



Global Alliance  
for Sustainable  
Urban Development



# A Roadmap to New York for Smart City Solution Providers

# PURSUE NEW MARKETS

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## Background: A Roadmap to a New Market

Rising populations, aging infrastructure, and climate change pose serious challenges for cities across the world. With 70 percent of cities already dealing with the effects of climate change, and a projected 68 percent of the world projected to be living in cities by 2050, smart cities and urban technologies are essential investments for a sustainable and equitable urban future.

Cities have already become testbeds for new and disruptive technologies, and are committed to building inclusive economies, attracting great talent, and increasing citizens' quality of life. They are upending outdated models and legacy infrastructures, to bring efficiency and transparency to "future-proof" their cities for the 4<sup>th</sup> industrial revolution. The need for change in cities is crucial and New York City (NYC) is no exception. NYC has some of the largest infrastructure systems in the world, including public transit, water, waste, and telecommunications. The rapid development creates new market opportunities for companies worldwide, as the city search for the best smart solutions to improve multiple aspects of the quality of life.

The roadmap is brought to you by Access Cities, which is a global alliance for sustainable urban development. It is produced by Danish Cleantech Hub New York.

## Access Cities – a Global Alliance for Sustainable Urban Development

Access Cities is an international, public-private project, which aims to strengthen sustainable urban development in five project cities: New York City, Singapore, Munich and the Danish cities of Copenhagen and Aarhus. The project connects actors working with sustainable urban development in the pursuit of game-changing solutions to common issues confronting cities.



# What is a Smart City

**Human and Social Capital**



**Innovative Technologies**



**Sustainable Economic Growth  
and High Quality of Life**



**Traditional Infrastructure**

Smart Cities are widely defined. However, in a report of top 50 smart city governments, smart cities are defined in terms of their willingness to develop and invest in smart city solutions. Here, Smart Cities are when investments in human and social capital, traditional infrastructure and innovative technologies are leading towards a sustainable growth and creating high quality of life for citizens.



# Smart City Trends



**Smart infrastructure.** Big data, real-time data and data analytics for better planning. Better and greener mobilization. BIM process. Cities lead the fight against climate change powered by technology.



**Smart lighting.** Energy efficiency. IoT connection. Wireless technology. Big data, real-time data and data analytics on users and environment. Personalized and human-centric smart-lighting.



**E-governance.** Government as innovators and accelerators. Governments provide funding and engage in public private partnerships. Open Data Forums and Citizen Engagement programs. Data will be gathered and analyzed to help in identifying civic problems, zeroing in on opportunities and creating solutions.

## The next generation is here

As massive, complex mechanisms, cities somehow manage to deliver services, move products and goods, protect us, educate us and inspire the citizens. But how can they do it smarter? The next generation of urban evolution is here and the rise of new technologies and services is making NYC better and creating higher quality of life.

Currently, an increased focus and market opportunities can be found within three distinct areas of smart city solutions



NYC is ensuring a more sustainable future for New Yorkers through:

Energy efficiency policies such as the 2019 NYC Buildings Emissions Law

A 0x30 recycling goal and program

A city wide strategy called OneNYC

Greenhouse gas emissions initiatives mandating 80x50 reduction

## **New York City's Smart City Vision**

In 2007, PlaNYC set the vision for NYC through 2040 and commenced its smart city journey. Data began to be systematically collected to improve policy across ten focus areas, such as energy, climate change, and air quality. The current unified city plan, OneNYC, incorporates city initiatives to achieve goals such as diversity, inclusivity, equity, growth, resiliency, and sustainability.

New York City's first digital strategic plans – its roadmaps – were developed in 2010-2013, and since then, New York City has been a leader when it comes to smart city technology.

# GREEN ENERGY LEGISLATION

NYC's smart city strategy starts with their current goal to create a so-called net-zero economy. New local laws set the requirements for efficient buildings and speedier upgrades. The NYC Energy Conservation Code (NYCC) sets the standards for energy and water consumption and conservation, both for new and old buildings. New York State Energy Research and Development (NYSERDA) is also involved, as to insure statewide energy goals, where 70 percent of electricity in 2030 must come from renewable sources like wind, solar, and hydropower.

**\$5B**  
commitment  
to Clean  
Energy  
Fund

**100%**  
reduction in  
greenhouse  
gas  
emissions  
by 2050

**\$104.1B**  
citywide  
investments  
planned  
between  
2020-2029

A group of people are sitting on a grassy area near a waterfront, with a city skyline in the background during sunset. The scene is bathed in warm, golden light. In the foreground, several people are sitting on the grass, some with their backs to the camera. In the background, a dense city skyline is visible, with the sun setting behind the buildings, creating a bright glow. The water is visible in the middle ground, and a few people are walking along a path near the water.

New York is leading the way in developing innovative new technologies that enhance energy efficiency and reduce greenhouse gas emissions. This funding to modernize street lights across the state will not only increase public safety through increased visibility, it will also advance our aggressive initiatives to combat climate change and create a cleaner, greener New York for all.

**Governor of New York State,  
Andrew M. Cuomo**

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# NYC PRINCIPLES

[nyc.gov/playbook/principles](https://nyc.gov/playbook/principles)



We serve and empower residents from diverse language, ability, geographic, and socioeconomic background.



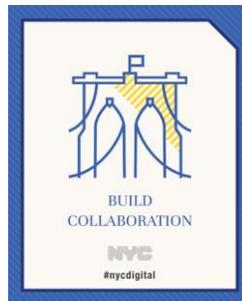
We deliver services and information through channels that New Yorkers already use, and we build on existing resources in New York's diverse communities.



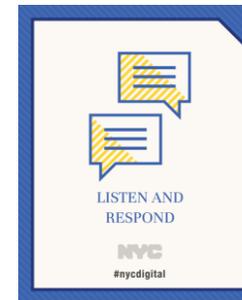
We proactively identify the most urgent and persistent needs of New Yorkers, then we design engaging, easy-to-navigate services that meet residents' preferences and requirements.



We deliver services that are reliable and accountable; we keep New Yorkers' personal data secure and we're transparent about how we use the information we collect.



We help others better serve New Yorkers. We develop and share data and platforms to improve all the services City residents use.



We develop accurate, responsive services by engaging collaboratively with New Yorkers, seeking their insights, and responding to people when they interact with us.

# NYC SMART CITY STRATEGIES



Make services available to New Yorkers of all capabilities and language preferences



Engage New Yorkers in the creation and testing of services



Build on existing services that work



Design for mobile devices first



Communicate simply and clearly in all languages used



Structure services around New Yorkers' needs rather than by agency needs



Integrate digital services within neighbourhoods and communities



Collaborate with civic, design and technology partners



Reach out to New Yorkers and invite them to use City services



Build the capacity of City staff to deliver best-in-class services

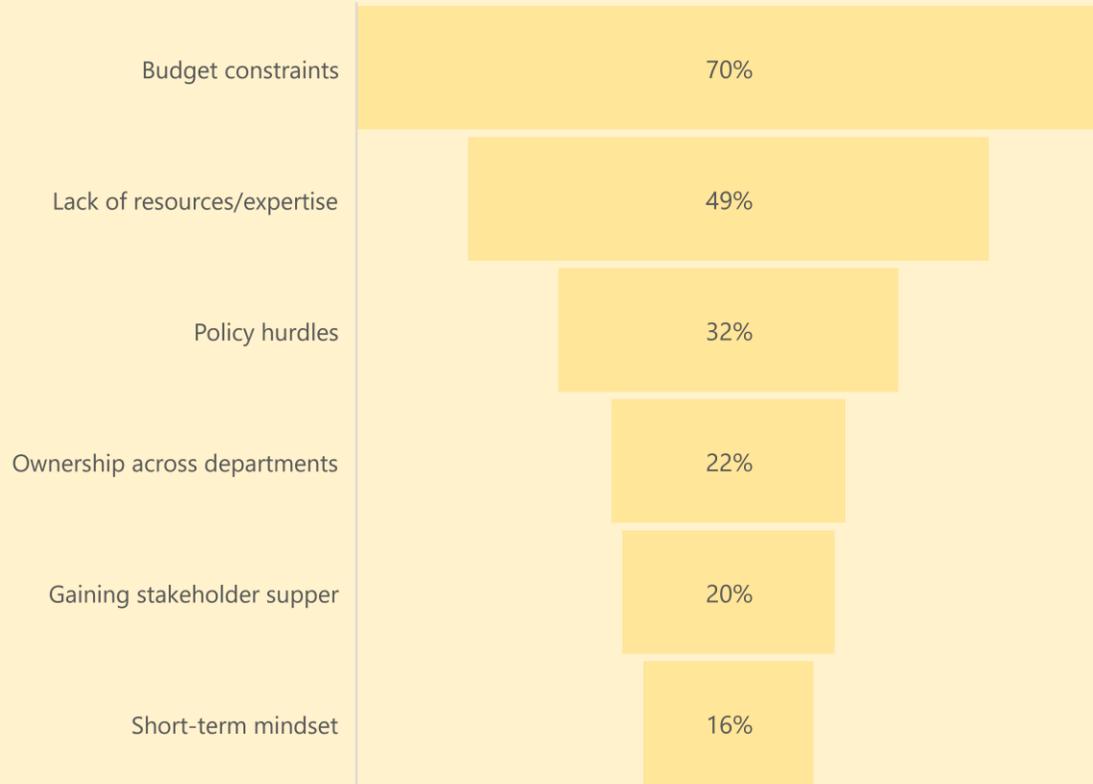


Create citywide technical, data and design standards



Make accountability and transparency fundamental to all service interactions

# CHALLENGES



n=778  
Source: Black & Veatch, 2015

## HURDLES TO OVERCOME

As cities move closer to their smart city visions, the demand for smart technology development only continues to grow. With rapid technological development comes a variety of common hurdles most cities must tackle. Recent analysis shows that:

- Constraints include governmental austerity measures, lack of resources, and insufficient experts to lead new tech initiatives
- Cities have started to hire Chief Innovation Officers to oversee the implementation of new tech, yet cities lack enough front-line employees to envision, implement and maintain new technologies in neighbourhoods.

Collectively, these amount to growing pains for the municipal tech market which, when overcome, will speed adoption.

## SALES CHANNELS

As a smart city solution provider you can access the market in different ways depending on the type of project. You can chase new or retrofit projects, public or private purchasers, look for local challenges and so on.

As a solution provider in NYC, you will experience that the majority of the projects are retrofitting of the existing infrastructure.

## Know Your NYC Customers

- NYC was ranked #1 city for total purchases of smart city solutions with 1,319 purchases in 2015-18.
- There are various types of customers for smart city solutions in NYC depending on the type of project.
- Your customers could be governmental institutions, development corporations, the city agencies, building owners, developers, contractors, architects, depending on who manages the infrastructure and/or buildings.

### Examples of governmental institutions and development corporations

- The New York State Energy Research and Development Authority (NYSERDA)
- New York Power Authority (NYPA)
- The Brooklyn Navy Yard (BNYDC)
- New York City Economic Development Corporation (NYCEDC)
- Local Initiatives Support Corporation (LISC)





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By providing our most talented visionaries with the space and resources they need to grow, we're acting on our commitments to entrepreneurs, to innovation, and to a smarter and more equitable New York

**Mayor of New York City,  
Bill de Blasio**

# Public NYC Actors You Must Not Miss Out On



## Mayor's Office of Sustainability

MOS works to secure NYC's future by confronting crises of climate change and inequity. The programs work across city sectors to lead a just transition to carbon neutrality and create a cleaner, fairer, healthier city. MOS is responsible for executing smart city programs, pilots and projects across the City.



## Mayor's Office of Recovery and Resilience

MOR identifies, translates and applies the best-available climate science and analysis to develop its policies, programs, capital projects, and public engagements, to develop innovative policy and programmatic. Also MOR creates tools and leads collaboration across sectors. MOR is responsible for executing smart city programs, pilots and projects across the City.



## Mayor's Office of the Chief Technology Officer

CTO's mission is to ensure that technology is inclusive, accessible, human-centered, and works for all New Yorkers. With focus areas such as universal broadband, digital services, inclusive innovation, tech policy and future planning, CTO deploys sources and technology to realize OneNYC.



## NYC Economic Development Corporation

NYCEDC is working every day to make New York City a global model of a smart, sustainable, resilient, and livable city. NYCEDC provides entrepreneurs with access to partners across academia, nonprofit, for-profit, and city organizations, enhancing access to infrastructure, funding to ensure a reduction in cost and to foster collaboration.

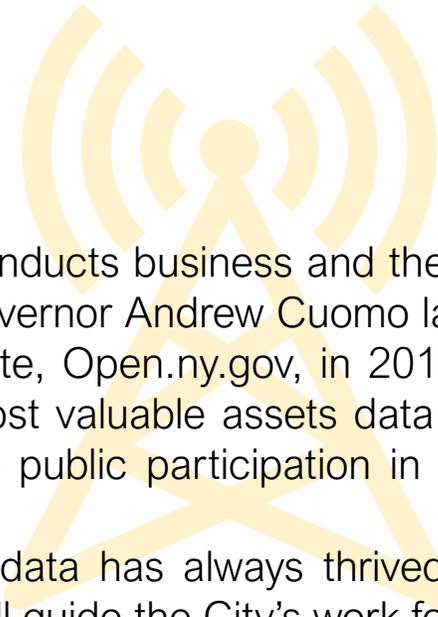
These offices implement their portfolio of projects with flexibility, involving other departments and agencies as required. Decentralizing responsibility across several offices to implement smart city solutions created many benefits, while remaining relevant to the guidance offered by the city's vision.

## EXAMPLE

### DECENTRALISING RESPONSIBILITY ACROSS SEVERAL CITY AGENCIES

The provision of real-time bus arrival times at bus stops stayed focused on dealing with NYC's steady population growth, rather than be about simply using available technologies to increase convenience or comfort. City departments tapped into a centralized database of 18 million requests from different municipal services made through the City's 311 service hotline to improve the delivery of services. At the same time, the Offices enjoyed the flexibility and initiative to spearhead their own smart city initiatives. To ensure knowledge transfer, The Mayor's Office of the Chief Technology Officer launched NYCx, which sources tech-knowledgeable individuals to share experience and expertise when applying frontier technologies to smart city initiatives. Operating in this way, the City creates coherence among its diverse objectives, taps into the specialized expertise of its departments, and fosters a spirit of collaboration and interdependence.

# Smart City Data in NYC



New technologies have dramatically changed both the way government conducts business and the public's expectations about access to government information. As part of this transformation, Governor Andrew Cuomo launched the Open NY initiative, which included the launch of New York State's open data website, Open.ny.gov, in 2013. The award-winning platform is dedicated to increasing public access to one of the State's most valuable assets data. Its goals continue to spark innovation, promote research and economic opportunities, engage public participation in government, increase transparency, and inform decision-making.

Since the publication of NYC's first online public dataset in 2009, open data has always thrived and recently, a new strategic plan was launched – the new 'Open Data Strategic Plan', which will guide the City's work for the next 10 years.

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Read more:



- **NYC Open Data** - free public data published by New York City agencies and other partners.
- **2019 Open Data for All Strategic Plan** – strategic plan for NYC work with data for the next 10 years.
- **NYS Open Data Handbook** – guidelines and information about data handling and use in NY.

# NYC Smart City Projects

New York strives to be an equitable city, where all residents have access to free wi-fi, clean water, and the waste management system. To achieve this aim, the city has developed smart city projects in collaboration with residents and companies.

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## **Brownsville Innovation Lab**

One initiative is the launch of a neighborhood innovation lab in Brownsville, Brooklyn, one of the most problematic zones in the borough. Project managers provided residents with access to healthy food, public safety at night, and better waste management solutions.

## **LinkNYC**

This project aims to replace the city's payphones with a kiosk or a "Link". Each link is a wifi hotspot, which provides free and encrypted wi-fi coverage. LinkNYC comes equipped with an android tablet for browsing and video calls, a keypad for free calls to all the US, a button for emergency calls, and two USB ports so citizens can charge their phones.

## **New York Citi Bike**

A bike-sharing system operative in Manhattan, Northern Brooklyn, and Western Queens. The program deploys hundreds of stations with bikes that are available 24/7. Citi Bike's connected app helps users find the closest available bike in real-time and tells app users how to get to a station.

## **HunchLab**

Public safety was a major concern for NYC for years. To improve crime detection, the city did a two year trial of HunchLab, a crime prediction software. HunchLab is a software solution that uses historical data and terrain modeling to predict crime occurrence. This solution can identify crime hotspots, helping police increase public safety in this area. The two-year trial successfully and significantly lowered violent crime in New York.

## **Smart Street Lighting**

NYC launched the Accelerated Conservation And Efficiency (ACE) program in 2013. The city aims to upgrade city lights with LED retrofits, thus saving energy usage. The program features smart technology, which controls the intensity of the light, and schedules the hours of operation according to the number of occupants in the vicinity at the moment.

## **Smart Water Metering**

The new automated meters monitor and report water usage. NYC buildings are required to minimize the waste of rain and gray waters. The new devices also collect data about rain-water harvesting and grey-water recycling levels.

## **Smart Waste Management**

Bigbellys are smart trash cans being installed across the city. They monitor trash levels and send an alert, avoiding trash overflow and optimizing pick-up schedules. Equipped with a solar-powered trash compactor, this system has five times the capacity of a traditional trash bin.



# NYC Connected Vehicle Technology



Connected vehicle technology is coming to the streets of NYC and it holds the potential to make the streets safer and smarter. The CV technology is a new tool to help NYC reach its Vision Zero goals to eliminate traffic related deaths and reduce crash related injuries and damage to both the vehicles and infrastructure. The goal of this project is to show that the benefits justify the sustainability of the operation and will encourage others to outfit their vehicles thus increasing the benefits to all.

Read more: [cyp.nyc](http://cyp.nyc)

# Local Ecosystems

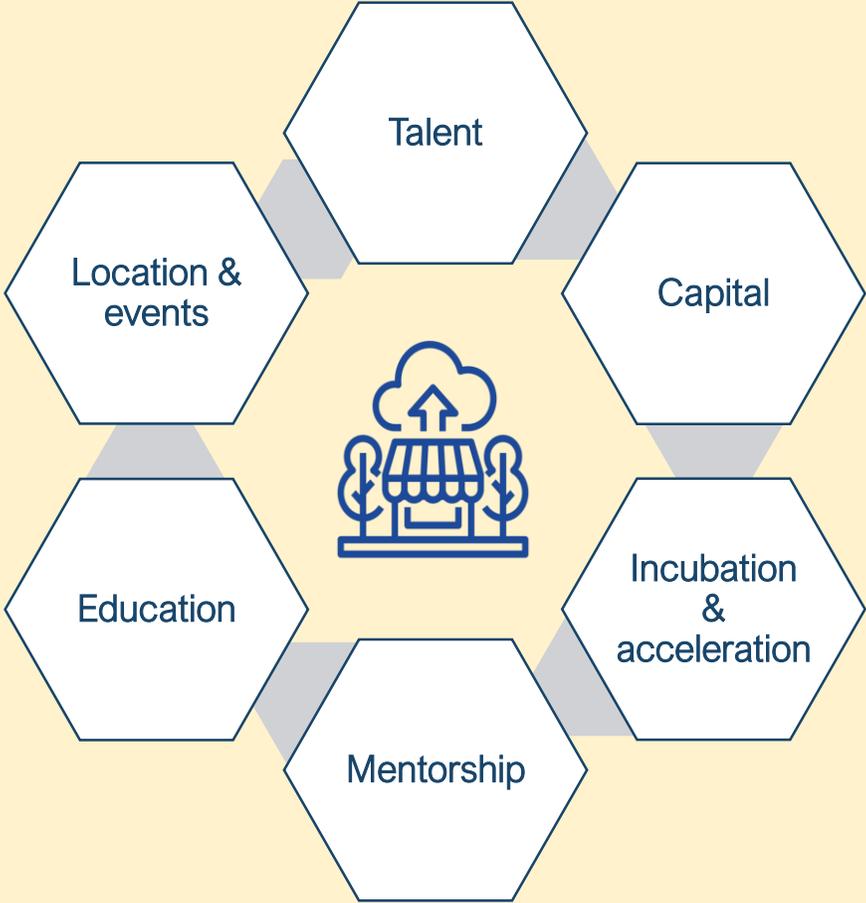
## Local ecosystems lay the groundwork for your business to thrive

- Local ecosystems are drivers of new growth, innovation and partnerships and they can be key to accelerating your sales, presence and market expansion in NYC
- Among other things, the NYC ecosystems provide access to incubators, accelerators, investors, new customers, mentors and events. By this, joining a local ecosystem can provide the best conditions for your company to thrive

### Examples of local ecosystems in NYC



## What a local ecosystem can offer



# GO TO MARKET: TIPS & TRICKS

## Access NYC - FASTER

- **Identify a local challenge**  
Local challenges provide a burning platform for a given City, State or country and provide an opportunity for you, to easily understand the local context.
- **Define your business case**  
Be aware of your unique selling point and how your product and/or service responds to the local challenge. The USP must respond directly to the challenge.
- **Allocate resources**  
Entering a new market is often expensive and time-consuming, make a solid plan for how you will finance the market expansion including a potential search for investors etc. Most importantly: be realistic!
- **Identify your partner(s)**  
Lower risk by partnering up with a US partner. By this, you might be granted with access to new sales channels, funding, the right certificates, extended marketing efforts and so on.
- **Join an incubator**  
An incubator is a great setup to reduce chances of failure of early stage startups and it helps in the economic viability and growth. By joining an incubator, you become a natural part of the local ecosystem.
- **Find a local investor**  
The amount of venture capital companies in NYC is sky-high and the City provide a jungle of opportunities if you are looking for an investor and external financing

# LOCAL INVESTORS

## CHECK OUT

### **Alpaca**

Alpaca was until recently known as Corigin Ventures. Alpaca are focused on investment with companies that focuses on technology that power commerce in the physical and digital world.

### **Anzu Partners**

Anzu Partners is an investment firm that focuses on breakthrough industrial and life sciences technology companies. Anzu Partners focus on investment in early-stage companies.

### **City Light Capital**

City Light Capital is an investment firm that seeks to invest early in impactful companies. They invest in companies where there is a direct link between financial outcomes and social impact. Their sector focus is on IoT, Energy Efficiency and Food and Agriculture.

### **Differential Ventures**

Differential Ventures invest in B2B data technology start-ups that have a unique advantage in data or machine intelligence. Their primary sector focus is Enterprise Tech, FinTech and Cybersecurity.

### **Mobility Ventures**

Mobility Ventures core investment thesis is mobility. They focus on early-stage companies that enable mobility and promote a mobile lifestyle. This include, innovative solutions within the wireless infrastructure. Hereof, mobile health, mobile commerce, AI data sciences, location based services and energy/power management.

### **RTP Ventures**

RTP Ventures is an investment firm that seeks to invest in early-stage companies, that are product innovative within technology and shows strong skills of thinking differently.

### **StarVest Partners**

Starvest Partners invest in firms with sector focus on Software-as-a-service, Data & Analytics, E-Commerce Infrastructure, and Digital Marketing Services. Starvest Partners seeks companies that is at their expansion-stage.



The US accounts for nearly 70 percent (68.6 percent) of total global venture capital and just two broad regions – the San Francisco Bay and the Boston-New York-Washington Corridor – account for more than 40 percent of global venture investment.

New York accounts for 5 percent (out of a total of 100 percent) of the global venture capital investment.

The amount of venture capital companies in NYC is sky-high and the City provide a jungle of opportunities if you are looking for an investor.

## TOP 5 US SMART CITIES TO KEEP AN EYE ON

NYC ranks first in the US list of top smart cities but other cities are also worth keeping an eye on. The top smart cities in the US all show recognition to involve outside stakeholders in order to cost-effectively create the most functional smart city initiatives. The cities are sharing knowledge across sectors, and with each other, and in turn, they have the opportunity to create the most beneficial and effective smart city solutions.

### Top Ranked Cities in Smart Technology Development

1. New York City
2. Boston
3. San Francisco
4. Chicago
5. Seattle

# ABOUT



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Access Cities is an international, public-private project, which aims to strengthen sustainable urban development in five project cities: New York City, Singapore, Munich and the Danish cities of Copenhagen and Aarhus. The project connects actors working with sustainable urban development in the pursuit of game-changing solutions to common issues confronting cities. Access Cities will develop innovative, viable and scalable responses to the most pressing sustainability challenges faced by global city hubs today and tomorrow – in collaboration and via the exchange of documented learnings within the sustainability space.

Read more: [accesscities.org](https://accesscities.org)



Danish Cleantech Hub is an international public-private partnership. The founding partners are The Confederation of Danish Industry and State of Green. Danish Cleantech Hub works with a variety of partners including public agencies, private business, universities, and NGOs in order to tell New York the story of the green transition of Denmark. Deeply integrated in the cleantech ecosystem of New York, Danish Cleantech Hub can provide a single point of entry for all cleantech related activities between Denmark and New York.

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Read more: [cleantech-hub.dk/new-york](https://cleantech-hub.dk/new-york)

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