

ACCELERATING SUSTAINABLE MOBILITY IN EUROPEAN CITIES

SUSTAINABLE CITIES MOBILITY CHALLENGE 2023



Transforming mobility for a sustainable future

As more European cities pledge to rapidly cut carbon emissions, the decarbonisation of transport plays a crucial role in transitioning to a net-zero carbon society. Measures taken at the local level can also improve the quality of life and wellbeing of residents while contributing to climate adaptation and enhancing sustainable economic growth.

The Sustainable Cities Mobility Challenge¹ was launched in September 2022 to support this transition. FedEx granted EIT Climate-KIC and EIT Digital \$597,000 USD to develop the Challenge and support European cities to adopt innovative approaches and solutions for low-carbon, sustainable mobility.

¹ The original programme name was the Sustainable Cities Climate Impact Challenge. It was renamed to the 'Sustainable Cities Mobility Challenge' for the 2024 edition.

[Learn more about the Sustainable Cities Mobility Challenge](https://www.climate-kic.org)



Throughout history, cities have been trailblazers of societal evolution, and this era is no exception. We stand alongside European municipalities, both large and small, dedicated to collaborative efforts to reduce greenhouse gas emissions through sustainable mobility solutions. By supporting equitable access and community wellbeing, we strive to ensure that the transition to sustainable mobility contributes to a healthier, more resilient future for all.

In the wider European mobility context, initiatives like the Sustainable Cities Mobility Challenge are not just isolated endeavours; they are part of a larger movement of redefining how we move within our cities. The four selected pilot projects may seem small in scale, but they all contribute to the wider climate objectives of the European Green Deal, Urban Mobility Framework and the EU Cities Mission. By prioritising sustainability, equity, and resilience, we can transform urban mobility from a problem into an opportunity – one that addresses the urgent threats of climate change while enhancing everyday urban life.

Our collaboration with FedEx shows what is possible when corporations, city officials and citizens come together for a greater, common purpose. The success of the Challenge demonstrates the transformative power of public-private partnerships in reimagining urban mobility.



Thomas Osdoba,
Director of NetZeroCities and Senior Advisor on Cities for EIT Climate-KIC.

PROGRAMME BACKGROUND

Sustainable Cities Mobility Challenge



DURATION

APRIL 2023 - MAY 2024



TOTAL BUDGET

USD \$597,000



CITIES INVOLVED

4

The Sustainable Cities Mobility Challenge was developed to address the demands of sustainable transport needs in European cities. Originally, the programme set out to scout for urban mobility breakthroughs among entrepreneurs, start-ups, and Small-to-Medium-sized Enterprises (SMEs), forging connections with transportation teams in European cities.

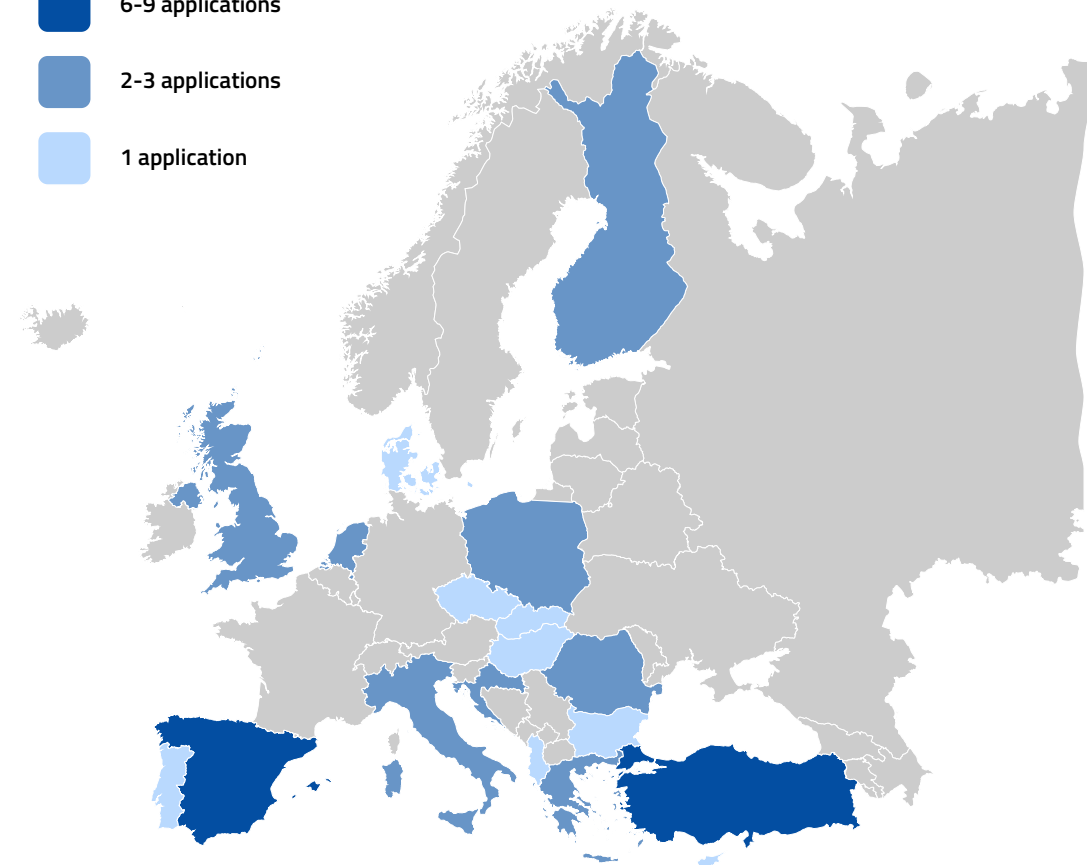
However, after consultation with several city transport teams, the Challenge was redefined to focus on the decarbonisation of urban transport and align more closely with NetZeroCities, an EU Mission initiative coordinated by EIT Climate-KIC and funded by the Horizon 2020 Framework Programme to achieve 100 climate-neutral and smart European cities by 2030.

The reframed call officially launched in October 2022, inviting municipalities with populations exceeding 25,000 to present their innovative proposals for sustainable mobility initiatives. The projects were expected to deliver tangible impact locally and were evaluated based on their potential for positive environmental and social benefits, learning and replicability in other cities.



A total of 43 applications from 19 countries

- 6-9 applications
- 2-3 applications
- 1 application



9 main themes emerged (some project proposals focused on more than one theme simultaneously):



Promotion of active travel (walking, cycling and wheeling)



Infrastructure (mainly for walking, cycling and wheeling)



Cargo bikes and e-cargo bikes



Behaviour change/ citizen engagement



Digital applications (apps)



Electric vehicles (promotion, EV charging facilities)



Data and monitoring for sustainable transport



Public transport



Shared mobility

LONDON BOROUGH OF HACKNEY

United Kingdom



Pop: 280,000

Cargo bikes are helping small businesses become more sustainable in this London borough

Hackney is a densely populated and culturally diverse part of London. An inner-city borough, Hackney faces both high levels of inequality and high levels of air pollution.

"According to Public Health England, as many as 7 per cent of all deaths among people in Hackney over 30 can be attributed to air pollution— this is higher than both the London and England averages," says Ali Howes, Senior Transport Planner at the Zero Emissions Network (ZEN), an initiative in London's City Fringe area to reduce transport emissions and improve local air quality.

Hackney Council recently launched a Climate Action Plan for the borough, with transport as one of its focus areas. "The Plan recognises there's a need to make a green transition fair. Improved air quality will improve Hackney residents' health and reduce inequality, which is why ZEN wants to support residents and businesses during this transition," says Howes.

One of ZEN's main projects is a cargo bike pilot scheme. It's one of four projects selected for the Sustainable Cities Climate Impact Challenge, organised by EIT Climate-KIC and EIT Digital, and supported by FedEx.

PROJECT IMPACT



Award amount

\$70,000



14

SMEs awarded grants to purchase e-cargo bikes



2

New e-cargo bikes for new bike-share hub



1

E-cargo bike staff training course and toolkit developed



+5

Borough-wide cargo bike and e-van "demo" events



Cargo bikes can carry extra cargo at the front or back of a bicycle and often have an electrical assist function to help riders carry heavy loads or through hilly areas. ZEN wants to promote cargo bikes as a cleaner and greener transport option.

"One of the biggest barriers to using cargo bikes is cost," says Howes. "This is why the project includes grants so that small businesses can shift to a cargo or e-bike—particularly those which are replacing a diesel or petrol van."

The scheme has been so popular that four times more businesses applied for grants than ZEN can currently support. "What's been interesting is the range of different businesses who have applied: painting and decorating companies, catering companies, an art gallery, a bookshop and an architecture firm. It just goes to show that there's a lot of interest and demand for cargo bikes in Hackney and it will be interesting to see how they plan to use the bikes," says Howes.

Following a rigorous shortlisting process, 14 businesses were awarded a grant to purchase a cargo bike which will be used to transport tools and equipment, carry out repairs and client visits, deliver documents and food, and provide cycle education and training for vulnerable groups.

Cargo bikes are also available to Hackney residents as part of an on-demand, publicly-available bike-share service for more casual users, or those unable to store or afford them. Riders can use an app to access the bike and ride it straight away. ZEN is also helping provide cargo bike training to Hackney businesses and has also created a toolkit that local governments can use as a template for setting up their own cargo bike share scheme.

While Hackney already has cycling infrastructure—including cycle lanes and quieter streets with traffic filters—ZEN hopes this continues to improve in future, to encourage more cargo bike users, and cyclists in general. Howes says, "I also think there's more we could be doing to support women riders and people of colour, to make cycling more inclusive and more accessible—we're currently doing some work with industry on this. What's great about promoting cycling is that we are uniting more people from different perspectives—not just from transport – who are keen to reduce emissions in our cities."

Watch the full interview [here](#)

ESPOO

Finland

A Finnish city's plan to promote inclusive cycling

With a population of over 314,000 residents, the city of Espoo touts the best of both worlds: a unique combination of urban and nature. Its stunning outdoor landscapes fused with a vibrant city centre make it ideal for cycling. But not all residents have equal opportunity to this mode of transport. Those with an immigrant background (around one-fifth of the population) have faced barriers to accessible cycling due to cultural or other reasons.




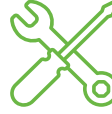

"This is particularly true for women and girls who may have never had access to bicycles or the opportunity to learn how to ride one," explains Veli-Pekka Korhonen, Sustainable Mobility Specialist at the City of Espoo.

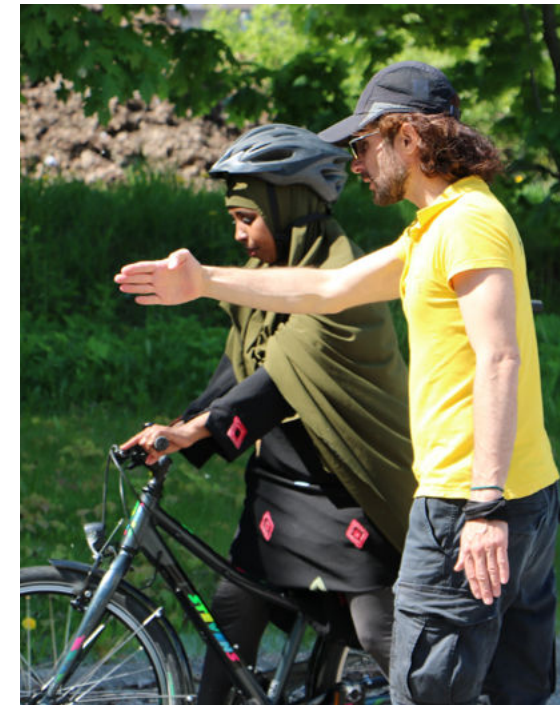
Korhonen is leading an initiative that promotes social inclusion, and gender equality and supports local bicycle repair businesses. This green mobility project was one of four selected for the Sustainable Cities Climate Impact Challenge, organised by EIT Climate-KIC and EIT Digital, and sponsored by FedEx.



Pop: 314,000

PROJECT IMPACT

| | | | | |
|---|---|---|--|---|
|  |  |  |  |  |
| Award amount | 73 | 128 | 220 | 70 |
| \$60,000 | Residents' bikes repaired | Residents trained to cycle | Residents trained in bike maintenance/repair | City bike subscriptions awarded |



"We understand the importance of empowering individuals with the skills and confidence to ride a bicycle, enabling them to enjoy the benefits of sustainable mobility. Therefore, we offer workshops where dedicated teachers guide the participants through the learning process," he says.

In collaboration with the Helsinki Region Cyclists, the City of Espoo organised cycling courses in five locations from June to August 2023. The project has received an overwhelming response from residents with 84 participants trained and counting.

But as Korhonen explains, "The impact goes beyond simply teaching people how to ride a bike. They have come to realise that biking provides a newfound sense of freedom and flexibility, allowing individuals to travel from A to B whenever they want to."

To encourage cycling after the courses, the participants were offered a "graduation gift" of a complimentary subscription to the city bikes in Espoo and Helsinki or a voucher for bicycle maintenance.

The City of Espoo also acquired six workspaces and a mobile "repair café" during August where residents could learn bike maintenance skills while boosting the local businesses that provide those services.

"This project has brought us great joy," adds Korhonen. "To see the happiness and excitement of individuals as they learn to ride a bike has been truly rewarding. It highlights the positive impact such initiatives can have on people's lives, fostering a sense of accomplishment and empowerment. We are grateful for the opportunity to contribute to the well-being of our community."

The project contributes to the city's larger decarbonisation strategy known as the "Espoo Story," which aims to achieve carbon neutrality by 2030. Because one-third of its CO2 emissions originate from traffic, the city council has made addressing transportation-related emissions a high priority.

Watch the full interview [here](#).

OLOT

Spain

Creating a secure bike parking network to boost sustainable mobility in Catalonia

Located close to Girona, in the La Garrotxa Volcanic Zone Natural Park, is the city of Olot. Despite its hilly terrain, cycling is becoming increasingly popular in the city and wider region – and Olot City Council is keen to promote sustainable mobility further.

“Our city plays a crucial role in the entire region’s mobility – around three-quarters of trips in this region pass through our streets, so our goal is to completely transform mobility in Olot,” says Isaac Crivillés i García, Councillor for Energy Transition, Public Health and Mobility at Olot City Council.

In 2022, the Olot City Council’s ‘Promoting Mobility Plan’ was approved – and one of its aims is to create a network of safe bike parks. This is one of four projects selected for the Sustainable Cities Climate Impact Challenge, organised by EIT Climate-KIC and EIT Digital, and supported by FedEx.



Pop: 36,000



PROJECT IMPACT



Award amount
\$60,000



“...my biggest wish for Olot residents is that they find a way to make their trips more sustainable and healthier. The overall goal is to completely transform mobility and this programme undoubtedly contributes to that.”

*- Isaac Crivillés i García,
Councillor for Energy Transition,
Public Health and Mobility at Olot City
Council.*

Similar to many European cities, Olot residents face the challenge of inadequate secure bike parking, a concern highlighted in surveys conducted by the Council. For a hilly city that wants to encourage more inhabitants to use and park electric bikes, this is an especially large barrier.

“Around here, typical bike parking includes the bike racks you see in many cities, the inverted U-shaped stands anchored to the ground. We want to provide enclosed bike parking locations, where you can leave your bike securely for several hours. To access it, cyclists will need to register and that way we know who has their bike inside and who has accessed it. This will hopefully encourage cyclists – especially electric bike users – to take more trips into the city by bike and no longer worry about theft,” says Joan Rigall, Mobility Technician at Olot City Council.

The project aims to create a network of open-air parking areas, requiring authorised access, in facilities where there is parking demand – such as schools, hospitals and sports centres. All bike parks will have the same type of user identification and after registration, users will be able to park their bikes safely inside.

Olot City Council hopes this investment will lead to long-term, sustainable behaviour change. As Councillor Crivillés i García says: “Once this project is implemented, my biggest wish for Olot residents is that they find a way to make their trips more sustainable and healthier. The overall goal is to completely transform mobility and this programme undoubtedly contributes to that.”

Watch the full interview [here](#).

KARASU

Turkey

Located on the Black Sea, close to both Istanbul and Ankara, the Turkish city of Karasu is a popular local and international summer holiday destination. Karasu is best known for its beautiful landscapes and its large beach – the second-longest in Turkey, spreading over 20 kilometres with two sections bearing the 'Blue Flag' certification for high environmental standards.

With a population of around 70,000 in winter, it swells to almost 1,000,000 people in the summer months, which transforms Karasu. "When I think about this region hosting so many people...I think about the chaos due to the increased motorised traffic. It is essential to plan for more sustainable modes of transportation," says Abdulkadir Özden, Assistant Professor at the Sakarya University of Applied Sciences.

Aiming to create more spaces in Karasu for walkers, cyclists and scooter riders, the municipality teamed up with the Sakarya University of Applied Sciences on a green mobility project. This was one of four projects selected for the Sustainable Cities Climate Impact Challenge, organised by EIT Climate-KIC and EIT Digital, and sponsored by FedEx.

Pop: 70,600



The project's main goal is to increase regional micro-mobility corridors and increase traffic-free space, particularly in areas such as schools, parks and near sports fields. While a coastal bike path was built a few years ago – and quickly became popular with locals and tourists – it was disconnected from the central parts of Karasu.

"There is a unique biking culture in the Sakarya region – studies have shown that people of all ages are more likely to use their bikes to run daily errands, compared to other parts of Turkey. However, there was a lack of connection between the coastal bike lanes and the city centre," says Özden.

Progress has been made to improve connections, with two separate 1-kilometre routes becoming dedicated bike lanes that link the city centre with the coast. Infrastructure improvements to existing bike lanes, helping improve visibility and safety, have also been undertaken.

Additionally, the municipality has installed bicycle parking racks, repair stations and cycle resting points to further improve the cycling experience and make biking in Karasu safer.

To encourage more children to take up cycling, the project also launched the 'Şimdi Bisiklet Zamanı' event – i.e. 'Now It's Time to Bike' – on 21 September 2023, which saw kids and adults come together to learn about all aspects of cycling. Helmets, lights, locks and other cycling gear were distributed among participants to enhance safety and security.

With more future sustainable mobility projects on the horizon, Özden feels positive about the rise of cycling in the region: "We want to create change from the beginning – from the younger generations. Let them have safer paths so that when they become teenagers, they walk and cycle more. We want to show people that if you support local decision makers, then they are more willing to improve active transportation and sustainable transportation for the District of Sakarya."

Watch the full interview [here](#).

PROJECT IMPACT



Award amount
\$50,000



2.2KM
Of protected bike
lanes added



4
Bike repair stations
installed



7
New bike parking
stations installed



1
Cycling race and
celebration event



The future of sustainable mobility

As part of the application process for the Sustainable Cities Mobility Challenge, 21 of 43 applicant municipalities provided responses to the question:

What are the main transport priority areas for your city over the next decade?



Reduce car traffic and car dependency to ease congestion, noise, road danger and emissions, and increase the percentage of trips taken in the city by sustainable transport (walking, cycling, public transport vs private car).



The role of improved sustainable mobility options to **enhance health and urban quality of life** and provide the space for social interaction/cohesion among citizens.



Create infrastructure for cycling, and shift **behaviour and cultural changes** away from owning a private car to providing **access via vehicle-sharing models**.



Introduce 'Low Emission Zones' and increase **pedestrian-only and new traffic-free areas** that can be used **flexibly for social and economic activities**.



Actively **prioritise vulnerable road users** over others (e.g. using the **road user hierarchy** familiar to transport planners, whereby pedestrians and wheelchair users are accorded the highest priority, followed by cyclists, public transport, freight transport and private transport).



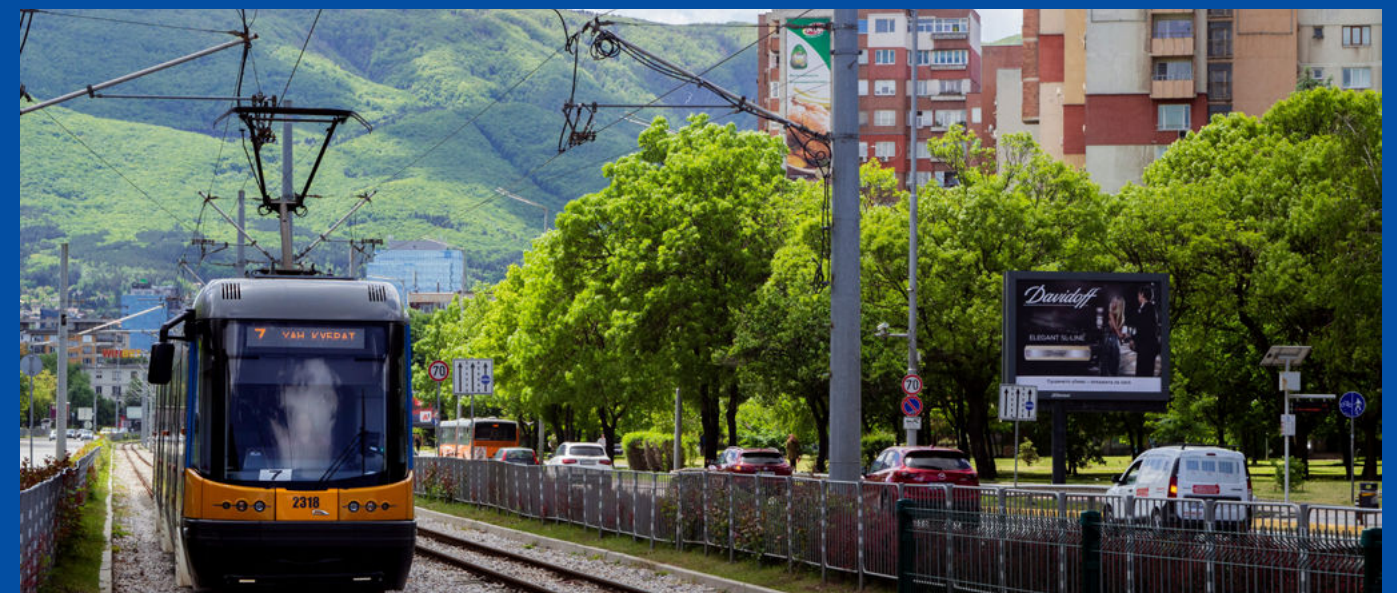
Tackling transport exclusion or the need to provide **environmentally sustainable, affordable and efficient public transport** (bus, tram, train), and to support **active mobility** for all citizens, including children, older people and those with disabilities).



Improving last-mile delivery to address issues arising from large goods vehicles and van traffic; including optimising the organisation of freight, logistics, and services within city centres.

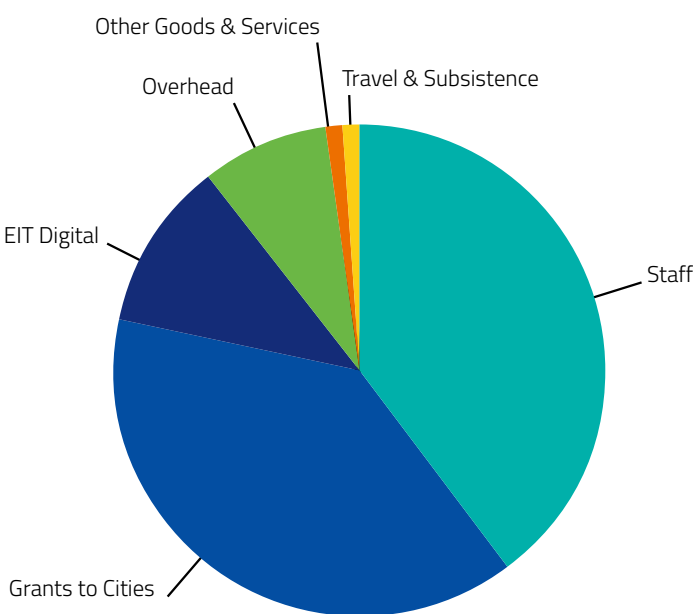


Better integration of transport and urban planning, ensuring that urban sprawl and its resulting unsustainable travel patterns are not 'built-in' to new developments.



Expenditure Report

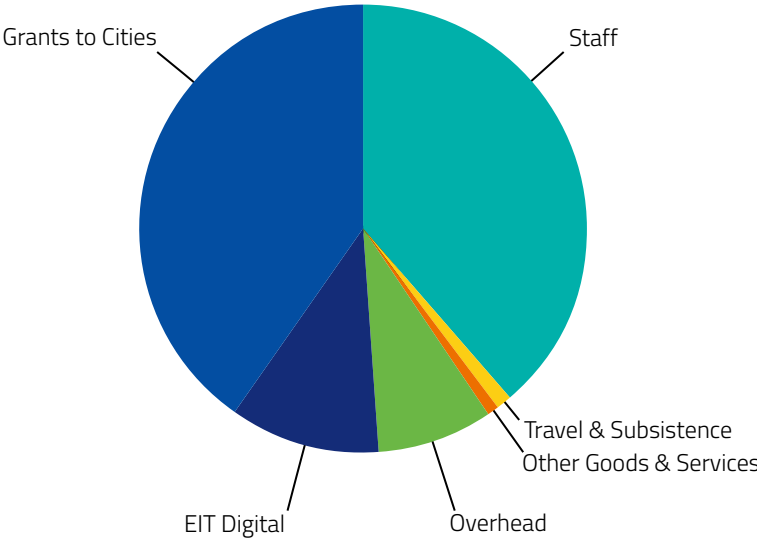
Project spending



| Cost Category | Spending to date (USD) |
|------------------------|------------------------|
| Staff | 231,756 |
| Travel & Subsistence | 6,007 |
| Other Goods & Services | 6,110 |
| Overhead | 48,775 |
| EIT Digital | 65,000 |
| Grants to Cities | 225,000 |
| Total | 582,64 |

Full project forecast

| Cost Category | Spending by Sept 2024 (USD) |
|------------------------|-----------------------------|
| Staff | 231,756 |
| Travel & Subsistence | 6,007 |
| Other Goods & Services | 6,110 |
| Overhead | 48,775 |
| EIT Digital | 65,000 |
| Grants to Cities | 240,000 |
| Total | 597,648 |



Partners



FedEx Corp. (NYSE: FDX) provides customers and businesses worldwide with a broad portfolio of transportation, e-commerce, and business services. With annual revenue of \$90 billion, the company offers integrated business solutions through operating companies competing collectively, operating collaboratively, and innovating digitally as one FedEx. Consistently ranked among the world’s most admired and trusted employers, FedEx inspires its 530,000 employees to remain focused on safety, the highest ethical and professional standards and the needs of their customers and communities. FedEx is committed to connecting people and possibilities around the world responsibly and resourcefully, with a goal to achieve carbon-neutral operations by 2040.



EIT Climate-KIC

EIT Climate-KIC is Europe’s leading climate innovation agency and community. We use a systems approach to shape innovation to support cities, regions, countries and industries to meet their climate ambitions, acting in the ‘messy middle’ between commitments and reality.

Together with our partners across the globe, we implement. We open pathways to shift mindsets and behaviours and enable decision-makers and investors to act. We orchestrate large-scale demonstrations that show what is possible when cycles of innovation and learning are deliberately designed to trigger exponential decarbonisation and build resilient communities.



EIT Digital

EIT Digital is a leading European digital innovation and entrepreneurial education organisation supporting the creation of a strong digital Europe. We believe in making and shaping a competitive digital Europe that is inclusive, fair and sustainable, and aim at global impact through European innovation fueled by entrepreneurial talent and digital technology.

We embody the future of innovation by mobilising a pan-European multi-stakeholder open-innovation ecosystem of top European corporations, SMEs, startups, universities, and research institutes, where students, researchers, engineers, business developers and investors address the technology, talent, skills, business, and capital needs of digital entrepreneurship.

ACKNOWLEDGMENTS

The authors thank the following individuals for their valuable contributions and support: Parisa Khoram and Neil Walmsley of EIT Climate-KIC. From the selected city projects, we thank Ali Howes, Joan Rigall, Abdulkadir Özden and Veli-Pekka Korhonen for participating in interviews.

Design support was provided by Alex Bilodeau.

ABOUT THE AUTHORS

Charlotte May, Cities Advisor (Mobility) at EIT Climate-KIC

Christa Beck, Communication Manager at EIT Climate-KIC

