DEEP TECH EUROPE

EUROPEAN INNOVATION COUNCIL Pilot

Impact Report 2020

Research and Innovation

EUROPEAN COMMISSION

DEEP TECH EUROPE

European Innovation Council Pilot

Impact Report 2020

Deep Tech Europe
European Innovation Council Pilot Impact Report 2020
Executive Agency for Small and Medium-sized Enterprises

European Commission
B-1049 Brussels
Manuscript completed in September 2020

Luxembourg: Publications Office of the European Union, 2020
ISBN 978-92-9460-218-3

DOI 10.2826/770124

EA-03-20-597-EN-N

Mariya Gabriel
Commissioner for Innovation, Research, Culture, Education and Youth

As Europe emerges from the worst economic crisis in recent times, the role of research and innovation is more important than ever. We face many challenges posed by the COVID pandemic and the transition to a fair, climate neutral, sustainable and digitally enabled economy, the solutions for which will come from novel technologies and disruptive innovations.

The European Innovation Council (EIC) Pilot aims at identifying, supporting and accelerating the scale up of breakthrough technologies and game-changing innovations. Europe has no lack of scientific and entrepreneurial talent, but our innovators do not always have the opportunity to grow their ideas in Europe. The EIC Pilot supports those individual research teams and entrepreneurs with visionary ideas and the ambition to grow in Europe.

I am extremely proud of what the EIC has achieved in its current pilot phase. This report brings together an impressive set of data and examples that demonstrate a range of high-impact endeavours. In the last year alone, over 10,000 of Europe's most exciting innovators, startups and SMEs were attracted by the programme and applied for support. It has pioneered a new blended finance approach (combining grant and equity support) and set up the first ever EU investment fund (EIC Fund) dedicated to directly invest in and accompany the growth of potential game-changing EU startups and SMEs. It has demonstrated its agility and responsiveness by responding rapidly to the COVID crisis, actively supporting woman innovators, engaging a diversity of innovators from all fields and countries contributing to reduce the Innovation Divide in Europe, and supporting companies to attract over €4 billion of further investment.

2020 is an important year for preparing the fully-fledged EIC, which will be established as a flagship of the new EU framework programme for research and innovation, Horizon Europe (2021 – 2027). It will provide unique opportunities to build a true European Innovation Area by connecting innovation ecosystems and bringing together our innovative researchers, startups, investors and companies from across Europe and beyond. It will put Europe at the forefront of the next generation of breakthrough technologies and market-creation companies, hence supporting EU tech sovereignty while keeping a strong international cooperation component, competitiveness and sustainable development for the benefit of EU citizens. I can only encourage everyone who has an interest in European innovation to look at what has been achieved, to witness how Europe is changing fast to meet current and future challenges, and to take part in the next chapter of the EIC as it becomes a full reality in 2021.

1. WHAT IS THE EUROPEAN INNOVATION COUNCIL PILOT?

To compete on global markets, increasingly defined by new technologies, Europe needs to capitalise on its excellent research and start-up ecosystem. That is why the European Commission has launched the European Innovation Council (EIC) pilot, a flagship initiative that supports the most talented European innovators in scaling-up their breakthrough innovations fast and efficiently.

This report focuses on the results and impacts of the main two funding schemes of the EIC Pilot – EIC Pathfinder and Accelerator. It includes results from the predecessors of these schemes launched in Horizon 2020: Future Emerging Technologies (FET) and SME Instrument. EIC Partners, including investors, corporates and buyers will discover why and how to work with the EIC portfolio of innovations.

From 2021, the full EIC will be launched with an expected budget of over €10 billion (2021-27) and enhanced funding and support.

Funding

The EIC is a one-stop-shop for innovators, providing support from the idea stage to all the way to the market entry. To cover the two key dimensions of the innovation process, the EIC has introduced two instruments: the EIC Pathfinder – to support early applied research and the EIC Accelerator to support the commercialisation and scale-up phase.

The EIC Pathfinder

- Grant up to €4 million
- Target: breakthrough, research projects, exploring radically new areas aiming at developing, disruptive technologies with market creation potential.

The EIC Accelerator

- Blended finance (grants or grants and equity of up to €15 million or more)
- Target: SMEs with a radically new, highly risky, non-bankable ideas and with a potential to scale up.

Currently in its pilot phase (2018-2020), the European Innovation Council will be fully implemented from 2021 under Horizon Europe, the EU's next seven-year framework programme. The EIC's pilot phase has enabled the Commission to test the main features brought in under Horizon Europe, namely targeted calls for future and emerging technologies under the EIC 'Pathfinder Pilot' (including Transition to Innovation activities and the Innovation Launchpad), programme managers to run the portfolio of projects in a flexible way, and blended finance (a combination of grant and equity) under the EIC 'Accelerator Pilot'.

To capitalise on previous grants, the EIC promotes the transition of projects from EIC Pathfinder as well as other programmes like European Research Council projects, to the EIC Accelerator, through Transition to innovation activities - additional grants aiming at bringing research results to further innovation stages.

EIC Budget

EIC pilot in Horizon 2020
(2018-2020)

EIC in Horizon Europe
(2021-2027)

Business Acceleration Services

In addition to funding, EIC beneficiaries receive tailor-made business coaching and business acceleration services. With a network of 750 international business coaches and a growing community of global business and finance partners from the corporate and VC world, the EIC offers its innovators specific business support and coaching, ranging from setting up an SME to getting companies ready to scale up and go global.

The EIC also offers its beneficiaries a virtual meeting-place, called the EIC Community Platform, where companies and researchers can connect, share their experiences, find investors, coaches, corporates and leverage potential businesses partnerships.

EIC Fund

The EIC Fund is the investment arm of the EIC. It fills the funding gap at the start-up stage where the EU venture capital market underperforms compared to the global venture capital market. The EIC Fund provides investments from €0.5 million to €15 million to companies selected for blended finance support (grant and equity) under the EIC Accelerator. This is the first time the European Commission makes direct equity or quasi-equity investments in companies, with ownership stakes expected to be in general from 10% to 25.

The European Investment Bank acts as advisor of the EIC Fund and manages the ownership stakes of the European Commission. The EIC Fund is proactively looking for private investors ready to co-invest into the supported companies.

Advisory board

In June 2019 the Commission appointed 22 exceptional innovators from the worlds of science and technology, entrepreneurship, and venture capital to the European Innovation Council Advisory Board, which provides strategic leadership to the EIC. The independent Board oversees the roll out of the current pilot and leads the strategy and design of the EIC under Horizon Europe. The members of the Board also increase the visibility of the EIC and promote Europe as an attractive place for breakthrough and disruptive innovation. In June 2020 the Advisory Board published its Vision and Roadmap for the future.

Professor Mark Ferguson
Chair EIC Advisory Board

"The Advisory Board is focused on helping to create the EIC as the investor of choice for high impact, market creating, deep tech European entrepreneurs. The EIC will: crowd in other investors through the excellence of the projects it selects and the network of investors it develops, attract corporate partners through focussed events, provide outstanding mentoring and business services and uniquely offer blended finance of grant and equity to allow innovators to rapidly scale. The EIC itself will implement agile, simple, rapid, but thorough, assessment processes. Our focus is to provide European innovators from diverse backgrounds with the opportunity to rapidly develop and scale their innovation in Europe, so benefiting all European citizens and allowing Europe to create the future we want."

European Innovation Ecosystem

The ambition of the EIC is to reach far beyond the funding and innovation support. It aims to create a better and more connected innovation ecosystem in Europe. For this reason, it also deploys activities fostering dialogue and cooperation between national & regional innovation agencies, universities, technology transfer offices, accelerators and incubators, public and private buyers, stock exchanges, corporates and investors among other actors.

EIC Timeline

2014
- Launch EIC predecessors in H2020: SME Instrument and FET

2017
- Announcement of the EIC Pilot

2018
- Establishment of High Level Expert Group
- First calls bottom up and with jury interviews
- Launch of the Enhanced EIC Pilot

2019
- First meeting of the EIC Advisory Board
- First blended finance call

2020
- Pathfinder's first Transition to Innovation Call
- First Top down Call in Accelerator (Green Deal)
- Start of first Programme Manager
- Establishment of the EIC Fund
- First Investment by EIC Fund*
- Launch of the fully fledged EIC under the Horizon Europe*

2021
- Start of Horizon Europe
- First EIC Calls under Horizon Europe *

*Foreseen

2. HOW DO WE MEASURE SUCCESS? EIC KEY PERFORMANCE INDICATORS

The EIC Advisory Board was mandated, among other things, to work on the framework that would allow to measure the success of the programme. They have defined the objectives of the EIC as:

"*Identify, develop and deploy high risk innovations of all kinds with a strong focus on breakthrough, market-creating and/or deep-tech*" and to "*support the rapid scale-up of innovative companies (mainly start-ups and SMEs) at EU and international levels along the pathway from idea to market*[1]".

In accordance with these objectives and in line with the Horizon Europe Key Performance Indicators (KPIs), they have developed the KPIs based on three storylines: **societal impact, economic impact and attractiveness**.

[1] *EIC Advisory Board, The European Innovation Council - A Vision and Roadmap for Impact.*

KPI framework developed by the EIC pilot Advisory Board

	Short-term indicators as of year 1+	Medium-term indicators as of year 3+	Long-term indicators as of year 5+
Societal Impact	Which SDGs EIC-supported companies contribute to	Share of EIC-supported, disruptive companies based on technologies from EIC and other institutions	Green Deal Impact Indicators
Economic Impact	Market capital multiple (min 3x)	Number of scaleups and their turnover	Contribution to European GDP
Attraction	Share of women among key target groups	Net Promoter Score for key target groups	Equal and gender-balanced participation of key target groups and in EIC-supported companies

Societal Impact

"EIC-supported companies contribute substantially to the SDGs and to Europe's sustainability transformation"

Economical Impact

"EIC-Supported companies add significantly to European GDP and jobs"

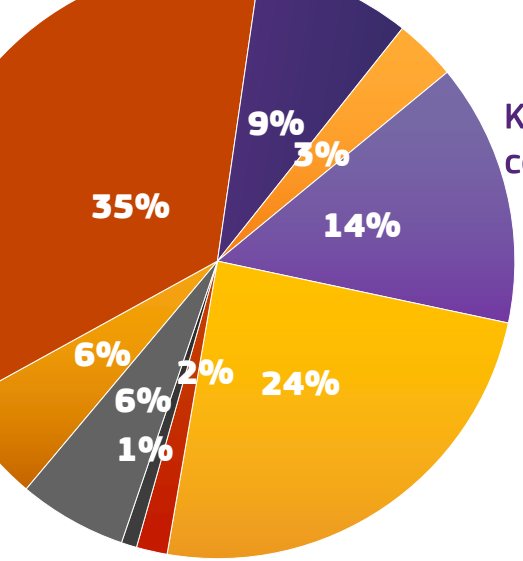
Attraction

"EIC is the hallmark of investments in entrepreneurs and researchers, being equal and gender-balanced"

The overarching message is that the EIC is the hallmark of investments in innovative researchers and entrepreneurs. It vouches for equality and gender balance, and the EIC-supported companies and innovations substantially contribute to sustainability with a particular focus on health, resilience, the green and digital transitions, the GDP and jobs in Europe.

A successful EIC carries the vision that European innovation creates impact connecting industry, academia, politicians, entrepreneurs, and the broad European public. The real power of the EIC is being a beacon that establishes Europe as the 21st century technology and innovation leader, with technological sovereignty and full consciousness of the urgent global need for climate-neutrality and sustainability in the future.
Thanks to this framework of KPIs, the EIC monitors its progress and achievements and communicates them to potential applicants, investors, policy makers, the wider ecosystem.

Although EIC is still in the Pilot phase, it already delivers on 4 KPIs:



KPI 1. Which SDGs EIC-supported companies contribute to

6%	SDG 2: Zero Hunger
35%	SDG 3: Health and Well-being
9%	SDG 7: Affordable and Clean Energy
3%	SDG 9: Industry, Innovation, And Infrastructure
14%	SDG 11: Sustainable cities and communities
24%	SDG 12: Consumption and Production
2%	SDG 13: Climate Action
1%	SDG 16: Peace, Justice And Strong Institutions
6%	No SDG Supported

KPI 2. Market capital multiple (minimum 3x)

Each euro invested by EIC brought a leverage of private follow-up investments of:

x3,3
for companies selected in 2015 over 4 years

x2,9
for companies selected in 2016 over 3 years

KPI 3. Share of women among key target groups (female CEOs, female researchers – at least 35%)

30%
of female researchers

15%
of female CEOs
For the blended finance calls

KPI 4. Share of scale-ups valued >€100 million and their turnover

5%
Of the EIC portfolio is valued >€100 million

How EIC supports women innovators?

In Europe women continue to be underrepresented both in research and the tech field, especially when moving up the academic and corporate ladder.

On the other hand, studies show that diverse companies and mix funds perform better. Increasing the participation of women in deep tech is not only a matter of fairness but also a case of excellent science and economic business case. EIC is proactively seizing this great opportunity for growth.

Within the EIC portfolio, the gender balance is monitored as an official KPI: 30% of researchers involved in Pathfinder are female and 17% of companies selected in the EIC Accelerator blended finance calls are led by women.

To increase the participation of women in the deep tech field EIC launched a number of initiatives:

- Gender parity in the pool of expert evaluators and juries of EIC interviews and EIC Fund Investment Committee.

Concrete measures introduced by EIC resulted in 34% of companies selected in the May funding round are led by women.

- EU prize for Women Innovators.
- Concrete measures to ensure that a sufficient number of EIC Accelerator and Pathfinder applications are led by women. Since May 2020, the EIC is guaranteeing that the pool of the best applicants passing all the quality thresholds and invited to interviews will be composed of at least 25% of companies led

by women CEO (or equivalent position). This measure brought already very concrete results. Out of 64 companies selected in May, 22 or 34% are led by women! This contributed to an overall increase in the female led companies from 8% to 15% (blended finance calls only).

- EIC Business Acceleration Services run women leadership programmes featuring dedicated coaching and pitching activities as well different outreach initiatives to raise awareness and showcase women researchers and entrepreneurs as role models.

DISCOVER TOP EIC WOMEN INNOVATORS:

Dr Patricia Scanlon
CEO | SoapBox Labs

Patricia Scanlon is the CEO of SoapBox Labs and was one of two Irish women named by Forbes magazine in its global "top 50 women in tech" ranking last year. SoaBox Labs is developing speech recognition technology aiming to help children with literacy and fluency. Over the last three years, SoapBox Labs has raised €10.8 million from investors, including Elkstone and an EIC grant in 2018 of €1.4 million. The company was also featured on Silicon Republic's 10 amazing European AI start-ups to watch list as well as one of Europe's top startups by Wired Magazine.

Cristina Fonseca
CEO | Cleverly.ai

Cristina Fonseca is a serial entrepreneur who co-founded Talkdesk and Cleverly.ai. The company developed a language-agnostic AI-based customer support assistant and received EIC grant in 2019. Cristina Fonseca is now Venture Partner at Portugal's largest independent private VC fund, Indico Capital Partners. She was listed among the TOP 50 Europe's most influential Women in the Start-up and VC Space.

Flavia Wahl
Co-founder | iBreve

The Irish company, iBreve has developed a new patent-pending wearable technology that analyses respiratory patterns in real-time, enabling market applications for stress reduction, remote monitoring and chronic disease management. iBreve won several innovation challenges, received funding for its dedication to sustainability and was featured in large newspapers around the world. The Co-founder Flavia Wahl was featured in Forbes' 53 Women-Led Start-ups Disrupting HealthTech.

Rosa Palacín
Project Coordinator | CARBAT

Professor M. Rosa Palacín is deputy director at Institut de Ciencia de Materials de Barcelona (CSIC). She coordinates project CARBAT that proposes to replace traditional lithium-based batteries with calcium based batteries for higher energy density. She is also vice-president of the International Battery Association, former co-director of Alistore ERI and serves in the Governing Board for Batteries Europe ETIP.

Christine Mummery
Project Coordinator | ORCHID

Christine Mummery is professor of Developmental Biology in the Department of Anatomy and Embryology at Leiden University Medical Center and member of the Royal Netherlands Academy of Science. She coordinated ORCHID project and created a roadmap for organ-on-chip technology and built a network of all relevant stakeholders. In 2014, she was awarded the prestigious Hans Bloemendaal Medal for innovative interdisciplinary research, she is a member of the scientific advisory board for Sartorius AG and currently president of the International Society of Stem Cell Research.

3. EIC ACCELERATOR AND ITS PORTFOLIO OF COMPANIES

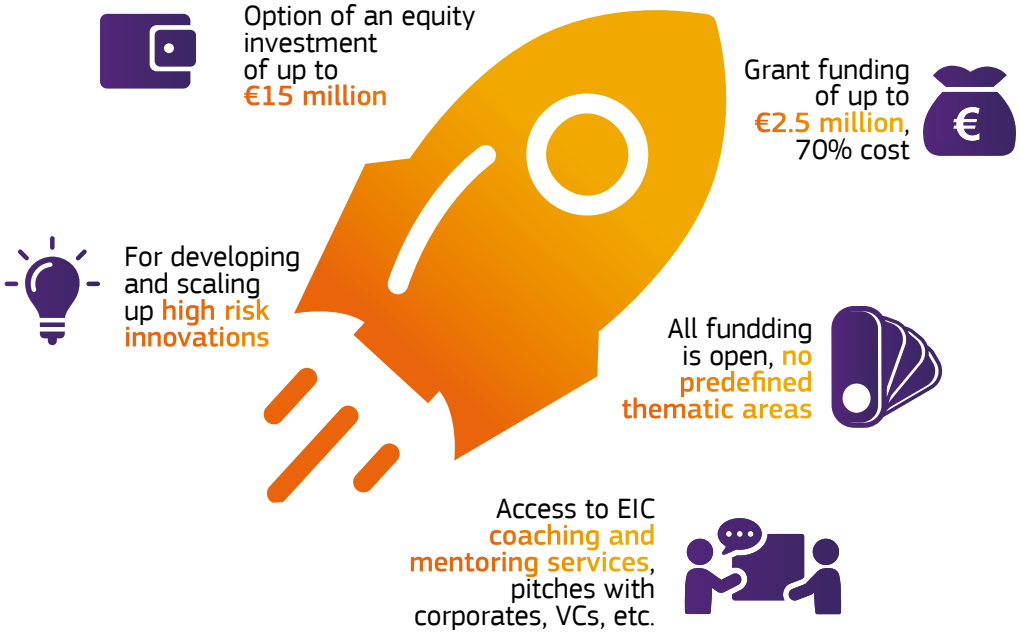
The EIC's Accelerator supports high-risk, high-potential innovative small and medium-sized enterprises (SMEs) willing to develop and commercialise new products, services and business models that could drive economic growth and shape new markets or disrupt existing ones in Europe and worldwide.

The EIC pilot Accelerator provides:

- A grant-only support to SMEs carrying out any type of innovation ranging from incremental to breakthrough and disruptive innovation and aiming to subsequently scale up.

- Blended finance support to SMEs carrying out breakthrough and disruptive non-bankable innovation.

How does the accelerator work?



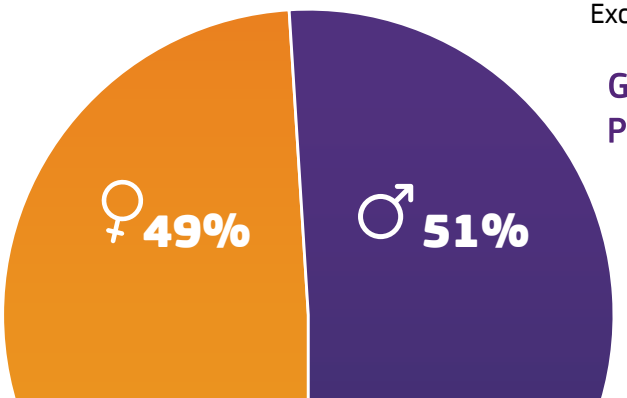
3.1. How the companies are selected

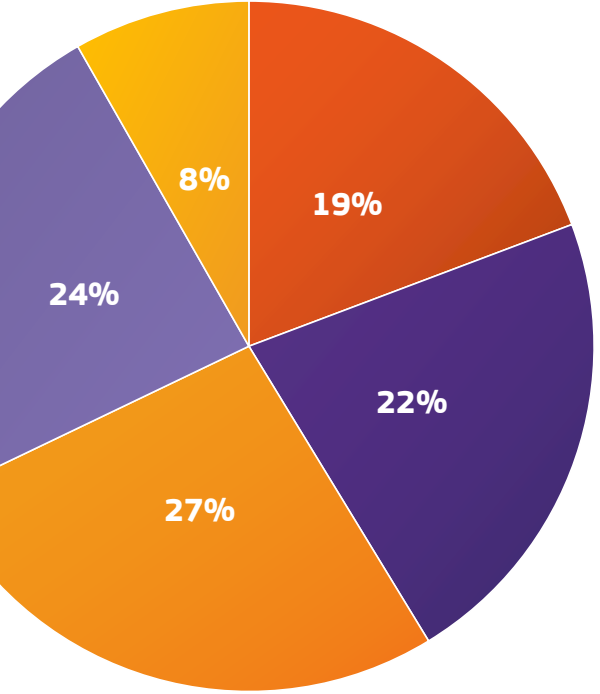
Start-ups and scale-ups can apply at any time of the year. Each applicant is assessed by independent experts on their potential social and economic impact, on their capacity to create new markets and scale up, on the high risk and high potential nature of their innovation and, finally, on their business plan. The companies with the highest assessment are invited to make a live pitch to a jury of experienced investors and entrepreneurs who take final go/no-go decision.

Around 2-3% of applying companies got through this strict evaluation in 2019. They are informed about the result within one month and receive the first part of their grants within five months on average from the application date. For the equity part of blended finance, additional due diligence is undertaken by the EIC Fund to structure the investment.

Projects that do not receive funding but are deemed high quality by the evaluators are awarded Seal of Excellence. It serves as a quality label to recognise the value of the proposal and helps other funding bodies take advantage of the EIC evaluation process. Since October 2019, 2537 companies from 40 countries have received Seal of Excellence Certificates.

Gender of EIC Accelerator Pilot jury members





Background of EIC Accelerator Pilot jury members

Coming from 35 different countries

- **Business angel**
- **Serial Entrepreneurs**
- **Innovation and Industry Specialists**
- **Venture Capitalist**
- **Other**

COVID-19

In March 2020, the EIC pilot Accelerator marked a record number of 3883 eligible applications submitted for a single cut-off. The increase was mainly due to applications to tackle the COVID-19 crisis, and in response an extra €150 million was made available to fund COVID-19 related projects.

3.2. Our portfolio of companies

The EIC Accelerator portfolio includes companies selected under the EIC Accelerator Pilot and its predecessor, the SME Instrument that offered only grant funding, under different selection criteria and only through remote evaluation[2]. The launch of the EIC pilot brought progressively major modifications to the previous scheme: bottom-up calls for SMEs (previously, this support was restricted to predefined thematic areas), face to face interviews with a panel of experienced innovators and, finally, blended finance support with new evaluation criteria.

The EIC Accelerator portfolio includes now more than 5500 firms and will grow to 5700 by the end of 2020. The companies are active in all sectors, and include all sizes, ages, profiles and verticals coming from 28 EU Member States and many Horizon 2020 associated countries, including Faroe Islands, Iceland, Israel, Norway, Serbia, Turkey, Ukraine and Switzerland. It has attracted both young, market-challenging start-ups aiming for fast scale-up, as well as more established businesses that are innovation champions in their field. Service-oriented companies come to the EIC Accelerator to launch their first product on the market. Finally, university spin-offs use the programme to develop the market feasibility of their technologies.

Around 71% of the companies in the portfolio received €50 000 grants (SME Instrument Phase 1) and 29% successfully competed for funding above €0.5 million (SME Instrument Phase2 and EIC Accelerator). All went through a stringent evaluation process as previously explained.

[2] Under the SME Instrument running from 2014, Phase 1 grants offered a lump-sum of €50 000 to carry out a concept and feasibility assessment and Phase 2 grants gave an amount between €0.5 million and €2.5 million for innovation activities such as demonstration, testing, prototyping, pilot lines, scale-up studies and market replication. From October 2019 Phase 1 disappears and SMEs can also apply for blended finance support.

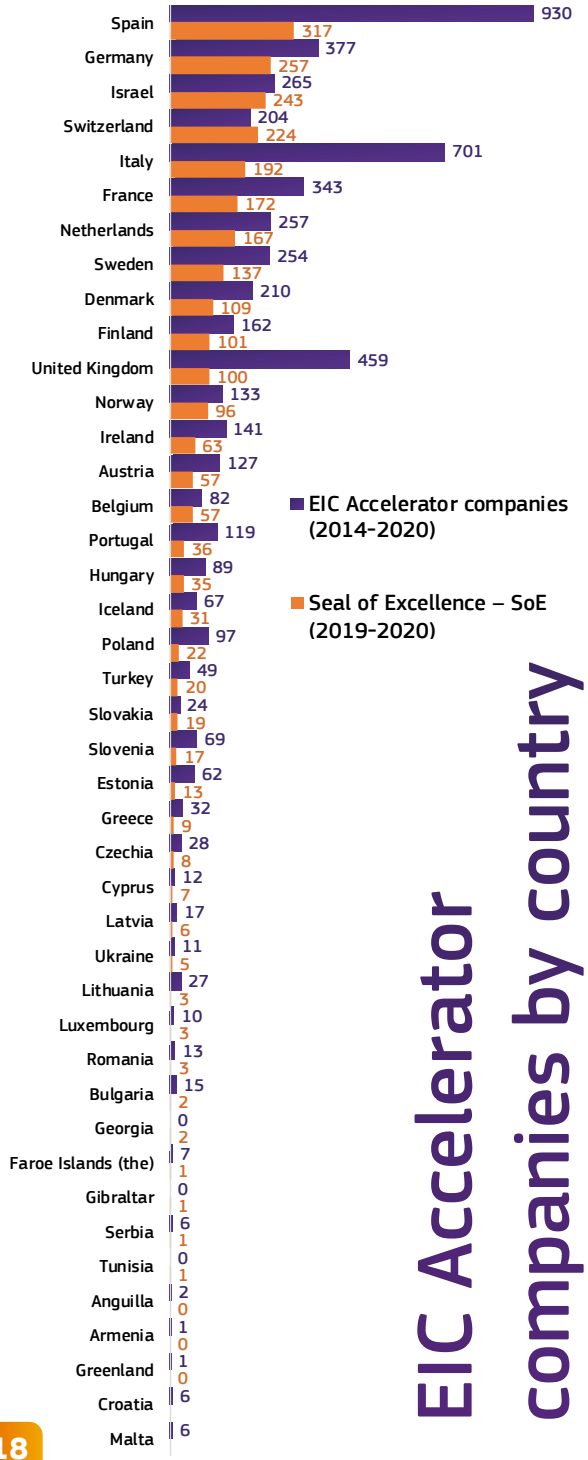
5500+ companies ~5700 by 2021

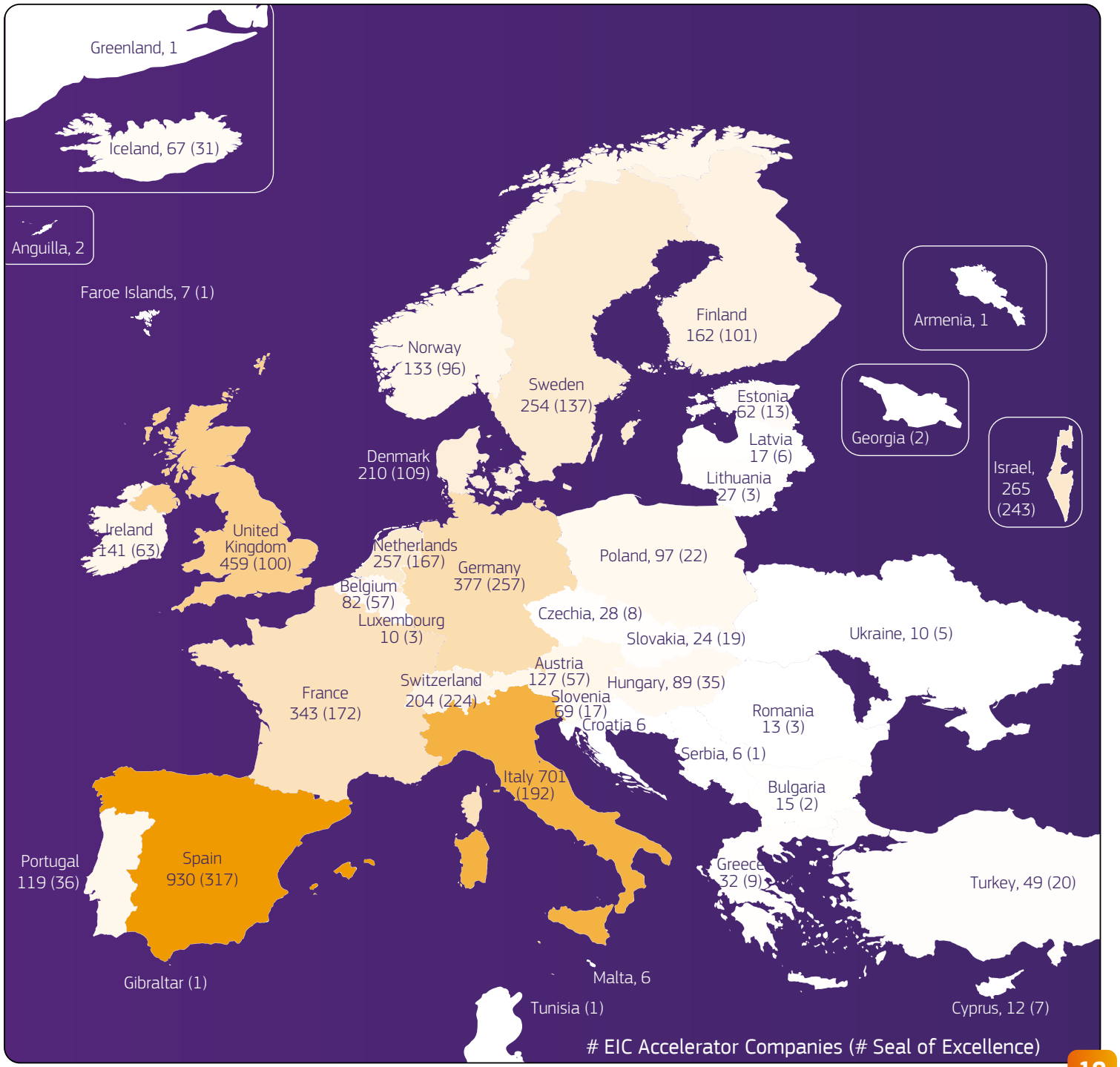
~1600 with funding above €0.5 million

39 countries

€2.78 bn in grants, **€582 m** in equity

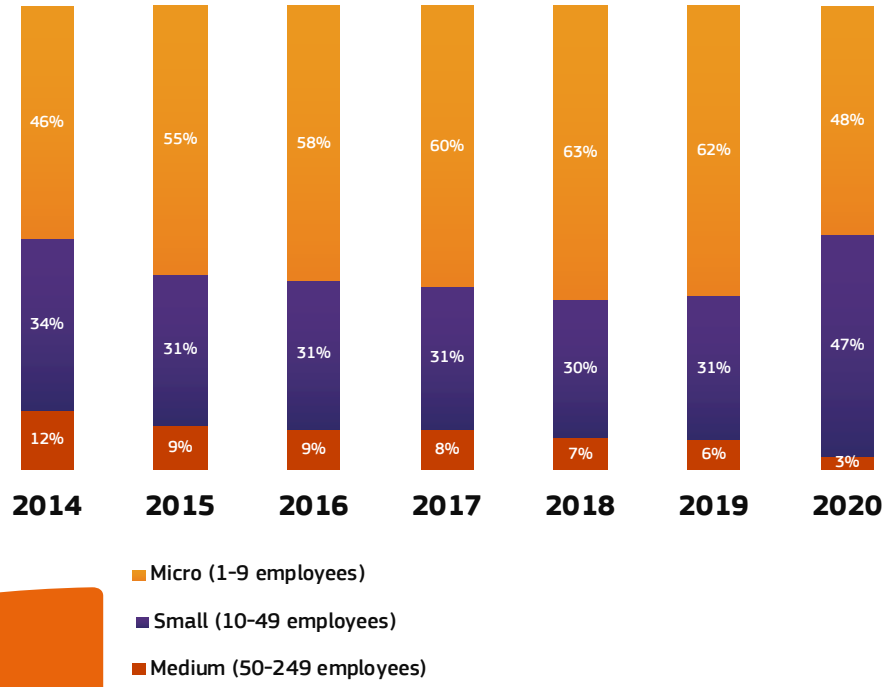
EIC Accelerator companies by country





Portfolio companies by size at selection

Most SMEs in the portfolio are small. Almost 2/3 are micro companies with less than 10 employees. This was an increasing trend up until 2020 when this share decreased to 48% and the share of small companies (10-49 employees) increased.



Portfolio companies by age

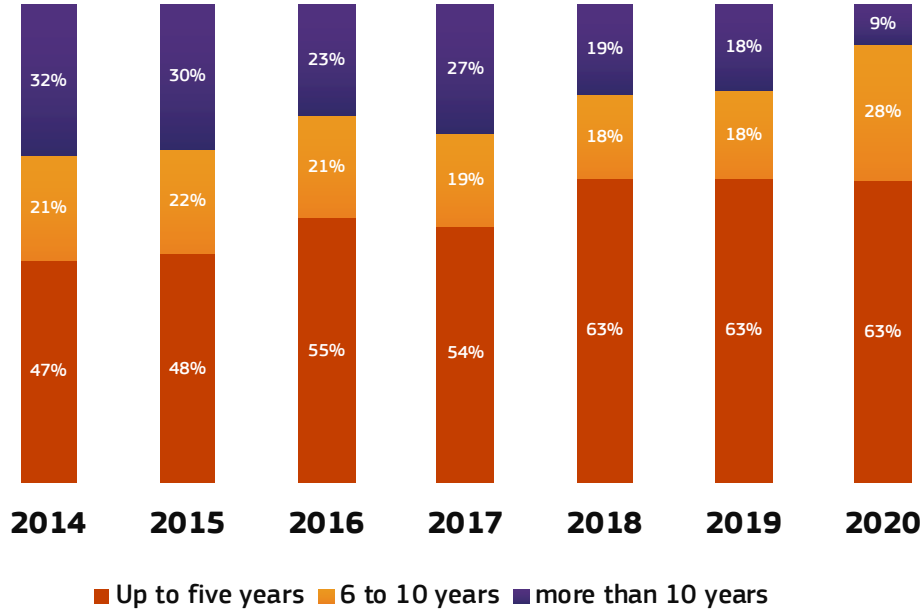
The EIC Accelerator attracts a significant number of start-ups. According to the EU State-aid Regulation for R&D[3], start-ups are defined as unlisted small enterprises up to five years following their registration. They have not been formed through a merger, and they do not have distributed profits yet. The share of start-ups joining the programme has been steadily increasing since the start of the programme with 47% in 2014 and 63% in 2020.

While start-ups represent 60% of companies, 2020 marks a shift towards selecting larger companies: young but increasing in staff.

2020 marks a shift towards selecting more mature companies, that while still young already managed to increase their staff on the way to scale up.

[3] *Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty Text with EEA relevance*

While start-ups (up to 5 years old) represent 60% of selected companies,



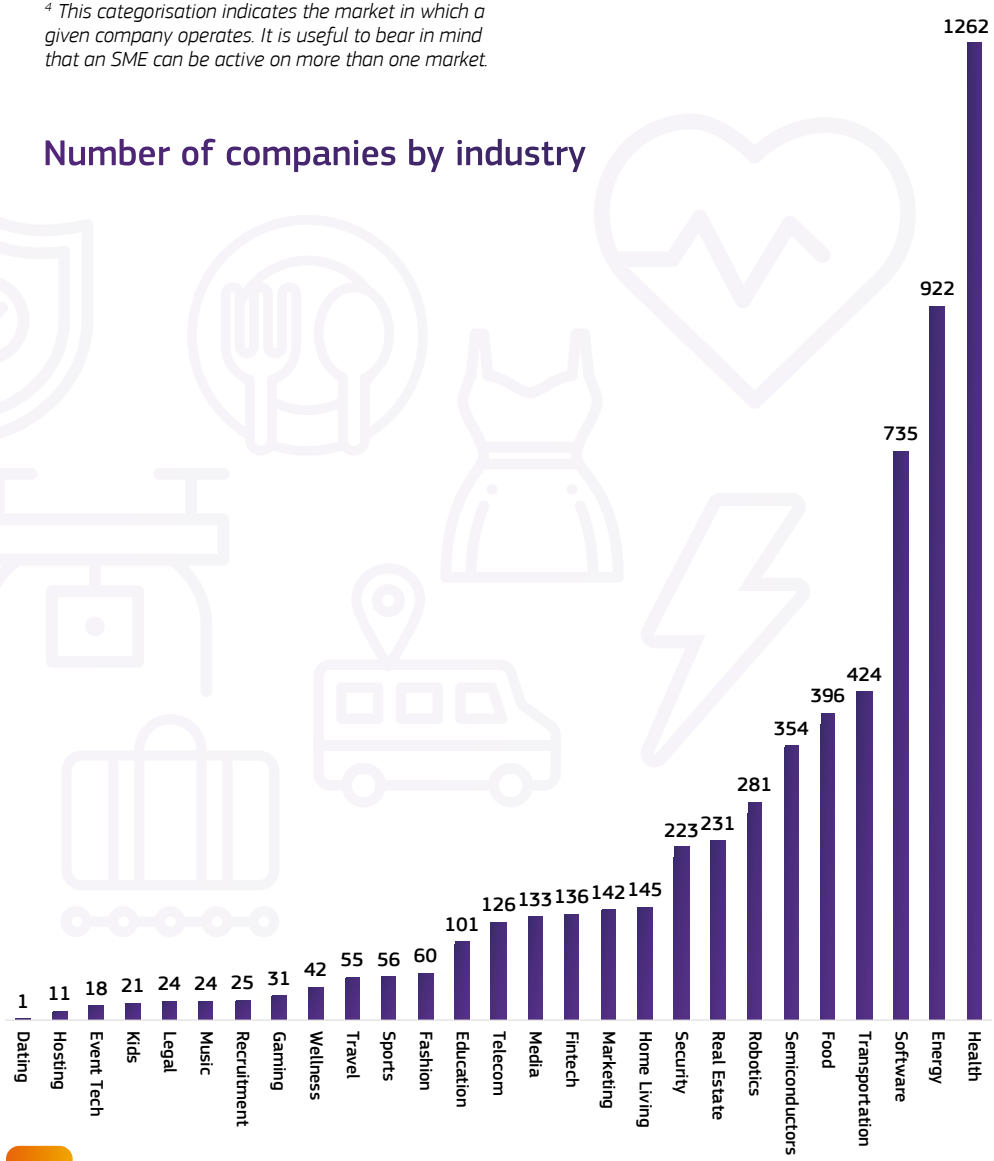
Portfolio companies by industry

The EIC Accelerator funds companies in all industry sectors.[4] The top 3 industry sectors in the portfolio are: health (1262), energy (922) and enterprise software (735).

Most of the funded companies are active in the health, energy or enterprise software industry

[4] *This categorisation indicates the market in which a given company operates. It is useful to bear in mind that an SME can be active on more than one market.*

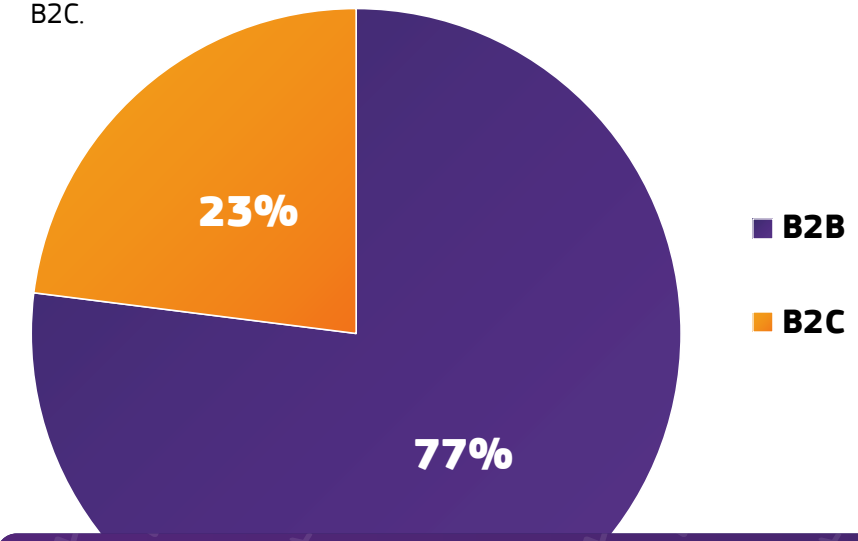
Number of companies by industry



Portfolio companies by customer targeted

When it comes to customers, a large majority (77%) of companies target B2B users with their product or service. One fourth concentrates on B2C.

77% of companies target B2B users



Poland | **Sector** Fintech | **EIC funding** €1.9 m

Robert Kałuża
Co-founder and COO

Billon Group:

Shaping a Paperless Banking Future

EIC-funded Billon Group is providing a platform powered by Distributed Ledger Technology (DLT) and based on a new type of architecture, which is able to store documents entirely in blockchain. The Polish-British fintech innovation can build paperless offices across businesses and organisations. Retail banks in Poland already started providing customers with notifications of commissions and fee changes on blockchain via a new document management product provided by Billon Group. The aim is to eliminate paper-based client-facing notifications, as well as to fully comply with the European Union's financial records-related regulations, including GDPR. After receiving EIC funding, Billon has raised over $16 million in growth capital with its most recent Series A round. This capital will be used to develop COVID-19 immunity certificates using blockchain.

"The EIC-funding is absolutely crucial in furthering the development of our research and expanding the possibilities of the platform. That way we keep our technological advantage, our key selling point to the outside world".

Blended finance: a unique support to innovative companies

A novel scheme with clear mission

With an estimated total equity funding gap of about €70 billion, there is a substantial lack of finance for breakthrough and disruptive innovators in Europe. Many European start-ups can't find high risk capital needed to get to the stage where private sector investors get involved. **The EIC blended finance scheme under the EIC Accelerator** was introduced to fill this gap in 2019. It is offering a patient capital in the form of equity or quasi-equity (up to €15 million) blended with a grant component (up to €2.5 million). This is the first time the European Commission is making such direct equity investments in companies, with ownership stakes expected to be in general from 10% to 25% in start-up companies.

The equity part is managed by the **EIC Fund** incorporated in June 2020. The European Investment Bank acts as an advisor to the EIC Fund on behalf of the European Commission. It manages the ownership stakes of the European Commission. The EIC Fund runs the due diligence process, structures the deals that are inclusive vis-à-vis private capital. It also creates value through connections with specialised mentors, ecosystems and additional funding opportunities and supports investee companies in subsequent rounds of capital increase, and seeks exits from such investments.

Large interest from the ecosystem

As of June 2019, companies can apply for both grants-only and blended finance support. So far, the EIC has run 4 cut-offs with blended finance possibility that attracted more than 10 000 applicants with a peak in March 2020 when 3883 applicants competed for funding. The share of companies applying for blended finance has been steadily growing, reaching 1059 eligible applications (27%) in March 2020, which was a record due mainly to extra COVID funding available.

EIC Blended finance in numbers:

- **4** cut offs
- **140** companies receiving
- **€278 m** in grants, **€583 m** in equity
- **€6 m** average ticket size

Profile of blended finance companies

Who are the companies applying for blended finance? Are they different from SMEs receiving grant-only support? The following analysis shows a comparison between companies selected for these two types of funding in cut-offs closed in October 2019, January 2020 and March 2020.

Both blended finance and grant-only companies are young and small. Almost half of them are micro companies with less than 10 employees and 62% are start-ups with less than 5 years on the market. At the time of the application, 42% of blended finance and 47% of grant-only companies received already private investments. Blended finance companies received much higher rounds, on average €6.3 million compared with €2.9 million in case of grants-only. This might indicate that blended finance companies are more mature in terms of business development.

Regarding country origin, blended finance support has been awarded to as many countries as grant-only, with France, Israel, Spain, Sweden and Finland having more blended finance projects than grant-only.

Profile of EIC companies receiving equity support:

Size

45% are micro enterprises
(1-9 employees)
(47% for grants-only)

48% are small enterprises
(10-49 employees)
(47% for grants-only)

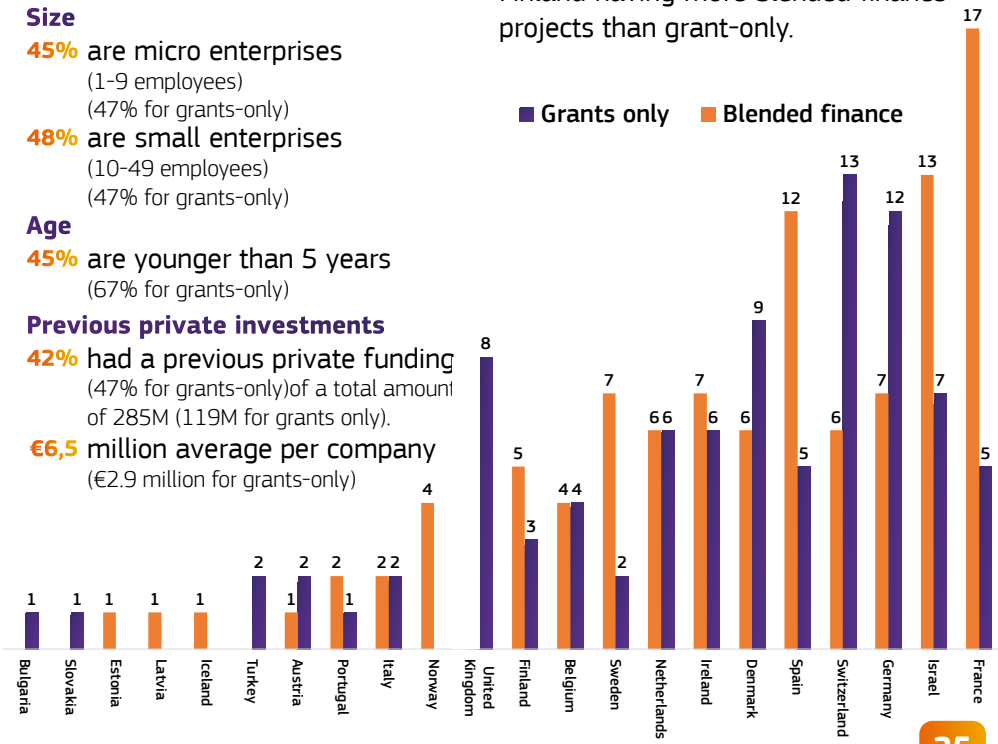
Age

45% are younger than 5 years
(67% for grants-only)

Previous private investments

42% had a previous private funding
(47% for grants-only)of a total amount of 285M (119M for grants only).

€6,5 million average per company
(€2.9 million for grants-only)



3.3. EIC Accelerator Portfolio performance

The EIC Accelerator supports innovators in the final development stages of their solutions and in bringing them onto the market. It offers funding at risky stages of product development, when private investors are reluctant to step in. The coaching offered helps companies streamline and structure their business strategy to give them the best chances to scale up. The business acceleration services connect companies with international networks of partners, investors and possible clients. The companies are set on the right path towards commercial success and scaling up.

The following analysis is based on investments acquired up till May 2020 by companies selected since 2014, first under the SME Instrument and then under EIC Pilot till March 2020.

Private Investments attracted

€5,3 billion of total private follow up investment attracted

€4 billion of private equity investments
out of which €1.8 billion in the last 12 months

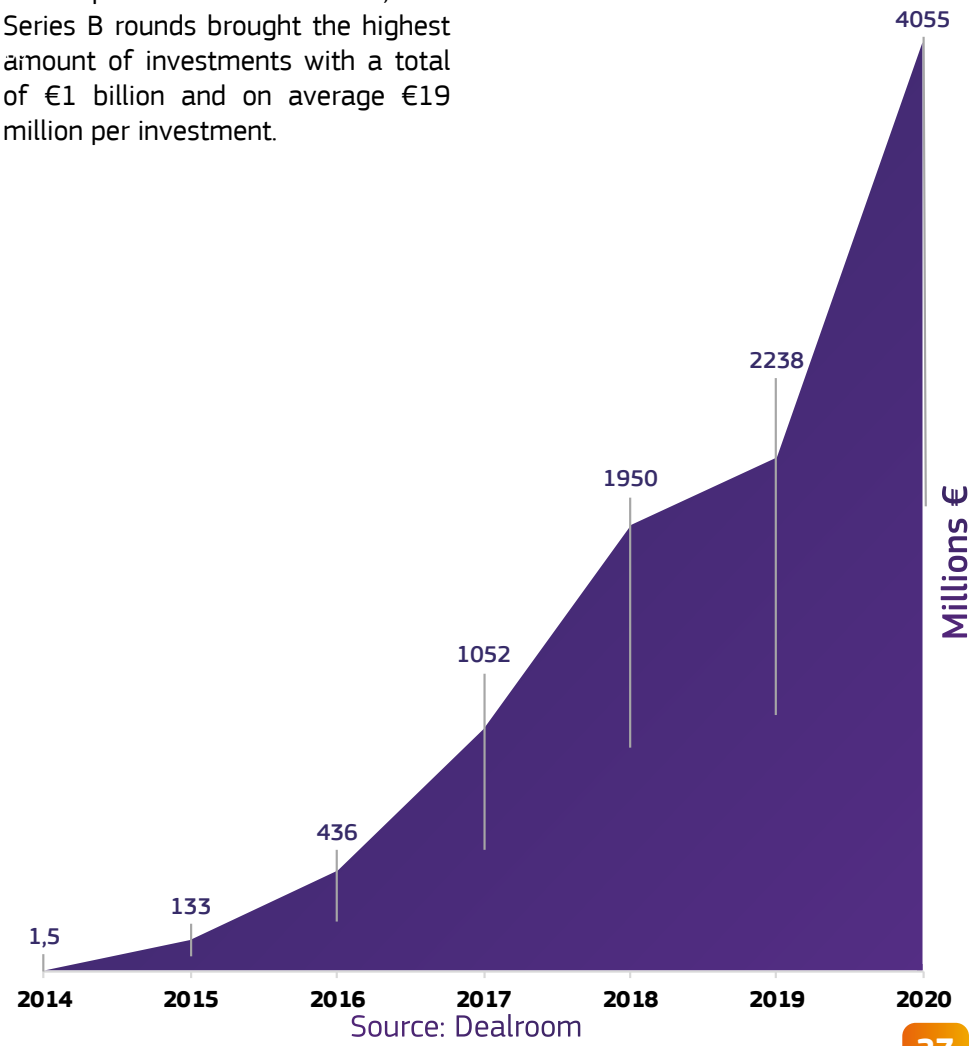
The amount of private investments raised by the companies after receiving the EIC funding is an important indicator that can serve as a proxy for the innovation's expected growth and market validation potential. Until May 2020, EIC Accelerator portfolio companies had attracted over **€5.3 billion of private follow-on funding (equity, debt, M&A, IPOs).** This is a conservative estimation as only publicly known investment rounds were taken into consideration. Out of the €5.3 billion of follow-up funding, €4 billion (74%) came from equity investments and the remaining amount from debt funding, IPOs and acquisitions. The last year saw a huge increase in follow-on funding as within the last 12 months, the cumulative amount of private investment almost doubled!

The equity investments were gathered by 18% of the portfolio's companies with funding above €0.5 million. This ratio is similar to the one used by Venture Capital firms where 10-20% of successful investments bring sufficient results to compensate the failure of lower performance of 80-90% others.

Cumulative private equity acquired by portfolio companies after the EIC Accelerator funding

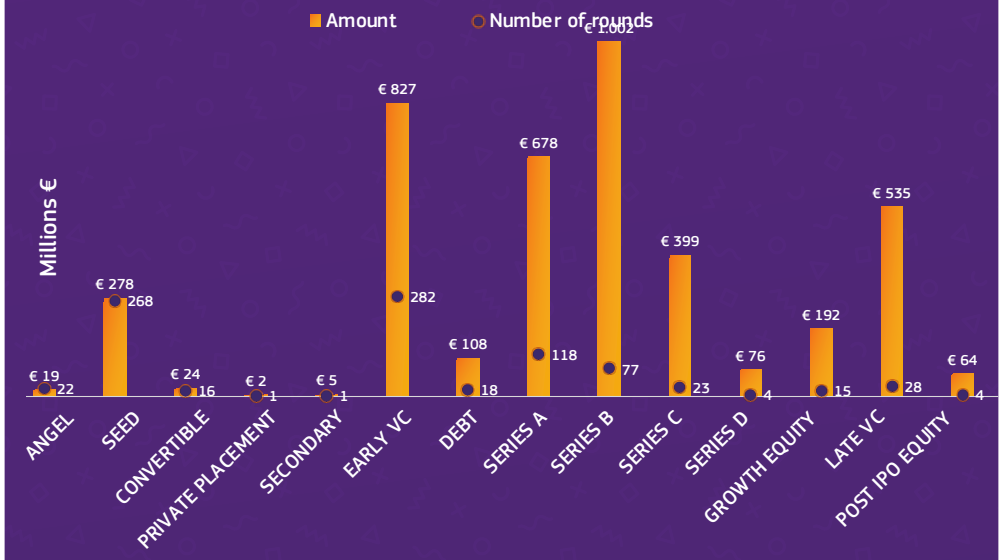
The majority of follow up rounds are early VC rounds. Series B rounds brought the highest amount of total investments

The funding, mainly Early VC, was collected in 877 rounds with an average funding per round of €4.8 million. This proves that the EIC funding can bridge the gap between seed funding and early VC funding and help companies get started on the capital market. However, the Series B rounds brought the highest amount of investments with a total of €1 billion and on average €19 million per investment.



Source: Dealroom

Types of follow-up private investment rounds



Average amount per round type

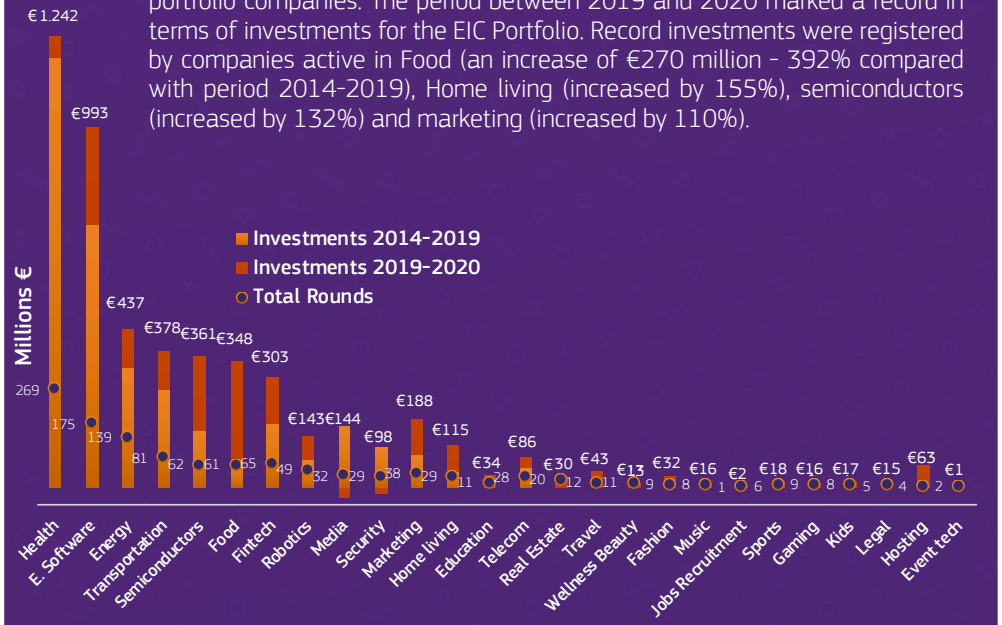
Source: Dealroom

Top 10 EIC companies attracting private follow-up investment rounds

Company	Total investment amount
Infarm (DE)	€218 m
Relex Solutions (FI)	€182 m
Rimac Automobili (HR)	€110 m
Unbabel (PT)	€83 m
Ultraleap (UK)	€76 m
AlphaSense (FI)	€75 m
Monese (UK)	€70 m
MeMed Diagnostics (IL)	€64 m
Hailo (IL)	€62 m
TactoTek (FI)	€62 m

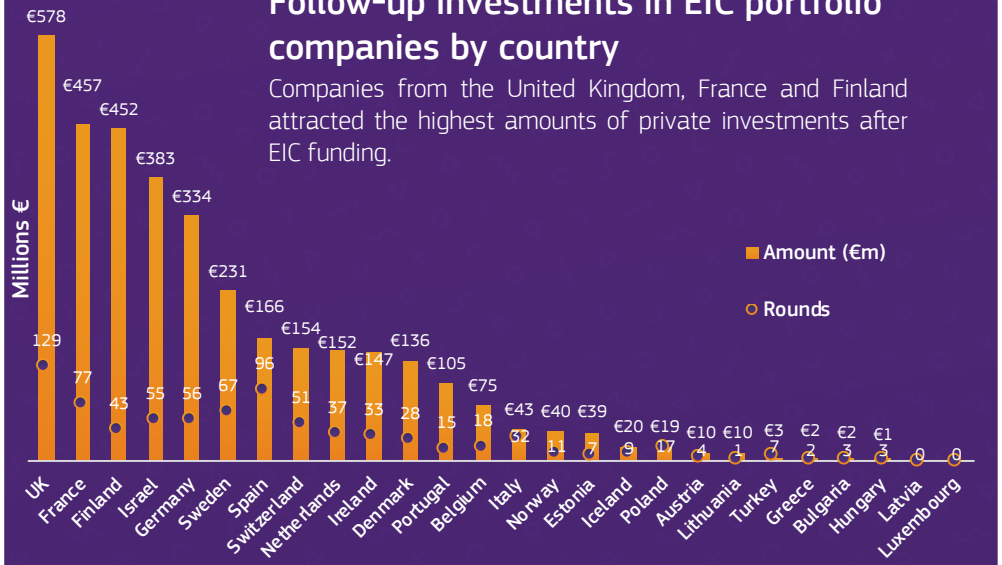
Follow-up investments by industry

Health, Energy and Enterprise Software are the sectors with the highest amount of post EIC funding investments. This follows the general sector distribution of portfolio companies. The period between 2019 and 2020 marked a record in terms of investments for the EIC Portfolio. Record investments were registered by companies active in Food (an increase of €270 million - 392% compared with period 2014-2019), Home living (increased by 155%), semiconductors (increased by 132%) and marketing (increased by 110%).



Follow-up investments in EIC portfolio companies by country

Companies from the United Kingdom, France and Finland attracted the highest amounts of private investments after EIC funding.



Source: Dealroom

Investors in EIC portfolio companies

The majority of investments in the funded companies came from Western and Northern Europe (69%). They were injected mainly in companies from these regions. 22% of investments came from the US and 4% from China. This is in line with overall US and Asian investors' involvement in Europe being at 21% of all European rounds in 2019 (SOET_State of European Tech).

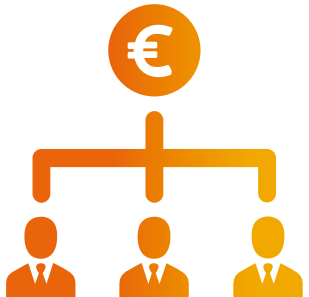
Investors prefer in general to invest locally. According to the State of European Tech Report, two-thirds of investments in Europe in 2017 were within the same country. Out of all investment rounds received by companies post EIC funding, 47% were purely domestic and 53% had at least 1 foreign investor. The Business Acceleration Services that are available for EIC companies help them get exposure in front of international investors and boost their international expansion in general.

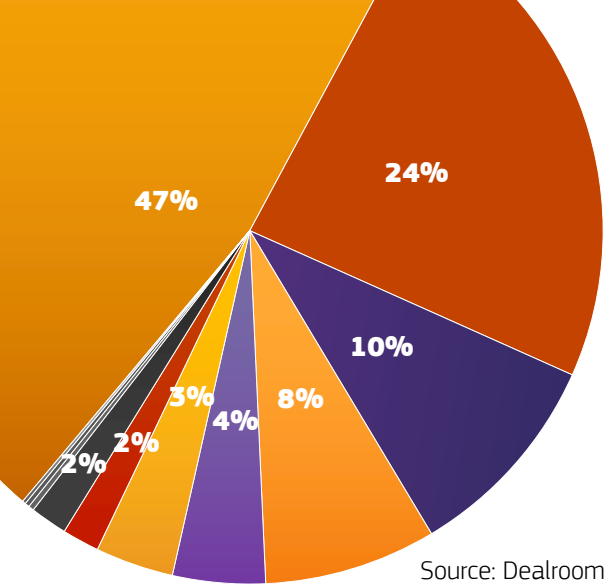
There is an increase in investments from corporate investors, from 13% in 2016 to 34% in 2019 (including both venture funds backed by corporates and corporates investing directly). This goes beyond the overall trend in Europe, where investments coming from corporate investors increased over time, but not as rapidly. 22% of rounds closed in Europe in 2019 involved at least one corporate investor, compared to 9% in 2015 (SOET). Professional VC Investment Funds remain the largest group investing in companies funded by the EIC Accelerator, accounting for 47% of all investments. Angel funding, on the other hand, represents 8% and crowdfunding went up from 1% in 2017 to 3% in 2020.

Investors in EIC portfolio companies are coming predominantly from Europe

Investment funds are the main type of investors of companies in the EIC portfolio

The most popular crowdfunding platforms are CrowdCube, Ourcrowd, Capital Cell, SyndicateRoom and Seedrs. The most successful crowdfunding campaign was carried out by RT Recycling Technologies (UK) and facilitated by CrowdCube. The company collected €4.2 million in their crowdfunding campaign for recycling end-of-life plastic into virgin plastic, wax, and oils.





47% venture capital
24% corporate
10% corporate venture fund
8% angel
4% family office
3% crowdfunding
2% workspace
2% accelerator
0,25% service provider
0,21% angel fund
0,15% advisor

Source: Dealroom

Type of Investors supporting EIC Accelerator portfolio (% of total investments)

The largest investment in an EIC Accelerator company was done by Technology Crossover Ventures which invested €176 million into Relex Solutions– so far the biggest round in the portfolio. Atomico from UK and BpiFrance comes second and third with investments totalling €155 million and €128 million respectively.

Finland | **Sector** Enterprise software | **EIC funding** €1.4 m

Johanna Småros
Co-founder and Group CMO

RELEX Solutions: 3rd largest investment in their sector in Europe last year

In the EU, close to 90 million tonnes of food waste are generated annually costing up to 140 billion euros. EIC-funded company RELEX Solutions provides a retail planning and optimization system that increases the efficiency and reduces the spoilage of the food value chain including retailers, wholesalers, and food manufacturers. Through precise demand forecasting, automated replenishment, inventory optimization, space planning and markdown optimization, the Helsinki-based company helps businesses plan better, sell more and waste less. The RELEX Living Retail Platform uses machine learning and AI algorithms to improve the speed and accuracy of retail decisions. RELEX works closely with top names like Coop Denmark, Franprix, MediaMarkt, Morrisons, PartyCity, Rossmann and WHSmith. In 2019, the company secured a 176 million € funding round from TCV, which purchased a minority stake in the company. This was the 3rd largest investment in Enterprise Software of the year in Europe and the number 31 globally, placing RELEX as the most well-funded tech start-up in Finland.

"Our EIC projects enabled us to further develop our machine learning and AI capabilities. These capabilities benefit both the retail value chain bu driving increased efficiency and competitiveness, as well as the planet through reduced waste."

Top Investors into EIC Companies (follow-up investments)

Investor	Number of investments	Amount invested
Technology Crossover Ventures	1	€181.8 m
Atomico	4	€155.1 m
Bpifrance	10	€127.8 m
Cherry Ventures	3	€117.6 m
Balderton Capital	2	€113.6 m
TriplePoint Capital	2	€113.6 m
Astanor Ventures	1	€90.9 m
Notion Capital	4	€89.6 m

Sweden | **Sector** Healthcare | **EIC funding** €2.9 m

Anders Karlsson
CEO

Idogen AB moves ahead with IPO

The Swedish biotech company Idogen AB is developing tolerogenic cell therapies to prevent the patient's immune system from attacking biological agents, transplanted organs or the body's own cells or tissues. These new types of cell therapies have the potential to improve the treatment of haemophilia A and reduce the risk of transplanted kidneys being rejected. Over the past year, Idogen AB has made significant advances in its unique cell therapy projects.

A new combination of substances to produce tolerogenic dendritic cells has been established, and a patent application has been submitted, with potential market exclusivity until 2040. In addition, a partnership has been initiated with Radboud University Medical Center to establish a scalable manufacturing process prior to the start of clinical trials. This year, the EIC-funded company was listed on Nasdaq First North Growth Market in order to expand their business, raise investor visibility and get prepared for a Main Market listing. Idogen has previously been listed on the Spotlight Stock Market.

"The funding from the EIC has been a crucial support for Idogen. We are developing our innovative tolerogenic cell therapy, from concept to clinical trials to help severe hemophilia A patients with an identified high medical need"

EXITS: IPOs and acquisitions

EXITS

17 IPOS **95%** on European stock exchanges

43 acquisitions **11 new in 2019 & 2020**

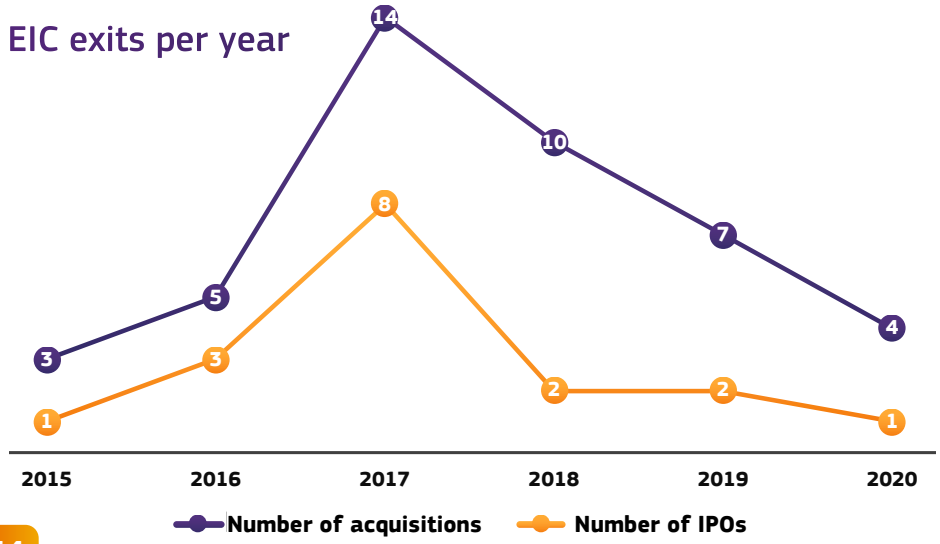
65% from Europe
30% from the United States
5% from Japan

Seventeen EIC backed companies have done their Initial Public Offerings (IPOs). All, except one, float on European stock exchanges. So far, the highest amount gained at listing belongs to Bioarctic (€77 million), a Swedish biopharma company. The second highest is Bonesupport (€50 million), also a Swedish company, that produces injectable biomaterial for bone fracture treatment. Other companies did their IPO to gather smaller amounts, on average €10 million.

Forty-three companies have been acquired. Large European companies were responsible for 65% of these acquisitions, 30% of acquirers came from the United States and two SMEs were acquired by Japanese companies.

2017 was a record year for EIC supported companies both in terms of IPOs and acquisitions while the overall European SME scene saw the same peak a year later (SOET).

EIC exits per year



Valuations

The combined valuation of EIC-backed companies grew by 40% within one year

Valuing an innovative company or start-up is intrinsically different from valuing an established company. Because of the high level of risk and often little or no revenue, traditional quantitative valuation methods are of little use. Start-up valuations are often based on qualitative attributes. However, whenever a company received already an equity investment, an estimation of its valuation becomes possible. With help from the Dealroom database, we use the last recorded public valuation (for publicly traded companies) or a x4-x6 multiplication of the last VC round amount (assuming that a VC investment usually represent between 15%-25% of equity) to present valuations. The combined valuation of EIC-backed companies, for which data are available, is between €20.1 and €28.3 billion. This is 40% growth compared with last year's cumulated valuation between €14.3 and €20 billion.

The Swedish company Arcam is the top valued company in the portfolio with a €636 million valuation. It was a listed company that was subsequently unlisted as acquired by General Electrics.

Top 10 valuations in the EIC portfolio

Company	Value
Arcam (SE)	€636 m
Bioarctic (SE)	€512 m
Relex Solutions (FI)	€409 m
Infarm (DE)	€364 - €545 m
MeMed Diagnostics (IL)	€255 - €382 m
Agendia (NL)	€223 - €318 m
Unbabel (PT)	€218 - €327 m
Hailo (IL)	€218 - €327 m
Arralis (IE)	€200 - €300 m
AlphaSense (FI)	€200 - €300 m

Source: Dealroom

Growth of EIC portfolio companies

The actual growth of funded companies can be measured by the periodic adjustment in their operating revenue and the number of staff. This information for companies receiving grants over €0.5 million comes from the Orbis database, which compiles different sources of official information, including national registries. Data that allows for a comparison between the application and at least one year after it, is available for only 61%-79% of companies. This is preliminary information, but it gives an idea of the portfolio's growth.

Around 73% of companies for which data are available have seen increase in their operating revenue. The average increase per company was of €1.63 million over the period of 2.1 years

Operating revenues

The vast majority of companies have increased their turnover on average by €1.63 million which corresponds to a 23.5% increase on the total turnover of the Accelerator portfolio over the period of 2.1 years. Data on the change in operating revenue between the application and the latest available post-EIC funding year is currently available for 563 companies (61%) with grants over €0.5 million (excl. 2018, 2019 calls). Out of these 563 companies, 413 or **73% have seen their operating revenue increase**.This generated a total of €4.8 billion in revenues in 2019 or latest post-grant year. On the other hand, 145 companies (26%) have seen their operating revenue decrease.

Employees

In terms of change in the employee count between the application and the latest available post-EIC funding year, data are available for 735 (79%) companies, with grants above €0.5 million (excl. 2018, 2019 calls). Out of these 735 companies, 487 (66%) have increased their employee count since they applied for grant, while 126 (17%) have reduced the number of employees. The average change for companies that registered increase, was of 108% or 24 employees over the period of 2.2 years on average.

Around 66% of companies for which data are available have seen increase in their employee count. The average increase per company was of 24 employees or 108% over the period of 2.2 years

4. EIC PATHFINDER AND ITS PORTFOLIO OF TECHNOLOGIES

EIC Pathfinder goes beyond what is already known. It supports high risk, high gain, long term and interdisciplinary scientific research enabling the emergence of visionary innovative ideas that may transform into future technological innovations. The main goal is to make the most promising and creative science-inspired technologies a reality and help Europe compete on a global scale.

The Pathfinder builds on the Future and Emerging Technologies (FET) scheme running under Horizon 2020 since 2014 and previous research framework programmes since the 90s. The Pathfinder programme includes two complementary lines of action under Horizon 2020:

- **FET Open:** a bottom-up scheme to explore innovative technologies, which may become the game-changers of the future.
- **FET Proactive:** seeking to establish a critical mass of European researchers in a number of promising exploratory research topics.

Both schemes offer grants between €3 - €4 million (in specific cases up to €10 million) to promote collaborative and interdisciplinary research and innovation by consortia of at least 3 entities from 3 different EU member states and associated countries.

Why fund future and emerging technologies?

Europe's biggest innovation potential is in the blending of knowledge, data and skills across disciplines and sectors.

This is what makes 'deep-tech' so hard to replicate, and therefore so strategic for Europe's future.

It turns science into a competitive advantage for creating new markets and for disruptive innovation.

How does Pathfinder work?

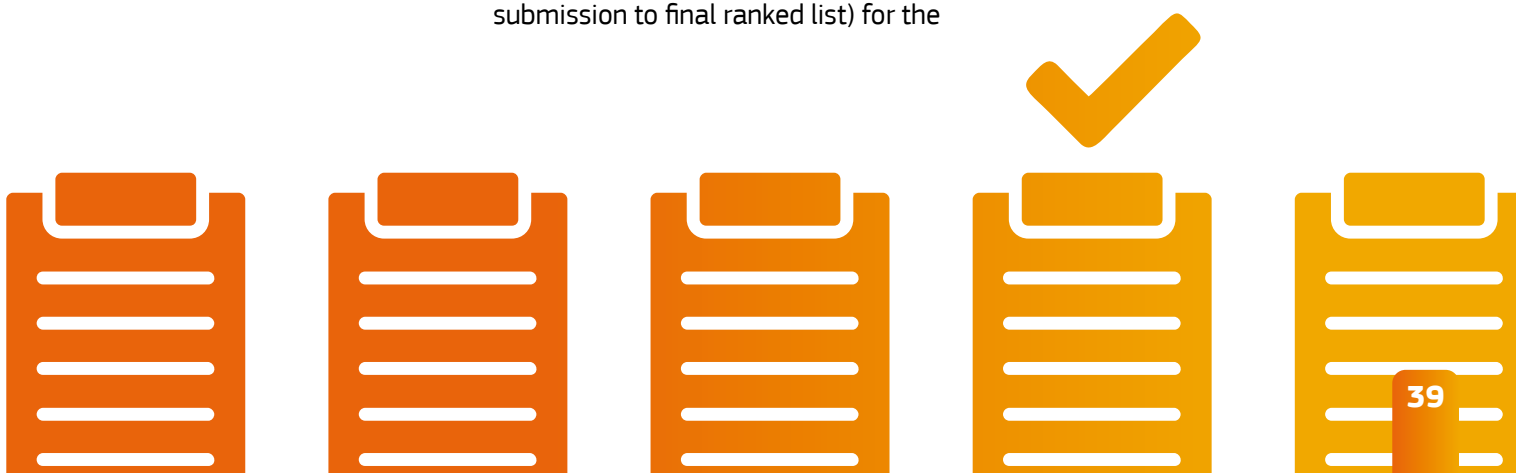
4.1. How the projects are selected

Proposals are assessed based on three evaluation criteria: excellence, impact, and quality and efficiency of the implementation. The evaluators need to be convinced that the proposed science-to-technology breakthrough has the potential to make Europe a leader in that domain, to change the dynamics of the market and to address societal challenges. In addition, the proposal must address a radical vision challenging current paradigms. Finally, its interdisciplinarity needs to open new areas of research and the team needs to have all the expertise necessary to successfully implement the idea.

The proposal is assessed by independent experts first individually and later through a panel. At the end of the process the experts propose a selection of proposals to be funded. It takes overall 5 months (from submission to final ranked list) for the applicants to get a notification about the results of the application.

Due to the nature of the EIC Pathfinder programme, evaluators' profiles cover all scientific domains including physics, engineering, nanosciences, health research and life sciences, environment, ICT research and many more. Furthermore, many of the experts have more than one scientific area of expertise. It is also worth mentioning that many of them have mixed profiles, being both scientists and innovators.

The pilot Pathfinder scheme benefits from a high demand. In 2019, 952 proposals were evaluated and 151 received the EIC funding, with a success rate of 16%. In 2020, the EIC pilot Pathfinder open call that closed on 3rd June 2020 has registered a record number of 902 proposals that are currently being examined.



4.2. The EIC Pathfinder portfolio of technologies

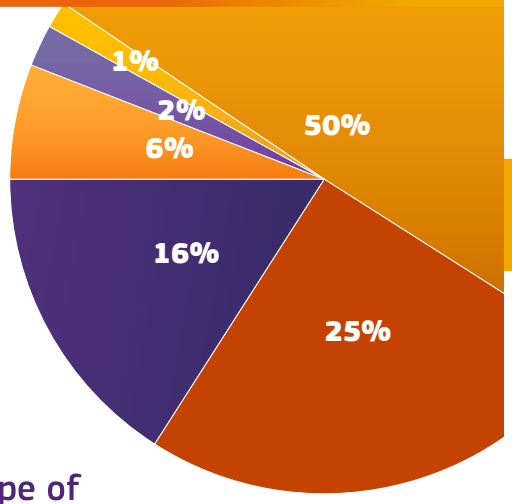
The EIC Pathfinder brings together two pre-existing schemes, **FET Open and FET Proactive**, With their **cutting-edge, high-risk and high-reward research and innovation projects** that aim to demonstrate a new technological paradigm and lead Europe's deep-tech ecosystem. This section provides basic characteristics regarding Pathfinder projects selected since 2014 under Horizon 2020 and areas of research and innovations being pursued.

The EIC Pathfinder portfolio includes 431 funded projects with more than 2774 participants that received overall €1.2 billion since 2014. The average project has 6.4 participants and €2.8 million in funding. Half of the participants come from academia, 25% are research organisations and 22% private companies, including 16% SMEs. 60%-70% of the projects involve one or more SMEs as beneficiaries, much higher than the overall Horizon 2020 (33%). The participation of SMEs is important as they are potential commercialisation partners for innovations developed within the Pathfinder funding scheme.

EIC Pathfinder participants come from 49 different countries, including all EU member states, Horizon 2020 associated countries but also non-European countries such as United States, Canada, Australia, China or Brazil (who generally participate with their own funding or on the basis of reciprocity agreements). 55% of participants come from 5 countries: France, Germany, Italy, Spain and Netherlands.

EIC Pathfinder funds research in different areas. Projects are interdisciplinary, touching upon several scientific fields, however as they should also create new technologies, most projects have a proof of principle in specific application. Health is the largest application area (37% of projects), followed by ICT (30%), Manufacturing & infrastructure (16%), Energy & Environment (15%) and food and agriculture (2%).

Two thirds of EIC Pathfinder projects have at least one participating SME set to carry the innovation to the market.



Health is the largest application area (37% of projects), followed by ICT (30%)

Type of EIC Pathfinder participants

- Academia
- Research Organisations
- SMEs
- Other Companies
- Other public bodies
- Other

431 funded projects

2774 participants

€1.2 billion of EIC support

49 countries

€2.8 Million average grant per project

6.4 average participants per project

UK, ES, AT, IT | **Sector** Circular Economy | **EIC funding** €3.2 m

LIAR bringing nature back into buildings

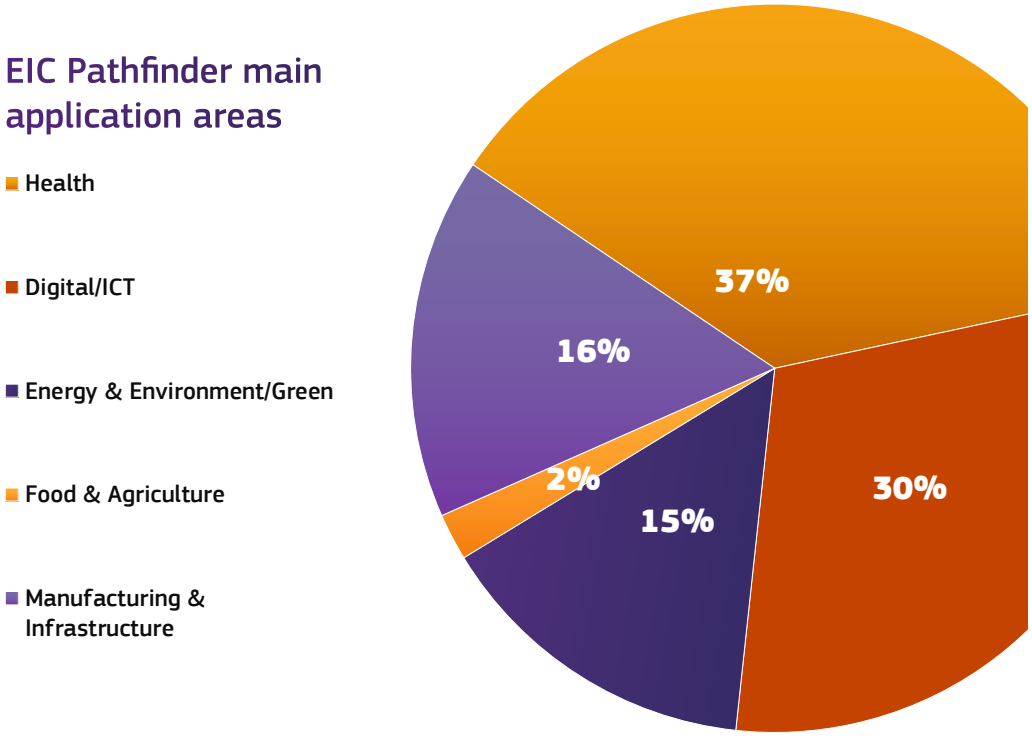
The vision of the EIC-funded project called LIAR - Living Architecture is bringing bioreactor and Microbial Fuel Cell technology into the fabric of our households to transform waste liquids, like urine from toilets and grey water from washing machines, into useful resources in our houses and businesses.

LIAR consortium – coordinated by Rachel Armstrong, Professor of Experimental Architecture at Newcastle University in the UK – has developed the world's first prototype system of microbe-based 'living' bricks capable of turning our waste back into something useful that can make our buildings sustainable, circular and 'alive'. The project has also produced Doulix — a web-based DNA design toolkit developed by Explora Biotech, a company that enables end-to-end design, validation and synthesis of custom synthetic biology constructs. LIAR's researchers demonstrated their work at several different exhibitions in Venice, London, Tallinn and Vienna and in festivals in Japan, Norway and Denmark. The Microbial Fuel Cell technology was also used in other projects, including Pee-Power® set up at the UK's Glastonbury music festival in 2019.

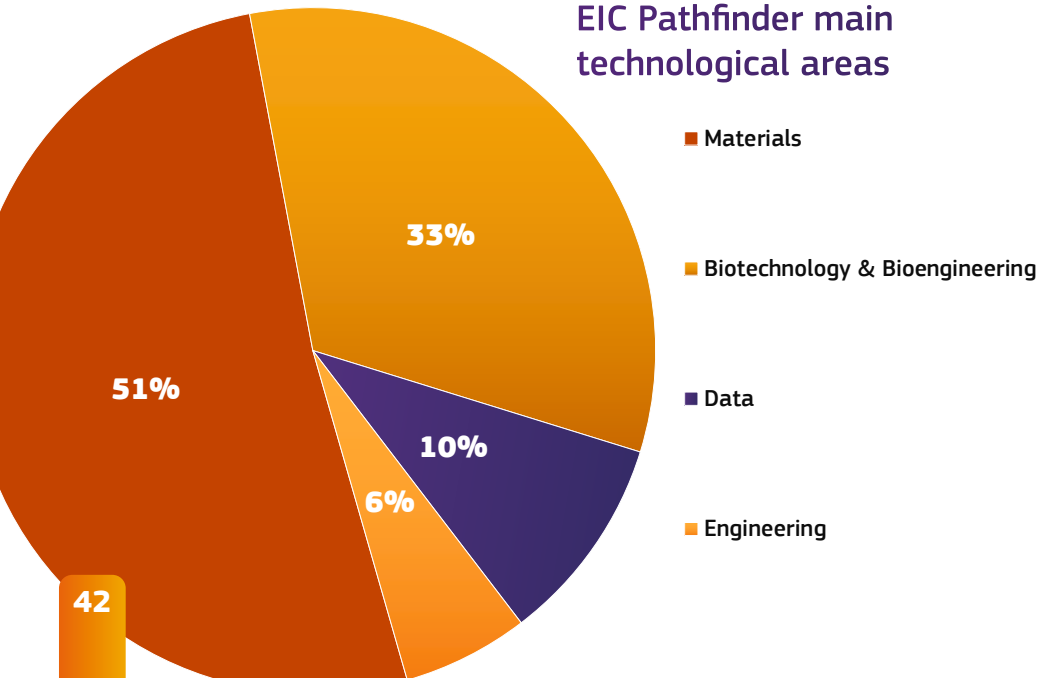
Rachel Armstrong
Project Coordinator

"Thanks to the EIC-funding our technology brings nature back into buildings. It's a bit like the revitalising feeling we get after a walk in the forest. Our aim is to reduce and eventually eliminate our dependency on fossil-fuel-based systems in buildings, whilst also giving us value back and boosting sustainability"

EIC Pathfinder main application areas



EIC Pathfinder main technological areas



In addition to the main applications, the projects are also classified according to the main technologies: 51% are materials related technologies, 33% biotechnology and bioengineering, 10% data technologies and 6% engineering. The matrix below presents the mix between Main Applications and Main Technologies.

	Applications				
Technologies	Health	Digital	Energy & Environment	Food & Agriculture	Manufacturing & Infrastructure
Biotechnology & Bioengineering	95	3	3	5	4
Engineering	0	6	3	0	11
Data	7	23	2	0	1
Materials	23	69	41	2	38

4.3. EIC Pathfinder Results – from research to innovation

Pathfinder produces outstanding scientific output: 72% of its peer reviewed publications are in high profile journals

Boosting innovation effectiveness is a complex and demanding objective. Science-driven and technology-based deep-tech innovation encompasses the entire journey from fundamental research, development of emerging technologies and services, de-risking, scale up, market intelligence, investment strategies and social engagement. The two critical aspects in this process are to have the capacity to pick up early signals from developments in science that point at radically new and untried technological possibilities and to find a way to promote early technology ideas from the lab to the market.

Scientific publications are one of the earliest results of work in the research world. While only few projects have finished their work so far the EIC Pathfinder portfolio (2014-

2019) has already produced a large amount of publications, over 3700 out of which 2662 in peer-reviewed journals. Many of those publications are of high quality and outstanding relevance. As demonstrated by the large share of publications, over 72%, in high-profile journals including Nature (188) and Science (39). This also includes feature articles like for the project nuClock that appeared on the cover page of the Nature in September 2019. In comparison, only 57% of all Horizon 2020 publications are published in high-profile journals. Overall, the Pathfinder scheme produces 16 publications in high-profile journals per €10 million of funding while in Horizon 2020 this figure amounts to 8,8 publications for the same amount of funding. The EIC Pathfinder project produce many patent: 46 applications have been filed and 14 have already been awarded.

Innovation Radar experts' assessment is another tool providing insights about the innovations being created within the Pathfinder projects. The progress of all EIC Pathfinder projects is systematically monitored by an Innovation Radar expert. The expert fills in a questionnaire that aims at identifying potential innovations, level of maturity of the technology and its exploitation, market competition and societal dimension. Besides the innovations, it also identifies the innovators behind it and their needs in the innovation and exploitation process. The Innovation Radar expert provides recommendations about how to support the innovator and its innovation.

76% of Pathfinder innovations concern new or emerging markets

3702 scientific publications

2662 peer-reviewed publications
72% in high profile journals

46 patents applications
14 awarded

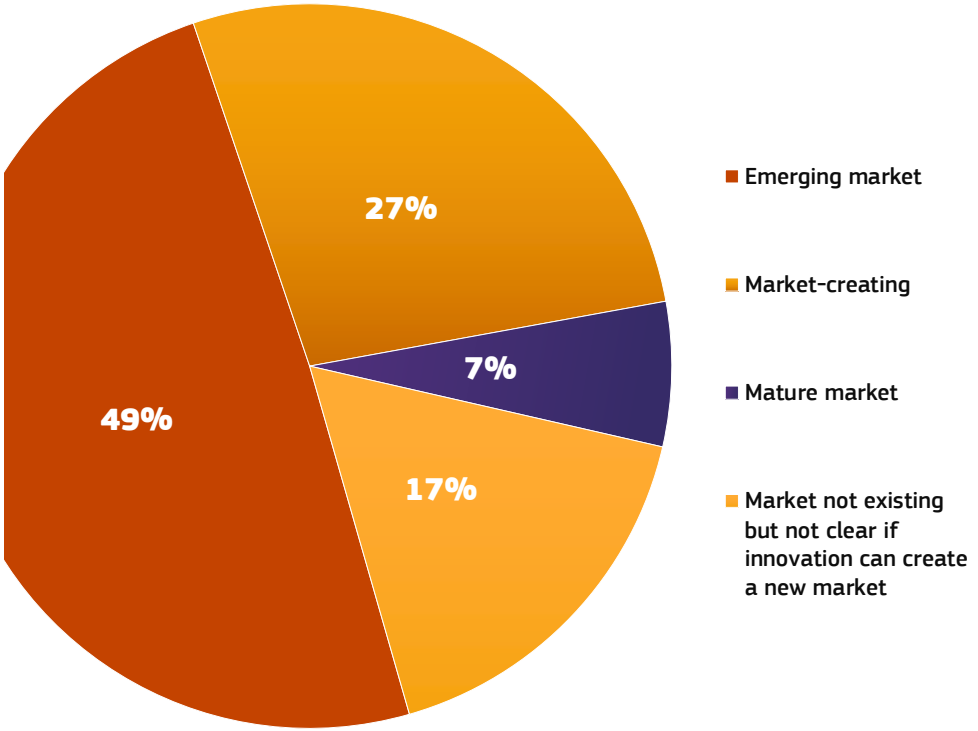
590 Innovations
451 addressing new and emerging markets

So far the Innovation radar identified 590 innovations in 150 Pathfinder projects. 76% of detected innovations are either market creating, where the market is not yet existing but the innovation has clear potential to create a new market, or addressing emerging markets, where there is a growing demand and only a few offerings are available. The remaining 23% of innovations relate either to mature markets that are already supplied with many products of the type proposed or to markets that are not yet existing and it is not yet clear that the innovation has potential to create a new market.

Top projects in terms of no. of publications

	Project Acronym	Number of Publications	Short Description
QUIC	QUIC (IT)	238	Creates quantum simulations of insulators and conductors
QuProCS	QuProCS (FI)	126	Quantum Probes for Complex Systems
RySQ	RYSQ (DE)	102	Rydberg atoms for quantum simulations
Dolfins project	DOLFINS (CH)	101	Distributed Global Financial Systems for Society
SoC	socSMCs (DE)	92	A novel approach for understanding and modelling social behaviour and implementing it in robots

Types of markets targeted by Pathfinder Innovations



Top 5 EIC Pathfinder innovations

(in terms of market creation capacity, market readiness and innovator capacity based on Innovation Radar)

	Project	Pathfinder Innovation
luminous	LUMINOUS (ES)	Biomarkers for Parkinson's disease using Advanced machine learning techniques
	NanoSmell (IL)	Utilization of electronic-nose based analysis of odorants
subCULTron	subCULTron (HR)	Continuous monitoring of underwater environments with an internet of artificial mussels, fish and lilypads.
unclock	nuClock (DE)	Laser technology for enabling fundamental spectroscopy and commercial applications in holography
VOXEL	VOXEL (PT)	Volumetric medical X -ray imaging at extremely low dose

EIC TRANSITION TO INNOVATION

The EIC aims to become a one-stop-shop for innovations. Once a breakthrough technology with market potential enters the EIC, it can receive the necessary support in terms of funding, coaching, advice and network to succeed as a marketable product.

Participation of SMEs is very important as they are the agents commercialising innovation. 60%-70% of EIC Pathfinder projects have already important activities provided by SMEs. The analysis shows that around 40 SMEs involved in Pathfinder projects received also funding from the EIC Accelerator. Many EIC Accelerator supported innovations come from EU-funded research projects in the European Research Council, such as:

ultraleap

Steve Cliffe
President & CEO

Ultraleap | UK

Ultraleap developed its touchless ultrasound haptic technology first through ERC starting and proof-of-concept grant. The company was created in 2013 and in 2014 received a funding of €750 000. The €1.5 million funding from the EIC SME Instrument really allowed them to perform market validation studies for the technology and accelerated the company's growth. After receiving the grant, Ultraleap raised €30 million in private investment and grew from 1 to 80 employees. In the meantime, they participated in Pathfinder projects LEVITATE and H-Reality, receiving a total of €1 million, and used their haptic technology to work on new breakthrough inventions such as haptic holograms.

"It would have been impossible for us to have come so far so fast without the support we've got from the FET Open projects. It's not just about the funding we've received – though of course this has been useful – but also the people and organisations we've been able to collaborate with."

Blusense Diagnostic | DK

Blusense Diagnostic is a MedTech spin-off formed six years ago from Anja Boisen's research group at the Technical University of Denmark following her ERC Proof of Concept grant. BluSense can create diagnostic tests for virtually any blood biomarker with the highest accuracy results in a matter of minutes. Their project Diadem was supported by a feasibility study grant from the EIC SME instrument as well as an additional €1.9 million from the EIC Accelerator. Blusense Diagnostic also successfully leveraged funding from Go Beyond Investing VC firm. BluSense has grown from only four people to more than 50 employees since 2014. Most recently, the company developed and CE marked a COVID-19 serology test and now they are focusing on developing medical diagnostics devices for neglected tropical diseases.

Anja Boisen

Head of center of Excellence 'IDUN'

"It is fantastic that we in the EC has unique funding opportunities covering all aspects from explorative, curiosity driven research to business accelerator programs. As a researcher it is very rewarding to see some of our research being transformed into direct benefit for society"

The EIC developed a series of tools to enable a smooth transition from lab to market:

The EIC Transition to Innovation grants' ambition and commitment is to bring the technology from EIC Pathfinder/FET projects to actual use, possibly through the creation of a start-up or spin-off. Projects must build on results from an ongoing or finished project, funded as a result of a FET-Open or FET Proactive call under Horizon 2020. The aim is to bring promising technologies to a level of development, validation and demonstration where they become a credible basis for entrepreneurship, business creation, investment and, ultimately, economic and/or societal returns. The project has to be driven by a partner with the vision to exploit the technology. So far, 13 projects have been funded in Transition to innovation activities all responding to the call that closed on 13th November 2019. Each project has an average budget of €2 million and lasts for two years.

Innovation Launchpad grants, up to €100 000 are available to fund further innovation related work, i.e. activities which were not scheduled to be funded by the original projects. The funding is used to verify and substantiate the innovation potential of ideas arising from Pathfinder or FET projects and to support the next steps in bringing them closer to the market. The Innovation Launchpad funding scheme was established in 2016. Since then, 74 projects have been awarded, including 32 SMEs from all over Europe. Innovation Launchpad projects regularly participate in workshops designed to stimulate networking, develop collective intelligence on innovation management and exchange best practises.

In Horizon Europe further activities are foreseen to foster entrepreneurship and test commercialisation potential of Pathfinder technologies. Business Acceleration Services will play a role in connecting those technologies with potential commercial partners: corporates, investors, entrepreneurs, procurers (see more under section 5.3. Business Acceleration Services).

4.4. Impacts of FET: What do we learn from Pathfinder's predecessor

Research needs time to reveal its impacts. Only few projects from the EIC portfolio, selected as of 2014, are actually completed, the results of the research work only start to emerge now. However, we can learn about the indicative impacts of the programme from an analysis of the Pathfinder's predecessor, the FET Programme run under the 7th Framework Programme for Research and Innovation (FP7) between 2007 and 2014. The "FET traces" study published in 2018, looked at 224 FET Open and Proactive projects completed between 2007 and 2014.

2007-2014 FET projects are:

Highly interdisciplinary
36% of projects have an impact on 20+ scientific fields

Radically new
83% deal with ideas not present in the scientific community before

Excellent
29% receive scientific awards

At first, the study aimed to confirm whether the FET scheme managed to select the interdisciplinary, and radically new research projects. A citation analysis showed that FET results are cited in many different scientific fields: 36% of the analysed FET projects have an impact on more than 20 scientific fields. This is a very high figure and reflects the interdisciplinary nature of FET.
Novelty is another central feature of FET research. The bibliometric analysis shows that the overwhelming majority of FET projects (83%) deals with research ideas not present in the scientific community before and could therefore be termed "radically new". FET researchers believe the programme offers the opportunity to do research that goes beyond the mainstream.

Economic impact of FET projects:

33% of all projects had at least one publication with the participation of an industrial partner

25% report at least one patent application based on FET results

12% of FET projects led to the founding of a spin-off company

Co-publications with industry are a good proxy of the actual impacts of FET projects on the economy and industry participation. 33% had at least one publication written with the participation of an industrial partner such as IBM, Panasonic or Thales. This finding can be assessed as indicating a high level of cooperation with industry. Patent applications are another indicator of economic relevance and especially of research that may trigger an innovation ecosystem. 25 % of the projects reported at least one patent application, indicating the considerable applied impact of their scientific project. Finally 12 % of FET projects led to the founding of a spin-off company. A remarkably high figure when comparing this with experiences in academia and other public research funding programmes.

UK, CH, NL, AT, CZ | Healthcare Technology | **EIC funding** €4.9 m

Alain Nogaret
Project Coordinator

CResPace: Neuron-on-chip to help cardiology patients

CResPace is a project bringing innovation in biotechnology and medical engineering together. Launched in 2017, its aim is to provide much needed therapies for cardiorespiratory and functional neurological diseases. There is a pressing need in modern medicine for projects like CResPace as many such diseases have no cure and patients carry a high symptom burden. The main outcome of the project will be an adaptive pacemaker, based on technology using small artificial neural networks known as central pattern generators. During the research, CResPace invented artificial neurons on silicon chips that behave just like the real neurons. This first-of-its-kind achievement has an enormous scope for medical devices to cure chronic diseases, such as heart failure, Alzheimer's or other neurodegenerative diseases. The implants created with this technology will help patients with diseases like heart failure or hypertension to extend their life and increase their quality of life.

"The EIC project has made it possible for European research teams engaged in disciplines as varied as Medicine, Physics, Physiology and Engineering to come together to achieve breakthroughs that meet the needs of patients suffering from chronic diseases. The CresPace consortium has delivered outcomes that are more than the sum of its parts and that provide a template for future multidisciplinary driven innovation"

5. HOW TO WORK WITH THE EIC PORTFOLIO

5.1. Become an EIC Evaluator

The EIC benefits from an extended and diverse pool of evaluators, both in terms of profiles and gender. Experts taking part in the evaluations are highly qualified, with in-depth knowledge in a wide variety of scientific areas and industry as well. Experts are selected on the basis of their scientific expertise and productivity as well as gender balance.

For the EIC Pathfinder, The majority of evaluators came from Academia (52%), and research organisations (24%), and private firms (6%) In the EIC Accelerator, around 26% of evaluators are venture capitalists, 29% innovation and industry specialists, 24% entrepreneurs, 21% business angels and other experts coming from larger corporates, innovation hubs, and accelerators.

Experts evaluate proposals independently or meet in Brussels or virtually to interview applicants and select the best innovators to be financed under the EIC. The return on the time investment is manyfold: evaluators discover brand new innovative projects and follow the latest trends in their preferred industry sectors. They get to meet other experts and investors from all over Europe pursuing similar goals. The activity is financially compensated, in line with the reimbursement and allowance conditions for experts of the European Commission. The EIC is always looking for new experts for both the Pathfinder and the Accelerator programmes.

Anna Maj | EIC jury member
Fin Tech Innovation Leader

"Every time we convene as a jury panel I am excited about discovering the best of breed tech start-ups across Europe. The evaluation sessions (both onsite and recently online) are always an inspirational and rewarding experience. As a jury members we are always committed to select outstanding teams of innovators and entrepreneurs, the best of the best, who are ready and well equipped to scale globally, and in this way to contribute and support the European innovation ecosystem."

5.2. Co-invest with the EIC Fund

As detailed in Section 3.3., the Accelerator programme offers equity or quasi-equity support to innovative companies. The EIC Fund manages the equity investment part of the EIC funding, and offers the opportunity for private investors to co-finance highly innovative companies. The rigorous evaluation process by experts with a wide range of specialities ensures that the best companies are selected with the highest potential impact.

The EIC also looks for investors to become mentors of the companies selected for blended finance and provide them with strategic advice, networking opportunities and fundraising support, among others.

5.3. Join EIC Business Acceleration Services

The EIC support goes far beyond funding. In order to further leverage EIC investments it offers innovators access to top, tailor-made Business Acceleration Services. The aim is to accelerate innovations and scale-up EIC-supported companies. Thanks to its wide reach and international network, the EIC offers to its beneficiaries:

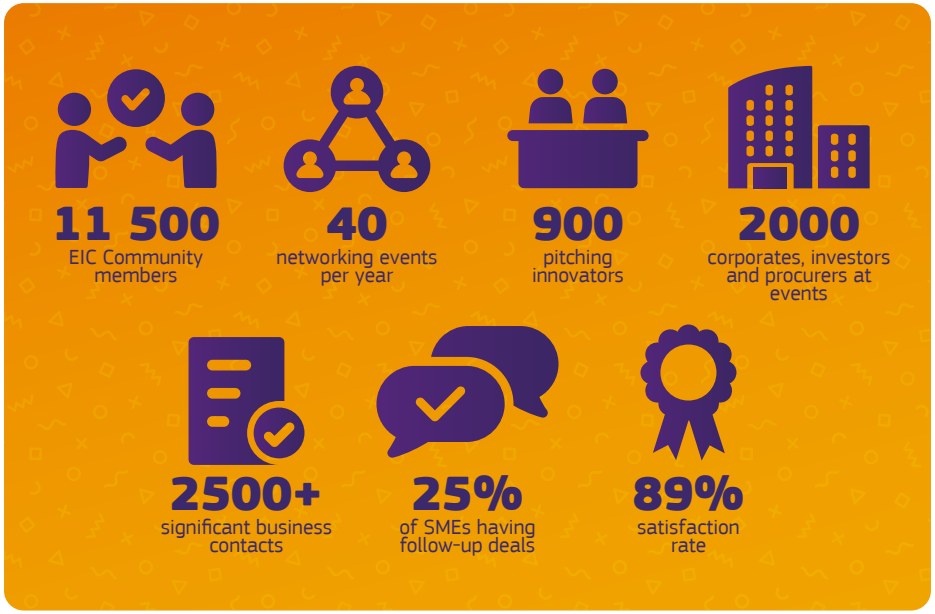
- Access to world-class coaches, mentors, expertise and training
- Access to global partners, leading corporates, investors, procurers, distributors and clients
- Access to innovation ecosystem partners and peers

By working with the EIC, corporates, procurers, investors and other partners can access 5700+ quality stamped companies and more than 430 innovation-driven research teams from all around Europe. The EIC is the largest community of its kind in Europe, across all fields and disruptive innovation areas from health, ICT, energy and environment, mobility, agritech, fintech etc. All EIC-funded research and innovation go through a highly competitive selection process.

The EIC-funded innovations are in different stages of development offering the business partners a wide range of possibilities from joint R&I, licensing, investment and so on. Time is money so by having a one-stop-shop source of innovative ideas across Europe, partners can save a significant amount of money and resources on scouting, communicating and evaluating start-ups and scale-ups. Furthermore, co-investing alongside the EIC fund can de-risk investment rounds into companies considered too risky otherwise.

Kinga Stanisławska
EIC advisory board member

"The EIC is not only about financial support. It's also about the Business Acceleration Services, about having access to partners, investors, corporates, to the ecosystem. The EIC has been already doing this very successfully."



EIC BUSINESS ACCELERATION SERVICES PARTNERS

EURONEXT
VEOLIA
MERCK
suez
SONAE
SAINT-GOBAIN
ferrovial
AIRBUS GROUP
Telefónica
bpifrance
Enel
VINCI
Roche
Nasdaq
.comdirect
ABB
EVONIK INDUSTRIES
IBERDROLA
Unilever
EVONIK POWER TO CREATE
BMW
Electrolux
orange
equinor
P&G
SOLVAY
asking more from chemistry®
eban
Fueling Europe's Growth
MAN
AIRBUS
Medtronic

France | **Sector** Nanotech | **EIC funding** €1,1 m

GENESINK: Gaining investments and clients with the EIC business acceleration services

Corinne Versini
CEO

GenesInk is a French company specialized in the conductive and semi-conductive inks market. Their nano-solutions aim to decrease raw material consumption and avoid pollution, especially for the electronics of the future: flexible printed electronics. In 2016, they received a €2 million grant from the EIC that opened the door to EIC Business Acceleration Services for them.

Corinne Versini, the CEO of GenesInk, won the EIC pitching contest at the EIC Investor Day: Empowering Woman Innovators in April 2019. Following the event they signed an initial funding agreement with Rise Tide 3, an association which invests in woman-led innovative companies.

In addition, after attending EIC Corporate Day, Genesink started a partnership with a new large costumer, L'Oreal. They signed a NDA and started working on a joint development agreement to use GenesInk's technology for L'Oreal's specific requirements. Versini affirms that this partnership was an eye opener as GenesInk was not focused on the cosmetic industry before.

"The EIC BAS events we attended got us funding, business, as well as access to an immense network. They put us in touch with decision makers we normally don't meet. For small companies like us that is really valuable."

Corporate Day with L'Oreal

Discover the EIC Business Acceleration Services:

The EIC Community is an exclusive, virtual meeting place in the form of an online business platform, where EIC beneficiaries can connect and leverage potential business partnerships. Besides EIC innovators it includes corporates, investors, procurers, ecosystem partners. The EIC Community offers:

- A directory of over 5700 quality checked EIC companies and 440 research teams
- A Forum to reach the whole EIC Community
- Tools for organising events with EIC beneficiaries
- A marketplace to announce innovation challenges

The Corporate Partnership Programme

It bridges the gap between EIC-funded innovators and large corporates so they collaborate and develop new business models and opportunities. It offers exclusive matching events (Corporates Days) and challenge-based collaboration schemes. This initiative is an absolute win-win situation for everyone involved: the innovators obtain scale, resources, sale channels, connections and forge new business opportunities, while the corporates can identify new emerging technologies and have access to great ideas that can positively impact their business. As a first result, up to 25% of participating companies close follow-up deals after the EIC events.

Cybelle Buyck
VP Legal and Corporate Affairs Europe AB InBev

"Together with the EIC we are bringing all these start-ups together, which in turn brings bright ideas, which is beneficial not just for us, but for many companies in Europe. This way we can all continue to innovate, be stronger and be competitive in the future."

The Buyers Partnership Programme

Public and private buyers are important potential clients for a majority of the EIC companies. Utility companies, hospitals or cities have a lot to gain from EIC-funded innovations in order to raise the living standards of citizens. Procurement procedures, especially public ones tend to favour bigger companies as they are long and complex to handle for start-ups. Through early market consultation and thematic procurement scouting days, the EIC tries to overcome these barriers, connecting the EIC innovators with buyers looking to exploit deep tech innovations.

The Investors Partnership Programme

The EIC connects its beneficiaries with more than 170 investors in Europe's top finance hubs, through pitching events organised by the EIC for companies benefitting from EIC grants, blended finance or a quality stamp of the Seal of Excellence. It also collaborates with renowned organisations or stock exchanges like Nasdaq or Euronext, Innovate UK and BPI France. As a first result, up to 20% of participating companies have a follow-up discussions with investors after the pitching.

Alex Zhigarev
Speedinvest

"I am very content to see that the EIC is taking an active role in building these entrepreneurial ecosystems by bringing together various players and providing them important services. EIC's portfolio is growing in quantity and quality and gathers start-ups from all over Europe. This makes it easier for the start-ups to access capital and provides necessary cross-border transparency to all players."

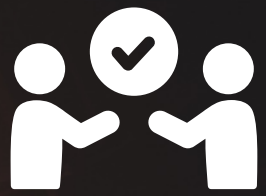
Business coaching

It will help beneficiaries progress over the life cycle of their innovation, from idea to proof of concept, to first pilot application and finally to upscaling and expansion. The EIC is always looking for experienced coaches to join the team. Potential coaches must demonstrate having executive industrial experience with launching products and business development and indicate sectorial and geographical experience. The service is remunerated.

Innovation Ecosystem Partners

To further strengthen the Business Acceleration Services' scope the EIC seeks for partnerships with ecosystem partners bringing in specific experience, specific expertise or access to specific networks in certain innovation areas. Such collaboration can include exchanges of information, the co-organisation of specific EIC events (such as pitching events or specific trainings, bootcamps, summer schools), data mining or mapping services of tech infrastructure, piloting plants and test-beds. Potential partnerships can take the form of a win-win collaboration or through a co-funding.

In addition, EIC beneficiaries can access international trade fairs through the Overseas Trade fairs Programme and other soft-landing services in top targeted markets, including Community talks, a GHG neutrality programme promoting the reduction of greenhouse gas emissions, the EIC Scalator providing curated services for EIC "centaurs" (companies with valuation over €100 million), specific services for early stage innovations and a women innovators programme.



If you want to work with us please get in touch via the contact form of the EIC Community.

CHECK THE EIC BUSINESS ACCELERATION SERVICES CALENDAR

6. EIC DEEP TECH INNOVATIONS FOR RECOVERY

6.1. The health sector after COVID-19

The coronavirus pandemic has affected every area of our lives including our work, our schools and our social life as well. In a crisis like this unity and quick action are key to prevent and minimise damage and speed up the recovery. The main impact of the coronavirus pandemic is on the healthcare system. The death rate of the virus is strongly linked to the availability of hospital care. Many EIC-funded projects have the potential or have been mobilised to curb the pandemic and help the fight against it. Novel medical technologies such as innovative testing have benefitted Europe significantly and are crucial to avoid a relapse or a second wave.

Although medical innovation is the highest priority during a global pandemic, it is still important after COVID-19 is gone. Helping doctors make more precise diagnoses and prescribe more effective treatments improves recovery rate, and lower recovery time. Prevention of major diseases increases the life expectancy and the quality of life for the whole society as well as lowers the burden on the health care system.

Health tech in the EIC Portfolio:

4265 companies

125 Pathfinder projects

€1.3 bn EIC Funding

€2 bn Follow-up investments

EIC Health "Centaurs" and their valuation

Arcam	ARCAM (SE)	€640 m	Additive manufacturing for implants
BIOARCTIC	Bioarctic (SE)	€460 m	Treatments for Parkinson disease
MeMed	Memed diagnostics (IL)	€255 - €380 m	Helping physicians to make faster, better-informed treatment decisions
AGENDIA	Agendia (NL)	€220 - €320 m	Molecular diagnostics and personalised treatment plans for cancer patients
DNA SCRIPT	DNA Script (FR)	€189 - €270 m	Producing synthetic DNA through natural enzymes

Tackling the virus

The EIC has demonstrated its agility and responsiveness during the pandemic. Allocating an extra €150 million for COVID-related solutions to the 2020 march cut-off of the Accelerator programme supported 36 projects tackling all areas of the crisis from treatment and testing to video sharing tools for remote working and home schooling. The EIC Hackathon brought over 20 000 brilliant innovators together with 141 different nationalities who submitted over 2000 solutions. To help the best solutions realise, 2235 partnerships were brokered during the EIC Matchathon. CureVac, supported by the European Commission with €80 million, is developing a RNA based vaccine for the coronavirus. All these solutions make Europe more resilient to and prepared for a potential second wave.

EIC Pathfinder Projects

13 Projects applicable to COVID-19

EIC Accelerator Companies

70 Companies tackling COVID-19

	Osivax (FR)	Vaccines to prevent pandemic and seasonal outbreaks of respiratory viral infections
no viruses 2brain	**NoViruses-2brain (PT)**	''One size fits all'' unique drug to eradicate multiple viral species simultaneously from the central nervous system of co-infected individuals

Norway | **Sector** Healthcare | **EIC funding** €2.5 m

Ellen Cathrine Anderse
CEO

EpiGuard: Infection-proof medical isolation unit is safely transporting COVID-19 patients

EpiGuard's EpiShuttle is an award-winning flexible patient transport unit designed for the safe transportation of highly infectious patients. Developed with the input of medics, patients, and clinical experts, the solution has been used with life-threatening diseases such as Ebola and, more recently, COVID-19. The infection-proof transportation pod doesn't require that healthcare professionals wear personal protective equipment (PPE) throughout the transport, but only when loading and offloading the patient – and they can still provide care and treat the patient through the ports provided. In the last months, this EIC-funded innovation has been used to transport numerous COVID-19 patients. The EpiShuttle is in service by Logan Air, The Royal Norwegian Air Force, the Royal Danish Air Force, the German Air Ambulance DRF, FAI, among others.

"With the EpiShuttle, healthcare professional's safety is the top priority. The EpiShuttle keeps the patient absolutely isolated, providing safer transport, for patients and medical professionals. We see that patient transport has played a significant role in the pandemic response. With sufficient transport capacity, you are able to move patients to areas with less pressure and more available intensive care capacity. The EIC pilot funding has been crucial for us in both developing the EpiShuttle v2 and now help tackle the coronavirus outbreak."

Medical AI

Artificial intelligence is impacting all areas of life including medicine. Machine learning algorithms can be trained to perform time- and labour-intense activities, such as segmenting and classifying cells, and run complex simulations to predict the outcome of treatments. Smart management systems help healthcare workers plan their work to minimise waiting time and improve patient experience. The medical AI market size is growing extremely fast and is forecasted to reach nearly $100 billion by 2027.

EIC Pathfinder Projects

2 Medical AI projects
4 Computer models in medicine

EIC Accelerator Companies

95 AI driven health companies

NURITAS	Nuritas (IE)	Biomolecule discovery in food using artificial intelligence and DNA analysis
BESAFE	BESAFE (ES)	AI enhancement of surgical technology for the reduction of human behaviour-related surgical accidents

Personalised Medicine

Developments in genetics and the Human Genome project have provided an incredible amount of information. It opens up the possibility of predicting the outcome of a treatment on an individual with a level of certainty higher than ever before. Genetic data can highlight mutations that put an individual more at risk of certain diseases and provide information of the general state of health. This information will help patients mitigate risk, prevent diseases and get precise treatment. Due to the prediction and prevention capabilities, personalised medicine has the potential not only to improve patient care but also to reduce healthcare use and costs.

EIC Pathfinder Projects

2 Personalised medicine projects

EIC Accelerator Companies

102 Personalised medicine companies

AVECTAS	Avectas (IE)	Enabling drug developers to manufacture potent engineered cell therapies at therapeutic volumes
ELECTROMed	Electromed (LU)	Electrochemically-enabled high-throughput peptidomics for next-generation precision medicine

6.2. Digital technologies for the recovery

The COVID-19 crisis accentuated the central role of digital technologies in our economy and daily lives, and highlighted the urgent need to speed up Europe's digital transformation. Many companies and individuals in Europe made a major "digital leap" with a historic deployment of remote work, a monumental increase in the digital access to services and a shift to "lights out" factories and supply chains. This transition will continue during the recovery from the COVID-19 induced economic crisis.

EIC Digital "Centaurs" and their valuation

	Relex solutions (FI)	€410 m	Supply chain management and predictive analytics software
HAILO	Hailo (IL)	€220 - €330 m	Specialised deep learning processors to deliver data centre performance to edge devices
	Unbabel (PT)	€220 - €330 m	Online, human corrected, machine translation service
AI	AlphaSense (FI)	€180 - €270 m	Semantic financial search engine for investment professionals
	Almotive (HU)	€180 m	Automated driving technology

Digital tech in the EIC Portfolio:

1954 companies

101 Pathfinder projects

€1.3 bn EIC Funding

€2.2 bn Follow-up investments

Autonomous devices and Internet of things

Autonomous devices are physical robots that are aware of their physical surroundings. They learn from input and experience and are able to do tasks mostly on their own. Some can be as big as factory robots that produce cars, and some can be small like bees that are used to pollinate flowers. Some, like cancer fighting nanobots, are not even visible to the human eye. Independently, autonomous devices can already provide good value but when integrated within the Internet of Things, they can function exponentially better. The IoT can combine the physical and the virtual worlds into a new smart environment, which senses, analyses and adapts, and makes our lives easier, safer and more efficient.

EIC Pathfinder Projects

- **14** Software to create complex machine response
- **10** Human-like behaviour, dreaming or sense of time
- **4** Network of autonomous devices, bio-hybrid devices, new autonomous motion

EIC Accelerator Companies

- **371** IOT
- **40** Autonomous & sensor tech
- **281** Robotics

	Konux (DE)	Combining Machine Learning algorithms and IoT to deliver software-as-a-service solutions for operation, monitoring, and maintenance process automation
	Dream (FR)	Incorporating dream-like processes in robots to consolidate their experience and improve their future ability to learn and adapt

Quantum technologies

The year 2020 is expected to initiate the quantum era with Google announcing its 53-qubit quantum computer in 2019. Quantum computing can speed up the number of algorithms performing computations in a couple of seconds whereas it would take centuries with a classical computer. As the amount of data increases, quantum computing can bring solutions that target the biggest industrial challenges, such as health care and energy. In 2020, the ability to handle big data will be required for cancer treatment, nuclear energy control, and DNA analysis.

EIC Pathfinder Projects

- **15** Quantum computers
- **7** Quantum
- **4** Quantum cryptography

EIC Accelerator Companies

- **25** Quantum technology companies

	Hafnium Labs (DK)	Software that provides reliable physical property data for molecules and mixtures
	Delft Circuits (NL)	Massively scalable quantum hardware solution

Space innovations

Space technologies and specifically space data proved to be very useful during the Covid-19 pandemic. They provided location-based information to ease social distancing and filled up the gap in weather forecasting caused by grounded planes. Up-to-date space data helps the scientific community and public authorities to better understand the consequences of the crisis, to mitigate its potential impacts and anticipate new models for the recovery period. The New Space sector refers to aerospace companies and ventures working independently of governments and driven by commercial ends. It can help develop faster, better and cheaper access to space technologies and space data.

EIC Pathfinder Projects

2 space tech
1 Earth observation
2 satellite safety

EIC Accelerator Companies

52 Space tech
29 Satellite tech
6 Space travel

	Nanoavionics (LV)	Engineering the Future of Commercial Space
	E.T.PACK (ES)	Changing orbit in space using the Earth's magnetic field

Bulgaria | **Sector** Aerospace | **EIC funding** €1.2 m

Raycho Raychev
Founder & CEO

EnduroSat: Access to space redefined

EnduroSat is designing, building and operating high-end NanoSats for a range of space missions. Thanks to the successful market launch of its novel space systems developed during the Phase II SME Instrument project, the Bulgarian start-up established itself as an innovative satellite player. The company is vertically integrated with in-house capability, bringing down the cost of a NanoSat from hundreds of thousands of euros to less than 50 000 EUR for a basic configuration. Through EnduroSat's unique Online Satellite Configurator, customers can build their ideal NanoSat in just a few minutes. This simplifies the mission planning and opens up new opportunities in space for European entrepreneurs, small and medium-sized businesses, educational and research institutions. The EIC-funded company raised a €1 million investment from Freigeist Capital and received €350 000 from the Bulgarian fund Neo Ventures. The founder, Raycho Raychev was also named one of Europe's top innovators under the age of 35 by MIT Technology Review.
http://www.endurosat.com/

"Thanks to the European Innovation Council and networking opportunities provided by the EU Commission, EnduroSat succeeded in scaling up their business and accessing new markets"

6.3. Innovations supporting the Green Deal

The EU's climate goals are very ambitious. The 2030 climate and energy framework aims to reduce greenhouse gas emissions by 40%, increase the green energy share to 32% and increase the energy efficiency by 32.5% by 2030. The European Green Deal targets aim to make Europe climate neutral by 2050. The European Commission tackles the climate challenges at multiple levels: by increasing the share of renewable energy, supporting plastic recycling, transitioning to a circular economy and increasing the energy efficiency of buildings and transport. The coronavirus pandemic has also had an impact on the environment. Reduced transport and travelling and a decrease in construction and production activities have led to a significant drop in carbon emissions and air pollution, especially in big cities. This shows that decarbonising these industries is crucial for achieving our climate goals. EIC-funded innovative new technologies offer ways of replacing combustion engines with electric batteries, fossil fuels with renewable energy and lowering the carbon footprint of many industries, such as construction and agriculture.

Green tech in the EIC Portfolio:

1600 companies

50 Pathfinder projects

€1 bn EIC Funding

€1,15 bn Follow-up investments

EIC Green "Centaurs" and their valuation

infarm	Infarm (DE)	€520 – 760 m	Urban farming services company that develops farming tech for grocery stores, restaurants, and local distribution centres
	Hydrogenics (BE)	Acquired for $290M	Designing, manufacturing, building and installing industrial and commercial Hydrogen Systems
innovafeed	Innovafeed (FR)	€160 - €240 m	Sustainable way of producing protein using regionally available, low-value materials, intended for animal feed and aquaculture
	AMR-G Smart Water Meters (IL)	€145 - €220 m	Water meter add-on that will provide you with maximum data of your water spend
	Microphyt (FR)	€115 - €170 m	Unique solutions to industrialize the production of biomass of species of microalgae of economic interest

Green Energy

Energy supply is the single largest source of carbon emissions. In 2017, it corresponded to the emission of 1.2 billion tonne CO2 equivalent in Europe. The major challenges of transitioning to fully renewable energy sources are two-fold: 1. Currently the efficiency of most renewable power plants is low 2. Most renewable energy sources are not available at all times, therefore fossil or nuclear plants need to support them for continuous power supply. New technologies developed by EIC-funded projects can increase the efficiency of solar panels and hydro plants as well as to harness energy from other renewable sources such as ocean waves. Renewable fuel from artificial photosynthesis or hydrogen can serve as a substitute for fossil fuel.

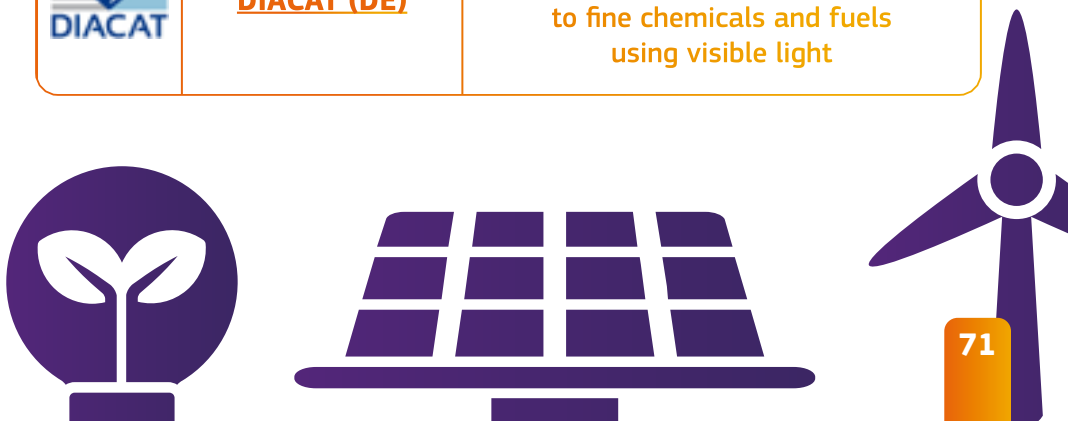
EIC Pathfinder Projects

13 Energy storage and transfer
8 Solar energy
7 Thermal energy

EIC Accelerator Companies

288 Clean energy
162 Energy efficiency
67 Energy storage
116 Waste solutions

	Arkyne Technologies (ES)	Electricity from plant's photosynthesis
DIACAT	DIACAT (DE)	Diamond materials for the photocatalytic conversion of CO2 to fine chemicals and fuels using visible light



Green Transport

Transport is the second largest sector in terms of CO2 emissions. Moreover, combustion engines produce other air pollutants and microparticles that have been linked to respiratory diseases. Here too, innovative companies and research funded by the EIC offer solutions. Electric vehicles and hydrogen engines show a green alternative to combustion engines and efficient smart city management can reduce traffic and increase the use of public transport and car-sharing services.

EIC Pathfinder Projects

5 Renewable fuel
12 Batteries
1 Smart parking

EIC Accelerator Companies

346 Transportation
13 Hydrogen fuel cells
10 Batteries for electric vehicles
47 Smart city

H55	**H55 (CH)**	Electric propulsion system for the air transportation of tomorrow
NeuroMotive	**NeuroMotive (DE)**	NeuroRobotics platform application to traction control for automotive industry

Climate and Environment

Reducing carbon emission and pollution might not be enough to stop global warming from becoming irreversible and prevent species from extinction. Capturing CO2 via artificial photosynthesis or inorganic process are one of the innovative solutions developed by EIC-funded companies. As pollution is growing, and it affects both nature and humanity. Less and less fresh water sources are potable affecting developing countries disproportionately. Novel filtration technologies can remove contamination and give access to clean water. Organic pesticides are an alternative to chemicals that poison the ground water.

The global plastic production in 2015 was 322 billion tonnes and only 30% is recycled. Innovative solutions help find ways to reuse and repurpose more of our plastic waste and break down the plastic using for example microorganisms that turn plastic into materials useful to the chemical industry.

EIC Pathfinder Projects

3 Clean water
2 CO2 capture
3 Fighting pollution

EIC Accelerator Companies

116 Waste solutions
107 Water
62 Climate-related
23 Fighting pollution

Lactips	**Lactips (FR)**	Produces thermoplastic pellets based on milk protein
	RADICAL (IE)	Fundamental breakthrough in detection of atmospheric free radicals

Future of solar energy supported in EIC Pathfinder lab and Accelerator

The European Innovation Council promotes the Green Deal principles.
In energy sector, both the Accelerator and Pathfinder programmes reap success.

a-leaf **ES, CH, NL, AT, DE, FR, IT** | **EIC funding** €7.9 m

A-LEAF is a Pathfinder project, which got inspiration from the natural process of photosynthesis carried out by green plants and oriented its research on developing an artificial leaf capable of producing fuel from sunlight, carbon dioxide and water. This ground-breaking technology could change the sustainability paradigm, by transforming carbon dioxide into valuable chemical fuels using a clean, fast and cost-effective process.

RatedPower **Spain** | **EIC funding** €1.6 m

RatedPower, a Spanish SME supported by EIC Accelerator developed a software allowing automation of utility-scale photovoltaic power plant analysis, design and basic engineering process, while making it much faster and reliable. Since then, RatedPower has gained multiple awards recognition regarding the market potential of such a tool.

"EIC funding has helped RatedPower to: improve and expand its product (pvDesign), making possible to develop faster and better new features; grow its team´s size and quality; and promote its brand and image across different markets."

Andrea Barber
CEO RatedPower

Methodology Note

The data about private investment has been collected in collaboration with Dealroom.co, a Dutch company using big data technologies to scan the Internet and other sources in search for publicly available data about innovative companies. It monitors the progress of private companies by tracking indicators of innovation and growth, such as investments (both venture funding and to a lesser extent government grants), exits (IPO, merger & acquisition), accelerator support etc. The reliability of the information has been confirmed through verifications. It covers 85% of all transactions, given that some investment rounds are not disclosed. Therefore, the analysis in this report provides an estimated overview of the situation, and the actual numbers are likely to be higher overall.

The information regarding financial performance of companies comes from the obligatory self reporting of companies as well as from Orbis database[5], which compiles different sources of official information, including national registries.

The data about Pathfinder patents and publications come from project report. Moreover the report uses information from Innovation Radar experts' assessment. This is a tool providing insights about the innovations being created within the Pathfinder projects. The progress of all EIC Pathfinder projects is systematically monitored by an Innovation Radar expert. The expert fills in a questionnaire that aims at identifying potential innovations, level of maturity of the technology and its exploitation, market competition and societal dimension.

[5] *https://orbis.bvdinfo.com/version-2018410/home.serv?product=OrbisNeo*

EA-03-20-597-EN-N

Publications Office

ISBN 978-92-9460-218-3
DOI 10.2826/770124