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Sophie Purdom, managing partner at Planeteer Capital, which invests in climate tech. Gabby Jones/Bloomberg

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NYC Thrives as an Unlikely Silicon Valley of Climate Technology



Stephen Lee
Reporter

- \$3.5 billion has recently been invested in NYC clean tech
- City plans to expand network of climate hubs in Brooklyn

From the outside, the Brooklyn Army Terminal doesn't look like much. The complex was once the nation's biggest military supply base, sending millions of soldiers and countless tons of cargo off to World War II. Now it's a sprawl of aging warehouses ringed by auto body shops and meat distributors, grim enough to have once stood in as a psychiatric hospital in the 2019 "Joker" movie.

But New York City officials envision the Army Terminal as a bustling campus full of entrepreneurs and researchers, any one of whom might invent the next high-capacity battery or develop a breakthrough climate modeling AI. They also see the terminal as another node in the city's growing network of climate hubs, which is already spurring so much growth that many entrepreneurs and government officials now call New York the Silicon Valley of climate tech.

Given that New York is known more for its financial, real estate, and media industries, its new identity as the nation's burgeoning epicenter of clean tech has taken many by surprise. But just as the San Francisco Bay Area "is a magical place for software, I feel like New York has that magical feeling now for climate," said Andrew Chang, managing director at Activate New York, a not-for-profit that helps entrepreneurs take their ideas to market.

It's a goal that's actively supported by New York Mayor Eric Adams (D), who recently said climate tech companies are "not only making our city and planet more sustainable, they are providing career opportunities for working New Yorkers. This is the future, and it's happening right here in New York City."

New York's plans are in lockstep with the Biden administration's hopes for a wave of climate startups and investment, fueled by tax credits in the infrastructure and climate bills and rooted in the idea that a profit motive must be in place to decarbonize the economy on a large scale. Those efforts are being turbocharged by the city's clean building law and the state's ambitious climate plan, making New York fertile testing ground for companies trying to innovate with new hardware or software.

And while the Bay Area's climate tech sector is bigger, New York is catching up fast: Some \$3.5 billion in venture capital funding has flowed into the city's climate tech sector since 2021, according to Climate Tech VC, an independent market research company. That's a 250% spike over the \$1 billion of investment from 2011 to 2016.



The Brooklyn Navy Yard campus houses 30 to 40 climate tech startups. Gabby Jones/Bloomberg

Moreover, some 100 climate startups have been founded in the city over the last four years, and 159 New York City-based climate tech startups have secured venture capital funding since 2021.

The bet on climate tech is by no means a sure one. US clean energy stocks have fallen by \$30 billion over the last six months, due to a mixture of rising financing costs, high interest rates, and permitting delays. To some, those tremors are

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uncomfortably reminiscent of an earlier boom in climate tech investment that fizzled out about 10 years ago. And New York will have to be patient if it wants to develop the country's leading climate tech hub—after all, it took decades for Silicon Valley to turn into the information technology center it is today.

What gives New York a leg up, however, is government-backed hard infrastructure in the form of the climate hubs. The city's Economic Development Corporation is opening 280,000 square feet at the Army Terminal in coming years—in addition to the 3.7 million square feet of usable space the facility already has—for companies to develop products like advanced solar panels and heat pumps. The city is also inviting private companies to use the terminal's aging plumbing, electrical, and rooftop systems as a test bed, and will issue a request for proposal in early 2024 to develop prototyping labs and testing platforms at the terminal.

Companies are already responding to the signal. Two startups, Conservation Labs and Enertiv, recently signed on to pilot their AI-powered water leak sensor and electricity consumption monitoring products at the Army Terminal. A third company, Trakref—recently acquired by facilities management software company Fexa—will soon use the facility to pilot its refrigerant management software.



New York officials want to turn the Brooklyn Army Terminal into the next home for climate tech startups.
Gabby Jones/Bloomberg

"It's a unique moment for the Brooklyn Army Terminal to take a huge step forward and not only drive a portion of the city's economy, but also help us with the overall goal of getting off fossil fuels and greening the broader environment," said Andrew Kimball, EDC's president.

Beyond Army Terminal

The city's ambitions reach well beyond the Army Terminal. The Trust for Governors Island and Stony Brook University, with support from City Hall, are building a \$700 million hub on Governors Island in New York Harbor that will serve as an "island-wide lab," said Clare Newman, president of the trust. That initiative is expected to create 7,000 permanent jobs and generate \$1 billion in economic impact, according to the city.

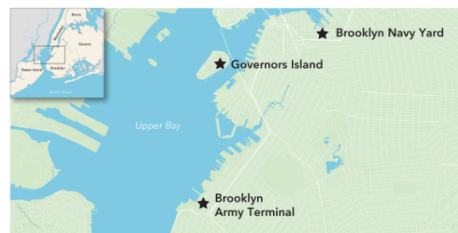
Above all, New York boasts the Brooklyn Navy Yard complex, the glittering jewel of the city's climate tech scene, where between 30 and 40 businesses are working on everything from ammonia as an energy source for long-haul transport to telecommunications equipment that doesn't require constant cooling. That's in addition to about 500 companies working in a dizzying array of other sectors: robotics, furniture, food, military equipment, and vastly more.

Easy access to the nation's financial heart, the chance to join a community of like-minded inventors, and rental prices about 20% lower than the city average were key reasons co-founder Jared Day situated SolarMelts, a company working on a biodegradable road de-icer, in an unfinished, dusty workshop at the Brooklyn Navy Yard.

It's also why Kelvin, a company that makes an insulated radiator cover that prevents heat waste in buildings, set up an office—complete with a large workspace where the devices are assembled—in one of the main buildings at the sprawling 300-acre campus.

New York City's 'Innovation Coast'

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"This is one of Brooklyn's most interesting creative communities that's full of makers," Matthew Isaacs, Kelvin's vice president of business development, said of the Navy Yard. Four or five other nearby companies are working on complementary technologies to Kelvin's, meaning their teams can quickly come together to share ideas, Isaacs said.

New York City's sprawling economy, with its tendrils reaching into virtually every sector, also makes it a good home base for companies attacking the climate crisis from other angles. For example, one of the reasons Kintra Fibers snagged space at the Navy Yard to develop its polyester yarn, made without fossil fuels, is that New York is also the nation's fashion hub, according to Billy McCall, the company's founder and CEO.

That kind of diversity is a good thing if the goal is to hit upon a breakthrough technology that can put a dent anywhere in carbon emissions, according to Sophie Purdom, managing partner at Planeteer Capital, which specializes in climate tech investment.

"We should have a ton of shots on goal in climate," Purdom said.

So much activity is being generated that the Navy Yard is nearly fully leased. As with the Army Terminal, the city also plans to expand the property, adding 5.1 million square feet of advanced manufacturing space, according to Lindsay Greene, president of the Brooklyn Navy Yard Development Corporation.



The Brooklyn Navy Yard workspace of SolarMelts, which is creating a biodegradable de-icer.
Gabby Jones/Bloomberg

The cycle is only going to accelerate, because the more firmly New York establishes its status as the nation's climate tech hub, the more it attracts newcomers eager to be part of the scene, said Julie Samuels, president of Tech:NYC, which represents New York's entrepreneurial tech sector.

"I can't tell you how many people ask me every day about how to break into the climate space," she said. "The energy is palpable."

Investors Fueling Growth

Across the East River, about 150 sharply dressed New Yorkers recently gathered on a Manhattan rooftop terrace to mingle, sip champagne, and talk about climate change.

They're the well-heeled counterparts to the inventors in Brooklyn—the city's tight-knit community of startup investors and fund managers who focus on climate tech, and whose money is one of the most critical ingredients fueling the sector. So far in 2023, the industry has seen \$664 million of venture or growth funding across 34 deals, according to Sightline Climate.

The central ethos at the rooftop party—one of several that happen every week, at various locations across the city—was the notion of a "double bottom line." Climate investors freely admit they want to make money, but they say they're equally interested in decarbonizing the economy.

"To solve the climate crisis, the driver has got to be the private sector coming up with solutions. And investors have got to make money," said Peter Davidson, CEO of Aligned Climate Capital and a former official at the Department of Energy's loan program. "That's how we get the trillions we need to fund the low carbon transition."

The city's institutional asset managers, like BlackRock and the New York City Comptroller's Office, are also pouring money into the sector, but typically not until later rounds, and often only for large-scale projects like wind farms. Most smaller climate tech companies rely on venture capitalists to fund their manufacturing, marketing, and working capital accounts.

But some investors are still scarred by an earlier climate tech boom that went bust in the early 2010s, said Purdom, a prominent figure in New York City's climate tech investing scene.

In that bust, commonly known as "Climate Tech 1.0," venture capital firms invested about \$25 billion into various companies, but 90% of the Series A investments failed to deliver a return, according to Boston Consulting Group.

That bust happened because of a deadly mix of insufficient customer demand, fierce Chinese competition, and overenthusiasm in energy and biofuels sectors that ultimately fizzled, according to Sonam Velani, managing partner of venture fund Streetlife Ventures.



Sonam Velani, managing partner of early stage venture fund Streetlife Ventures.
Gabby Jones/Bloomberg

The fossil fuel sector, which was then an even more dominant player than it is now, also helped stifle the Climate Tech 1.0 rally. "You were competing against trillions of dollars in assets that have been accumulated and optimized over 100 years," said Chang of Activate New York, a former Energy Department official. "So some people are still a little skittish."

This time, though, many investors think things are different. The new climate tech market is more diversified, with more players trying different types of products, and companies are being heavily supported by subsidies in the recent infrastructure and climate bills.

A report from PwC released in October found that, although overall investments in climate tech startups fell this year, the share of private market equity and grant investment rose to 11.4% in the third quarter of 2023.

Still, many limited partnerships—which provide the capital venture funds use to make investments—need to be educated on how climate tech companies tend to grow more slowly than, say, traditional software companies, many investors say.

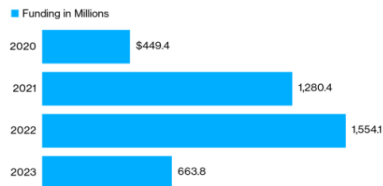
Many climate entrepreneurs, too, could stand to sharpen their business and management skills, said Purdom. “To be a successful climate tech entrepreneur, you can’t just rely on being a Ph.D. with technology developed in a lab,” she said. “You need to also be a strategic financial professional.”

For now, so much money is flowing into climate tech that the failure rate is practically guaranteed to rise, Purdom said. But she also said that’s a sign of a healthy, self-correcting market.

“We shouldn’t expect that everything’s going to work out,” she said. “My concern is that when that fallout starts to happen, folks might extrapolate that too far and cry wolf, when it’s a natural correction of the ecosystem.”

Investment Fuels NYC’s Climate Tech

Funding set to dip in 2023 after years of growth



Source of company funding activity in New York City: Sightline Climate
Partial data for 2023 as of Nov. 15, 2023
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Purdom also noted that a recent slowdown in dealmaking is helping cool down overheated expectations. The market isn’t mature enough to support the city’s hundreds of climate-specific investment vehicles and billions of dollars of venture and private equity gushing into the sector, she said.

“What we’re seeing is a plateauing and a recorection of the market,” Purdom said. “We knew this was coming. We saw a quick rampup in enthusiasm in a thematic way for climate, but many companies are not able to raise the next round of financing and starting to slow down or close their operations, or get acquired by other companies. That’s healthy. The trend is real.”

Government Incentives

It’s not just investors who are fueling New York’s burgeoning climate tech sector. A good chunk of the activity is also being generated by new city and state regulations that are mandating various parties to comply.

For example, Local Law 97—a citywide rule that requires about 50,000 buildings across the city to cut their emissions over several compliance periods, starting next year—has triggered demand for building decarbonization hardware and software, according to Ben Furnas, the city’s former director of climate and sustainability who helped write the law.

That was one of City Hall’s goals when the law was first conceived. “We had the ambition that there would be all sorts of thoughtful give and take between government regulators and the private sector,” said Furnas, now executive director of a climate initiative called The 2030 Project at Cornell University. “These dynamics tend to work best when the government sets a goal, but then leaves innovators a lot of space to identify the most cost effective, thoughtful, and efficient ways to meet those goals.”

New York City’s massive stock of buildings, many miles of coastline, and countless square miles of concrete and pavement also makes it a perfect test bed for companies to can trial their decarbonization technologies, said Brendan Hermaly, CEO of Navy Yard-based Thalo Labs.

More private sector innovation could spin out of a law signed by Gov. Kathy Hochul (D) in May that requires nearly all new buildings to be all-electric, starting in 2026 for small buildings and 2029 for bigger ones. To climate hawks, the lesson is that tough laws can stimulate economic growth.

Looming Threats

Still, some worry that the election of a fossil fuel-friendly mayor or president could unwind the policy incentives that are driving the industry forward.

At the local level, environmentalists have criticized Adams for allegedly weakening the enforcement of Local Law 97 in a final rule that came out on Monday. Uncertainty over the law is a key reason Kestrix, a London-based company that uses AI and thermal imaging to help large property owners plan energy retrofits, hasn’t opened an office in New York, according to Lucy Lyons, the company’s CEO.

“That sends the message to me, as a founder, that I should stay where I am,” Lyons said. “We’re leaning into Germany, France, Italy, and the Netherlands; places where the regulatory signals are more clear.”

Moreover, any of the current Republican presidential candidates “could impact severely the comfort around domestic investments, and also how people view how safe America is to make investments from a climate perspective,” said Kunal Doshi, CIO of Accelerate Investment Group, which specializes in climate tech. “It’s altruistic to think the president can’t alter the regulatory environment. Why would you assume funding in the other direction isn’t going to impact you?”

That’s not the way Kimball of the EDC sees it. In his view, New York’s climate tech scene is already so well established that it’s become decoupled from government mandates.

“I think we’re well past the day that a president can stop the overall momentum,” he said. “Can they slow it down? Possibly, but in New York City you’ve got buildings that need to modernize and reduce emissions. That creates a marketplace in and of itself, no matter what the federal government does.”

To contact the reporter on this story: Stephen Lee in Washington at stephenlee@bloombergindustry.com

To contact the editors responsible for this story: Sei Chong at schong@bloombergindustry.com; Zachary Sherwood at zsherwood@bloombergindustry.com

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