

Competition
brief













Introduction	4
Why climate smart cities?	4
What is the competition?	4
The competition	5
Structure and timeline	
System demonstration	6
The city challenges	7
• Bogotá	7
Bristol	11
• Curitiba	13
• Makindye Ssabagabo	17
Competition criteria	21
Offer to innovators	24
Submitting an application	
Application process	
Application form	27
Application support	27
Appendix	

Introduction

Why climate smart cities?

More than half the world's population lives in cities; cities are our global economic engines and leaders in technology and policy development. Cities are where innovation happens.

However, the current climate emergency exacerbates global problems like rising inequalities; a lack of affordable, energy-efficient housing; limited mobility options; food and energy insecurity; and more.

The Climate Smart Cities Challenge harnesses the creativity and energy of innovators to work with cities to help achieve global net zero and create a better future for all. Launched by the UN and Sweden, this innovation competition will accelerate the shift to climate neutral cities, by empowering innovators and communities to collaborate in designing and demonstrating solutions and reinventing how cities innovate.

What is the competition?

The Climate Smart Cities Challenge is an open innovation competition to identify climate smart solutions to reduce the climate impact of Bogotá, Colombia; Bristol, United Kingdom; Curitiba, Brazil; and Makindye Ssabagabo, Uganda, while creating a better future for all.

Up to 80 finalists (up to 20 per city) will be selected in January 2022 to work closely with these four cities, learn more about their challenges, collaborate on solutions, and ultimately form teams to demonstrate solutions in real-world environments. The winning teams will share up to 400,000 Euro to leverage further investment and build towards systems demonstrations in 2023.

What is challenge-driven innovation for cities?

"Challenge-driven innovation is an innovation framework that accelerates traditional innovation outcomes by leveraging open innovation and crowdsourcing along with a defined methodology, process and tools to help organizations develop and implement actionable solutions to their key problems, opportunities and challenges."

Challenge-driven innovation represents an opportunity for cities to advance efforts towards sustainable development, by supporting and purposely coordinating investments in innovative solutions locally. In seeking new solutions to tackle urban problems from local, national and global providers, cities can also help to increase the skills, capacity and knowledge of city officials and local stakeholders, as well as deliver new infrastructure and socially-impactful climate action. Challenge-driven initiatives create ideal circumstances to facilitate collaboration between multiple partners and to steer innovation that benefits citizens and local businesses.

The competition

Structure and timeline

The climate Smart Cities Challenge is an initiative from Viable Cities, UN-Habitat, Teknikföretagen, Vinnova, Swedish Energy Agency, Swedish Institute, Swedish Secretariat for Expo 2020 Dubai, Business Sweden, Swedish Agency for Economic Development and Regional Growth, International Council of Swedish Industry:NIR, Swedish Export Credit Corporation, Smart City Sweden, Mission Innovation, Scania, ABB Group, Sveriges Allmänna Utrikeshandelsförening (SAU), Ignite Sweden and Nesta Challenges. The initiative is being delivered by Viable Cities and UN-Habitat, supported by Vinnova (the funder).

The city representatives involved in the initiative include:



Curitiba

Instituto de Pesquisa e Planejamento Urbano de Curitiba and Prefeitura Municipal de Curitiba (Curitiba Municipality) and Agência Curitiba de Desenvolvimento S.A. (Curitiba Agency).



Bogotá

Secretariats of Mobility and Environment.



Makindye Ssabagabo

Makindye Ssabagabo Municipal Council.



Bristol

Bristol Housing Festival and Bristol City Council.

The Climate Smart Cities Challenge consists of five phases:

- 1. Open call for cities (now closed).
- 2. The competition (now open, closes 5 January 2022).
- 3. Finalists and cities co-creation period (February May 2022).
- 4. Winning teams plan for demonstration of their solutions in cities (June November 2022).
- 5. System demonstration (2022-2023).

Timeline



System demonstration

Adopting a systems view of climate change, the partners of the Climate Smart Cities Challenge will design system demonstrators in each of the four participating cities.

System demonstration is an approach to orchestrate a portfolio of connected innovations, targeting different aspects of a city's climate and sustainability challenges. The purpose is to achieve multiple, large-scale and transformative outcomes that help cities become climate neutral while improving the lives of residents. Multiple and diverse stakeholders in each city will come together to learn from these demonstrators, and mobilize the necessary investments for climate transition.

Winning teams of the Climate Smart Cities Challenge will work with cities, investors and other partners to demonstrate new pathways and capabilities to reduce greenhouse gas (GHG) emissions, while also contributing to nature restoration, social justice, health, security, employment and other societal benefits.

The system demonstration planning phase will take place from June – November 2022, building towards demonstrations in cities in 2023.

Multiple levers of change including governance, policy, regulation, behaviour change, data, legal technology and finance will be activated to achieve these results, thereby inspiring other actors, redirecting financial flows and mobilizing investments for climate neutrality to create a better future for all.

7

The city challenges

Bogotá



The challenge

Every day more than 67,000 delivery trucks and vans clog the streets of Bogotá, contributing to the traffic congestion of the city and emitting 850,000 tonnes of CO₂ and over 700 tonnes of PM2.5 per year. More than 70 per cent of the vehicles belong to small fleet owners, many of them operate under informal conditions, and 40 per cent are empty trips at any given time. How can we increase the efficiency of these operations to reduce congestion and emissions and improve productivity?

Call to action

We are looking for innovative business models, services and/or technologies that contribute to improved freight mobility in the city and reduce congestion-based greenhouse gas and air pollutants emissions from logistics operations [by 100,000 tonnes of CO₂ and 100 tonnes of PM2.5 by 2024, approx.].

What are we looking for?

Proposals should involve all supply chain stakeholders, such as shippers, carriers and receivers.

We are open to a variety of approaches that incorporate considerations related to mobility, value chain efficiency, energy efficiency or technological improvements of the fleet, but the most competitive solutions would (but are not limited to):

- 1. Provide usable and compelling information that both formal and informal freight operators can use to improve efficiency and reduce costs.
- **2. Provide data security and privacy protections** to all users creating trust and encouraging data sharing behaviours.

- **3. Incentivise the participation and integration** of the different stakeholders.
- 4. Analyse and present aggregate data to guide city transport and environmental planning decision-making, regulations and infrastructure investments.
- Identify needed regulations/policies e.g. congestion charges to freight and other vehicles, to enable operators to navigate more easily.
- 6. Provide intelligent/smart routing that enables better coordination of the freight transport system of the city.
- 7. Integrate live traffic/freight supply and transport data sources, to enable more efficient and cost-effective operations with dynamic pricing or savings for carriers, receivers and shippers.

What do we hope to achieve?

- Develop solutions that will contribute to Bogota's recently adopted Climate Action Plan to reduce GHG emissions by 15 per cent in 2024, 50 per cent in 2030 and to reach carbon neutrality by 2050.
- Improve freight mobility in the city by reducing congestion-based greenhouse gas and air pollutants emissions from logistics operations by 100,000 tonnes of CO₂ and 100 tonnes of PM2.5 by 2024, approx.
- Enable a constant speed of travel through the city, as research highlights that traffic jams have a significant impact on emissions as they demand additional fuel consumption.

Key barriers to overcome

- Bogotá produces around 5 per cent of the country's GHG emissions, and the transport sector is responsible for 48 per cent of them. Ensuring the solution is adopted to the rest of Colombia may take some tailoring of the solution to the environmental, geographic and local assets.
- Bogotá faces significant traffic congestion due to the inefficient use of transportation alternatives and resources, as well as the lack of an intelligent traffic management system focused on freight transport.
- Aim to engage the informal sector, including owners with older vehicles and smaller budgets.
- The freight sector accounts for at least 10 per cent of GHGs and 16 per cent of PM emissions in the city, which includes all emissions sources.Within the transport sector, freight transport accounts for 38 per cent of particulate matter emissions in Bogotá, making it the greatest contributor of this pollutant.

8

What support will we be offering to finalists?

- A series of workshops and presentations to further detail the challenge.
- Weekly drop-in Q&A sessions with the city lead and partners.
- Responses to specific questions via email.
- Access to relevant data sets and studies, including mobility and emissions inventory databases and tools for solution development; logistics and cargo datasets; freight and mobility studies.
- Introduction to key freight sector stakeholders through the Urban Logistics Network.
- The option to use physical and/or virtual spaces throughout the competition.
- Facilitate access to city spaces and permits for testing solutions.
- Accompany the ideation, testing and scaling of solutions.
- Connect solutions and solvers with partners and investors.

Who might apply?

- Software developers.
- Fleet logistics companies.

- Technologists.
- Transport and urban mobility planners/engineers.

Location of system demonstrator

The city is prepared to work with the winning team to implement demonstrations in an area that could be

defined collegially with the participants, in a way that suits the needs of the innovators and city.

9

Planned local investments

The Bogotá Development Plan 2020-2024 sets out the Mayor's objectives, policies and proposals for protecting the environment and improving the Bogotá quality of life. For this regard it provides a vision for Bogotá through 2 purposes: No 2: Bogotá Reverdece and No 4 Region of a model of multimodal, inclusive and sustainable mobility.

In addition, the Secretariat of Mobility is working to strengthen the role of urban logistics in public policy documents. The structuring of the Land Management Plan, the Mobility Master Plan, the Low Carbon Action Plan for Urban Freight, and the Logistics Vision 2050 set out objectives, actions, and indicators and present the conditions necessary to implement these actions in the short, medium, and long term. To achieve this, collaboration with all stakeholders and the generation of regular and reliable data are the success factors for structuring programs, projects, and policies in this area. From there, it is possible to plan efficient and low-carbon urban logistics, involving stakeholders and contributing to national GHG emission reduction goals. Understanding the air quality issues and regulatory environment related to the freight sector, the City has the Strategic Plan of Air Management of Bogotá 2030, also called the Air Plan, adopted in 2021, with a budget of around 40 thousand USD, from 2020 to 2030, for 45 projects, including a sustainable freight transport program to reduce emissions from this sector.

In order to achieve emission reduction goals and the co-benefit in public health, stringent emission standards and fuel policies should be continuously and effectively implemented. Bogotá's Air Plan is the management tool for the actions that the city must take to reduce air pollutant emissions, to be able to comply with World Health Organization (WHO) Goals. These set of actions are intended to improve Bogota's quality of life and competitiveness and integrate fundamental goals: governance, relationship with climate change, green growth, and energy efficiency.

About Bogotá

Bogotá, the capital city of Colombia, South America, is located in the geographic center of the country.

Bogotá has nearly 8 million inhabitants, representing 22 per cent of the country's total population, and a population density of 18,881 residents per km. With 28 per cent of the companies in the country located in the capital, Bogotá faces significant traffic congestion due to the inefficient use of transportation alternatives and resources, as well as the lack of an intelligent traffic management system, making innovation in this area crucial.

To learn more about Bogotá's challenge, the local context, background data and planned investments, read Bogotá's challenge brief.

Bristol





The challenge

Bristol – currently facing a climate emergency and a housing crisis – aims to develop 24,000 new affordable homes by 2050. Yet, a standard new home will produce some 150 tonnes of CO_2 in the 25 years after it is built. How can we develop and scale new ways of delivering affordable and carbon-neutral housing?

Call to action

We are looking for innovative business models, services and/or products that can help shape a new housing development appraisal and financing model that enables the development of affordable, zero carbon new homes in the city starting in 2023.

What are we looking for?

Successful proposals should demonstrate they can contribute to the design of an innovative development and financing model for the construction of new homes on urban brownfield sites in the city of Bristol. The homes should be zero carbon, demonstrate a biodiversity net gain, commercially viable, evidence best value and be cognisant of Bristol's high standards of community engagement in the planning process.

We are open to a variety of approaches, but the most competitive solutions are likely to address one or more of the following:

- Planning and design.
- Financing and investment.
- Housing and construction or manufacturing.
- Social value quantification.

The ultimate aspiration is that this model for new builds can be later tested and applied for the retrofitting of the existing building stock in Bristol, a vital component of reaching our net zero carbon target.

What do we hope to achieve?

- The city aims to develop 24,000 new affordable homes by 2050.
- Achieve Bristol's pledge to make the city carbon neutral and climate resilient by 2030.
- Contribute to Bristol's Ecological Action Plan of increasing space for nature, reducing pesticide use and considering our wider footprint: reducing consumption of products that undermine the health of wildlife and ecosystems.



Key barriers to overcome

- Bristol currently has over 15,000 individuals and families on the housing waiting list, and over 800 households in temporary accommodation.
- It is estimated that 1 in 170 people in Bristol don't have somewhere permanent to live.
- In Bristol's preliminary climate resilience assessment, it was found that under a high emissions scenario, by 2080, Bristol could expect to see sea levels on Bristol's coastline increase by up to 72cm. Winter precipitation rate could increase by up to 48 per cent. Summer maximum temperature is projected to increase by over 9 degrees Celsius

and, by 2080, summer precipitation rate in Bristol is projected to decrease by up to 68 per cent.

- To reach the city's target of a carbon neutral 2030, the rate of reduction will need to be 1.6 times that of the previously observed rate.
- According to the UK Green Buildings Council (UKGBC), the built environment contributes to around 40 per cent of the UK's total carbon footprint. Half of this is from energy used in buildings and infrastructure, and 28 per cent are embodied in the materials used in the construction of buildings.

What support will we be offering to finalists?

- Workshops and presentations to further detail the challenge.
- Regular Q&A sessions with the city leads and partners around specific topics.
- Access and signposting to relevant data sets and studies, including housing and financing data and access to reports and studies.
- Introductions to relevant city stakeholders as required.

Who might apply?

- Housing developers.
- ESG Investors.
- Green home technologists.
- Real estate finance experts.

Location of system demonstrator

As specified in the challenge statement, the Bristol demonstration location will be an urban brownfield site. The city is in the process of identifying the relevant sites and will be able to share details of these with the finalists.

Planned local investments

The following investment and infrastructure either exists or is planned for Bristol:

- The Heat Network: The council's own network of pipes that provides local businesses, organisations, and housing with heat and power from more sustainable sources. While the network is currently low carbon, in the coming years the plan is to become no carbon. Over time, new renewable alternatives will be installed which will further reduce carbon emissions. increasing the city's resilience to fluctuating energy prices and reducing our reliance on gas. Heat networks are central to achieving the Mayor's goal for Bristol to be a carbon neutral city by 2030 and the council's existing heat networks already connect over 1000 social housing properties.
- Castle Park Energy Centre: The new Castle Park Energy Centre, part of the Bristol Heat Network, will be delivered by Bristol City Council and Goram

Homes in partnership with Vital Energi and will house England's largest water source heat pump. The Castle Park Energy Centre will provide affordable heating with a low carbon footprint for a greener, cleaner Bristol. Once the Energy Centre is complete, a mixed-use development will be built over it with construction due to begin in late 2021.

• The Affordable Homes Programmes: This provides grant funding to support the capital costs of developing affordable housing for rent or sale. As the Government's housing accelerator, Homes England has made available £7.39bn from April 2021 to deliver up to 130,000 affordable homes by March 2026, all outside London. The funding is for the supply of new build affordable housing, not met by the market. £577,000 of funding from Homes England has been awarded to Bristol City Council to help develop 50 much needed new homes in north Bristol.

About Bristol

Bristol is the largest city in the Southwest of England, with a population of 449,300. It is characterised by Georgian architecture, street art, a thriving arts and culture scene and its independent spirit. A fast evolving and growing city, Bristol is home to a diverse and vibrant population who herald from 180 different countries of origin, practice 45 separate religions and speak 92 languages. Bristol is one of the 10 Core Cities in the UK who contribute more than a quarter of the UK economy and collectively house 20 million people. As a Core City, Bristol is well placed to affect change on the way we interact with the climate emergency, and to catalyse action regionally, nationally and internationally. Bristol is also home to The One City Approach and Bristol City Office. The City Office convenes an active network that brings together a huge range of public, private, voluntary and third sector partners which share an aim to make Bristol a fair, healthy, and sustainable city. This culture of collaboration provides the perfect context for citywide innovation.

To learn more about Bristol's challenge, the local context, background data and planned investments, read Bristol's challenge brief.

Curitiba



The challenge

The city of Curitiba aims to be carbon neutral by 2050. This will require addressing multiple related challenges including energy, transport and waste management. City residents rely on hydroelectricity (and other power sources), but it has become increasingly scarce and expensive. Despite an impressive history as a world leader in developing active mobility and public transport, private car ownership continues to rise. And each day, 80 per cent of solid waste collected in the city is sent to landfills. How can we create zero carbon neighborhoods that build on historic urban infrastructure and character, integrate multiple urban functions, and promote economic opportunity and green job growth for local residents?

Call to action

We are looking for innovative and integrated business models, services and/or technologies that will help create zero carbon emission areas, advancing to Curitiba's ambition to reach carbon neutrality by 2050.

What are we looking for?

We encourage proposals that cut across the energy, mobility and waste sectors and reduce emissions while contributing to a better future for all. Proposals should be capable of being demonstrated in the Vale do Pinhão and/or Vila Torres neighbourhoods of the city.

We encourage proposals that address:

Energy – generating sustainable energy at an affordable price.

Around 70 per cent of Brazil's electricity is generated from renewable sources, mainly hydroelectric. But a serious water crisis is affecting energy generation and increasing prices. Curitiba therefore seeks innovative solutions for affordable, sustainable energy for Vila Torres and Vale do Pinhão. Vila Torres is a vulnerable community, where the construction pattern of houses makes it difficult to install individual sources of sustainable energy generation; Vale do Pinhão is a former industrial area with great potential for urban renewal.

Mobility – moving people, goods and services sustainably and affordably.

Curitiba's Master Plan 2015 prioritises public transport, mixed use neighbourhoods and decongesting the city centre – with the aim of reducing the need for travel and cutting emissions. Curitiba therefore seeks proposals for affordable, low-emission mobility of people, distribution of loads and provision of local services, for short (last-mile) journeys, suitable for use in Vila Torres and Vale do Pinhão. Although both are served by public transport, Vila Torres' current traffic is predominantly carried out on foot and Vale do Pinhão's primarily by private vehicle.

Waste – reducing waste sent to landfills through segregation and recycling.

Around 80 per cent of Curitiba's solid waste is sent to landfill, even though much of this waste – such as paper, plastic or e-waste – could be recycled and organic waste could be composted. PlanClima sets a target of increasing the recycling rate from 20 per cent to 50 per cent by 2030. As well as making the city more sustainable, this would also be an economic benefit: many families, especially in Vila Torres, depend on recyclable materials for their income. Curitiba therefore seeks innovative proposals that more effectively segregate urban solid waste and support greater use of recyclable waste by communities, reducing the amount of waste sent to landfills, suitable for use in Vale do Pinhão and Vila Torres.



What do we hope to achieve?

- Support Curitiba's goal to become a carbon neutral city by the year 2050.
- Contribute to the city's long-term goal of establishing carbon-neutral zones and neighbourhoods.
- Support the generation of sustainable businesses and green jobs.
- Implement multi-sector actions in the fields of energy, mobility and waste as part of the city's carbon neutral trajectory.

Key barriers to overcome

- In Brazil, 58.34 per cent of the energy comes from hydroelectricity, 25 per cent from thermoelectric and 10 per cent from wind power. Photovoltaic energy represents only 1.87 per cent of the total energy generated.
- The reservoirs in the Brazilian Southeast/Midwest Regions, which are responsible for 70 per cent of the energy consumed in the country, are operating with only 19.59% of its capacity. As a result, the cost of energy has risen considerably in recent years and this year increased by 8.97per cent in Curitiba.
- Curitiba aims to reduce private car travel in the

city. In Vale do Pinhão, 55.1 per cent of the trips are made by individual vehicles.

- In 2020, Curitiba generated a total of 1,800 tons of urban solid waste per day. Of the total waste collected, approximately 20 per cent is recyclable and the remaining 80 per cent is sent for disposal in a landfill. There is a huge potential for reuse of those materials.
- Many families, especially in Vila Torres, depend on recycling materials for their income – a situation that has been worsened by the pandemic and unemployment.

What support will we be offering to finalists?

- A series of presentations and workshops for all the finalists regarding the City of Curitiba and topics related to the challenge.
- Support with finding and navigating public datasets.
- Q&A sessions with the city lead and partners around specific topics.
- Introductions to relevant city stakeholders.

Who might apply?

- Technologists/software developers.
- Energy engineers/innovators.

- Circular economy and waste management providers.
- Transport/mobility planners and engineers.

Location of system demonstrator

The two target areas for the challenge are Vale do Pinhão and Vila Torres. Vale do Pinhão is an historic industrial area poised for regeneration, and Vila Torres is a mixed-use area comprising primarily residential uses and small businesses and has a significantly high population of people living in poverty. (Much more detail about the characteristics of both neighbourhoods are in the **Curitiba challenge brief and technical volume**).

Planned local investments

In the region of the Regional Administration of the Matriz, where the two demonstration areas are located, investments in the order of US\$29.5 million are planned for the period 2022 to 2025. These are interventions in road infrastructure, construction, rehabilitation and adaptation in food supply facilities, implementation and revitalization of leisure and sports areas, renovation and expansion of sports, leisure, tourism and security facilities.

About Curitiba

Curitiba is the capital city of Paraná State, located in south Brazil. With a population estimated at 1.9 million inhabitants, the city is often known and awarded due to its urban planning system, focused on the Transit Oriented Development model, and due to its environmental awareness, being one of the greenest capitals and one of the cities that recycle the most in Brazil. Curitiba has been acknowledged and awarded recently also by its initiatives towards becoming a smart city.

To learn more about Curitiba's challenge, the local context, background data and planned investments, read Curitiba's challenge brief and Curitiba's technical volume.

Makindye Ssabagabo



The challenge

Makindye Ssabagabo Municipality is one of the fastest growing cities in the Greater Kampala Metropolitan area with a rapid population growth of almost 10 per cent per year. The city faces high emissions with residential housing accounting for 9 per cent of total greenhouse gas emissions, coupled with an acute shortage of affordable housing projected at 189,115 units by 2023. The lack of affordable and green housing exacerbates the city's ability to reduce carbon emissions and approach net zero. How can we develop scalable, affordable green technologies and models to accommodate the growing population sustainably?

Call to action

We are looking for innovative products, services and/or business models which can help build zero carbon, energyefficient, affordable homes that can be developed and demonstrated in Makindye Ssabagabo by 2023.

What are we looking for?

Successful solutions will demonstrate an affordable new green home model which can be implemented in either Busabala or Nansana, with the ambition to scale and be applied to retrofitting existing housing stock across the Greater Kampala Metropolitan Area from 2023.

We are open to a variety of approaches, but the most competitive solutions are likely to address one or more of the following:

- Building materials.
- Energy.
- Waste management.
- Manufacturing processes.
- Water systems.
- Holistic green designs.

What do we hope to achieve?

- There is a need to bridge both the knowledge and service gap between innovators like manufacturers, financial institutions and communities embracing green homes. The pilot will generate knowledge and technological breakthroughs on the one hand, and industrial applications and commercial adoption on the other.
- The city is ready to undertake the pilot project under a public private partnership given the conducive legal and regulatory frameworks that protect and support innovators and their clients. The successful implementation of this project will greatly improve the sustainability, aesthetics and liveability in the city while building green jobs for residents.



Key barriers to overcome

- The biggest challenge the municipality faces is the unplanned and informal physical developments taking place, especially in the upcoming peri-urban areas of the municipality, due to rapid urbanisation coupled with the increasing influx of people from Kampala.
- The overall housing situation in the municipality is characterized by inadequate housing in terms of quality and quantity both in rural and urban areas. According to the Uganda Household Survey 2021, urban areas including Makindye Ssabagabo had a higher percentage of iron sheet roofed owneroccupied dwellings (84 per cent) than rural areas.
- According to the Uganda Household Survey 2019/20, the absolute numbers of persons living in

poverty in urban areas has increased from 1 million people in 2009/10 to 1.3 million people in 2019/20. This has been exacerbated by the COVID-19 pandemic that has seen the percentage of the urban poor jump from 11.7 per cent to 11.9 per cent.

 The GHGs associated with residential buildings and homes are largely a result of the following conditions: the unsustainable production and use of building materials like clay or earth bricks, timber coupled with unsustainable building techniques, indiscriminate disposal of solid waste and wastewater, failure to harvest rainwater, dependency on biomass for domestic energy, failure to adopt energy saving technologies and lack of green spaces.

What support will we be offering?

- The city project team will be available to respond to specific questions from innovators and provide some dedicated time for each of the finalists.
- Access to relevant data sets will be made available accordingly, including:
 - > Municipal Physical Development Plan.
 - > Reports of the green home digital survey.
 - > Greenhouse gas emissions report.
 - > Makindye Ssabagabo Municipal Council Local Economic Development Strategy 2022-2027.
 - > Uganda Population and Housing Census Report 2014.

- Facilitate introductions to relevant stakeholders for this challenge, including:
 - > The Mayor.
 - > City manager.
 - > Relevant city technical staff.
 - > Other local leaders.
 - > Uganda Green Building Council.
 - > City residents and community members.

Who might apply?

- Housing developers.
- ESG investors.

- Green home technologists or building material developers.
- Academia.

Location of system demonstrator

The city has identified two potential demonstration sites; Busabala or Nansana. Further details of the sites

will be shared with selected finalists.

19

Planned local investments

The city hosts the biggest housing project for the affluent class in Uganda. The project funded by the National Social Security Fund comprises 2741 units marketed as high-end apartments with four bedrooms, a CCTV security system, swimming pool, Wi-Fi, gym, club house and elevators. The project will cost USD 400 million over a ten year period.

The city also hosts the biggest specialised hospital in the country that is under construction in Lubowa under a public private partnership involving the government of Uganda. The project will cost USD 379 million.

The city has prioritised paving of roads, since 2019, 30 kilometres of earth roads have been upgraded to bitumen standards, Currently, 17 per cent of the total road network of approximately 354 kms is tarmacked. In order to upgrade more roads, the City is currently procuring a road tarmacking unit in a phased manner. According to the Uganda Green Growth Development Strategy, 2017/18 – 2030/31, embracing planned green cities will increase worker productivity from USD 977.8 to at least 50 per cent at USD 5,217.65 for new workers. In addition economic flows from industrial cities and increased worker productivity from subsistence farmer level will increase from USD 3.06 billion/year in 2020 to USD 5.28billion/year Cumulative = USD 44.9 billion, equivalent to UGX 163.88 trillion over 10 years.

Full implementation of the Uganda Green Growth Development Strategy interventions will enhance national GDP by 10 per cent, deliver an additional 4 million green jobs and reduce greenhouse gas emissions by 28 per cent relative to the conventional growth pathway.

About Makindye Ssabagabo

Makindye Ssabagabo is one of the fastest growing areas in the Greater Kampala Metropolitan Area in Uganda with a rapid population growth rate of 10 per cent and the highest population density in the country. The municipality borders the capital city Kampala and has a combination of urbanized, affluent, less affluent and informal settlement areas. The challenges of growth, development and servicing of Kampala have triggered a sprawl of growth centres in the municipality. Following a series of consultations involving different stakeholders, the city is ready to undertake this challenge. The successful implementation of this project will greatly improve the sustainability, aesthetics and liveability in the city while building green jobs for residents.

To learn more about Makindye Ssabagabo's challenge, the local context, background data and planned investments, **read Makindye Ssabagabo's challenge brief**.

Competition criteria

Finalist selection criteria

Each city's challenge is complex and will require many different solutions working together to achieve the city's ambitions. Therefore, we are seeking a variety of proposals that can contribute to solving the problem – we don't expect a single organization to overcome every barrier. Finalists will work with city stakeholders to fine-tune proposals, adapt to the city context, and form relationships to create a team of complementary partners in each city.

The cities and partner organizations will review applications using these criteria:

1.	Impact and innovation – 1 does this solution have the potential to achieve the desired impact?	1.1	How is the solution relevant to the challenge as defined by the city? Does the applicant respond to what the city has identified to be the problem?
		1.2	Will this solution reduce greenhouse gas emissions?
		1.3	Will this solution promote additional socio-economic benefits for the city? How will the community be engaged, including disadvantaged groups or others referenced in the city challenge brief?
		1.4	Is it new or different from what's already on the market?
2.	Concept viability – does the applicant present a robust concept that is ready to be demonstrated in a real-world environment?	2.1	Is it technically feasible and viable within the timescales of the challenge and the system demonstrator?
		2.2	Does the applicant have a feasible business model within the context of the system demonstrator?
		2.3	Is the applicant considering user and customer engagement ? Will potential solutions be affordable to the end user ?
3.	Collaboration potential – is the applicant well-suited to join a team and will engagement with the city support their vision?	3.1	Does the applicant indicate willingness to work with new partners ? Is the applicant seeking complementary skills or expertise to achieve their goals?
		3.2	Is the applicant able to integrate their solution with others?
		3.3	How does the applicant envision collaborating with the city ?
4.	Capability – does the applicant have the track record to deliver?	4.1	What is the applicant's relevant experience and expertise ?

Who can apply?

Before applying to the competition please ensure you meet the following eligibility criteria:

Before applying to the competition please ensure you meet the following eligibility criteria:

- Applicants must be a registered entity (inclusive of businesses, charities, community groups, educational institutions, sole traders, public bodies etc.). It is not required that you be registered specifically within any particular country.
- Separate applications must be submitted for each organization.
- Applicants must own or have permission to use relevant intellectual property.
- Applicants must specify which city challenge they are applying for. Please note that you can submit a separate proposal if you wish to apply to more than one city challenge.
- Applications must clearly respond to one of the four city challenges as described on the competition website and in the competition brief.
- Employees of Viable Cities; UN-Habitat; Nesta Challenges; Instituto de Pesquisa e Planejamento Urbano de Curitiba (IPPUC) (Institute for Research and Urban Planning of Curitiba); Prefeitura Municipal de Curitiba (Curitiba Municipality); Agência Curitiba de Desenvolvimento S.A. (Curitiba Agency); Secretariat of Mobility, City of Bogotá; Secretariat of Environment, City of Bogotá; Makindye Ssabagabo Municipal Council; Bristol City Council; Bristol Housing Festival; Bristol One City; ABB Group; Sveriges Allmänna Utrikeshandelsförening (SAU), Teknikföretagen, Vinnova, Swedish Energy Agency, Swedish Institute, Swedish Secretariat for Expo 2020 Dubai, Business Sweden, Swedish Agency for Economic Development and Regional Growth, International Council of Swedish Industry: NIR, Swedish Export Credit Corporation, Smart City Sweden, Mission Innovation, Scania, Ignite Sweden or any other partner organizations involved in the Climate Smart Cities Challenge, and their immediate families, are not eligible to enter.
- Individuals or organizations who are involved in assessing entries, and their immediate families, are not eligible to enter.
- We are unable to accept entries from any organization that is currently: bankrupt, in liquidation, having their affairs administered by the courts or entered into an arrangement with creditors.

Winning team selection criteria

Finalists will form teams in spring 2022, and will submit proposals in May 2022 outlining how funding for planning for system demonstration should be used.

Proposals will be reviewed and scored by an expert advisory panel, the cities and the Climate Smart Cities Challenge partners.

They will review team proposals and select the winning teams in May 2022 using these criteria:

1.	. Impact and innovation – does this team's proposal have the potential to achieve the desired impact?	a. How is the team's proposal relevant to the challenge as defined by the city? Does the applicant respond to what the city has identified to be the problem?
		b. Will this team's proposal reduce greenhouse gas emissions?
		c. Will this team's proposal promote additional socio-economic benefits for the city? How will the community be engaged, including disadvantaged groups or others referenced in the city challenge brief?
		d. Is it new or different from what's already on the market?
2.	. Concept viability – does the team present a clear concept?	a. Is it technically feasible and viable within the timescales of the challenge and the system demonstrator?
		b. Does the team have a feasible business model within the context of the system demonstrator?
		c. Is the team considering user and customer engagement ? Will potential products, models or solutions be affordable to the end user ?
3.	Collaboration potential – does the team present a suitable vision to collaborate and create a viable system demonstration?	a. Is the team able to integrate their products, models or solutions with others?
		b. How does the team envision collaborating with the city ?
		c. Does the team have resources to bear , in terms of funding or potential additional partners or investors?
4.	• Capability – does the applicant have the track record to deliver?	a. What is the team's relevant experience and expertise ?
		b. Does the team lead have the relevant capacity ?

Offer to innovators

What will finalists receive?

There is an array of non-financial support available to finalists. Each city will be offering significant resource and time to provide support to finalist organizations, ranging from workshops, stakeholder management and access to data. The challenge partners will also provide an exciting offering of in-kind support, including facilitated matchmaking and team development and profile raising opportunities; see the details on the About the competition page and below. Up to 80 finalists will be selected (up to 20 per city).

From February - May 2022, finalists will to benefit from:

• Support and engagement activities with a partner city: finalists will be able to work with city stakeholders to fine-tune solutions, adapt to the city context and form relationships with other teams to create teams of complementary partners. Each city has outlined their specific offering.



Bogotá



Bristol



Curitiba



Makindye Ssabagabo

- Facilitated matchmaking process to find collaboration partners and form teams.
- Access to coaching and mentoring support to develop product and business model.
- Potential to build relationship with city stakeholders.
- Profile-raising opportunities, including:
 - > Finalists featured at the Expo 2020 Dubai in January 2022.
 - > Winning teams featured at the World Urban Forum in Katowice, Poland in June 2022.
 - > Potential media opportunities.
 - > Exposure to potential investors.
- Opportunity to contribute to tangibly reducing greenhouse gas emissions and creating a better future for all.



Matchmaking support

Finalists will benefit from matchmaking support to form teams. Support will include speed-dating sessions among the finalists and deepened match-meetings to form relationships; guidance in choosing partners; kicking off collaborations and setting goals and objectives; assistance with maintaining momentum; and support with preparing final submissions.

Winning teams

In May 2022, finalists submit proposals as teams to progress. In June 2022, up to four teams (one per city) will be chosen to proceed with a planning phase, and announced at the World Urban Forum in Katowice, Poland. The winning teams will share up to 400,000 Euro in a planning phase to build towards demonstrating their solutions in the cities in 2023, with the ultimate aim of creating solutions that will create better futures in cities around the world. Teams may also be able to access financial support that cities and the competition partners can help leverage in the system demonstration phase.

Further information about this and the next phases of the competition will be shared with selected finalists.



Submitting an application

Application process

All applications to the Climate Smart Cities Challenge must be submitted by 17:00 (UTC) on 5 January 2022. Applications need to be submitted before the deadline and via the dedicated application portal. All applications must be submitted in English.

Before starting your application you will need to make an account in the application portal. You can save a draft of your application at any time and come back to your application later.

Once your application has been submitted, you will receive a confirmation email. You will not be able to edit your application once it has been submitted. Please remember to submit your application before the final deadline 17:00 (UTC) 5 January 2022.

We encourage applicants to read all the information on the website including the **FAQs**, **competition criteria**, **privacy policy** and **terms and conditions**, before completing this application form. All applications will be assessed against the finalist criteria.

Early application opportunity

Applicants who submit an eligible application before 23:59 (UTC) 5 December 2021 will receive priority review and an invitation to meet with the relevant city stakeholders during the week commencing 6 December 2021.

This is an exciting opportunity for applicants to complement their application form with a short pitch and meet with some of the key decision makers for the competition. This is a limited opportunity working on a first come, first serve basis so we highly recommend submitting an application as soon as possible.

If selected to progress, organizations will be announced on 20 January 2022, at Expo 2020 Dubai. Applicants should only submit if they are able to commit to working with the partners to provide the necessary information ahead of this.

Application form

In the application form you will be asked to submit the following information:

- Contact information for the key team members and organization involved in the proposal.
- Brief descriptions of how your proposal addresses the relevant city challenge statement and the overall finalist criteria.
- Confirmation that you meet the eligibility criteria and can commit to working with the challenge partners for an announcement on 20 January 2022 at Expo 2020 Dubai.

A PDF of the application form is available but please note that all submissions must be made online via the dedicated application portal before 17:00 (UTC) 5 January 2022.

On the online application platform you will be able to make an account and access the application form. You can save a draft at any time and come back to your application later. Click the 'save' button at the bottom of the application form to save your draft. Once your application has been submitted, you will receive a confirmation email. You will not be able to edit your application once it has been submitted.

You can submit more than one application. Applicants must specify which city challenge they are applying for but you are able to submit a separate proposal if you wish to apply to more than one city challenge. If applying with existing partnerships a separate application must be submitted for each organization involved.

Download the application form PDF

Link to the application portal

Application support

The Climate Smart Cities Challenge is open to applications globally and we encourage submissions from innovators and organizations from anywhere!

We recognise that there are a diverse range of people and organizations with brilliant ideas and solutions who are looking for an opportunity to scale and collaborate to achieve a real world impact. Therefore there is an array of application support for Climate Smart Cities Challenge, as outlined below, including a number of events and a dedicated application support team.



Upcoming competition events



There are a series of exciting upcoming events related to the competition including:

- 9 November 18:00 20:00 (UCT) Climate Smart Cities Challenge Workshop for Disseminators at COP-26 on 9 November 2021:
 - > Details: This event at COP-26 looks at the role of innovation competitions and climate smart solutions in delivering 1.5 °C compatible systemic impact in cities and communities. The objective is to showcase a series of ongoing innovation competitions, while strengthening networks and building relationships between innovators, the United Nations, Mission Innovation, and governments in our quest to deliver 1.5 °C globally sustainable solutions.
 - > Attendees: organizations with relevant networks interested in learning more about open innovation competitions, and sharing the Climate Smart Cities Challenge.
 - > How to attend: Virtual (facilitated from UNFCC innovation Hub at COP-26 in Glasgow). Invitation only If you think your organization should be at this event please email olle.dierks@viablecities.se
- We anticipate each city will have a dedicated webinar for interested applicants to find out more about each of the challenges and competition, including an opportunity for Q&A.
 - > Details: Dates and joining information will be added to the website, please keep checking this to register your attendance.
- Knowledge week at the Expo 2020 Dubai, 16 December 2021.
 - > Details: more information about this event will be added to the website, please keep checking this to find out more.
- Finalist announcement at the Expo 2020 Dubai on 20 January 2022.
 - > Details: more information about this event will be added to the website, please keep checking this to find out more.

Frequently Asked Questions

Find answers to commonly asked questions, questions are updated weekly on the website. Please note that the final deadline for submitting questions is 15 December 2021 at 17:00 (UTC).

Application process contact

There is a dedicated competition support team who will be able to help answer questions related to the competition or city specific challenges, or any media enquiries.

Please contact climatesmart@citieschallenge.org



City challenge briefs



Read Bogotá's challenge brief.



Read Curitiba's challenge brief and technical volume.



Read Bristol's challenge brief.



Read Makindye Ssabagabo's challenge brief.

Terms and conditions

Read the challenge competition terms and conditions. FAQs

Find answers to **frequently** asked questions in the FAQs.

Application form

Download a PDF version of the application form.



A better quality of life for all in an urbanizing world



Viable Cities/KTH

The Royal Institute of Technology, Teknikringen 10B, 100 44 Stockholm, Sweder en.viablecities.se



UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME P.O. Box 30030, Nairobi 00100, Kenya www.unhabitat.org

