
WEF, OECD, etc.



Europe's most ambitious innovation initiative

- **€10 billion** programme to identify, develop and scale up breakthrough technologies and disruptive innovations in Europe
- **Unique** in the world to combine research on emerging technologies with Accelerator for startups, SMEs and scaleups
- **EIC Fund** largest VC deep-tech investor in Europe (over €3 billion)
- **Innovator-centric** steered by Board of leading innovators
- **Pro-active approach** with flexible funding
- Enhances the **European innovation ecosystem**





Building on EIC pilot phase (2018-20) under Horizon 2020 programme

- **Bringing together and reform of existing instruments:**
 - **Future Emerging Technologies** (FET Open, FET Proactive) => **EIC pilot Pathfinder**
 - Also, FET Launchpad, FET Transition to innovation as basis for EIC Transition
 - **SME instrument** => **EIC pilot Accelerator**
 - Primarily bottom up; face to face interviews
 - Introduction of “blended finance” grant of up to €2.5 m and equity of up to €15 m in single application
 - Also Fast Track to Innovation (FTI) and Prizes
- **Expanded Business Acceleration Services:**
 - Multi-corporate days (e.g. Planet.tech; energy4planet), visits to innovation hubs, overseas trade fairs, etc
 - Services for Pathfinder (boot-camps, etc.)

What is the EIC?



One stop shop for
breakthrough, deep-tech,
market-creating innovators

- Open to all innovators, in any field, at any time
- Complemented by targeted funding on strategic challenges
- Highly competitive for Europe's high potential innovators

Agile funding from idea to
investment

- Pathfinder for advanced research on emerging technologies
- Transition from lab to commercial setting
- Accelerator & EIC Fund to scale up innovations by start-ups & SMEs

Building ecosystems and
communities

- Access to Business Acceleration Services (coaches, mentors, corporates, investors & knowledge partners)
- EIC Programme Managers to develop visions for breakthroughs, manage portfolios, and connect to ecosystems
- Crowding in other investors (VC, corporates, etc.)



EIC main instruments and characteristics

Pathfinder

- **Early stage research** on breakthrough technologies
- Grants up to €3/4 million
- Successor of FET (Open & Proactive)

Transition

- **Technology maturation** from proof of concept to validation
- **Business & market readiness**
- Grants up to €2.5 million

Accelerator

- **Development & scale up** of deep-tech/ disruptive innovations by startups/ SMEs
- Blended finance (grants up to €2.5 million; equity investment up to €15 million)
- Successor of SME instrument

- Mission to **identify, develop and deploy high risk innovations** of all kinds
- Focus on **breakthrough, market-creating, deep-tech**
- Steered by **EIC Board** of leading innovators (entrepreneurs, investors, researchers, ecosystem)
- **Business Acceleration Services** (coaches/ mentors, corporates, investors, ecosystem)
- **Pro-active management** (roadmaps, reviews, re-orientations, etc) with EIC Programme Managers
- **Follow up funding for results from Horizon** (ERC, EIT, collaborative) & national programmes

EIC main calls in 2021



Accelerator - Open	Apply any time (early stage screening)	~€593m (~50:50 grant/equity)
Accelerator – Challenges • Green Deal innovations for the economic recovery	Cutoffs for full applications in 16 June, 6 October	~€495m (~50:50 grant/equity)
• Strategic technologies: digital & health		
Pathfinder - Open	9 April - 19 May	~€168m
Pathfinder - Challenges • Awareness inside • Measure & stimulate brain • Cell & gene therapies • Green Hydrogen • Engineered Living Materials	15 June - 27 October	~€132m
Transition – Open	15 April - 22 September	~€60m
Transition – Challenges • Medtech & devices • Energy harvesting & storage		~€40m



What is the EIC Pathfinder?

The EIC Pathfinder programme funds **research** to **develop the scientific basis** to underpin **breakthrough technologies**

- EIC Pathfinder **Open**



bottom-up approach with
no predefined topics

Funding schemes: 

- EIC Pathfinder **Challenges**

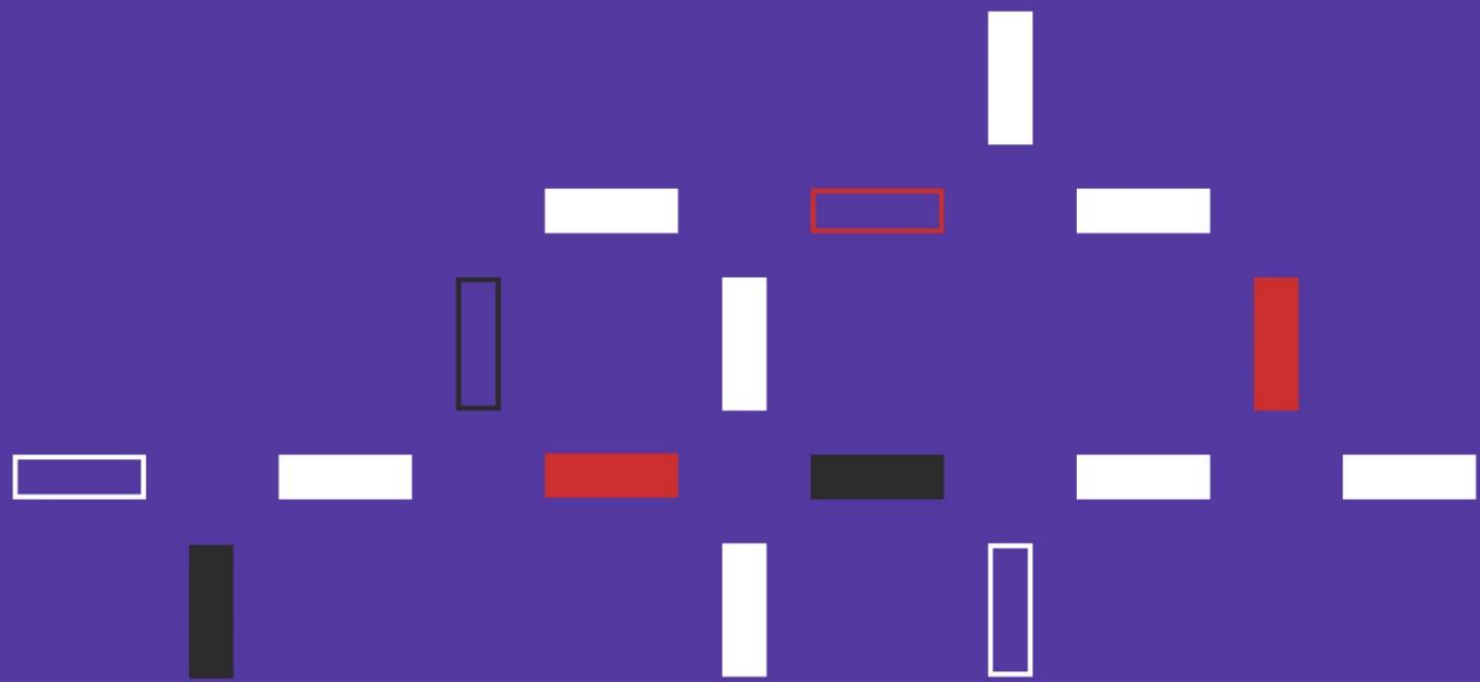


top-down challenge-driven calls for
tackling specific technology
breakthroughs by projects portfolios





EIC Pathfinder Open





Who is it for and Why should you apply?

- Do you have **a vision for a future technology** that could make a real difference to our lives?
- You should apply if you are looking for support from EIC Pathfinder Open to realise **an ambitious vision for radically new technology**, with potential to create new markets and/or to address global challenges.
- EIC Pathfinder Open supports **early stage development of such future technologies** (e.g. various activities at low **Technology Readiness Levels 1-4**), based on high-risk/high-gain science-towards-technology breakthrough research (including 'deep-tech').
- This research must provide the **foundations of the technology** you are envisioning.

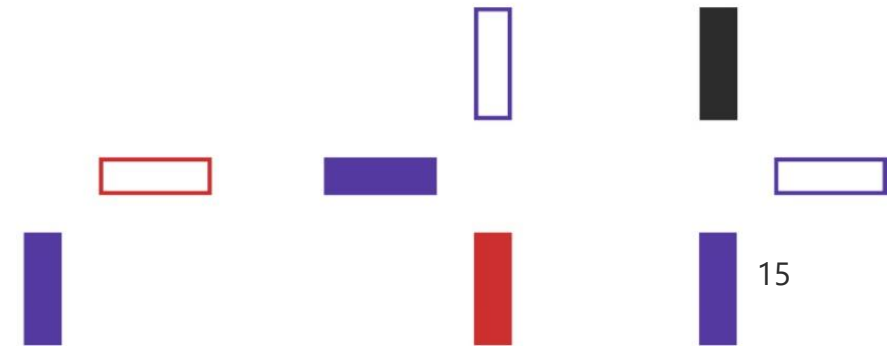




Gatekeepers

Collaborative, interdisciplinary research, meeting the following Gatekeepers:

- **convincing, long-term vision of a radically new technology** that has the potential to have a transformative positive effect to our economy and society;
- **concrete, novel and ambitious science-towards-technology breakthrough**, providing advancement towards the envisioned technology;
- **high-risk & high-gain research approach & methodology**, with concrete and plausible objectives.





Expected outcomes

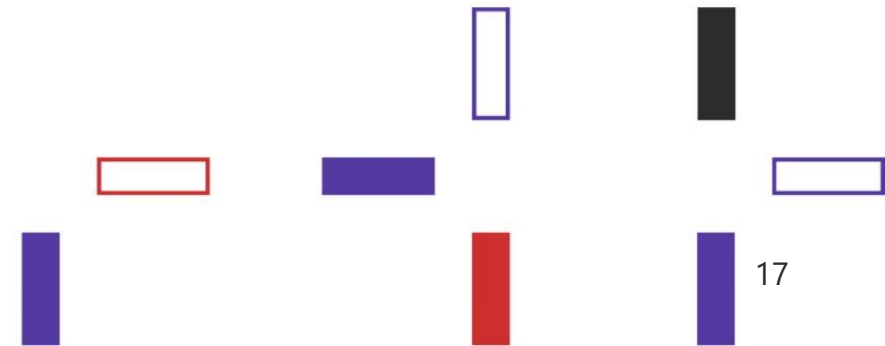
- the expected outcome of a EIC Pathfinder project is the **proof of principle** that the **main ideas of the envisioned future technology are feasible**, thus validating its scientific and technological basis;
- projects are expected to take the necessary measures to **allow future uptake to take place**, for instance through an **adequate formal protection of the generated Intellectual Property (IP)**;
- projects are encouraged to involve and empower in their teams **key actors** that have the potential to **become future leaders** in their field such as excellent early-career researchers or promising high-tech SMEs, including start-ups.

All the above will **strengthen Europe's capacity for exploiting the scientific discoveries made in Europe** throughout the steps to market success or for solving global challenges.



Can you apply? Consortium composition

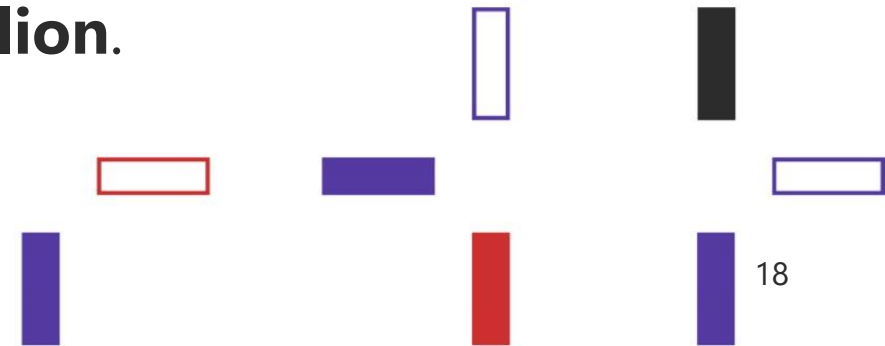
- A consortium has to include at least **three independent legal entities**, each one established in a different Member State or Associated Country and with at least one of them established in a Member State.
- Legal entities: all types are eligible.





What support will you receive if your proposal is funded?

- You will receive a grant for a **Research and Innovation Action (RIA)** to cover the **eligible costs**, necessary for the implementation of your project.
- For this call, the EIC considers proposals with a requested EU contribution of **up to EUR 3 million** as appropriate. Nonetheless, this does not preclude you to request larger amounts, if properly justified. The funding rate of this grant will be 100% of the eligible costs.
- The total indicative budget for this call is EUR **168 million**.





Additional opportunities for selected projects

Projects or their beneficiaries funded through EIC Pathfinder are eligible:

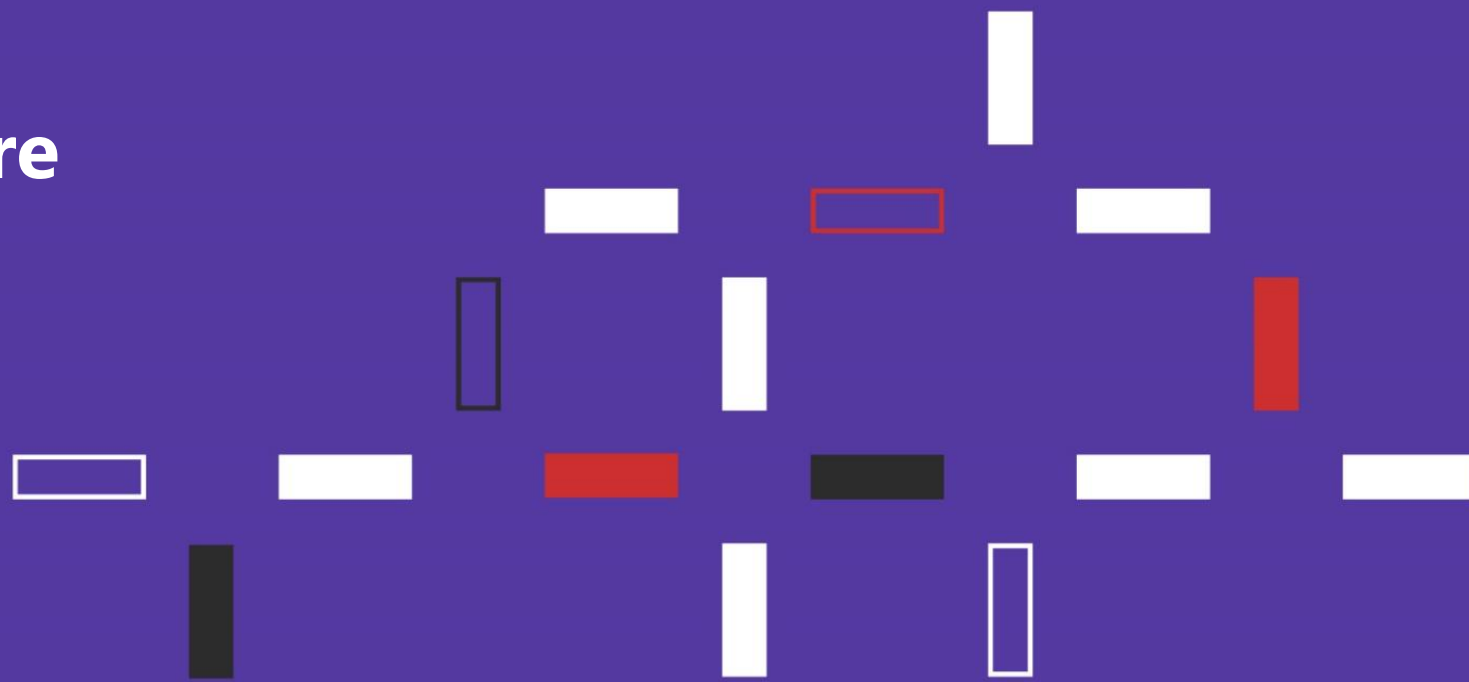
- to receive additional **Ad hoc grants** (up to 3 per project or more if duly justified) with fixed amounts of up to €50000 to undertake complementary activities:
 - to explore potential pathways to commercialization
 - for portfolio activities.
- to submit a proposal to the **EIC Transition** for transforming their research results into innovation opportunities;
- to submit an **EIC Accelerator** proposal via the **Fast Track** scheme;
- to receive free access to a wide range of **Business Acceleration Services**.



EIC Pathfinder

Open

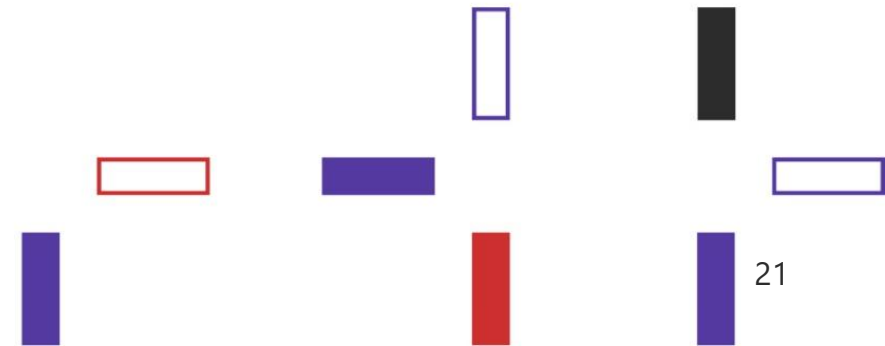
Evaluation Procedure



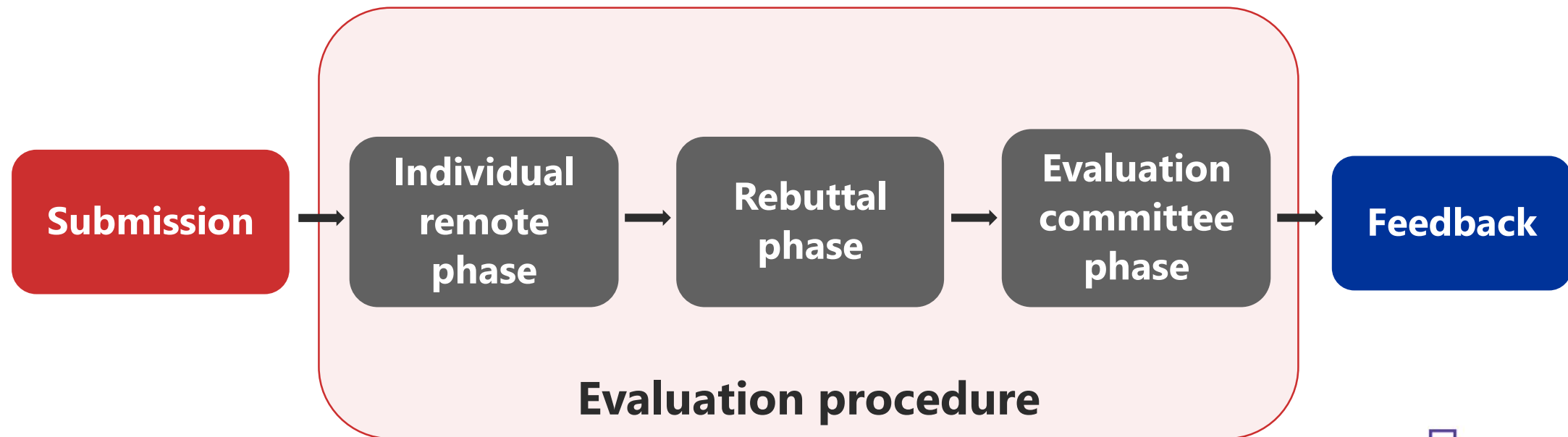


How do you apply; how long does it take?

- You must submit your application via the **EU Funding & Tender Opportunities Portal** before the given deadline.
- You will be informed about the outcome of the evaluation within **5 months from the call deadline** (indicative).
- If your proposal is accepted for funding, your grant agreement will be signed by **8 months after the call deadline** (indicative).



How does the EIC decide if your proposal will be funded?





Individual Remote phase

- Expert evaluators evaluate the proposals with respect to the **evaluation criteria**:
 - Excellence
 - Impact
 - Quality and efficiency of the implementation
- The **remote score** for each evaluation criterion will be the **median of the evaluators' scores**.
- The **overall remote score** will be the **weighted sum** of the three median scores from the three evaluation criteria.

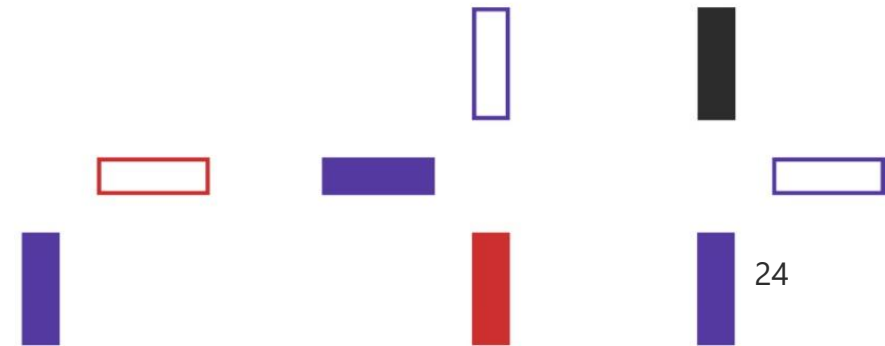


Evaluation criterion “Excellence”

- **Long-term vision:** How convincing is the vision of a radically new technology that has the potential to have a transformative positive effect to our economy and society?
- **Science-towards-technology breakthrough:** How concrete, novel and ambitious is the proposed science-towards-technology breakthrough with respect to the state-of-the-art? What advancement does it provide towards realising the envisioned technology?
- **Objectives:** How concrete and plausible are the proposed objectives? To what extent are high-risk/high-gain research approach and methodology appropriate for achieving them?
- **Interdisciplinarity:** How relevant is the interdisciplinary approach from traditionally distant disciplines for achieving the proposed breakthrough?

Threshold
4/5

Weight
60%

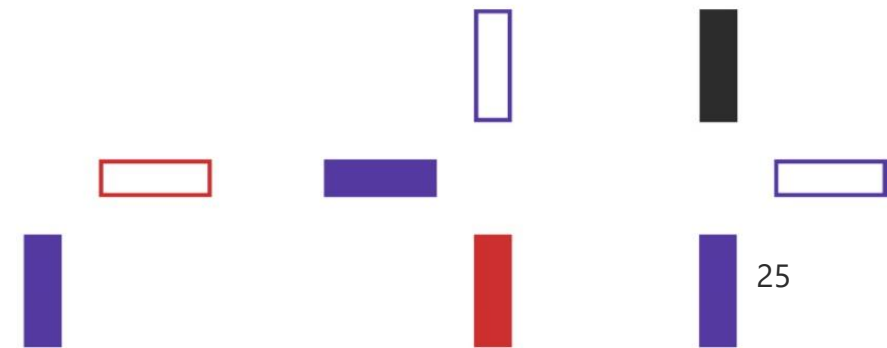


Evaluation criterion “Impact”

- **Innovation potential:** How adequate are the proposed measures for protection of results and any other exploitation measures to facilitate future translation of research results into innovations with societal or economic impact? How suitable are the proposed measures for empowering key actors that have the potential to take the lead in translating research into innovations?
- **Communication and Dissemination:** How convincing and wide reaching are the proposed measures and plans for public/stakeholder engagement and for raising awareness about the project outcomes, including through Open Science, with respect to their potential to establish new markets and/or address global challenges?

Threshold
3.5/5

Weight
20%



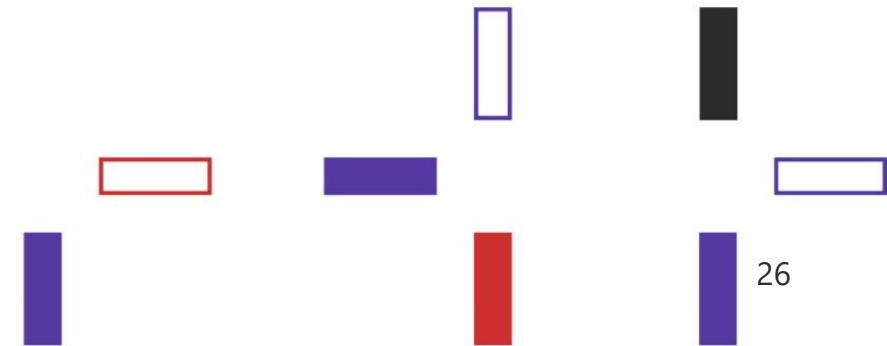


Evaluation criterion “Quality and efficiency of the implementation”

- **Quality of the consortium:** To what extent do the consortium members have all the necessary high quality expertise for performing the project tasks?
- **Work plan:** How coherent and effective are the work plan (work packages, tasks, deliverables, milestones, time-line, etc.) and risk mitigation measures in order to achieve the project objectives?
- **Allocation of resources:** How appropriate and effective is the allocation of resources (person-months and equipment) to tasks and consortium members?

Threshold
3/5

Weight
20%





Rebuttal phase - “Right-to-react”

- you will have the opportunity to **reply within 7 calendar days** with a strict page limit (**maximum two A4 pages**) to the evaluators’ comments;
- your **replies cannot be used to alter or add to the content** of the proposals, but must strictly focus on providing clarifications and/or on responding to potential misunderstandings or errors by the evaluators;
- the replies will be **made available to the evaluation committee**;
- the evaluation committee will **take into consideration** the comments from the rebuttal procedure, if any, in order to arrive at their final scores for the proposals that underwent this procedure.



Evaluation committee phase

- the evaluation committee will be composed of **external independent experts different** than those who evaluated the proposals remotely;
- the **final score** will be decided based on the remote score and the outcome of its consensus discussions, taking into consideration the comments from the rebuttal procedure, if any;
- these discussions will **focus on controversial proposals that have a realistic chance of getting funded** (i.e. proposals from an appropriately chosen range above and below the funding threshold);
- **expert evaluators** who evaluated and scored the proposals remotely may be **invited to the consensus discussions**, in particular for controversial proposals;
- the evaluation committee will confirm the **ranking list**.



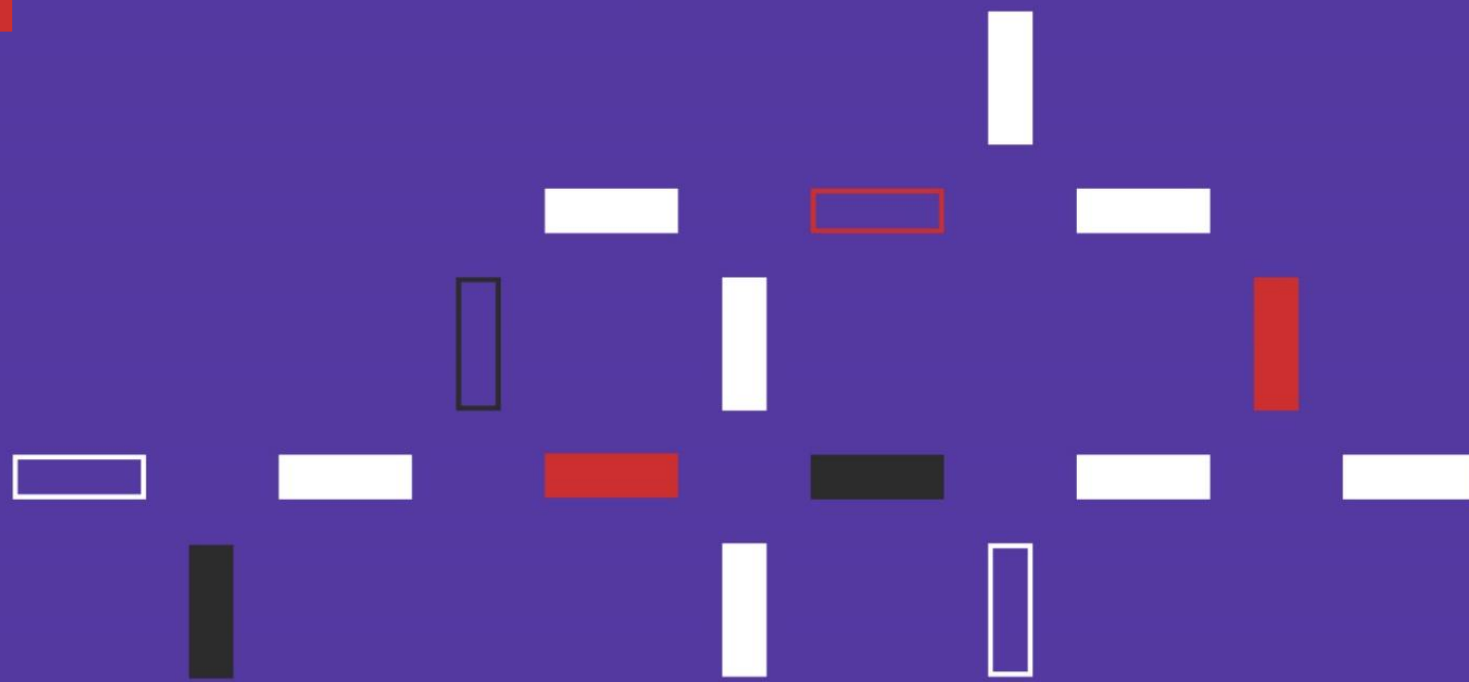
Feedback to Applicants

Applicants will receive an **Evaluation Summary Report** that will comprise of:

- the **final score**;
- a collation of the **comments** from individual reports, or extracts from them;
- a **comment that summarises** the assessment by the evaluation committee;
- **additional comments**, possibly including advice not to resubmit proposal.



EIC Pathfinder Calls 2021





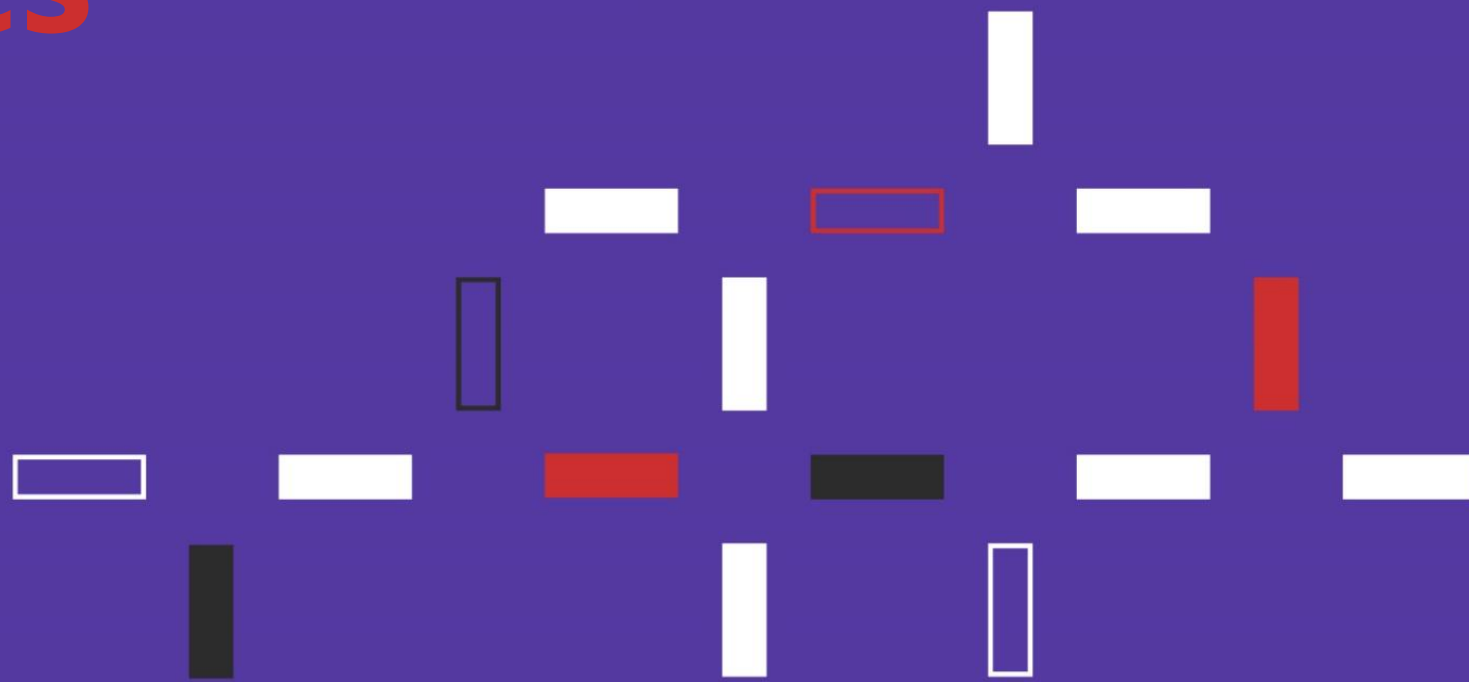
Calls 2021 – Summary table for all funding opportunities

	Pathfinder Open	Pathfinder Challenges	Ad hoc grant
Total budget	€168 million	€132 million	Max. 1% of Pathfinder call budget
Proposals (indicative)	Up to €3 Mio	Up to €4 million	Up to €50000
Funding rate	100% of eligible costs	100% of eligible costs	100% of eligible costs
Opening	09 April 2021	15 June 2021	-
Deadline	19 May	27 October 2021 at 17.00 CET	Not applicable
Length of proposal	17-page proposal – Section 1 to 3	25-page proposal	Not applicable
Applicants	Consortia: Min. 3 partners from 3 different MS/AC (of which at least 1 partner in a MS)	1. Single legal entities in a MS/AC (conditions apply) 2. Consortia: - If 2 partners: from different MS/AC, otherwise - Min. 3 partners from 3 different MS/AC (of which at least 1 partner in a MS) (unless differently stated in the Challenge chapter)	No specific requirement: either an individual grant holder or a group of grant holders.



EIC Pathfinder Challenges

What is it?



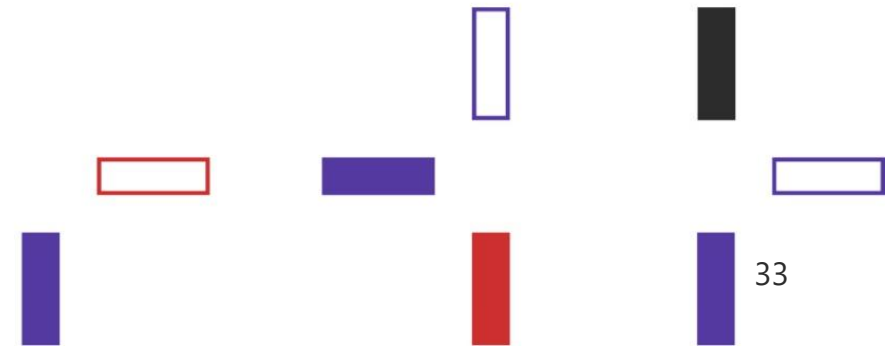


Portfolio approach

Challenge portfolio approach:

- exploring different perspectives, competing approaches or complementary aspects of the Challenge;
- multidisciplinary interactions and exchanges for synergies and serendipity;
- contributing to an overarching medium to long-term business goal and technology-based strategic plan, under the supervision of an **EIC Programme Manager**.

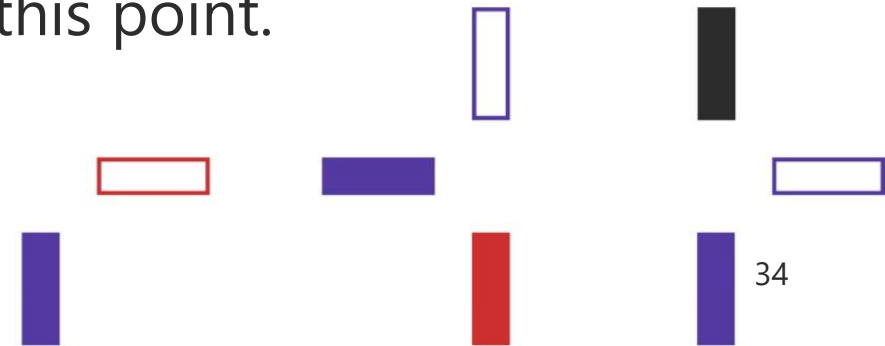
Projects will participate in relevant portfolio activities.





Why should you apply?

- If you have an **ambitious idea** to realise the vision of a specific Pathfinder Challenge then this call may be for you. Your project should contribute to the specific objectives of the respective Challenge.
- EIC is particularly interested in your **ideas for new deep-tech: technology** that becomes possible thanks to cutting-edge science in an area of the specific challenge.
- We are seeking **new technological solutions at early stage of development** that are new and disrupt the standard practice up to this point.

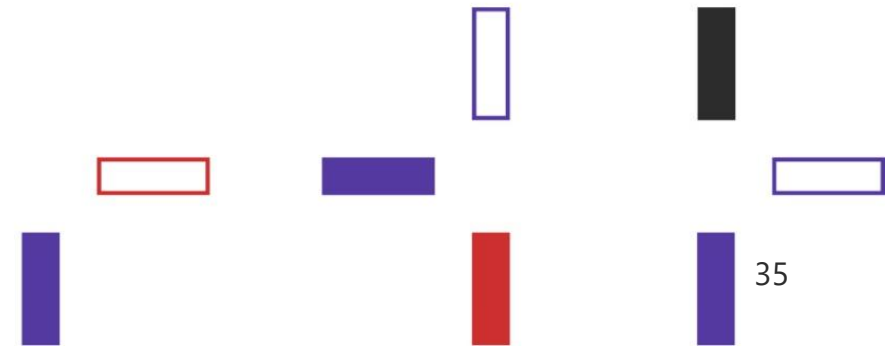




Expected outcome

- your project must aim to deliver, by its end the specific outcomes defined in the respective challenge chapter;
- project outcomes must also include top-level scientific publications as well as an adequate formal protection of the generated intellectual property (IP);

Before you apply you are strongly encouraged to read the respective **Pathfinder Challenge Guides**.





Pathfinder Challenge Guides

- The Challenge Guide are documents that will **provide more information** about the specific objectives of the challenge, e.g.:
 - a detailed assessment of the state of the art and related (existing) projects in the field
 - technical information to underpin the objectives
 - potential societal, economic, environmental impacts if the objectives are achieved
 - as well as relevant references.
- The Challenge Guides will be **published when the call opens (15 June 2021)** on the EIC website and the EU Funding & Tender Opportunities Portal.



Can you apply?

Consortia or single legal entities (unless stated otherwise for the specific challenge*):

- In case of consortium, they have to include **at least two** independent legal entities:
 - consortia of two must have independent legal entities from two different Member States or Associated Countries;
 - consortia of three or above follow standard rules i.e. at least one legal entity must be from a Member State;
 - Legal entities: all types are eligible.
- In the case of **single entity**, mid-caps and larger companies will not be permitted.

***Challenge 1** is only open to proposals for **collaborative projects with at least 3 partners** following the standard eligibility conditions.



What support will you receive if your proposal is funded?

- You will receive a **grant** for a **Research and Innovation Action (RIA)** to cover the eligible costs, necessary for the implementation of your project, including the portfolio activities.
- For this call, the EIC considers proposals with an EU contribution of **up to EUR 4 million** as appropriate. Nonetheless, this does not preclude you to request larger amounts, if properly justified or stated otherwise in the specific Challenge. The funding rate of this grant will be **100% of the eligible costs**.
- The total indicative budget for this call is **EUR 132 million** which is expected to be allocated in approximately equal shares across the challenges.
- +Additional opportunities for selected projects



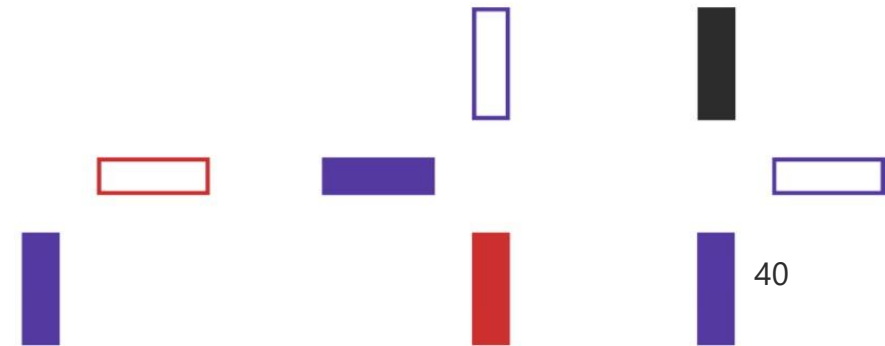
How do you apply; how long does it take?

- You must submit your application via the **EU Funding & Tender Opportunities Portal** before the given deadline:
 - Call opening: **15 June 2021**
 - Deadline: **27 October 2021 at 17.00.00 CET.**
- You will be informed about the outcome of the evaluation within **5 months from the call deadline** (indicative).
- If your proposal is accepted for funding, your grant agreement will be signed by **8 months after call deadline** (indicative).



Topics for 2021

1. Awareness inside
2. Tools to measure & stimulate activity in brain tissue
3. Emerging Technologies in Cell & Gene Therapy
4. Novel routes to green hydrogen production
5. Engineered living materials





Backing visionary entrepreneurs

Transition to Innovation

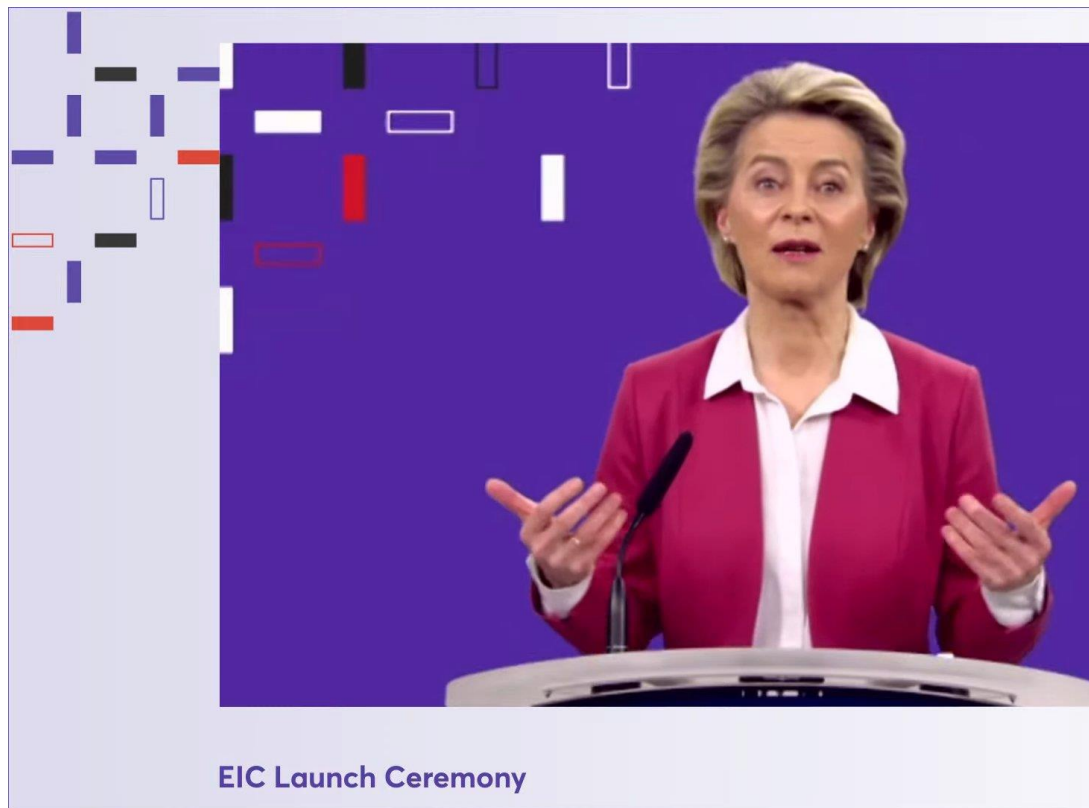
Translating research into innovation





The need for Transition Activities

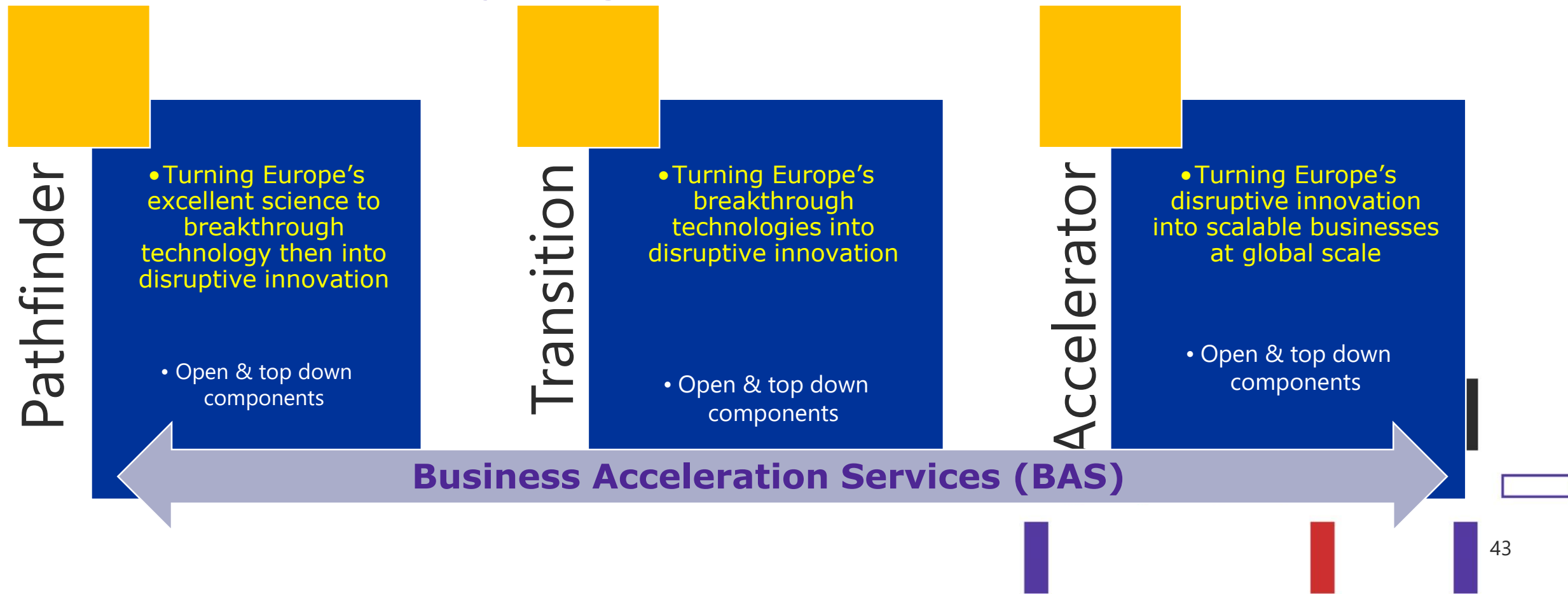
- Europe is extremely good at generating ideas and visions of breakthrough tech.
- But it is not very successful at pushing these ideas into concrete innovations into market.
- “The new European Innovation Council is there to help resolve this paradox,”
- EIC: from idea to market



“We, Europeans, are excellent at making science with money. But we are not so good at making money out of science,”

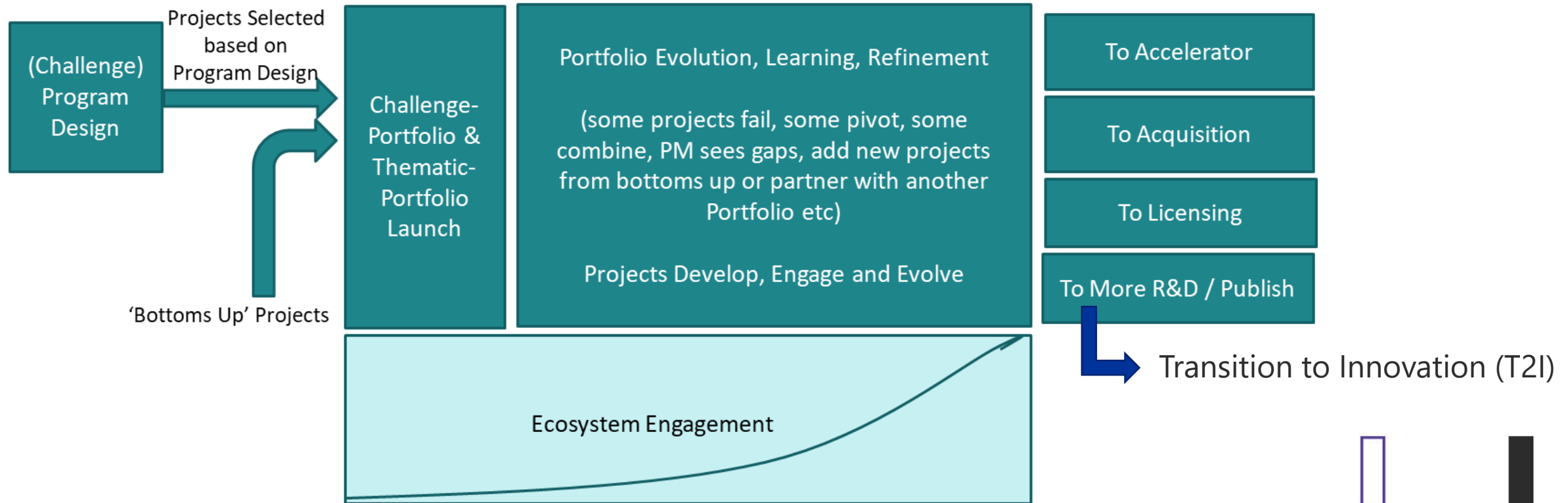


EIC: Integrated, agile support across the full innovation spectrum from early stage research to start-up and scale-up.





EIC Pathfinder Transition Overview Diagram

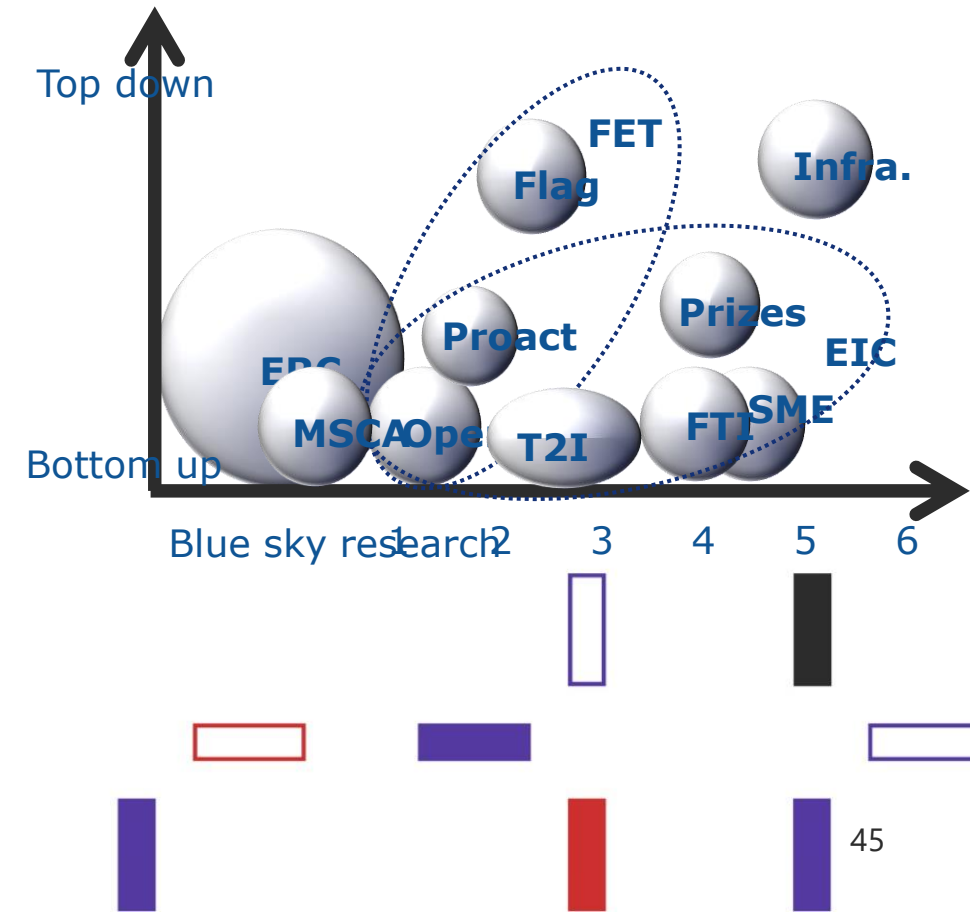




Transition to Innovation (T2I)

Transition to Innovation (RIA) will cover the gap:

- From TRL 3 to TRL 5/6: From proof of concept to prototype demonstrated in relevant environment
- Between Pathfinder/FET and Accelerator or other investment opportunities.
- Between ERC PoC and Accelerator or other investment opportunities.





Is this the right call for me?

- Have you identified Pathfinder, FET or ERC PoC project results that could be the basis for ground-breaking innovations and new businesses?
- Is this novel technology ready for the next steps towards its maturation and validation in some specific applications?
- Do you envisage building a motivated and diverse entrepreneur-lead team to develop the idea and increase its market readiness?

If the answer to each one of these questions is 'yes', then EIC Transition may be the right call for you.



For Whom is it?

- Innovative researchers that want to go beyond the experimental PoP in laboratory and approach the validation/demonstration of the technology in relevant environment
- For entrepreneurs, venture builders, SMEs, Spinoffs, corporate not part of initial project
- Restricted to applications based on results generated by the following eligible projects:
 - EIC Pathfinder projects, incl. EIC pilot, H2020 FET-Open, FET-Proactive, Flagships calls
 - ERANET calls under the FET work programme (CHISTERA, QUANTERA, FLAGERA)
 - European Research Council (ERC) Proof of Concept projects
- Single beneficiary (not larger companies) or small consortium (2-5 beneficiaries)
 - E.g. universities, RTOs, SMEs or corporates, user/customer organisations or end users

The different tracks in Transition to Innovation (T2I)

- **A focused collaborative project** to advance research up to TRL 5/6. This involves mainly strategic technologies that need more time to mature while improving also the Market Readiness Level.
- **Projects led by an SME/Start-up** with an interest in the results as single partner or in a small collaboration. The goal is to mature both the technology and market readiness.
- **A team of innovative researchers** who want to turn selected project results into a viable product by looking for a suitable business model and/ or **creating a start-up or spin-off** company. In some cases, the results may already be relatively close to market or ready for investment.

Transition will be one single flexible scheme that can encompass any of the above or others that include technology and market aspects.



Can you apply?

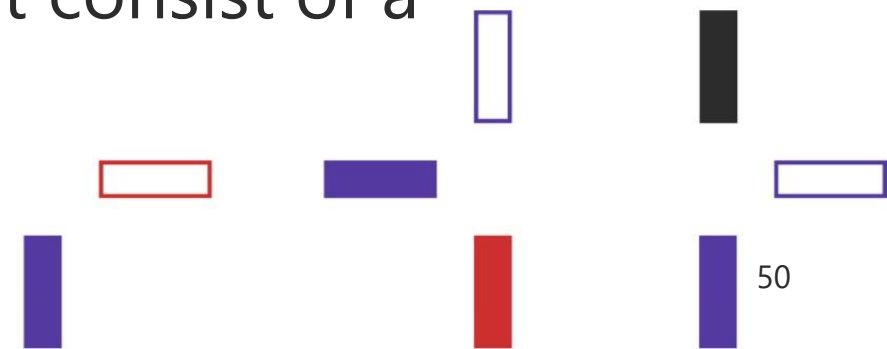
- Your proposal must build on results (demonstrated proof of principle) achieved within an eligible project.
- Eligibility is restricted to results from (original) projects* for which:
 - start date of the grant is more than 12 months before the date of the Transition call deadline
 - end date of the grant for the eligible project is less than 24 months from the date of the Transition call deadline
- You do not have to be the owner of the IP or one of the original beneficiaries, but have the right to use the IP or know-how generated in the initial project.
- Submit via the European Funding & Tender Opportunities Portal and see the Worprogramme for specific instructions.

* projects not beneficiaries



Details of the 2021 call

- Opening 15/4
- Closing 22/9 (both for Open and Challenges)
- 59,6 M Euro for Open
- 40,5 M Euro for 2 challenges (approx. equal share)
- Expected 2.5 M Euro per project
- Sections 1 to 3 of part B of your proposal must consist of a maximum of **25** A4 pages





Evaluation of proposals and next steps

- **First remote evaluation phase by experts**
 - Median of the individual scores per criteria (excellence, impact, implementation)
 - Overall score sum of the three medians
 - Feedback 9 weeks after the call deadline
- **If successful and within 2x available budget then invited to a face-2-face interview**
 - You may bring max 5 people mentioned in the proposal/work
 - Jury composed of max 6 members, may include 1 program manager
 - Convincingly pitch your proposal and answer clarifying questions
 - Recommends a Go/No Go, no change in the overall score
 - Invitation 13w and feedback 17 weeks after the call deadline
- If successful, grant agreement signed within 6 months from the call deadline



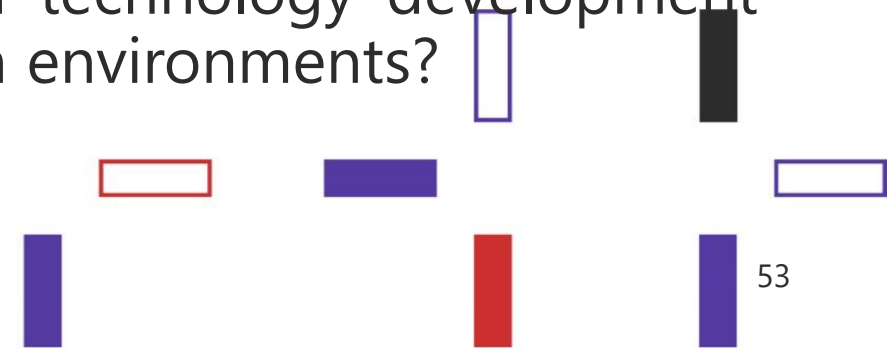
EIC Transition Evaluation Criteria (proposal structure)

Excellence	• Technological breakthrough • Technology feasibility • Objectives	• Threshold: 4/5 • Weight: 1/3
Impact	• Business and market fit • Economic and/or societal benefits • Entrepreneurship • Partnerships and investment readiness	• Threshold: 4/5 • Weight: 1/3
Quality and efficiency of the implementation	• Quality of the team • Milestones and work plan • Allocation of resources	• Threshold: 3/5 • Weight: 1/3



Evaluation criteria for Transition

- **Excellence (Threshold: 4/5)**
- Technological breakthrough: Does the technology have a high degree of novelty compared to other technologies available or in development; to what extent does this novelty create the potential for new applications and functionalities?
- Technology feasibility: Do the results of the technology demonstration and validation so far indicate the potential for application?
- Objectives: Have potential applications been identified and are they plausible? How appropriate are the objectives for the planned technology development and validation of the innovation in relevant application environments?





Evaluation criteria for Transition (II)

- **Impact (Threshold: 4/5)**
- Business and market fit: How well do the activities propose to develop the business model and product features address commercialisation and other relevant aspects (intellectual property rights, regulation, certification and standardisation)? How will potential users or customers be involved to test potential demand and acceptability?
- Economic and/or societal benefits: How effectively can the proposed innovation and its related activities create substantial demand and new European or global markets? To what extent is the proposed innovation expected to generate other positive impacts (employment, societal, environmental, scientific, etc.)?
- Entrepreneurship: how suitable are the proposed measures to build a strong and motivated entrepreneur-lead team with necessary competences in technology, product engineering, and business development to bring the innovation to the market?
- Partnerships and investment-readiness: How effective are the proposed measures to become investment ready and develop plans to commercialise the project outcomes (including through IP management); have the participants identified key partners willing to be involved?



Evaluation criteria for Transition (III)

- **Quality and efficiency of the implementation (Threshold 3/5)**
- Quality of the team: To what extent do the applicant(s) bring the necessary high-quality expertise, capabilities and motivation to move decisively towards innovation, create a unique commercial value from the emerging technology and develop an attractive business and investment proposition?
- Milestones and Work plan: Is the pathway towards deployment clearly described? Are milestones adequately and clearly defined (measurable, timed, etc.) to track progress along the pathway and towards objectives? How coherent and effective are the work plan (work packages, tasks, deliverables, time-line, etc.), the innovation methods and the risk mitigation methods, in order to reach the milestones and to achieve the project objectives?
- Allocation of resources: How appropriate and effective is the allocation of resources (person-months and equipment) to tasks and partners?



Seal of Excellence

- Awarded to individual SMEs that apply and meets all evaluation criteria at the first step but is not selected for funding
- Provides access to Business Acceleration Services and facilitates funding from other sources
- Only awarded to those applicants who give consent to sharing the data about their application with other eligible funding bodies
- EIC juries may recommend that your application does not receive a Seal of Excellence if they find weaknesses in your proposal which were not identified by the expert evaluators.



Projects funded in Transition can also:

- Apply to receive ad hoc grants with fixed amounts of up to EUR 50 000 to undertake portfolio activities
 - Max of 1 ad hoc grants per project to one grant holder or a group of them
 - After discussion with Programme Manager or following a project review
- Submit an Accelerator proposal via the Fast-Track scheme
 - No direct short application (first stage) to Accelerator
 - Project review to determine innovation and market deployment potential and decide if project is suitable for Accelerator support
 - If successful, submit directly to full application



The specific Transition challenges for 2021

I. Energy harvesting and storage technologies



II. Medical Technology and Devices: from Lab to Patient



The specific Transition challenges for 2021 (I)

- **Energy harvesting and storage technologies**

- **Innovative technologies and systems combining energy harvesting and storage**, which are efficient, clean, high energy density and low-cost, integrated for stationary or mobile applications.
- **Innovative concepts and techniques for the combined harvesting and storage of solar energy** (in the form of heat or solar fuels), **geothermal or waste heat**, including topics such as long-term thermal storage, cooling and cryogenic storage, building integrated solutions, thermo-electricity, advanced heat transfer, power to heat to power, pumped heat and thermo-mechanical energy storage and conversion
- **Advanced materials and devices for electro-chemical storage** (other than Li-Ion batteries), at utility scale, mobile or distributed/micro scale level, also integrated to PV/wind energy systems or for other intermittent sources.



The specific Transition challenges for 2021 (I)

Why this challenge?

- **Energy storage is a key for decarbonized, competitive and reliable energy systems**
 - Energy generation and demand are often decoupled
 - High penetration of intermittent renewable energies requires efficient, smart and low cost energy storage solutions
 - Energy storage can be integrated to waste energy recovery technologies and retrofit of fossil fuel plants to increase energy systems flexibility and cross sectors coupling
 - Innovative technologies for energy harvesting, conversion and storage are crucial for the Green Deal targets of decarbonized energy systems
 - Utility-Scale Storage of Renewable Energy and **Sun-powered chemistry** (e.g. solar fuels) in top10 emerging technologies in 2019 respective 2020





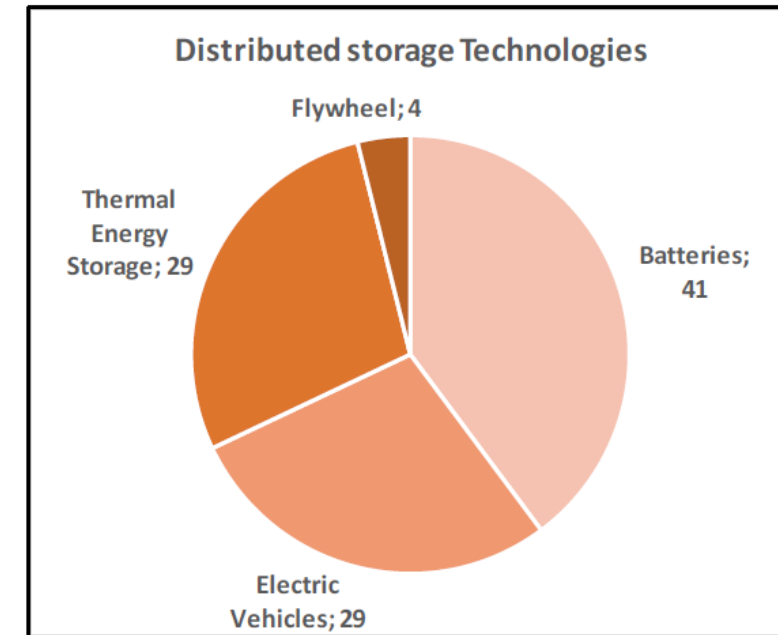
The specific Transition challenges for 2021 (I)

Relevance of energy harvesting and storage technologies

- **Why such a topic in Transition? Increase flexibility of energy systems**

- ✓ **Numerous ongoing or recently finished projects on storage and conversion**

- EU-funded early-stage research on innovative energy technologies is uncovering unique opportunities for systems integration of advanced energy harvesting, conversion and storage technologies
- There are many EIC Pathfinder/FET and ERC (PoC) projects in storage and harvesting which could be ready for transition to innovation



Small scale storage technologies in BRDIGE group of (64) projects



The specific Transition challenges for 2021 (I)

The proposals should:

- perform the necessary R&D to advance from an existing proof-of-principle to a mature version
- develop an exploitation strategy, outlining the proposed path to innovation and describing a business plan
- Provide clear and ambitious performance targets and progress milestones
- **Be focused on one or more of the following:**
 - ✓ **combining** energy harvesting and storage into integrated systems and technologies
 - ✓ Propose Innovative concepts for the harvesting and/or storage of **solar energy** (in the form of heat or solar fuels), **geothermal or waste heat**
 - ✓ Propose topics such as long-term and inter-seasonal energy storage, cooling and cryogenic storage, building integrated solutions, thermo-mechanical energy storage and conversion, chemical loop based solutions
 - ✓ Advanced materials and devices for electro-chemical storage (other than Li-Ion batteries) with toxic-free and non-critical raw materials.



The specific Transition challenges for 2021 (I)

Eligibility and expected results:

✓ Eligibility:

- Same as for Transition Open.

✓ Expected results:

- prototypes or demonstrators operating in relevant environment conditions
- Able to demonstrate the proposed solution in one or more combined scenarios (Distributed or centralized, short-term or (inter) seasonal, stationary or mobile. etc.)



Transition challenges for 2021 (II)

Medical Technology and Medical Devices: from Lab to Patient

WHY THIS CHALLENGE TRANSITION CALL?

- EU-funded early-stage research on novel Medical Technologies and Devices has led to unique opportunities to benefit patients and support clinicians
- The EIC pipeline includes the ACCELERATOR funding stage to bring these opportunities to the clinic, crowding in private investment and industrial partnerships
- BUT, a proof-of-concept (PoC) resulting from PATHFINDER, ERC, ERANET is often not ready for ACCELERATOR funding



Transition challenges for 2021 (II)

Medical Technology and Medical Devices: from Lab to Patient

Before approaching industrial partners and private investors, Medical Technology PoCs usually need:

- To evolve substantially from the “lab version”, for example being recast with electronics, software, materials, ICT system operating environments and processes compliant with the appropriate safety standards, e.g. IEC 60601, ISO 10993, etc. and suitable for future manufacturing with appropriate quality levels, etc. in line with ISO 13485.
- Also, to thoroughly validate safety and efficacy in a clinical setting is necessary to advance towards regulatory compliance, to fully gauge the potential of the technology jointly with clinicians and patients and to motivate private-sector involvement.



Transition challenges for 2021 (II)

Medical Technology and Medical Devices: from Lab to Patient

Also:

In addition, Medical Technology and Devices businesses face unique challenges

(e.g. long and capital intensive product development cycles, complex regulatory procedures, slow market uptake requiring the support of key opinion leaders and intensive follow-up with early adopters, etc.)

As a result:

In addition to a mature technology, a well thought-out and realistic exploitation plan is needed



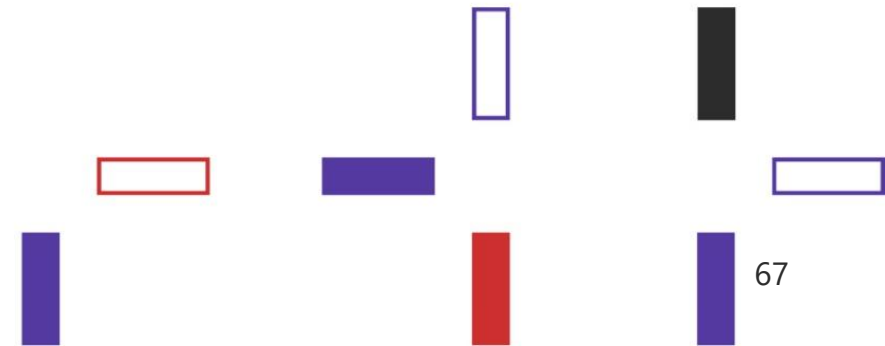


Transition challenges for 2021 (II)

Medical Technology and Medical Devices: from Lab to Patient

THE PROPOSALS SHOULD AIM AT:

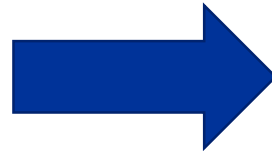
- perform the necessary R&D to advance from an existing proof-of-principle technology to a mature version ready to initiate clinical evaluation
- develop an exploitation strategy, qualitatively and quantitatively outlining the proposed path to patient and describing an investable proposition



Transition challenges for 2021 (II)

Medical Technology and Medical Devices: from Lab to Patient

The starting point in the project should be a preliminary prototype of a medical device or technology (TRL3-4)



The endpoint deliverables in the project should be a completely functional version of the technology suitable in its end-of-project state for clinical validation (TRL 5-6), supported by a sound and implementable exploitation strategy.

*Proposals submitted to this call can target **any technology** addressing important health needs in the direct clinical treatment and care of patients*

***EU contribution of € 2.5 million and duration of up to 3 years
(but other amounts and durations possible)***



Thank you!

<https://eic.ec.europa.eu>

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