CLIMATHON GLOBAL AWARDS | CITIES AWARD

KNOWLEDGE PACK
In today’s world, more and more people live in cities than ever before, with cities generating 80% of all economic output. An urban future sees cities at the centre of growth with projections estimating that by 2050 68% of the global population (about 6.7 billion people) will live in urban areas. Rapid population growth coupled with the effects of climate change create increasing pressures for the sustainable design, operation and maintenance of current and future urban environments. Research by the Crowther Lab at ETH Zurich, a world-leading science laboratory on global systems ecology, reveals that 77% of the cities around the world will experience a striking change of climate conditions over the next 30 years. We are in a climate crisis and the time to act is now.

Cities are leading the fight against climate change and driving innovative thinking. In 2019 over 100 cities across 46 countries in 6 continents have participated in EIT Climate-KIC’s Climathon – a powerful solutions-hackathon – and are already taking steps to develop local solutions to climate challenges.

The Climathon Global Awards are a celebration of transformative solutions tackling climate change on a local level. This year, EIT Climate-KIC is partnering with the Crowther Lab at ETH Zürich to celebrate and amplify city leadership in climate action with its Climathon Global Cities Award, which will run alongside the Climathon Global Citizens Award. The focus this year will be on cities who leverage EIT Climate-KIC’s Enablers of Change Framework (see Links/Resources) whilst harnessing the potential of nature to address climate change at the local level. Cities can win tailored support from world-leading experts on their proposal, international media attention, seed funding, a trip to the ChangeNOW Summit in Paris to join us in a full-day implementation training. In addition cities will have the opportunity to connect to the EIT Climate-KIC Deep Demonstration programme, and in particular EIT Climate-KIC’s work around Healthy and Clean Cities.
We envisage a prosperous, inclusive, climate resilient society founded on a net-zero carbon economy in which natural ecosystems and people thrive. EIT Climate-KIC and Crowther Lab are celebrating visionary cities that can address climate change through systemic innovation – intervening through multiple levers, such as governance, policy, finance and market structures to influence behaviour.

The Crowther Lab has shown that strategic tree reforestation on a global scale could significantly counteract excess carbon emissions. This research has captured the imagination of over 140 million people worldwide and sparked a renewed conversation on the potential for nature-based solutions to address climate change. The Crowther Lab’s most recent paper in Nature analyzes the relationship between Urban Heat Islands (UHIs), population, precipitation and vegetation, and calls for nature to be combined with innovative solutions to reduce the UHI effect. Such innovations need to reduce energy use and carbon emissions, improve air quality, and benefit public health. Putting all this new knowledge together, it becomes apparent that next to technological and policy innovation, nature provides a currently underused avenue to combat the effects of climate change. Yet the power and potential of nature-based solutions to climate change have not been fully explored.

The Crowther Lab brings world-leading knowledge on systems ecology to this year’s inaugural Cities Award, emphasising the importance of nature. While proposals are not required to include a natural theme, we highly encourage proposals from visionary cities that can address climate change by effectively integrating nature within policy and economic priorities.

How to Apply?

You can already draft your application based on the information contained within this pack (see pages 8 and 28). The formal application form will go live for online submission from 26 October (climahonglobalawards.org).

Cities may submit questions by email to climathon@climate-kic.org until 6 November. Please put “Cities Award” in the email subject. All questions and answers will be published on the Climathon Global Awards website on 12 November.

Why Cities Should Participate?

Winning proposal(s) of the Cities Award can receive:

- Tailored support and implementation coaching by world-leading experts, including the high-profile jury and Crowther Lab scientists
- International media attention on their project with in-kind support from award winning public relations consultants Greenhouse PR and leveraging the widespread media reach of the Crowther Lab
- Opportunity to connect and exchange with EIT Climate-KIC’s network of Healthy, Clean Cities Deep Demonstration who are showing a clear commitment to implementing systemic change to redesign their cities, or other Deep Demonstrations
- Connection to EIT Climate-KIC global partners with introductions to key knowledge partners and funders relevant to the winning proposal
- Seed funding up to EUR 60’000 to implement the visionary concept

All finalists can receive:

- An invitation to Climathon Global Awards Ceremony on 31 January 2020 in Paris during the ChangeNOW summit
- A full-day implementation training by world-leading experts on 30 January 2020 in Paris, which will involve in-depth feedback on their application, support to craft a compelling pitch deck, and introductions to relevant Climathon global partners to realise the long term vision. Travel and accommodation for one representative from each city will be covered (if a second representative would like to join, they can do so on their own expense)

In hundreds of cities around the world, Climathon Local Organisers collaborate with city authorities to enable citizens to take action to combat climate change locally. Taking innovative ideas and implementing them at the city level will be critical.

This is where the Cities Award comes in: you as a local authority can apply with a systemic action plan of what you would like to do, whether alone or with local partners, and win support to make your vision a reality.
Free entrance to the 3-day ChangeNOW summit, a transformational experience with: 13,500 m² dedicated to solutions, 3 stages for impact entrepreneurs and leaders, 5,000 meetings and networking opportunities, 50 mayors and international city representatives, and full program of partnering events throughout Paris

Featured coverage in the ChangeNOW brochure and Climathon Global Awards website about their proposed concept

The Crowther Lab will provide customized feedback for the top 20 highest scoring proposals.

All applicants receive recognition of their efforts on the Climathon Global Awards website and on the Crowther Lab website.

About the Cities Award

On the road to decarbonize our economy, cities play a leading role. Given the urgency for climate action, incremental steps are off the table (see EIT Climate-KIC’s strategy Transformation, in time). Through their work with cities around the world, EIT Climate-KIC have developed a systemic change framework for cities. It is based on four ‘enablers of action’: smarter systems, municipal momentum, collaborative communities and enabling economies. The Cities Award will reward the most innovative and compelling proposal of a city authority to create action across all four enablers. Have a look at this dedicated page for input, best-practice examples and free resources on putting together the best systemic change bid.

This year, EIT Climate-KIC is partnering with the Crowther Lab at ETH Zurich. The Crowther Lab brings world-leading knowledge on systems ecology to this year’s Cities Award, and for that reason we are integrating a nature-based solutions theme into the competition. While cities are not required to include this theme, we highly encourage proposals from visionary cities that can address climate change by effectively integrating nature-based solutions holistically within policy and economic priorities.

Examples of areas where cities could be introducing change:

- Nature-based infrastructure and ecosystem regeneration
- Zero emission mobility service systems
- Deep building retrofitting
- Clean energy supplies
- Circular resource loops
- Urban food production and nutrient recycling
- Growing fair, prosperous and sustainable local economies
- Healthy, vibrant, creative and accessible public spaces

Who can Participate?

City/regional authorities (ideally as consortiaums with further local partners) including cities where Climathon 2019 takes place.

Those cities interested to acquire a license to host a Climathon can click here.

Deep Demonstration Cities:

1. Madrid
2. Amsterdam
3. Maribor
4. Milano
5. Copenhagen
6. Sarajevo
7. Orléans
8. Malmö
9. Skopje
10. Edinburgh
11. Vienna
12. Krševci
13. Leuven
14. Kraków
15. Nis
Selection Criteria

Administrative Requirements:
- Projects must be in the proposal phase, but can leverage existing projects with similar goals that incorporate the enablers of action.
- Projects must identify a minimum of one year milestone to demonstrate progress.

Programmatic Assessment:
- Integration of the four ‘enablers of action’
  - Smarter Systems (e.g. monitoring, data commons)
  - Municipal Momentum (e.g. leadership and support from municipal government)
  - Collaborative Communities (e.g. citizen engagement/community participation)
  - Enabling Economies (e.g. access to sustainable finance, investable projects, cost estimates are feasible)
- Innovation
  - Has it been done before?
  - How is it different?
  - How does it build on past lessons learned?
- Impact
  - How does the core feature of the project include measurable decarbonisation and/or the use of ecosystem services and/or the natural environment (i.e. climate change adaptation and mitigation)?
  - Explanation of baseline metrics to measure progress against.
  - How will it be communicated with the public and local citizens?
  - How does the project contribute to the wider aspiration of the city around carbon neutrality?

- Monitoring
  - Does the project include sustained monitoring of progress, implementation, and/or realisation?

- Scalability
  - Can this be applied to other neighborhoods and/or cities?
  - Is there a plan for how to share the project/concept/knowledge with other cities and to raise awareness within the city itself?

- Co-benefits
  - What other expected or unexpected benefits to the local or global community exist (e.g. biodiversity, air quality, social cohesion, community assets, human health, and economic prosperity)?

Timeline

- 26 October 2019 - Applications open at climathonglobalawards.org
- 17 November 2019 - Application deadline
- 13 December 2019 - Finalists announced
- 7 January 2020 - Webinar for finalists
- 17 January 2020 - Finalists submit their pitch deck presentation
- 30 January 2020 - Bootcamp for finalists
- 31 January 2020 - Awards ceremony

Bootcamp & Climathon Global Awards

The top 5 finalists will join us in Paris for the Climathon Global Awards which will take place at the ChangeNOW conference on 31 January 2020.

On 30 January 2020, the day before the Climathon Global Awards, there will be a 1 day bootcamp for the Top 5 Finalists of the cities track which is mandatory as the jury will evaluate the finalists on this day.

On 7 January 2020 from 16:00–17:00, the Crowther Lab and EIT Climate-KIC will host a webinar for the finalists in preparation for the bootcamp and awards ceremony. All finalists will be required to submit their pitch deck presentation by 17 January 2020.

A detailed agenda for the bootcamp and agenda will follow closer to the date.
About the EIT, Climathon and Crowther Lab

Climathon

EIT Climate-KIC is a knowledge and innovation community established and funded by the European Institute of Innovation and Technology (EIT) in 2010. Our purpose is to tackle climate change through innovation. We are Europe’s largest public-private partnership with this purpose – a growing pan-European community of diverse organisations united by a commitment to direct the power of creativity and human ingenuity at the climate change challenge. We bring together large and small companies, scientific institutions and universities, city authorities and other public bodies, start-ups, and students. With over 350 formal organisational partners from across 25 countries, we work on innovation to mitigate climate change and to adapt to its unavoidable impacts.

EIT Climate-KIC hosts Climathon, a year-round platform translating climate action solutions into tangible projects, supporting climate positive businesses & start-ups and addressing local policy changes.

Crowther Lab

The Crowther Lab is an interdisciplinary research group at ETH Zurich developing a fundamental and holistic understanding of global-scale ecology in order to understand and address climate change. They aim to find scientific solutions to climate change and biodiversity loss. By generating quantitative models of the Earth's ecology, their research has revealed that it is possible to offset climate change by restoring plants and soils across the globe. Now, their research aims to generate the ecological mapping tools to guide global restoration efforts.

Logistics

Travel and accommodation will be arranged once the Top 5 Finalists have confirmed.

For two person/city representatives to travel to/from Paris as well as accommodation in Paris is provided. Please note that you need to have a valid passport and visa. For the cities track, it is not possible for additional team members to attend the bootcamp as places are limited. We recommend that at least one of the city representatives attending is comfortable speaking to the public on behalf of the city.

Arrival in Paris will be on 29 January 2020. Earliest departure possible after the Climathon Global Awards on 31 January 2pm. Accommodation will be booked for from 29 to 31 January.
Case Studies

This section provides examples of municipal climate projects that exemplify the values of the Cities Award and systemic innovation.
Milan, Italy

Milan is pursuing an array of activities and projects with the potential to rapidly evolve into a credible transformational strategy. These include highly innovative efforts to test solutions and new models that could be replicated across the city (and region) through policy and capital planning. With Europe’s third-largest economy among metropolitan regions, Milan has the wherewithal to support this work, but needs our help mobilising expertise to deliver innovations in resilient and sustainable community development. With at least seven places undergoing innovation experiments at a district scale, Milan has a critical mass of activities to inform accelerated citywide transformation (including, for instance, experiments on carbon neutral social housing, use of bio-sourced materials or promotion of sustainable mobility).

One example is Bosco Verticale (engl. Vertical Forest) by Stefano Boeri, a pair of residential towers in Milan built between 2009 and 2014. The towers are 116m and 85m high and contain more than 700 trees and 16'000 plants, absorbing 19 tons of carbon per year. Apart from CO2 sequestration and removal of air pollution, they also mitigate runoff and build habitats for biodiversity. In fact, more than 30 bird species already live in the tower’s trees. Using the vertical structure, the towers provide ecosystem services of a forest ten times the building area (2ha) (European Conference, 2014).

Together with the innovative heat-pump system, the trees on its facade moderate the temperature in the building by shading the interior from the sun in summer, and by letting the sun warm the interior in winter, when most of the trees have dropped their leaves. The Bosco Verticale is a showcase of advanced engineering and technological development and was awarded the International Highrise Award in 2014 and the Best Tall Building Worldwide in 2015. This building is a showcase of nature-based solutions as an example of sustainable urbanisation and has changed the image of the urban environment.

**Enabling economies**
The Bosco Verticale is a good example of engineering work which has proven the ability to be **scaled up and replicated**. In 26 other cities, vertical forest buildings are under construction or in the planning phase on all continents, except for Antarctica. Further, a whole city formed out of vertical forests is under construction in Liuzhou, China, hosting 40'000 trees. While the average selling price for apartments is high in the Bosco Verticale, social housing projects are under way in Eindhoven and Nanjing that consider principles of equity. Lastly, capital planning and institutional design work has been developed to help prepare for financing innovative projects and to ensure rapid replication is possible.

**Other enablers of change**
The park in front of the Bosco Verticale was part of the infrastructure concept and it offers communal spaces like playgrounds for children or repair shops, establishing healthy, vibrant, creative and accessible public spaces. Smart systems are used in the two towers to water the vegetation automatically using recycled household water, to monitor the growth of the trees and to control the energy efficiency. While the Bosco Verticale lacks determined community co-ownership, the city of Milan adopted an initiative that encourages local residents to become involved in the administration and finance of green areas (“Care and Adopt public green”). Such community engagement, combined with service delivery models, and adaptive, responsive governance, builds the capacity for change that is needed to drive transformative action. Apart from nature-based solutions, Milan also works on district-scale energy and water strategies, and pioneering efforts to address urban mobility. EIT Climate-KIC and partners are working together with the city leadership to shape all activities into a coherent strategy for climate neutral transformation by 2030.

References:
- World Economic Forum
- Green Roofs
- CIBSE Case Study Garden City
- European Conference (2014) Debrief
- Commune Milano
- C40 Invigorating Cities
Barcelona, Spain

Barcelona strives to be the most liveable city in the world. This is an ambitious target for one of Spain’s most polluted cities, continuously failing the EU’s air quality targets. Apart from chronic air and noise pollution, Barcelona also deals with its high population density, compact city infrastructure and lack of urban green space, which lead to increased temperatures from the heat island effect. Across the political spectrum, these effects are seen as an urgent problem the city must confront. As such, Barcelona now aims to improve public health and give the city back to its residents, while cutting carbon emissions through its impressive Urban Mobility Plan. This ambitious plan redefines the city’s streets, promotes green spaces and reduces traffic-related emissions. Consequently, the European Institute of Innovation and Technology chose Barcelona as the European Capital of Urban Mobility.

The Urban Mobility Plan includes the “Superblock”, a policy to promote a high quality of life and reduce carbon and particulate pollution. Superblocks are clusters of 400 x 400 metre city blocks inhabited by between 5’000 and 6’000 people. The Superblocks are closed off from general traffic, buses and freight trucks, which have to drive around the perimeter. Through the apartment blocks, only local vehicles are allowed, traveling at the same speed as pedestrians on one-way loops, leaving most of the area open to pedestrians and cyclists. So far, five pilot neighbourhoods have been implemented in Barcelona and 495 more are planned. The Superblocks approach to spatial organization will increase green spaces and decrease emissions in a city where transportation accounts for 28% of CO2 emissions. In the future, Barcelona hopes to reduce traffic by 21% by cutting 355 km of roads dedicated to motorized traffic. This will reduce pollution dramatically, ensuring that the population will not be exposed to dangerous levels of particulate matter and noise. Lastly, this single measure will reduce CO2 emissions by almost 160'000 metric tons per year.

**Municipal Momentum**

Implementing Superblocks can be done easily and at low cost by promoting soft measures, mainly through changing traffic signals. As such, they are excellent for experimentation of new ways of understanding and providing benefits to the city. Following the implementation, a more ambitious phase follows, where public life and the way people use public space is transformed. Curbside parking spaces will be relocated into off-street garages and low speed limits will be implemented, allowing people to use the streets for leisure activities, such as picnics, games, sports or cultural activities. The concept is already at work in three other cities in Spain and remarkable results have been recorded. While noise, nitrogen oxide and particle pollution levels dropped, the pedestrian space increased, raising the number of people walking through the streets and increasing the income of local shops. In general, Barcelona’s urban plan is to make the whole city walkable, ensuring access to public spaces, greenery and a community of neighbours for all residents of ages and incomes.

**Other enablers**

The implementation of Superblocks will be complemented by new mobility infrastructure, which includes the introduction of additional 200 km of new cycling lanes and an already existing orthogonal bus network, where buses navigate a series of main thoroughfares. This increases access and frequency of the bus system. For instance, the next bus stop will be less than 300 metres away with average waiting times of around five minutes anywhere in the city. To engage collaborative communities, a series of neighbourhood consultation workshops were held to allow for citizens to be part of the co-designing process. It takes roughly a year and a half to implement a Superblock. On the city council’s website, residents can also access air quality information of their surroundings from a network of air pollution monitoring stations. The site also promotes getting around the city by bike, highlighting a bike sharing system and present and future bicycle lanes. Lastly, the city provides information on local sustainability initiatives and on actions that citizens can follow to reduce the negative impacts on their environment.

References:

- The Guardian
- VOX
- Barcelona.cat 1
- Barcelona.cat 2
- CAO 1
- CAO 2
- Sea Going Green

To date, 5 pilot neighbourhoods have been implemented in Barcelona and 495 more are planned.
Johannesburg, South Africa

Johannesburg is South Africa's largest and fastest growing city, often regarded as the financial capital of the African continent. Since 2006, the city has worked on an ambitious Growth and Development Strategy, outlining a resilient, sustainable and livable city. Yet, climate risks have become more prevalent during the past years, such as heat-wave-related deaths, flood risks, water and energy demand and vector-borne diseases. Consequently, Johannesburg seeks to align, strengthen, integrate and institutionalize its climate change action. Despite the fact that 78% of South Africa's energy is produced from fossil fuels, the country does not focus on energy-centric, short-term policies to cut emissions but instead has mainstreamed mitigation into all aspects of society, creating a more holistic approach.

In line with its Growth and Development Strategy, Johannesburg introduced the Climate Change Strategic Framework (CCSF), a strategic framework that includes all actors in society. The CCSF focuses on organisational aspects rather than climate action. As such, it provides a structured approach towards developing detailed and effective action plans for mitigation and adaptation and further provides a framework to institutionalize their implementation and execution. The project seeks to develop a climate change engagement and communication strategy to empower the human capital and foster climate action across sectors within the municipality and between different actors such as citizens, businesses and citizens.

Municipal Momentum
As part of the CCSF, the city mainstreams climate change and related interventions and activities. This communication results, for instance, in joint efforts between the municipality's departments and from business and communities to measure greenhouse gas emissions. Further, local climate planners are able to better understand energy and emission implications of different climate interventions. Using this framework, Johannesburg hopes to unify the city to drive transformative action in their community realizing the city's ambitious climate change goals and to prioritise positive change over stagnation. Through the CCSF, Johannesburg, one of South Africa's biggest greenhouse gas emitters, aims to reduce emissions by 65% until 2050.

Others
Feeding into this holistic climate action strategy, Johannesburg issued Green Bonds worth $143 million for climate mitigation investments. The funded projects will benefit the overall environment of the city and will help to reduce its CO2 emissions. Such projects include retrofitting buildings and street lights, urban greening projects, and renewable energy and demand side management initiatives. Johannesburg has also initiated a waste strategy that stimulates entrepreneurship by establishing waste buy-back centres, operated by communities. Lastly, Johannesburg's transport planning is also part of the holistic and integrated CCSF approach and comprises of its bus rapid transit system, transit-oriented development planning, projects that make public transportation more accessible and the EcoMobility World Festival 2015 to promote greener mobility.

References:
- Global Covenant of Mayors
- Urban-Pathways
- C40
- SmartCity

Country: South-Africa
City: Johannesburg
Population: 4,434,827 inh.
Area: 1,645 km²
Density: 2,696 inh./km²

Name of project: Climate Change Strategic Framework
Year of realisation: 2015

Enablers:
- Municipal Momentum
- Collaborative Communities
- Enabling Economies

65% of CO2 emissions will be cut by 2050 with the Climate Change Strategic Framework.
Copenhagen and New York City are both coastal cities facing rising sea levels and more frequent heavy rainfall events. In 2011 and 2012, both cities experienced severe flooding resulting in $1 billion and $19 billion damage respectively. Consequently, both cities have developed adaptation projects to strengthen their climate resilience. Further, they signed a cooperation agreement that seeks to leverage experiences from each other by sharing their successful climate solutions. As such, Copenhagen is drawing on New York City’s experience with coastal flooding, while New York City is learning from Copenhagen’s experience with cloudburst management.

Following the cooperation agreement between the two cities, New York City based its Cloudburst Resilience Planning Study on Copenhagen’s approach using a combination of blue-green and traditional infrastructure to manage extreme rainfall events. Copenhagen’s award winning Climate Adaptation Plan uses public-private partnerships to stimulate growth and sustainability alike and focuses on how adaptation measures can be beneficial to the city. Such measures could include planting grass to replace asphalt or lowering playgrounds and basketball courts so they hold water during a storm event. On the opposite side, Copenhagen learns from New York City’s experience and adaptation measures against coastal flooding, for instance, from the DryLine project, also called the ‘Big U’, which is a system of dikes placed around the tip of Lower Manhattan. Using their cooperation and leveraging each other’s experience, both cities seek to transform climate-related risks into opportunities for creating environmentally and economically sustainable, vibrant and livable cities.

Enabling Economies

Over $600 Million is the estimated total benefit from the Copenhagen-based cloudburst strategy in New York City. These benefits comprise of avoided risks and social costs as well as created social and environmental values. Copenhagen’s cloudburst strategy sees climate adaptation and the risks of flooding as resources rather than a problem, benefiting businesses and citizens alike. For instance, the strategy ensures that investments can be made in partnership with external investors. This can contribute to investments being not just an expense for the city, but also a way to create growth and employment. The Danish Cleantech Hub, a public-private partnership, facilitates the collaboration between the two cities by providing a single point of entry for all cleantech related activities between Denmark and New York. Integrated approaches for solving the challenges of climate change and urbanisation have managed to achieve cost-efficiencies, greater public support and ultimately healthier and more livable cities.

Others

Holistic measures to climate adaptation address the technical challenge in question and social sustainability in the urban landscape alike. As such, Copenhagen and New York City see climate adaptation as an opportunity to gain greater value from urban development investments and added social and environmental benefits of CO2 sequestration, improved public realm, and increased biodiversity. Community engagement is encouraged by green infrastructure via activities such as gardening and farming, while both municipalities are tuned for change and realize that the costs of inaction will likely be higher than the expenses for adaptation measures. Lastly, data sharing, for instance of flood-risk maps and real-time information, is a basis for a cost-efficient minimization of current and future flood damages, and provides a safe and consistent basis for a prosperous development.

References:
- C40
- CleanTech Hub
- State of Green
- Forbes

Country: Denmark & USA
City: Copenhagen & New York City
Area: 177 km² & 820 km²
Density: 4,400 inh./km² & 10,425 inh./km²

Name of project: Collaboration on climate adaptation
Year of realisation: since 2014

Enablers:
- Enabling Economies
- Smart Systems
- Collaborative Communities
- Municipal Momentum

The avoided social and environmental costs are estimated at $290 million.
An exciting urban greening programme called Green Corridors was introduced in Medellín, Colombia’s second largest city, winning the 2019 Ashden Awards in the category “Cooling for People”. Along 18 roads and 12 waterways, former rubbish dumps and abandoned areas occupied with concrete were transformed by the city into green corridors of thick vegetation in order to tackle the urban heat island effect, improve air quality and create a better environment for all. The 30 Green Corridors cool the local temperature by more than 2°C by shading the concrete and tarmac surfaces and by evaporating water. The corridors imitate natural forests with low, medium and high growing plants and create networks of greenery that birds, mammals and insects use to travel through the city. Further greening projects are underway, such as the planting of 800,000 trees and the “More Forests for Medellín”. Using a socially integrated approach, Medellín, formerly known for its high levels of violence throughout the city, made unprecedented steps towards becoming a carbon neutral city, while adapting to climate change and creating a better environment for its citizens.

**Collaborative community**

The city of Medellín gave integrated and participatory upgrading projects the highest priority in the political agenda due to their belief that the improvement of the social, economic and spatial problems of the neighbourhoods would contribute to the development of the city as a whole (Municipio de Medellín, 2004). As such, socially integrated approaches were used to construct the 30 Green Corridors, leading to citizen co-creation through community meetings and workshops. Symbolic agreements between the administration and the community called “Pactos Ciudadanos” (Citizen Agreements) are used to ensure the maintenance and sustainability of the project. The community committed to take good care of the corridors while the administration committed to maintain the places (Urbanismo Social, 2007). By doing so, the city’s response brings people together by planting vegetation and creating a better environment for all.

**Other enablers of change**

The project resulted in 75 apprenticeships for gardeners who were formerly displaced by armed conflicts or stem from poor rural communities. These gardeners benefited from the workplace training and a qualification, while slowly transforming the market structures and enabling the scaling of local nature-based solutions. Further, the municipality promotes new technologies that will lead the municipality towards a carbon neutral city by providing clean mobility with free public bicycles, electric buses and taxis, and electric Metro and Metrocable, a gondola system carrying commuters from the mountains above the city down to the valley and the city center.

Temperatures along the Avenue Oriental, one of the city’s main roads, have fallen by up to 3°C.
London, UK

The most prominent legacy of the London Olympic Games in 2012 is the Queen Elizabeth Olympic Park in East London. Former Olympic and Paralympic venues are surrounded by parklands, peaceful waterways and adventurous playgrounds, free to visit for everyone seven days a week. By 2030, the park will be home to five neighbourhoods and more than 10,000 houses and office space for 25,000 workers. The park also accommodates large and small commercial companies, different universities and a cultural quarter. Queen Elizabeth Olympic Park and its surroundings constitute an attractive and inspiring place where people come together to live, regenerate and to make business. It further is a key demonstrator space for the trial of innovative sustainability solutions and smart city initiatives and as such one of the Smart Sustainable Districts supported by EIT Climate-KIC.

Smarter systems
Queen Elizabeth Olympic Park is a Smart Park in the sense that it focuses on developing new approaches to collecting data on the park, managing and communicating this data. Therefore, a Smart District Data Infrastructure system was developed that facilitates efficient use and sharing of data across the community ensuring it is used to its full potential, while considering good governance of data. Such data is gathered through microclimate and air quality sensors, which contribute to local development decisions into the future. Bat sensors are used for bat conservation, ensuring positive impacts on their population. Furthermore, the park also offers the largest public and free Wi-Fi network of its kind in the world. Apart from giving visitors free access to the internet, this service helps to understand how different areas of the park are used by different groups of people. Understanding this ensures that the park is managed in an optimal way and that services can be further improved. The Smart District Data Infrastructure system can also ensure the highest possible resource efficiency by combining data logged in buildings and provided by the district energy network with people’s user experience. Lastly, the park’s free application provides information to visitors about locations, events, leisure opportunities and provides a map to ensure optimal navigation.

Other enablers of change
The park also ensures co-ownership of its community by regular community discussion events and by giving them the opportunity to volunteer in events, on the mobility services or in conservation and gardening. In 2018, community members volunteered more than 17,000 hours. Further, the community is connected through social networks like OpenPlay, which helps the community find and book spaces and activities in their neighbourhoods, or Echo, a time bank project where members trade skills, services or resources using their time as a currency. Lastly, innovative ideas are supported, such as innovative apps that motivate the local community to act healthily and sustainably through a reward system, or innovative and clean mobility ideas like driverless vehicles or a smart journey planning using the park’s app and different vehicles.

References:
• Better Points
• Queen Elizabeth Olympic Park 1
• Queen Elizabeth Olympic Park 2
• Climate-KIC

Country: United Kingdom
City: London
Population: 8,825,000 inh.
Area: 1,572 km²
Density: 6,542 inh./km²

Name of project:
Queen Elizabeth Olympic Park
Year of realisation: 2012

Enablers:
• Smart Systems
• Collaborative Communities
• Municipal Momentum
• Enabling Economies

By 2030, the park will host 5 neighbourhoods and more than 10,000 houses.
The city of Dakar has been undergoing an enormous population increase for several decades. The city grew quickly and in uncontrolled ways and now hosts 25% of the Senegal population. Due to underdevelopment and difficult soil and weather conditions, Senegal is strikingly dependent on food imports, leading to high food prices and price volatility, which inflicts 16% of the population (8% of urban households) with food insecurity. To provide the citizens of Dakar with alternative and sustainable food supply systems, the UN Food and Agriculture Organisation (FAO) and the government of Senegal, the Municipality of Dakar, and several NGOs launched the project for micro-gardening in 1999. Micro-gardens are simple, inexpensive and soilless gardens on standing tables using recycled materials as support and soil substrate. They are placed in small urban spaces, such as roofs, yards, or vacant areas. They provide families with healthy food, improve their diet and allow them to sell the surplus for a small income. In addition, they help to adapt to the consequences of climate change and the scarcity of agricultural land, while providing green lungs to Dakar, whose landscape is dominated by concrete.

Enabling economies
Micro-gardening effectively contributes to food security because it is highly productive. According to FAO, one micro-garden can provide six cropping cycles per year, producing on one square metre, for instance, 30 kg of tomatoes a year, 36 lettuces every 2 months or 100 onions every 4 months. Over 10,000 people have been trained since the start of the programme, consuming, on average, more than double the amount of healthy vegetables per month than non-participants, while selling the rest of their grown vegetables (about 65%) on the market. Micro-gardens are not just highly productive but also very efficient as they use only half the water of traditional farming. They also reduce the amount of food waste because the distance between production and consumption is short. In comparison, 20–50% of traditional vegetable and fruit production is lost due to insufficient supply infrastructure. As such, yield and quality is higher for micro-gardening products than for traditional farming, while little investment is needed because recycled materials and local products are used. Lastly, the micro-gardening business model showed its scalability by being successfully replicated in other cities in Senegal, Burkina Faso, Gambia, Niger and Venezuela.

Other enablers of change
Micro-gardens are also an example of circular economy, recycling and reusing waste while supplying healthy and sustainable food. Gardening was adopted by all social categories, which fosters social cohesion and promotes the integration of women and the elderly in society. Further, micro-gardens create spaces for community meetings and co-creation. The 12 micro-gardening training centres also ensure efficient sharing and use of the gained knowledge, while offering job opportunities for marginalised groups. The micro-gardening programme was also integrated in the city’s master plan to ensure its long-term finance and sustainability.
Application Questions

Applicant Details
16. Please enter your City
17. Please state country
18. Primary contact first name
19. Primary contact given name
20. Primary contact job title
21. Primary contact department
22. Primary contact email
23. Primary contact mobile No
24. Secondary contact first name
25. Secondary contact given name
26. Secondary contact job title
27. Secondary contact department
28. Secondary contact email
29. Secondary contact mobile No
30. Do you confirm you can attend the exclusive finalist bootcamp on 30 January 2020 if your city is selected?
31. Did your city host a Climathon in 2019?
   ○ If yes:
   ○ How has your local Climathon contributed to the creation or development of this project, if at all? If not, why not?
   ○ Have any Climathon solutions influenced your city plans, legislation or policies in any way? If not, why not?
32. Has your city ever received funding from Climate-KIC?
33. Preferred airport
34. Visa required?

Project Details
(maximum of 1670 words/3.5 pages)
35. Name of the Project
36. Tagline
37. Is the project in the proposal phase?
38. Brief project summary
39. Project description
40. How does your project integrate one or more of the four ‘enablers of action’?
41. How is your project innovative compared to other cities or organizations addressing similar problems?
42. What are the baseline metrics to measure your progress against? What is the one year milestone with which to measure progress against? How does the project include sustained monitoring of progress, implementation, and/or realisation?
43. How does the project include measurable decarbonisation and contribute to the wider aspiration of the city around carbon neutrality?
44. How have local citizens been involved or consulted in the conceptualisation of the project? Have other cities or neighborhoods engaged? If yes, please describe and identify any other partners involved in the project.
45. What other expected or unexpected benefits to the local or global community exist (e.g. biodiversity, air quality, social cohesion, community assets, human health, and economic prosperity)?
46. Anything else you want us to know about your project?

Links / Resources
Crowther Lab papers
- Global tree restoration potential
- Potential Future cities: climates in 2050

EIT Climate-KIC materials
- Enablers of Change Framework
- Transformation, in Time EIT Climate-KIC strategy
- City Deep Demonstration Innovation Insight Paper
- Healthy, Clean Cities

Other relevant research
- Magnitude of urban heat islands largely explained by climate and population
- The natural capital of city trees
- Guidance on Integrated Urban Hydrometeorological, Climate and Environmental Services
- Strategies for Cooling Singapore
- 100 Solutions for Climate Action in Cities

Open Policy
Who owns the solution submissions?
At Climathon, we operate under a mindset of open collaboration focused on transformative and climate-positive impact and, by default, all challenges and solutions publicly contributed to the Climathon website or ideated as part of any of the Climathon-branded events become shareable and reusable by anyone. If you have been inspired by a specific solution, we recommend that you get in touch with the relevant team or, at the very least, give credit to the team behind it by referencing the solution subpage as the original source. Who knows, this might lead to an opportunity to work together or find new partners.

What if I have IP concerns about sharing my solution?
It is part of our ethos that openness and co-creation are at the foundation of innovations that can truly make a dent in our road to a decarbonised society. We understand, however, that there may be special cases where sensitive information may be difficult to share publicly. For teams in this position, we encourage you to share only what you feel comfortable with and to upload a high-level explanation of your idea on our website (we do not need all the technical details to assess its potential) to give the wider Climathon community an opportunity to reach out to you and share valuable feedback on your solution. If you need extra support with intellectual property concerns, please contact us at climathon@climate-kic.org.

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