Green tech powers up NYC companies

Firms find data-intensive ways to end inefficiencies wherever they lurk.

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Years ago, when Deirdre Lord told people at cocktail parties she was in the energy business, they would look at her vacantly and sidle to the other side of the room. No more. Now they want to hear what she has to say.

Ms. Lord’s three-year-old company, the Megawatt Hour, provides pricing data and analytics to schools, businesses and nonprofits in New York to help them manage one of their biggest headaches: energy costs that are among the nation’s highest. The business grew eightfold last year, said Ms. Lord.

"[We] bring transparency to opaque energy markets," she said. "Customers can see when to buy and not to buy, and we do that with the click of a button."

The Megawatt Hour is part of a small but growing crop of clean-tech and energy-efficiency startups in New York City. These new companies are riding a shift from capital-intensive to data-intensive technologies that focus less on hardware than on smart management of energy, water and waste. That shift is creating opportunities as the green industry moves into the city’s tech sweet spot—software, data gathering, analysis and prediction—and takes advantage of its potential as an urban lab.

Among other things, startups here are developing technology to cut energy use in thousands of old buildings, to lower the costs of a subway system that is the largest user of propulsion energy in the state, and to make solar power more efficient and popular.

"A lot of new and different types of opportunities are coming out of places like New York," said John Lee of Osage University Partners, a Pennsylvania venture fund that invests in startups born in universities like Columbia and Cornell. "It’s not the clean-tech investing of two or three years ago. It’s more capital-efficient and a lot more attractive in terms of [the amount of] capital."

New York City’s clean-tech contingent—some 40 companies, according to the city’s Economic Development Corp.—doesn’t yet rival the hundreds of startups in social media, e-commerce, fin tech, ad tech and other techs in a resurgent Silicon Alley. And for all the interest in climate change and alternative energy, they still face obstacles, from scarcity of talent and money to the vagaries of public financing and customers wary of new technologies.

"It seems like the time is right to try to help create this cluster, but it’s certainly not going to be easy," said Micah Kotch, director of innovation and entrepreneurship at New York University Polytechnic Institute.
Meanwhile, universities and city and state agencies are picking up some of the slack. The New York Power Authority is helping to underwrite new technologies upstate, and the New York State Energy Research and Development Authority supports six clean-tech incubators, including NYU Poly's ACRE. Last year, NYSERDA ponied up $15 million for three proof-of-concept centers run by Columbia, NYU Poly and the University of Rochester to help researchers get from idea to funding to commercialization.

City | Installed solar photovoltaic capacity (in megawatts)
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Los Angeles | 132
San Diego | 107
Phoenix | 96
San Jose | 94
Honolulu | 91
San Antonio | 84
Indianapolis | 56
New York | 33

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"We are finding ways to give early adopters and startup companies a place to test new technology and collect data on new solutions to accelerate the route to market," said Richard Kauffman, chairman of NYSERDA. "The more we can do to shorten the sales cycle, the greater the chances of success."

With New York City as a lab, many startups, like the Megawatt Hour, are homing in on energy-guzzling buildings. Enertiv, a graduate of the RG/A Tech Stars accelerator, uses software and sensors to monitor energy usage and give real-time feedback to building owners and managers, such as the fact that the New Haven public-school system had rooftop coolers going 24/7—including weekends. With Enertiv, the schools saved 40% of their heating costs, said founder Connell McGill. He recently signed up NYU, the New School and the Related Cos.' Equinox gyms.

Others, such as Locus Energy, are using big data to drive greater energy efficiency. Locus monitors solar installations to help owners maintain and get maximum performance from them. From 1,500 installations three years ago, Locus is up to 35,000 today. In the future, Locus plans to use the millions of pieces of data it collects every hour to help system owners and managers make forecasts, manage risk and drive down costs.

"Solar naturally fluctuates every second, and enabling customers to assess that fluctuation through advanced algorithms and leverage an engineer's capabilities is a huge advantage," said Michael Herzig, Locus’ founder and chief executive.

The shift to software notwithstanding, the city even has a nascent hardware industry. Columbia University startup Radiator Labs has installed its technology in two university buildings, helping save 40% on heating, according to co-founder Marshall Cox. Next up: NYU.

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Think Eco, based at ACRE, makes a "modlet" that wirelessly regulates the use of air conditioners, computers, coffee makers—anything that constantly draws electricity. Some 20,000 Consolidated Edison customers use the device, and utilities in Texas and Minnesota have signed up.

And there’s more technology in the pipeline that could be incorporated into startups. Lei Zuo, an engineering professor at
SUNY Stony Brook, is harvesting electricity from the vibration of railroad and subway tracks to power lights and other equipment. At Columbia, professor Kartik Chandran is developing a submersible drone that tests wastewater treatment tanks to see if the microbes in residence are doing their job.

But whether they are startups with a business model or barely out of the proof-of-concept stage, clean-tech entrepreneurs still must convince skeptical customers.

"Landlords are not necessarily driven by making things green," said Radiator Labs' Mr. Cox. "They're driven by making things profitable. We have great promise, but not many people are willing to take the risk."

Scarce talent and money are also hurdles. Enertiv last year feared it might lose a key engineer, a foreigner who needed a hard-to-get H-1B visa. Locus Energy has most of its engineering staff on the West Coast, where it believes there's a deeper pool of engineering talent.

While the new focus on software is more palatable to investors, there's still a paucity of early-stage private investment. Clean-tech investment in New York shrank to $43 million in 2012 from $126 million in 2007, according to NYSERDA. Though New York has the third-largest economy among the 50 states, it ranked a dismal 12th in private green-tech investment from 2007 to 2012. And while clean-tech venture investing jumped 38% nationally in the first quarter compared with the year-earlier period, according to venture tracker CB Insights, New York didn't even show up in the numbers.

One ACRE occupant, Energy Solutions Forum, is trying to change that. ESF provides research and policy analysis to investors and market participants to drive more investment into energy ventures. Its first New York Energy Week conference last year attracted 2,000 participants.

"The lack of data is the energy industry's biggest problem," said founder and Chief Executive Angelique Mercurio. "We are dying to see more energy investment here."