

Danielle Staude

From: Susan Gladwin <susan@susangladwin.com>
Sent: Thursday, November 04, 2021 11:57 AM
To: Danielle Staude
Cc: Christine O'Rourke; Al Grumet; Gregory Hildebrand; Gregory Hildebrand
Subject: Fwd: Ithaca to decarbonize every building - for CAP TF

CAUTION: External Sender

Hi Danielle,

This is very significant development that I'd love for the rest of the CAP TF to read if you wouldn't mind forwarding it to them.
Susan

This U.S. city just voted to decarbonize every single building

Following a common council vote, Ithaca, N.Y., is set to be the first city in the country to electrify its buildings with the help of BlocPower

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Ithaca, N.Y., the home of Cornell University, consists of some 6,000 homes and buildings. (iStock)

By [Tik Root](#)

Yesterday at 9:18 p.m. EDT

Late Wednesday night, the city of Ithaca, N.Y., voted to electrify and decarbonize its buildings. It's the first such initiative of its kind in the country.

"We are being very aggressive," said Luis Aguirre-Torres, Ithaca's director of sustainability. "I'm very excited but, at the same time, it's a lot of work ahead."

The city of about 30,000 people consists of some 6,000 homes and buildings. Decarbonization would involve looking at everything from how a building is heated to what appliances it uses, with the aim of moving away from the consumption of fossil fuels such as oil and natural gas.

"It's a project for the whole city, not just municipal buildings," said Aguirre-Torres.

Buildings [account for nearly 40 percent of greenhouse gas emissions](#) in the United States. Ithaca's initiative is projected to cut about that much from the city's overall carbon footprint — saving approximately 160,000 tons of carbon dioxide. That's the [equivalent of the emissions from about 35,000 cars driven](#) for a year.

[Block by block, he aims to fight injustice and save the planet](#)

"There isn't a single day where I don't worry about what climate change means for our kids," said [Donnel Baird](#), a founder of BlocPower, a Brooklyn-based company focused on "greening" aging buildings. Ithaca chose BlocPower to manage its initiative. Baird said the vote has marked a milestone.

"The hardest part is finding the city with the courage to make the commitment."

"To me, the hardest part is done," he said. "The hardest part is finding the city with the courage to make the commitment."

Ithaca's common council voted unanimously in favor of this latest move, which is part of the broader Green New Deal that [the city approved in 2019](#). That measure calls for the city government to meet all of its electricity needs with renewable energy by 2025, as well as reduce its vehicle emissions by half. Most ambitiously, though, it set a goal of being a carbon-neutral city by the end of the decade.

Aguirre-Torres said the city lost precious time to the coronavirus pandemic, which effectively shrank the timeline from 10 years to eight. "I had to come up with a very aggressive strategy," he said.

The decarbonization effort is officially called the Efficiency Retrofit and Thermal Load Electrification Program. Building improvements could range from swapping natural gas and propane cooking stoves with electric induction cooktops to installing solar panels.

Timur Dogan, a professor at Cornell University, which is located in Ithaca and is consulting with the city on the project, said researchers are working on modeling to help inform what buildings to tackle first. But the program is broadly slated to unfold in two phases — the first covering 1,600 buildings and then another 4,400.

The goal, Aguirre-Torres said, is to reach full building decarbonization by 2030 and have the first phase done in the next three years. Baird said that may take closer to four or five years but is certainly achievable. He pointed to BlocPower's work in Brooklyn as proof, saying that the company retrofitted more than 1,000 apartments there in under two years. "We have the track record," said Baird.

Donnel Baird, founder of BlocPower, in the Brooklyn Navy Yard complex, where its offices are located. (Biz Herman for The Washington Post)

Dogan said the timeline is "ambitious" but is technically feasible. "The technology we're talking about implementing here is already off the shelf and readily available," he said. "It's a matter of political will and financial means to make this happen."

The city, whose total budget is only about \$80 million, is turning to the private sector to fund its [building decarbonization effort](#). The idea, said Aguirre-Torres, is to fund the program using private equity and then help reduce the costs of the capital via state and federal incentives, as well as manufacturer rebates. The city would also establish a fund that, bolstered by philanthropic donations, would further help lower the cost of the program, especially for low-income households.

"It would be equivalent to having zero percent interest," he said, adding that the city has already raised the \$100 million it needs for Phase 1. If that progresses well, it would then start looking for the additional \$450 million necessary to cover the projected costs of Phase 2, he said.

"I don't look at this as an environmental issue," said Aguirre-Torres. "It's an economic issue that can be solved with creative financing schemes."

Ithaca is far from the only place championing climate mitigation and adaptation plans. Facing rising temperatures, [Miami has appointed a chief heat officer](#). In New York City, the mayor has [an office dedicated to climate resiliency](#). In northwest Canada, the [Vuntut Gwitchin First Nation declared a climate emergency and is also targeting net-zero by 2030](#).

Aside from buildings, Aguirre-Torres said transportation and the electric grid are Ithaca's other significant sources of emissions. And, from aiming to double rooftop solar to developing a program to get used electric vehicles in the hands of low-income people, his plans are no less ambitious.

"I believe that all of this is possible," he said. "We can be a replicable model for a lot of places."

From: Susan Gladwin <susan@susangladwin.com>

Sent: Wednesday, November 3, 2021 9:45 PM

To: Al Grumet <al.grumet@gmail.com>; Gregory Hildebrand <Ghildebrand@bararch.com>; Gregory Hildebrand <gwhildebrand@gmail.com>; David Moller <david@mollers.us>

Subject: Ithaca to decarbonize every building

Unfortunately I don't have paywall access (do any of you? sure wish you could drop .50-1.00 for an article)

but the headline says it

<https://www.washingtonpost.com/climate-solutions/2021/11/03/ithaca-new-york-decarbonize-electrify/>



ESG IMPACT

Ithaca, New York becomes first U.S. city to begin 100% decarbonization of buildings, an urban climate change milestone

PUBLISHED THU, NOV 4 2021 2:22 PM EDT

UPDATED THU, NOV 4 2021 10:05 PM EDT

Eric Rosenbaum

@ERPROSE

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KEY POINTS

- Ithaca, New York, begins to fully decarbonize all of its buildings as the first phase of a novel 100% carbon-free city climate policy.
- Cities are seen as key leaders in U.S. climate change efforts and the massive stock of legacy buildings and residences with low energy efficiency drives a huge portion of carbon emissions.
- Ithaca's buildings equate to 40% of its carbon footprint and it is working with building energy specialist BlocPower on the project.
- To secure political approval and community buy-in, Ithaca lined up \$100 million in private financing from Alturus for the effort and will seek up to \$250 million more for additional climate change efforts including transitioning the city to electric vehicles.



People walk past colorful stores in a pedestrian area of downtown Ithaca, New York on a sunny day.

Far from Glasgow and COP26, Ithaca, New York, just made an unprecedented move to tackle climate change and the city's carbon footprint. In a unanimous vote on Wednesday night, Ithaca's city council approved the full decarbonization of its buildings.

It is the first U.S. city to begin operation on a 100% decarbonization plan, but it won't be the last, and its focus on buildings and its use of private financing to support the effort show how more urban models to tackle emissions may develop and even leapfrog federal and state efforts.



"On decarbonization, and frankly, just about every issue ... no one is coming to save us. Whether on climate or infrastructure ... we have more determination we will have to save ourselves," said Ithaca Mayor Svante Myrick. "This is the biggest step we've taken towards decarbonization and maybe the biggest step any city has taken."

Cities have been dubbed as the laboratories of democracy, where new ideas include new forms of social investment and infrastructure and new models of governance get tried out, and on climate policy, it is small cities like Ithaca and Des Moines, Iowa, that are poised to lead. Both cities are part of a new UN-led consortium on climate called the 24/7 Carbon-free Energy Compact which also includes Google.

"Not enough attention is being paid to what works in small American cities, and that's not unique to decarbonization," Myrick said.

Ithaca had already [lined up \\$100 million in private financing over the summer](#) to support the effort from private equity partner Alturus. Its building energy efficiency partner BlocPower is in place and the city is ready to begin going into buildings and start the work on Thursday.

"We are ready to go, Day One," said the city's sustainability director Luis Aguirre-Torres.

Ithaca's energy efficiency partner BlocPower, which is a [CNBC Disruptor 50](#) company, brought the investors on board to pay the upfront costs of the buildings project. BlocPower founder and CEO Donnel Baird recently told CNBC that 100 million buildings across the U.S. waste \$100 billion a year on fossil fuels. "There are significant savings that can be introduced," Baird said.

VIDEO 1:49

The business of battling climate change: Ithaca, NY decarbonizes city with help from BlocPower

Ithaca's plan will cover electrification projects for 1,000 residential buildings and 600 commercial buildings in the first phase of a total 6,000 building inventory.

For Ithaca, buildings are the first target for several reasons. Forty percent of its buildings were constructed before 1940 and buildings represent 40% of its carbon emissions profile. The city already receives 80% of its power supply from hydroelectric and nuclear power plants, whereas in other cities transitioning the power fleet may take precedence.

"The fact that we have 80% power generation from renewables makes my job quicker, but not easier," Aguirre-Torres said. The project is the largest of its kind in the country, according to Aguirre-Torres. "By addressing buildings first we take on 40% of emissions dead on," he said.

Tapping private investment for public climate projects

The strategy, according to Aguirre-Torres, is to not rely on government money, but to tap into private investors and combine it with incentives from government which can reduce the cost of capital and interest rates for project finance. Given the scope of the climate challenge, "That amount of money can't come from government," he said.

Former BP CEO and current leader of Beyond NetZero John Browne recently told CNBC it will take [\\$2 trillion more per year](#) for the society to meet its climate pledges.

Aguirre-Torres said while Department of Energy and New York Green Bank funding can help, Ithaca's goal is to set the ratio at 1 to 20 for taxpayer versus private investment funding. Ithaca already is looking to raise another \$250 million for further climate projects. Next year, it is planning to introduce a program to allow residents to buy used electric vehicles at a low cost with private equity investors being responsible for owning the battery technology — the biggest part of an EV's cost — and leasing the battery to drivers. Ithaca already has the largest number of EV charging stations per capita in New York State, though Aguirre-

Torres said there are significant issues to still be solved related to insurance coverage for the program if the leasing model is enacted.

Aguirre-Torres, who has an engineering degree, said his vision of using private finance for climate policy grew out of his experience working on innovation with local governments in Silicon Valley, as well as with the Schwarzenegger administration in California, and maybe most importantly, his work with the Mexican government on climate legislation. "When you work in Latin America you become familiar with there being no money for anything," he said. "Legislation I worked on many times got passed and then relied on World Bank or other multilateral organizations who come in to supplement private investment."

Mexican energy reform in 2014 drove significant investment in solar and wind, with most structured as debt equity projects. "PE is the most expensive form of capital we have, but the rates can be brought down if we start addressing the issues related to risk. I believe this can be a model for the entire country," Aguirre-Torres said.

Myrick said there are other U.S. cities using private financing to help fund projects such as building upgrades in low- and moderate-income communities, but it is the scale of doing it at 1,000 residential units at \$50,000 per home and a budget of \$500 million in a city which has an annual budget of \$85 million that sets Ithaca's ambitions apart as a model for the future.

"Given the scale of problem people are open to public and private partnerships in Ithaca. They realize government has to be the catalyst setting rules for climate but if we are going to make sweeping changes we just don't have the resources to do it alone," he said.

Many more city decarbonizations will follow Ithaca

Myrick, who was first elected to city government at the age of 20 as a Cornell University college student and became mayor in 2012 at the age of 24, said Ithaca is a very progressive community and its climate justice movement dates back to the 1970s, and students have driven the city to

where it is now reaching as a municipality in climate planning. Ithaca is an important test case because of its location in the Northeast which has both cold winters and hot summers making electrification of buildings and any changes to the power infrastructure a bigger challenge. "It's doing this in a place that doesn't have a better climate, that's part of what can make this replicable," he said.

Lower-income communities in cities that are not seeing major population growth and new construction have more reason to focus on existing building stock, said Stefen Samarripas, analyst at American Council for an Energy-Efficient Economy.

Heating systems, including water heating and space heating, are big drivers of energy use in residential and commercial buildings and are targets of climate projects, as well as insulation and lighting. In cities with less population growth, there will also be a larger share of legacy buildings in need of upgrades rather than new constructions in booming population hubs. And many lower income communities often include buildings with neglected energy efficiency standards, a task that is central to the business mission of Ithaca's operational partner BlocPower.

"Lower-cost homes oftentimes are going to be those properties that are older and in need of upgrades and in need of appliances that are more efficient," Samarripas said. "What we've seen is low-income households are experiencing higher energy cost burdens than their middle-income or high-income counterparts where that lower energy efficiency translates into eating a larger share of their monthly income."

This is making more cities consider the energy burden as a reason to create new incentive and financing programs, whether in partnership with a business or local utility, and whether directed at an individual resident or property owner.

Most of the buildings in the first phase of the Ithaca decarbonization project will be low- and moderate-income properties.

Local governments are best-positioned to lead on buildings

Local governments are in a good place to tackle the buildings issue because many existing policy structures given them the majority of the oversight in regulating buildings.

"A big reason why cities have really emerged as leaders on decarbonization, particularly with buildings, is traditionally land use and development has been more in the realm of state and local governments. They set the building codes, they have the levers," said Elizabeth Beardsley, senior policy counsel at the US Green Building Council. "The cities are feeling the local impacts from climate change too, and it is becoming more tangible and motivating," she said. "They are feeling the impacts and knowing they have those levers to use."

That is the case in Des Moines, Iowa, which experienced serious flooding in 2008 inundating facilities along riverfronts, and in 2018 had ten inches of rain in less than five hours flooding buildings and homes. "That really drove us to start thinking of green building as a resiliency measure," said Jeremy Caron, City of Des Moines sustainability program manager. Then last year, it experienced the "derecho" wind storm with 100-plus miles per hour winds which decimated electric service and supply chains. "It revealed a lot of challenges we need to start thinking about and dealing with," Caron said.

"Cities across the board relative to states and federal are being more proactive on clean energy and building efficiency and mostly because we have that grassroots connection to residents and we're responding to the requests from the community," he said.

Des Moines is currently in the process of selecting a consultant to work on its decarbonization plan, which will also begin with buildings. The city shares one advantage with Ithaca in tackling climate and starting with building: it is the beneficiary of [Berkshire Hathaway](#) Energy's major investment in wind power, with the Warren Buffett-owned utility already at 86% of the energy provided from wind and having the goal of making the entire state 100% renewable energy-powered in a decade.

"We can focus less on the grid and more on programs and solutions for residents and businesses and facilities," Caron said.

Buildings in Des Moines represent 65% of its energy consumption with transportation second at 26%. Driving building efficiency up and demand down is key. "The most affordable energy you can use is the energy you don't require," he said.

Building direct energy and electricity use comprise roughly 38% of greenhouse gas emissions in the U.S., according to the USGBC, and the majority of buildings that will make up urban environments through 2030 already exist, and in big cities like New York it's as high as 85% of building inventory. "Those buildings are really important and also areas where energy usage traditionally has not been regulated," Beardsley said.

Construction of net-zero carbon buildings will be normal over the next decade, but existing buildings are a much harder challenge and very fragmented as a market with a different cost burden than starting from scratch. In a country like the U.S., all of the existing building stock will require "deep renovation," Beardsley said, in order to meet IPCC targets. But cities are now adopting performance benchmarks for energy efficiency, which is the precursor to energy efficiency upgrades.

Des Moines is collecting its building energy benchmarking data for private property owners through the end of next year and anticipates it may need additional time to verify data given the pandemic shutdowns created abnormal patterns in energy usage.

Congress is currently contemplating multiple measures to make building infrastructure more climate-resilient as part of the Biden administration spending plan and to overcome hurdles including the fact that many business owners perceive their energy costs as being low relative to other expenses.

"It's taken a while to come up with new tools and policy ideas and will see more involvement of cities with existing buildings, those will grow," Beardsley said. "Many cities have made climate commitments and hopefully many are working towards detailed plans and actions," she said. "Sooner or later, they will have to work on existing buildings."

Cities need to be prepared to take advantage of any federal funding that does become available because those opportunities do not occur often. Des Moines may begin rolling out programs as early as the latter part of next year as it works on a five-year timeline to develop its decarbonization plan for buildings and larger "energy master planning," said Caron, who joined the city's government in May 2020.

Ultimately, local government leaders need to think of projects as being able to survive changes in political administrations and ideologies, Myrick said, and building a financial model that works is key.

"You need to show a return every quarter," he said. "When you set up a big ambitious project like this the next administration will have no choice but to continue regardless of ideology. It's a win for private property owners and households to see buildings become more efficient and produce less emissions and for partners in private equity seeing a return on investment that works for the environment."

Ten years ago, when he first became mayor, he said that he would never have imagined Ithaca could decarbonize all its buildings. "It wasn't on my agenda," Myrick said.

It was only over the past two years that Ithaca was prodded by local activists to be more aggressive and saw all the financing opportunities that were available at a time when the federal government was not stepping up to solve the problem.

"I have been in office through four presidents, and during the Trump administration, seeing how quickly the federal government could not just scale back ambitions and fail to meet goals but reverse course convinced me that we as cities had to be more aggressive," Myrick said.

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Danielle Staude

From: Debbie Alley <alleydeb@gmail.com>
Sent: Wednesday, November 10, 2021 12:26 PM
To: Urban Carmel; Al Grumet; Susan Gladwin; Paul Moe; Gregory Hildebrand; Karen Jaber; Patrick Kelly; fionammatney@gmail.com
Cc: Danielle Staude; Christine O'Rourke
Subject: \$95M up for grabs

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FYI. You may know Xprize, crowdsourcing some of the world's biggest challenges. University students applied for this initial prize and round 2 is open to anyone. There is a link in the article to the student team ideas and vids. Inspiring!

Learn why and who won the XPRIZE Carbon Removal Student Award Winners, with teams earning up to \$250k. As part of the \$100M XPRIZE Carbon Removal funded by the Musk Foundation, these student awards were created to fund early stage concepts from the next generation of carbon removal innovators and to remove barriers to entry for those interested in the main competition

<https://www.xprize.org/prizes/elonmusk/articles/5m-out-the-door-95m-to-go>

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