eit Climate-KIC

Work with us to achieve **net zero**, in time

Funding **systems change** is today's most important innovation

Climate-KIC is supported by the EIT, a body of the European Union

EIT CLIMATE-KIC

EIT Climate-KIC is supported by EIT, a body of the European Union. We are active in 39 countries globally, with 28 offices across Europe, including, Amsterdam, Bologna, Paris, London, Warsaw and Berlin. Our national centres develop local innovation ecosystems and partnerships and link these into our pan-European innovation community. Our Brussels office helps coordinate our activities with other EU initiatives.

EIT Climate-KIC supports a growing number of activities in central-east, south and south-east Europe through the EIT Regional Innovation Scheme (RIS).

We are one of eight knowledge and innovation communities (KICs) supported by EIT. We build on the foundations established through EIT's cross-KIC Global Outreach Programme in the U.S., Israel and China. We continue to develop joint programmes with Climate-KIC Australia.

We also operate through EIT Climate-KIC partners who have established a presence in international hubs, striving at all times to maximise the connectivity between the European innovation ecosystem and those in countries outside Europe.

www.climate-kic.org

@ClimateKIC

"If we are to limit global warming to within a 1.5°C target, global greenhouse gas emissions would need to reach net zero by around 2050 at the latest.

The recent IPCC Special Report on 1.5°C calls for a 45–50% reduction in GHG emissions globally no later than 2030 if we are to have a hope of staying below 1.5°C (IPCC, 2018).

Given that low-income countries will face additional challenges and require transition through less stringent emissions targets, and in a context of uncertainty with respect to US commitment to the Paris Agreement, a realistic global pathway to the 1.5°C target would call for Europe to assume more responsibility and leadership, achieving net-zero emissions by the mid 2030s.

Such a goal is significantly more ambitious than currently agreed European targets, and very far from the progress being made so far.

This is the case for broad-based systems innovation. EIT Climate-KIC's starting point is that achieving the Paris Agreement's 1.5-degree target requires a fundamental transformation of economic, social and financial systems."

From: *Transformation in Time*, EIT Climate-KIC's Strategy for 2019–2022

"We have learnt that a 'business as usual', supply-focused approach to innovation, in the context of public, or even philanthropic funding, runs the risk of bias towards discrete, single point solutions of an incremental nature.

Such solutions are unlikely to address climate change at the speed and scale we need.

EIT Climate-KIC has therefore chosen to position itself as an orchestrated innovation ecosystem that connects 'demand' and 'supply' in catalysing transformational systemic change, working closely with demand-side actors and those with high ambition for change."

From: *Transformation in Time*, EIT Climate-KIC's Strategy for 2019–2022

Systems change not climate change

The time for incremental change is over

EIT Climate-KIC is Europe's largest climate innovation agency focused on the rapid, broad-based systems transitions we now need to build prosperous, resilient, net-zero-carbon societies in time. We offer funders a framework for realising large-scale climate impact through collaborative investment and innovation.

Across most industries in Europe, the 'easier stuff' on the path to net zero has already been done, mostly through cleaner energy supply and efficiency.

What lies ahead is unprecedented and more difficult: structural change in social, economic and financial systems; fundamental transformations of city systems, industry and land use. New concepts of value and relationship.

Innovation is essential, but not as we have been doing it. We need innovation to catalyse systemic change.

EIT Climate-KIC uses a portfolio approach to the development and deployment of innovation to achieve systemic change.

We build portfolios of deliberately chosen innovations that work across technology, policy, finance, citizen engagement and other relevant levers of change.

These portfolios test diverse ideas and approaches simultaneously in order to generate options and pathways for the transformation of whole systems and value chains.

We invite new partners and funders to help shape and scale these portfolios for large-scale climate impacts.

Why systems innovation?

'Innovation-as-usual' – typically siloed and focused on 'supplying' the market with technology-led solutions – is not delivering a 1.5 degree world. We need a new model of innovation to tackle climate change.

> "Limiting global warming to 1.5°C would require rapid, far-reaching and unprecedented changes in all aspects of society… [including] transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems."

IPCC Special Report, Global Warming of 1.5 °C, Summary for Policymakers

Getting real about 1.5 means that richer nations will need to carve out ambitious pathways to zero along the safest (most ambitious) possible courses outlined in the IPCC's Special Report. To do its fair share, Europe would need to achieve net-zero fossil carbon emissions by the mid-2030s. This is a much more ambitious pathway than agreed EU targets and very far from the progress being made so far.

A target of 1.5 is feasible. But not without a fundamental transformation of major systems in the real economy, linked to the pricing of externalities, which will require myriad innovations in the financial system itself.

To do this, we need a new model of innovation: one that is designed to generate options in the face of uncertainty and diversity, and to test for integrated and exponential solutions to address the complex, multi-faceted nature of the changes we need to make.

This is about using innovation to trigger evolutionary dynamics in the systems that make up our world so that transformation in time is possible.

Using systems innovation as a key tool, our aim is to catalyse change in whole cities, regions, industries and value chains by 2035, working with partners to develop and scale ambitious, mission-led programmes.

What changes are we working for?

Our vision is of a prosperous, inclusive, climate-resilient society and a circular net-zero-emissions global economy. We focus efforts on five overarching systems, and twelve related innovation priorities (impact goals).

FINANCE
Our obsession with short-term returns must be replaced with capital designed to value the true costs of climate change and the social, economic and ecological benefits of 'multi-solving' for clean air, health and liveable cities, through systems-literate investment.

CITIES
We are working to catalyse integrated solutions to realise prosperous, green, resilient, livable cities, with zero carbon use in mobility and the built environment and optimum use of nature-based solutions.

INDUSTRY
Concrete alone contributes 5% of global GHGs. Cleaner materials and circular production systems could generate trillions in net economic benefit. Place-based innovation is also needed to support regions still economically dependent on coal and oil.

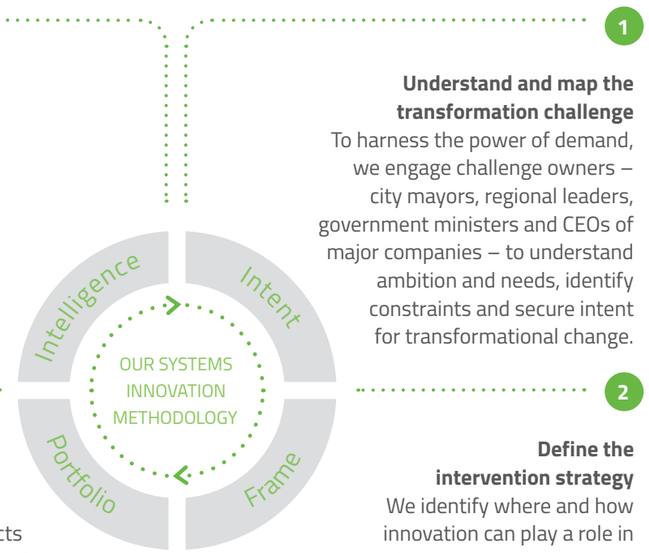
LAND USE
We are working for net-zero carbon emissions in forestry, agriculture and other land uses, including through: climate-smart agriculture and reformed food systems; carbon sinks; and bio-based substitutes for the fossil carbon used in cement, plastics and fuels.

WATER
We plan to introduce a fifth focus on water and marine systems and are already planning a deep demonstration of how ambitious maritime hubs can be catalysts for reversing the fast-growing emissions from international shipping.

1. **Promote retrofit and decentralised energy**
2. **Nurture nature-based solutions**
3. **Accelerate sustainable urban mobility**
4. **Make agriculture climate-smart**
5. **Reform food systems**
6. **Nurture forests in integrated landscapes**
7. **Build circular material flows**
8. **Reduce industry emissions**
9. **Reboot regional economies**
10. **Mainstream climate in financial markets**
11. **Democratise climate risk information**
12. **Foster bankable green assets in cities**

How we trigger systemic change

EIT Climate-KIC is a delivery vehicle for systems innovation. Through framing ambition and intent, systems mapping, portfolio-building, demonstration, sense-making and orchestration, we offer systems innovation as a service.



1

Understand and map the transformation challenge
To harness the power of demand, we engage challenge owners – city mayors, regional leaders, government ministers and CEOs of major companies – to understand ambition and needs, identify constraints and secure intent for transformational change.

2

Define the intervention strategy
We identify where and how innovation can play a role in catalysing change dynamics. We design portfolios around key leverage points and structural changes, working with a community of innovators.*

*Here we are able to build in learnings from our 1500+ innovation projects, 1500+ start-ups, almost 400-member organisations and 17,000 Alumni.

3

Orchestrate a portfolio
For each challenge, we build a portfolio of 30 – 100 diverse but connected innovation projects designed to address leverage points identified in earlier stages. Our portfolio approach results in a 'portfolio of portfolios' to address 'systems within systems'. Explicit learning – within and across portfolios – can catalyse change through unexpected combinations.

4

Sense-making and feedback loops
We generate insights and actionable intelligence to accelerate learning about how to achieve transformation at scale. Feedback loops inform dynamic management of innovation options.

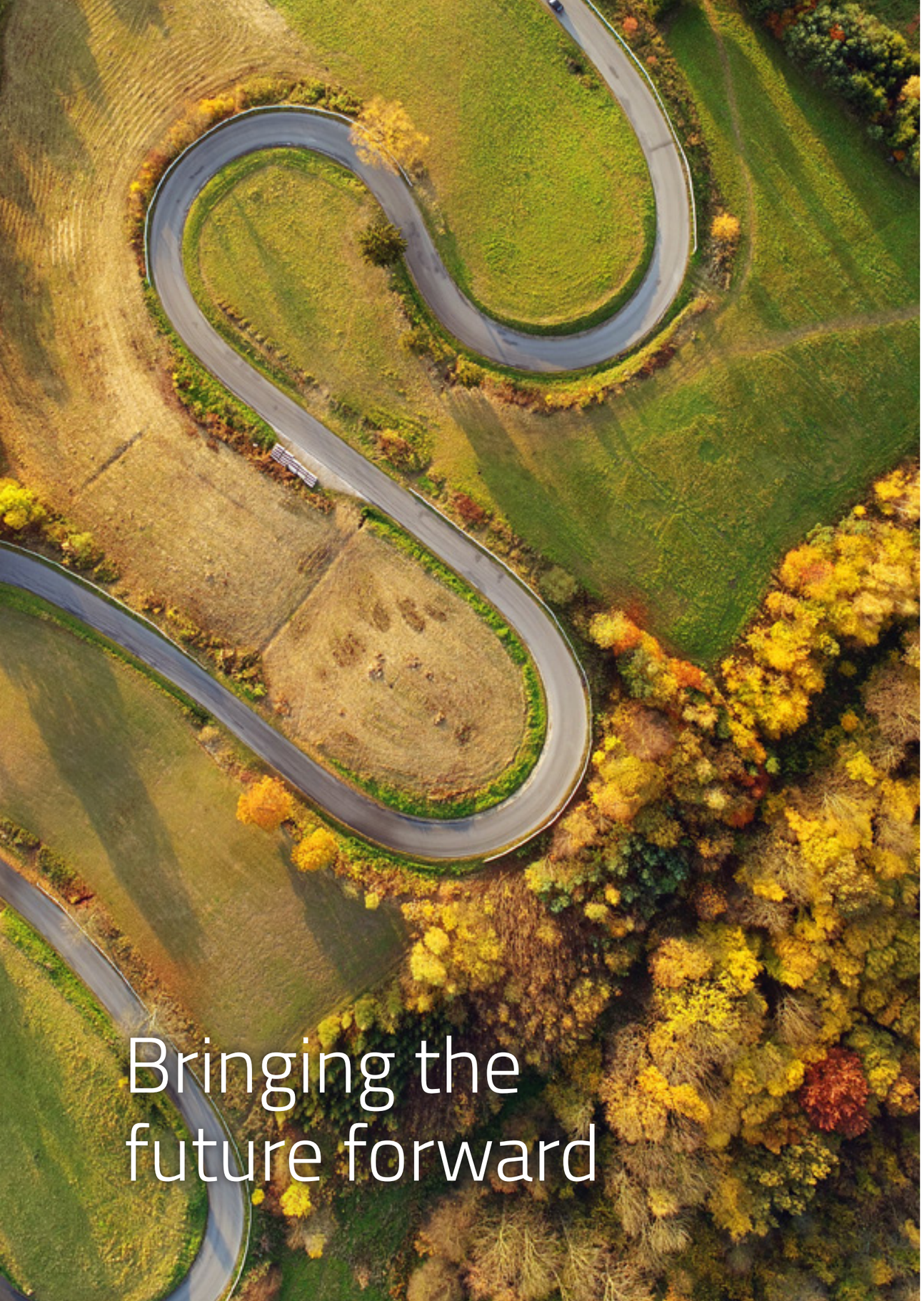
Levels of change

We address complexity and systems dynamics by working at many levels. We develop portfolios at the level of districts, cities, countries, regions, sectors and value chains.

Levers of change

Systems innovation is not limited to technological improvements. It acts on a wide array of change levers all at once, testing for possibility, connecting different approaches to learn from one another, looking for integrations, mash-ups and exponential effects. Portfolios may incorporate activities to address:

- Behaviour
- Citizen engagement
- Finance
- Market structures
- Organisational governance
- Policy and regulation
- Production
- Skills
- Technology
- … and other levers of change.



Deep demonstrations of systemic change

Earlier this year, EIT Climate-KIC launched eight 'Deep Demonstrations' as a test bed environment for the sorts of '1.5-consistent systems transitions' called for by the IPCC.

> "Deep demonstrations are intended as inspirational examples of what is possible at the level of whole systems when innovation is orchestrated, collaborative and mission-led. They represent the 'growth edge' of our strategy for tackling climate change through innovation."
>
> Kirsten Dunlop, CEO of EIT Climate-KIC

Our deep demonstrations provide a test bed for tackling multiple societal challenges in an integrated, holistic way. **Healthy, Clean Cities** looks at waste, mobility, heat, power, buildings, infrastructure, fuel poverty, skills, jobs, well-being, etc., as a set of interrelated challenges. It does this across multiple cities in order to speed up learning, scale and impact. Our food-focused demonstration works at the level of a global value chain. It looks at hunger, obesity, health, habits, perceptions, production, distribution and ecological degradation as connected challenges.

Following our systems innovation methodology (see page 8), we work with Europe's most ambitious 'challenge owners' to understand their 'problem space'. 'Designers' help us map the system and create a portfolio of intervention positions and leverage points. We match this demand with supply. To activate a live portfolio of projects we search for multiple innovation solutions and possibilities, and we launch calls for new and unexpected ideas, shaped by what we learn on the ground.

Sense-making and learning are a critical component of our deep demonstrations. Complex systems are characterised by evolutionary dynamics capable of amplifying and accelerating change. We build in deliberate learning about the effects of interventions and combinations of interventions on whole systems. In this way we create an evidence base for decision-making, both within the demonstrations themselves and for wider policymaking, with the aim of driving rapid large-scale change.

Deep demonstrations are our way of accelerating learning about how to change the world in the context of urgency and radical uncertainty. We invite partners and funders to expand and progress this initiative.

DEEP DEMONSTRATIONS

Healthy, Clean Cities

Cities face an enormous challenge in becoming resilient, healthy places to live, while reaching net-zero emissions in just a few years. EIT Climate-KIC is working with ten of the most ambitious mayors and municipalities in Europe to design portfolios of joined-up innovations capable of unlocking wholesale transformation across all city systems – from mobility to waste to energy to health and the built environment. Our first cohort of partners includes Amsterdam, Edinburgh, Copenhagen, Helsinki, Krakow, Madrid, Malaga, Malmö, Milan and Vienna.

Long-termism

Short-term thinking in investment cycles and in ideas of economic value are acting to prevent the 1.5 °C transition we need. Transformation of major systems in the real economy – agriculture, transport, energy, manufacturing, built environment, etc. – will require myriad interventions and innovations in the financial system. This deep demonstration aims to work with some of the most powerful 'problem owners' in this space – from the school children who need us to adopt long-term thinking to pension funds to the OECD – to embed new concepts of value, monetisation and externalities in the financial system, and to address the underlying behaviours and mindsets – including short-termism – that govern our choices and decisions.

Resilient Regions

The impacts of climate change involve slow-onset changes, extreme events and increasing systemic risks. Some regions of Europe are particularly exposed to these impacts due to the make-up of their landscapes, economies and societies. EIT Climate-KIC will take a systems innovation approach to forging resilience in these regions. This deep demonstration is designed to create a transformational impact by shifting regions' hazard-by-hazard risk reduction practices to a state where people, communities, and systems are able to withstand and bounce back from shocks, persist through slow-onset stresses and transform through crises. Early partners include regional governments in Andalusia, Nouvelle-Aquitaine, the Dolomites and Glasgow.

Landscapes as Carbon Sinks

Increasing rural depopulation in Europe, and economic practices that mine soils and landscapes for profit, are causing land to be sources of emissions, not sinks. Lack of land management is also raising wildfire risk that can create bursts of emissions, whereas opportunities for carbon sequestration are missed. Deep demonstrations of turning landscapes from carbon sources to sinks will need to tackle a lack of investment, forge new social contracts with soil and forests, and line-up value-chain incentives. Current partners include Chalons-en-Champagne, a French landscape ecosystem, and the Government of Scotland.

Climate-friendly Food Systems and Diets

Whether it's widespread plastic packaging, high levels of food waste or diets high in meat consumption, our food systems are incompatible with a 1.5° C future. The farming sector alone accounts for approximately one third of global GHG emissions. To reform our food system and boost global health we must tackle food production, distribution and consumption, as well as metrics, policies and habits. We will need to work with people and places and at the level of global value chains. This deep demonstration aims to catalyse a shift towards a sustainable, healthy food system that can feed future generations within planetary boundaries. IKEA – representing retail and consumer behaviour – is our first challenge owner. We will be looking to work with additional challenge owners to address four areas of change within the food system: primary production; food and feed processing and food supply chains; retail and consumer behaviour; and policy and public procurement.

Just Transitions of Heavy Industry Regions

Many regions and people across Europe still rely on economies that are incompatible with tackling climate change. These can be coal producing regions, or regions with polluting heavy industries. People and economies engaged in these sectors are therefore highly vulnerable during the transition to a decarbonised future. Inclusivity, and climate, social, economic and democratic justice are vital to the success of rapid structural change. EIT Climate-KIC's deep demonstration of Just Transitions will build into a Just Transformation movement, with the aim of demonstrating that such just transformations are indeed possible. We are working with pioneering and ambitious challenge owners across Europe to achieve democratic and inclusive transformations of whole regions. The movement will put the voices of citizens, workers and youth at the core of regional economic transformation. Our first partners include regional governments in Silesia in Poland, Mondragon in Spain and Emilia Romagna, Italy.

Circular, Regenerative Economies

We are working with the Government of Slovenia in a deep demonstration of rapid change to a circular and regenerative economy and society. They have identified circular economy as a strategic development priority to ensure a prosperous future and high quality of life for Slovenian citizens, and have articulated the ambitious and inspiring aim to become the world's first fully circular national economy. Innovation will tackle material production and waste flows across four key economic systems. We are also in early stages of a partnership with the Government of Bulgaria.

Resilient, Net-Zero-Emissions Maritime Hubs

We are working with ambitious partners on land (ports) and at sea (shipping industry) who share an ambition to create a circular, inclusive, net-zero-emissions maritime sector. The maritime sector accounts for 90% of global trade and 3.1% of global GHG emissions – a figure projected to increase threefold by 2050. Ports are places where multiple systems collide – shipping, energy, waste, tourism and other transport for example. They are emissions hotspots in themselves, but also hubs with the potential to effect enormous change. We are working with ports in Valencia and Piraeus as well as the Cyprus Ship Registry, through the Cyprus Deputy Ministry of Shipping.

What we bring to the climate challenge

EIT Climate-KIC brings a powerful innovation infrastructure. We are a growing community that is also growing in influence as the need for systems innovation and systems transition is called out by IPCC reports, national and European policy.

Background and track record

EIT Climate-KIC was established in 2010 and is still predominantly funded by the European Institute of Innovation and Technology (EIT), a body of the European Union. Our founding purpose was to bring together businesses, research centres, higher education and the public sector to tackle climate change through innovation.

In 2017 our approach to innovation evolved to fully acknowledge and address the challenges of systemic change, social equity and sustainable prosperity at the heart of the climate change challenge.

We bring a 10-year track record of learning what works and what does not. We have learnt that a 'business as usual', supply-focused approach to innovation, in the context of public, or even philanthropic funding, runs the risk of bias towards discrete, single-point solutions of an incremental nature. Such solutions are unlikely to address climate change at the speed and scale we need.

EIT Climate-KIC has therefore chosen to position itself as an orchestrated innovation ecosystem that connects 'demand' and 'supply' in catalysing systemic change, working closely with demand-side actors and those with high ambition for change.

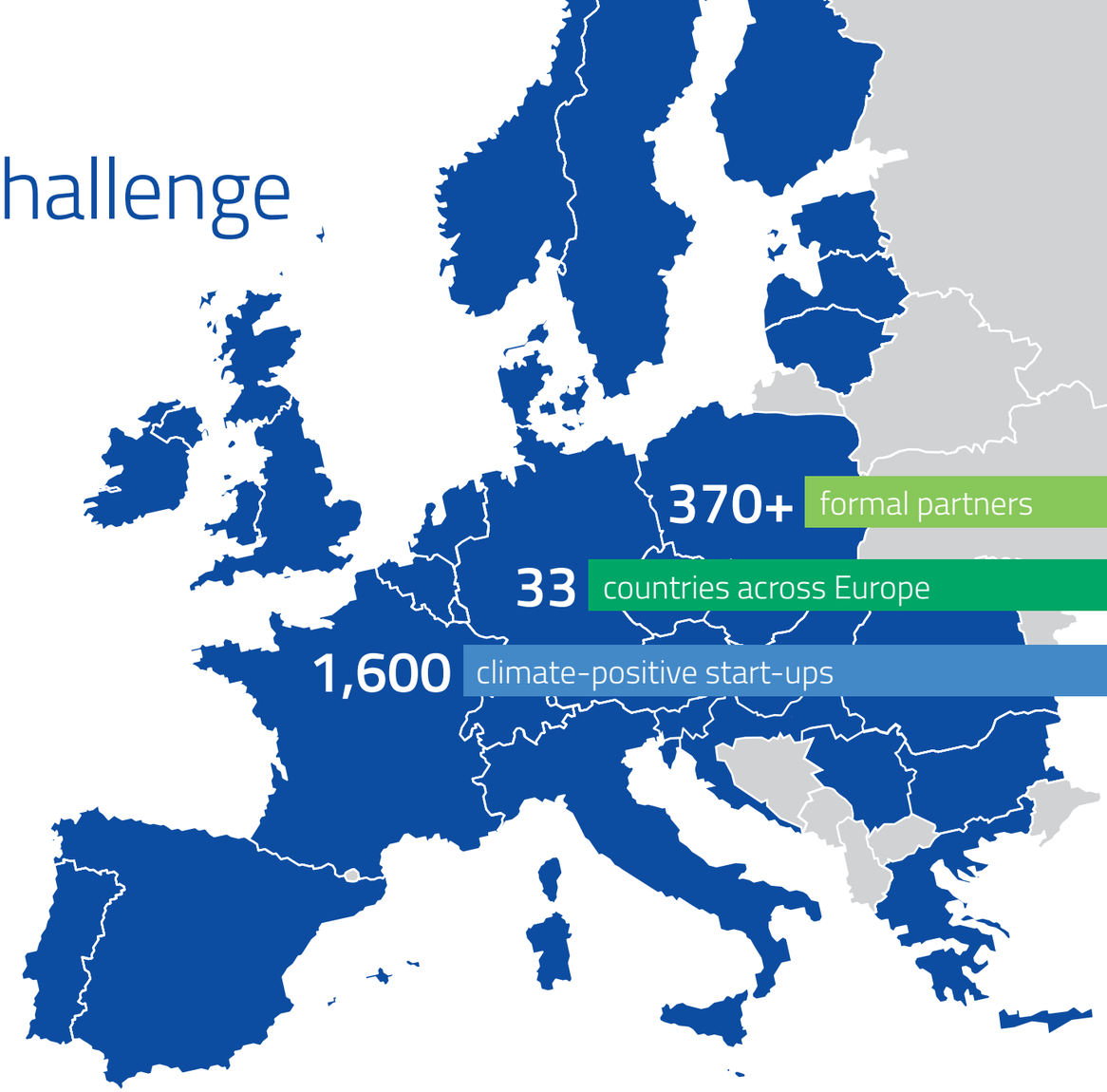
> Today we are an unrivalled community of changemakers, committed to working with a systems logic, made up of funders and investors, large and small companies, scientific institutions and universities, cities, regions and other public bodies, as well as start-ups and students.

We are a European innovation community with a global reach

EIT Climate-KIC is a strong voice for transformative systems innovation within Europe and beyond. We offer:

- **370+** formal partners in **33** countries across Europe
  Our partners are dynamic companies, the world's leading universities and research centres, forward-looking cities, NGOs and public-sector organisations.
- **1,600** climate-positive start-ups
  We deliver our Start-up Accelerator in 31 locations in 29 countries. Our start-ups have raised over €1bn in investment since 2012.
- A network of **high ambition** cities
  We engage hundreds of major cities across the world via programmes like Reinventing Cities (with C40), our award-winning Climathon, and 'deep demonstrations' of whole city transformation.
- **44,000** alumni
  Our active professional and graduate alumni community is seeding the world with networked climate leaders and systems thinkers.
- **Big** allies
  We work with big strategic allies to amplify our reach and impacts, including:

WWF · C40 CITIES · EAT · ADAPTATION FUND · DRAWDOWN · MISSION INNOVATION · SOLARIMPULSE FOUNDATION



- **Solutions**
  Together our community has developed 595 climate-positive products, services and approaches, leveraging over €3.4bn in climate funding since 2010.
- **Systems innovation** as a service
  We offer expertise, methodology, convening power, facilitation and access to sources of innovation for orchestrating change in places and across value chains. This includes toolkits for mapping, scenario-building, ideation and decision support. We run tried and tested programmes to trigger whole-systems impacts.
- Trusted **grant management**
  In addition to EIT, we are currently working with 20 other funding partners to deliver ambitious innovation portfolios for systemic change, including:

MAVA · ERGO · Munich RE · Nordic Innovation · Stadt Zürich · City of Vienna

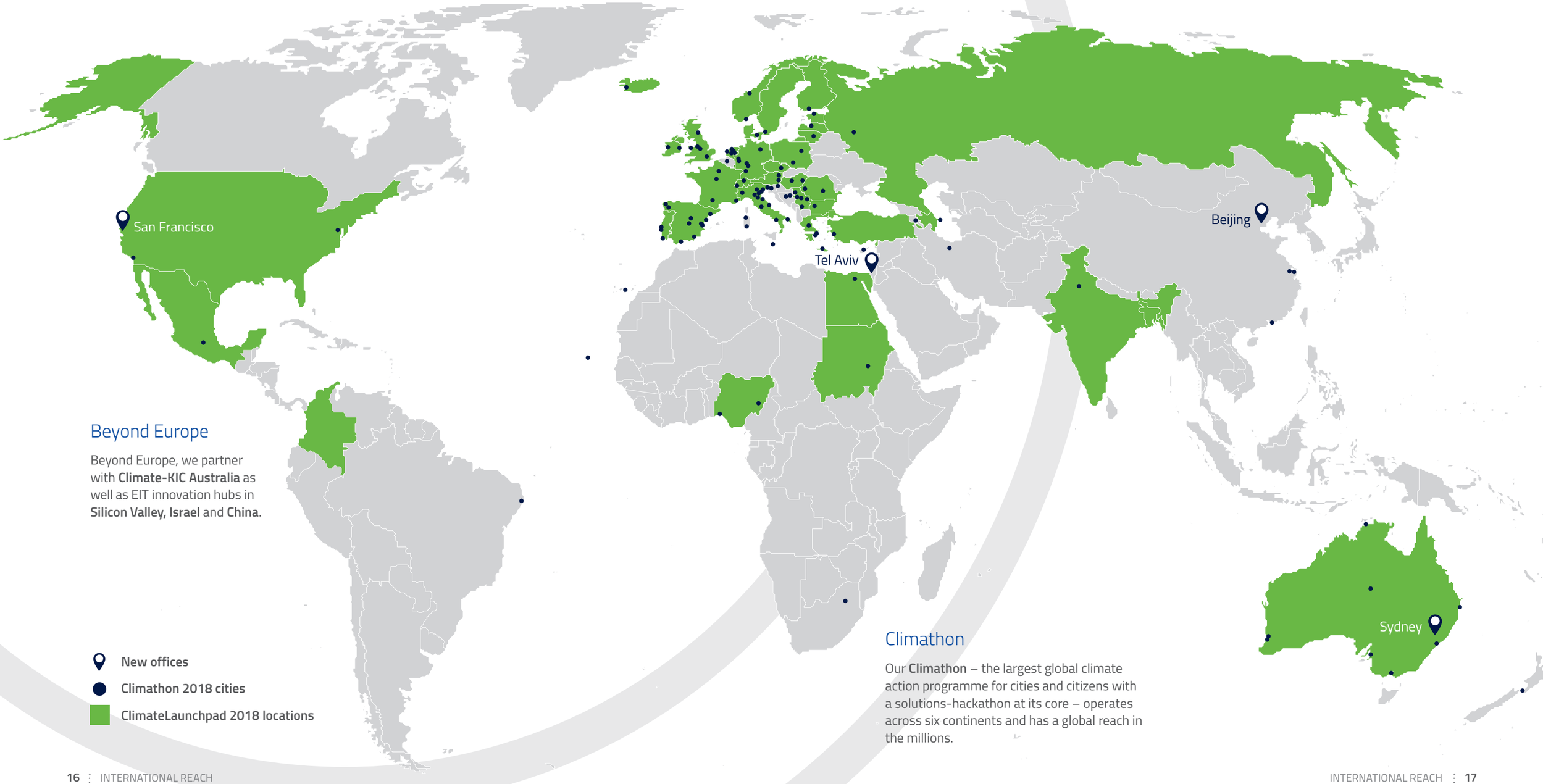
International reach

We are increasingly active outside of Europe. EIT Climate-KIC is building on the foundations established by EIT's cross-KIC* Global Outreach Programme in the U.S., Israel and China, and we continue to develop joint programmes with Climate-KIC Australia.

* EIT Climate-KIC is one of eight knowledge and innovation communities (KICs) launched by EIT.

ClimateLaunchpad

Our **ClimateLaunchpad** – the world's biggest business ideas competition – runs in over 50 countries worldwide.



Beyond Europe

Beyond Europe, we partner with **Climate-KIC Australia** as well as EIT innovation hubs in **Silicon Valley, Israel** and **China**.

New offices

Climathon 2018 cities

ClimateLaunchpad 2018 locations

Climathon

Our **Climathon** – the largest global climate action programme for cities and citizens with a solutions-hackathon at its core – operates across six continents and has a global reach in the millions.

A sample of projects in our portfolio

With our partners, EIT Climate-KIC manages a portfolio of innovations and interventions to catalyse systemic change. Many of these projects feed into deep demonstrations of transformative change. These pages offer a sample of individual projects, grouped by focus area.

FINANCE INTERVENTIONS

FINANCE // PROGRAMME

City Finance Lab

EIT Climate-KIC's City Finance Lab will leverage additional climate finance for cities. It is Europe's first dedicated platform for developing innovative finance solutions for green urban projects. It was established by EIT Climate-KIC and South Pole to address the estimated $1.1 trillion funding gap required to ensure that future urban infrastructure is low-emission and climate resilient. By providing technical assistance to developers, it is building a pipeline of bankable urban mitigation and adaptation projects.

FINANCE // PROJECT

Financial Centres for Sustainability (FC4S)

EIT Climate-KIC, with our partner Sustainable Nation Ireland, established the EU Hub of the UN's Financial Centres for Sustainability Network, to engage the region's 30+ financial centres. The Hub was launched at our finance-focused Climate Innovation Summit in Dublin in 2018. The EU Hub (#EUFC4S) will be a key pillar of the UN's global #FC4S network. It will pilot the world's first green benchmark for financial centres – supported by Climate-KIC, developed by PwC and I4CE and launched at the One Planet Summit.

FINANCE // START-UP

CRAMS by Carbon Delta

Carbon Delta went through EIT Climate-KIC's Start-up Accelerator programme. In May 2019 they launched their new climate risk assessment metric – Climate Risks for Asset Managers (CRAMs). CRAMS translates major climate policy and physical climate impact risks into company risk assessments. It is ideally placed to help investors develop a TCFD aligned disclosure approach. In 2019 Carbon Delta was acquired by MSCI Inc., taking climate risk assessment to the institutional market globally.

GLOBAL FOOD VALUE CHAIN INTERVENTIONS

FOOD / PROJECT

WINnERS

Winners (known as 'WINnERS' to denote Weather Index-based Risk Services) brings together a pan-European partnership of academics, climate scientists, insurance industry experts and global food buyers to build products and services that protect both food buyers and producers from weather- and climate-driven risks. The project builds resilient agricultural supply chains by modelling weather and climate risk exposure through state-of-the-art technology; investing in smallholder farmers to improve farming practices and credit worthiness; sharing risk across supply chain actors with weather and climate index-based insurance services; and promoting supportive regulatory environments for insurance products in developing countries.

FOOD // PROJECT

CSA Booster

The Climate-smart Agriculture Booster, or CSA Booster, is Europe's leading innovation hub for the transition to climate-smart agriculture. This ecosystem of public- and private-sector partners incubates and scales innovative and sustainable CSA solutions and accelerates investments into CSA using a variety of different levers: Agrisource is Europe's first open innovation platform dedicated to climate-smart agriculture; the CSA Booster MOOC is a free massive open online course available in four languages; CSA regional hubs have been established in four countries. Most importantly, CSA Booster has developed innovations in soil resilience and carbon sequestration, precision and digital agriculture, and sustainable water and land use practices.

FOOD // START-UP

Ÿnsect

In February 2019 Ÿnsect announced that it had raised €110 million through a variety of investors based in France, Belgium, the United Kingdom, Hong Kong and Singapore. The EIT Climate-KIC supported company manufactures insect products used to make pet food, as well as ingredients for aquaculture and plants. The significant injection of funding has been labelled the largest ever agri-tech investment outside the United States and represents a major opportunity to shift food systems to trigger significant change in the way the global economy sources protein.

CIRCULAR INDUSTRY INTERVENTIONS

CIRCULAR INDUSTRY // PROJECT

RENJET

CO2 emissions for the aviation sector are close to one billion tonnes per year and look set to double by 2050 without countermeasures. As much as 95% of those emissions come from the combustion of fuel. The RENJET project has brought together knowledge institutes, start-ups and established corporates to develop financial and business models to generate demand – with the support of the potential end users of renewable fuel: the Dutch airport of Schiphol and KLM, the main carrier airline of the Netherlands. To direct resources towards renewable jet fuel, the project partners took a 'supply chain approach', presenting a practical model on how renewable jet fuels could be delivered directly to selected airports.

CIRCULAR INDUSTRY // PROJECT

CICERONE

CICERONE is addressing a major challenge: the fragmentation and lack of coordination of circular economy R&I funding in the EU. Thousands of individual projects are being financed to catalyse a switch to a circular economy, but a European joint strategy and systemic approach is needed for impactful transformation. To fill this gap, CICERONE is developing common priorities for circular economy across all EU countries, and building a platform for public- and private-sector funders to jointly plan and finance future initiatives. CICERONE is funded by the European Commission's Horizon 2020 programme. **www.cicerone-h2020.eu.**

CIRCULAR INDUSTRY // START-UP

Climeworks

Climeworks, incubated in the EIT Climate-KIC Start-up Accelerator programme, is now a listed company with scalable technology already operating in Switzerland, Iceland and Italy. In 2019 it was named one of the top three CO2 Direct Air Capture technologies by Bill Gates. EIT Climate-KIC assumes the risk and provides business creation support for early ideas that can make a big change – which includes helping big ideas to be embedded in place-based and value-chain transitions, to trigger maximum systems value.

CIRCULAR INDUSTRY // START-UP

Chrysalix Technologies

Chrysalix Technologies offers a bio-based alternative to petro-chemicals. Their proprietary process enables the use of any type of woody material – including agricultural by-products and (currently unrecycled) treated waste wood – for the large-scale production of bio-derived materials, chemicals and fuels. In 2018 this multi-award-winning start-up received a voucher to carry out new scale-up work with two industrial partners and funding from the European Union's Horizon 2020 research and innovation programme.

CITY-LEVEL INTERVENTIONS

CIITIES // PROJECT

Merezzate+

Merezzate+ is a living lab for the integration of clean energy, sustainable mobility and circular economy into a new urban-development model based on user-centred design and social inclusion. The approach will be tested in Milan's Merezzate district, where the intervention foresees the construction of about 800 apartments. The demonstration will offer guidelines on the transferability and replicability of the model, both in and outside of Italy.

CITIES // PROJECT

Green Procurement for Zero Emission Construction Sites

Construction sites are big contributors to CO2 emissions and also have a major effect on air quality in cities due to other harmful pollutants. The Zero Emission Construction Sites project looks into how construction sites can be transformed into zero emission sites, thus helping to 'lay the foundations' of carbon neutral cities. Through a dialogue-based approach, the Zero Emission Construction Sites project is seeking solutions to these issues in close collaboration with Oslo, Copenhagen, Stockholm and Helsinki.

CITIES // PROJECT

1 Million Near-Zero-Energy Homes in Europe by 2023

1 Million Homes is a mission-led programme created with several partners and cities. It aims to engage citizens in deep retrofits of their homes, neighbourhoods and cities – including opportunities to generate income from selling energy. Social innovation is a key component, as is innovation in finance and communications. The first cohort of cities will come from the Benelux region as well as cities in Central and Eastern Europe.

CITIES // PROJECT

Sustainable Historic Districts

The Sustainable Historic Districts project takes a holistic approach to addressing common challenges in the historic districts of six cities from five EU Mediterranean countries: Lisbon (Portugal), Valletta (Malta), Nicosia (Cyprus), Ptuj (Slovenia), Savona (Italy), and Sassari (Italy). The project partners are working closely with EIT Climate-KIC to put sustainable development at the heart of the districts and to adopt integrated approaches instead of focusing on isolated challenges. In this way the intention is to transform these historic districts towards fairer, more sustainable, climate-resilient and inclusive communities.

EIT CLIMATE-KIC INNOVATION ASSETS

EIT Climate-KIC's entrepreneurship, education and citizen engagement initiatives – tried and tested over the past 10 years – are now fully integrated activities in our portfolios. Increasingly, we are shaping these activities according to local and systems needs.

ENTREPRENEURSHIP // COMPETITION

ClimateLaunchpad

The mission of ClimateLaunchpad, the world's largest green business ideas competition, is to unlock cleantech potential that addresses climate change. The competition creates a stage for those ideas, operating in more than 50 countries worldwide to support hundreds of new climate start-ups each year. In many parts of the world, particularly developing countries, it is the only platform for supporting these businesses and is particularly active in Africa, Asia and Latin America as a result.

ENTREPRENEURSHIP // ACCELERATOR

Start-up Accelerator

We run Europe's largest start-up accelerator for climate-positive entrepreneurship to nurture and grow the companies whose innovations and business models will enable us to achieve the 1.5° target. The programme currently operates in 31 locations in 29 countries. Successful alumni of our programme are featured in our online investor marketplace, which connects them with investors. Visit: climate-kic.org/marketplace.

CITIZEN ENGAGEMENT & INNOVATION

Climathon

Climathon is a year-round programme with a powerful solutions-hackathon at its core. It empowers citizens, city leaders and local organisations to come together to develop solutions to city climate challenges. In so doing it generates projects, supports climate-positive businesses and addresses local policy changes. Powered by dynamic local organisers, Climathon events have spread to over 140 cities on six continents. EIT Climate- KIC has ambitious growth plans for Climathon to reach 1000 cities and 100,000 participants within three years.

EDUCATION // SUMMER SCHOOL

Journey

EIT Climate-KIC's Journey is the world's biggest climate innovation summer school for graduates and young professionals. It offers immersive, action-oriented, transformative learning experiences to over 400 people each year, through a series of challenge-focused multidisciplinary learning labs. All 4-6 week Journeys culminate in Community Summits, where EIT Climate-KIC partners meet the future generation of climate leaders and hear their pitches. The Journey has been running since 2010 and has generated 480 climate-positive ideas.

EDUCATION // PROFESSIONAL MOBILITY

Pioneers

EIT Climate-KIC's Pioneers is a professional learning and exchange programme. It offers an innovative blended learning approach whereby a common baseline of knowledge is established through e-learning, and then deepened through workshops and practical application to real-life situations in the form of group project challenges and a 4-6 week placement. Operating in over twenty European locations, the programme creates a dynamic innovation network of climate change organisations and professionals, and equips participants with systems innovation skills and understanding.

EDUCATION // YOUTH

Young Innovators

Every child born in Europe today will need to lead a climate-neutral life by the time they leave school. The Young Innovators programme empowers young people to understand, explore and address the causes and effects of climate change through innovation. It aims to boost the skills and mindsets of teens and prepare them to lead the systems innovation we now need, because, in just a few years, they will become leaders of our societies, businesses, and nations. Our mission is to transform 1 million teens living in Europe into climate champions and innovators by 2030.

CASE STUDY

Milan

EIT Climate-KIC and partners are working on a place-based, city-wide, resident-led experiment* to demonstrate how to transform Milan into a sustainable climate-resilient city, by catalysing change at a district scale. Combined, the projects involved harness capital values exceeding €3 billion.

PARTNERS

Poliedra

Poliedra is the consultancy arm of the Politecnico di Milano. Their role in the project is to provide technical assistance in the design and distribution of the heating and cooling network, as well as passive design, monitoring and targeting of energy performance.

InvestiRE

InvestiRE is an arms-length developer and investor specialised in the public good – housing in particular.

Politecnico di Milano

The Politecnico di Milano provides support for the energy system design, education and outreach of the project, project management and production of the report and findings.

The Municipality of Milan

The Municipality of Milan is involved through their part ownership of the site, as the project sponsor and through investment into the development. Lessons learned are fed back into the Municipality for improving future projects. They part-own a number of partners in the project.

A2A

A2A is a very large Italian utility active in energy, environment and waste sectors. Their role in the project is to establish renewable generation and distribution and a smart metering network across the site.

AMAT

AMAT is a technical agency owned by the Municipality of Milan which advises on planning, programming, managing and monitoring urban green areas, mobility, environment, urban planning, energy and climate change.

*Zooming out, Milan is one of ten cities in EIT Climate-KIC's deep demonstration of Healthy, Clean Cities.

COMPONENT PROJECTS

- **Merezzate+**
  Merezzate+ is a new, affordable housing district in the south of Milan, with about 800 apartments planned (600 in social housing). It aims to create a new smart neighbourhood in an area undergoing an urban regeneration process. In our portfolio it acts as a district-scale 'living lab' to test and demonstrate a methodology for accelerating sustainability performance and climate resilience by using a joined-up, whole systems-level approach across:
  - building energy services
  - urban mobility
  - circularity/waste reduction
  - nature-based solutions and
  - resident engagement.

- **Milan Zero Carbon Fund**
  Partners are working to catalyse a fund worth many millions of euros to undertake a number of carbon reduction projects, to lead the city towards carbon neutrality.

- **Reinventing Cities**
  A programme co-created with C40 takes the learnings from **Merezzate+** to improve outcomes at additional sites and scale solutions across the city, for example, lessons learned on structuring community management and mobility.

- **Greening Milan**
  We are working with the **City Resilience Office** and **100 Resilient Cities** to fundraise and develop support for planting 3 million trees across the city by 2030.

- **Urban Cool Islands**
  The neighbourhood Corvetto will test an innovative pavement technology to cool urban heat islands.

- **Solar Thermal Integration**
  A2A Calore e Servizi is developing a mechanism to allow solar thermal from the **Merezzate+** site to top up the city's low temperature district heating systems – a city first for Milan.

IMPACT GOALS

These projects drive progress towards many of the 12 innovation impact goals we have identified on the path to a net-zero-emissions economy. (See pages 6 and 7.)

- Promote retrofit and decentralised energy
- Promote green, resilient cities
- Accelerate clean urban mobility
- Foster bankable green assets in cities

LEVERS

Together, these projects act as a related and connected set of interventions, acting on different levers for change:

- **Finance**
  The **Milan Zero Carbon Fund** and **Greening Milan** described on the previous page are driving progress towards multiple impact goals.

- **Technology**
  A2A Calore e Servizi's technological innovation, combined with a regulatory intervention are enabling the site to top up the city's district heating system – a city first for Milan.

- **Regulation and planning**
  1. We challenged a national law that every new apartment should have a fixed carpark. How? By using successful mobility solutions from cities in other countries to show that private ownership of vehicles is no longer a necessary, appropriate or desired form of mobility.
  2. An on-site heating experiment involving the energy company, the city, the local district, the developer and the residents provided evidence for and achieved;
  (a) a change in local legislation to allow heat generated on site to be exported outside the site boundary – a first in the city, and
  (b) changes to planning guidance to permit more extensive nature-based solutions in the district plan.

- **Behaviour**
  Behaviour is influenced through app-based gamification and real-time energy consumption management for all future residents. So far this innovation by **A2A Smart City** has achieved a modelled 5% use reduction. **Merezzate+** will test, with a participatory community approach, a range of solutions to increase uptake of walking and cycling, micro and shared mobility as well as public transport to lower private car use and ownership.

EIT Climate-KIC is Europe's largest public-private partnership addressing climate change through innovation to build a net-zero-carbon economy.

We are supported by the European Institute of Innovation and Technology (EIT), a body of the European Union.

Our response to climate emergency has been to focus our efforts on systems innovation to generate options and pathways for radical transformation.

Our Vision

A prosperous, inclusive, climate-resilient society with a circular net-zero emissions economy

Our Mission

To catalyse systemic change for climate action

Our Promise

Transformation in time, through innovation

www.climate-kic.org

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