

The Great Energy Challenge

[Home](#) [Photo Galleries](#) [Quizzes](#) [Graphics](#) [The Big Energy Question](#) [Innovators](#) [About](#)



For Street Carts, Is Cleaner Power as Easy as Swap Out, Plug In, Turn On?

Posted by [Erica Rowell](#) on August 22, 2014



(2)



Tweet



2

[More »](#)



Photograph by Erica Rowell

A red food cart that sits on the corner of 17th Street and Broadway in New York City's Union Square may not look different from the thousands of others scattered throughout the city, but it is unique in at least one way and that way has nothing to do with food. This Rafiqi's cart, which serves up a high volume of halal fare to hungry New Yorkers, lacks [the hammering sound of a generator that most food truck customers](#) — and vendors — are all too familiar with: Instead, it's plugged into a curbside charging station.

Such charging stations, installed by [Simply Grid](#), a start-up co-founded in 2010 by Jeffrey Hoffman and Michael Dubrovsky, are sleek, unassuming pedestals that take up less space than a newspaper box and allow mobile vendors to hook up whatever it is they need powered to the electric grid. Users simply plug in to the pedestal, instead of a generator, then send a text message to turn the power on or off.

Asim Rafiqi, who has been participating in a Simply Grid pilot program since September 1, 2013,

About This Blog

National Geographic is no longer updating this blog. For the latest energy coverage, visit the [Great Energy Challenge](#).

[More About This Blog »](#)

Follow [@NatGeoEnergy](#) on Twitter

Recent Energy News

- [Why Your Fridge Pollutes and How It's Changing](#)
- [How Geothermal Could Cleanly Power the Planet: Indonesia's Tale](#)
- [Corn for Home Heat: A Green Idea That Never Quite Popped](#)
- [Two Reasons Why Obama's Keystone Veto Won't Decide Pipeline](#)
- [Tweaking Bacteria, Scientists Turn Sunlight Into Liquid Fuel](#)

Search This Blog

Search for:

Blog Central

[Intelligent Travel](#)
[News Watch Blog](#)
[Breaking Orbit Blog](#)

Archive

[April 2015](#)
[March 2015](#)
[February 2015](#)

sees a number of benefits. “Cost-wise and headache-wise,” Rafiqi said, “this doesn’t give you headaches at all.”

A Low Headache Factor

Those headaches are both figurative and literal. With [more than 60 percent of New York City’s street food vendors using gasoline- or diesel-powered generators](#), cocktails of toxic air pollutants are served up alongside the on-the-go meals, pollutants such as carbon dioxide, carbon monoxide, volatile organic compounds (VOCs) [\[pdf\]](#), nitrogen oxide and particulate matter. And these pollutants [carry a variety of health risks](#) including asthma attacks, cancer, [damage to the nervous system](#), respiratory problems, [heart and lung disease](#), and death.

Noise, another health risk, tops the list of grievances Rafiqi ticks off.



Photograph by Erica Rowell

Rafiqi is one of five brothers famed in NYC street-food circles for their long-lived [Rafiqi’s food-cart dynasty](#). All but one of his family’s 18 red carts run off a generator, and he is familiar with the headaches that go along with the job. He continues to list them.

Along with noise are vibrations, the kind that follow you home, making you feel like your whole body is still shaking hours after closing shop, he says. Other issues with generators include shutdowns from missed oil changes, problems with burnt-out sparkplugs, robberies and [fires](#) (see also [here](#)).

He says Simply Grid gave him only three or four problems over the past year, and it provides on-demand power. Generators [provide limited power within a given time frame](#), Rafiqi says, while Simply Grid provides power when it’s needed — like “regular electricity,” an advantage that allowed him to use a heater last winter, something he couldn’t do with a generator.

The price looks promising too. Compared to generator costs, estimated at upwards of \$500/month, Simply Grid’s monthly costs based on hourly access to the pedestal should fall in the \$300-\$400 range, Hoffman said.

And what’s more, grid power could help cut down on the toxic air pollutants from generators, thus [reducing a number of health risks](#) to city dwellers.

- [January 2015](#)
- [December 2014](#)
- [November 2014](#)
- [October 2014](#)
- [September 2014](#)
- [August 2014](#)
- [July 2014](#)
- [June 2014](#)
- [May 2014](#)
- [April 2014](#)
- [March 2014](#)
- [February 2014](#)
- [January 2014](#)
- [December 2013](#)
- [November 2013](#)
- [October 2013](#)
- [September 2013](#)
- [August 2013](#)
- [July 2013](#)
- [June 2013](#)
- [May 2013](#)
- [April 2013](#)
- [March 2013](#)
- [February 2013](#)
- [January 2013](#)
- [December 2012](#)
- [November 2012](#)
- [October 2012](#)
- [September 2012](#)
- [August 2012](#)
- [July 2012](#)
- [June 2012](#)
- [May 2012](#)
- [April 2012](#)
- [March 2012](#)
- [February 2012](#)
- [January 2012](#)
- [December 2011](#)
- [November 2011](#)
- [October 2011](#)
- [September 2011](#)
- [August 2011](#)
- [July 2011](#)
- [June 2011](#)
- [May 2011](#)
- [April 2011](#)
- [March 2011](#)
- [February 2011](#)
- [January 2011](#)
- [December 2010](#)
- [November 2010](#)

The Costs and Benefits When It Comes to Pollution

Simply Grid's power solution is slowly building steam. Just this month the company announced a deal with the New York City Fire Department to provide ambulance electrification, a [growing trend with emergency vehicles](#) to keep their many onboard electronics juiced up and ready to go and a trend that may deliver more than easy-access power.

With many ambulances already equipped with the plug-in technology that allows them to charge at a base station, Simply Grid will enable them to plug in when they are idling curbside, at ERs, and so forth.

"In NYC," Hoffman wrote in an email, "the FDNY alone has over 600 ambulances idling 10-14 hours a day burning a gallon of diesel per hour. We're going to fix that."

Stopping vehicles from [idling](#) and switching from diesel- and gas-powered generators to grid power could deliver a number of health benefits.

For mobile food vendors like Rafiqi, the switch to electric power could mean fewer headaches, both figuratively and literally.



Photograph by Erica Rowell

One Piece of the Energy Solution Puzzle

Hoffman says that while the numbers vary depending on how efficient and well-maintained a given generator is, "there is no question that replacing a poorly maintained 2-stroke gas generator or a large diesel engine with grid electricity *significantly* reduces urban air pollution. ... [W]e believe that our conversions, when counting all-in emissions, effectively take 10+ cars off the road per

Subscribe

RSS

ATOM

Subscribe via a feed reader

@NatGeoEnergy on Twitter

Tweets by @NatGeoEnergy

 **NatGeo Energy**
@NatGeoEnergy

Thanks for following us! This account is no longer active. Head to [@natgeoscience](#) for energy updates from [@natgeo](#).

18 Nov

 **NatGeo Energy**
@NatGeoEnergy

Watch [#BeforeTheFlood](#) right here as [@LeoDiCaprio](#) travels the world to tackle climate change on [natgeo.com/2f6BKs0](#) on [natgeo.com/2f6BJUY](#)

30 Oct

Embed

View on Twitter

Top Tags

biofuel carbon dioxide emissions
China clean energy climate
climate change coal eco-marathon efficiency electric cars
electricity emissions **energy** energy
access **energy efficiency** energy
policy energy poverty environment EPA fossil
fuels fracking fuel efficiency
global warming greenhouse gas
emissions hydraulic fracturing japan methane
natural gas Nicholas Institute for
Environmental Policy Solutions nuclear nuclear
power **oil** oil prices policy politics
Renewable Energy
renewables shale gas **solar solar**
power tar sands warming water wind wind

generator replaced.”

Similar benefits of electrified power over generator power were echoed by Sergej Mahnovski, the director of the Mayor’s Office of Long-Term Planning and Sustainability, when he [said](#): “Food carts’ portable generators emit 20 times more asthma causing pollution per unit of energy than the city’s electricity supply.”

Janice Nolen, assistant vice president for national policy for the American Lung Association, also sees some immediate and direct health benefits from powering food carts with electricity instead of a generator — particularly, she emphasizes, for individuals like vendors who are closest to the pollution sources. But she is cautious to qualify the benefits and underline the unknowns.

She uses the example of electric-powered cars.

“While they emit less than the tailpipe of a car,” she said, in many areas “you’re requiring coal-fired power plants to work more because so much coal produces power. That presents a challenge, a challenge that is shifting as we’re getting cleaner power ... and more limits on emissions.”

That shift is already evident in New York City. While coal still [represents the largest slice](#) of the energy-source pie for electricity in the United States, the Big Apple [gets a lot of its electricity](#) from nuclear, natural gas, and hydroelectric power — and hardly any from coal. So NYC may be a good environmental choice for electric power.

But even as cleaner energy sources (and policy solutions and switching to cleaner fuels) slowly erode background levels of pollution, each “solution” is only so clean.

“Less pollution is always better,” said Nolen, “but figuring out how much would be challenging.”

To truly quantify the pollution benefits from Simply Grid, she said, a study would be needed, one that could somehow separate out the power sources the company would be replacing from the many similar sources of pollution (e.g., surrounding traffic, ocean vessels). That is a tall order. And at present such studies [appear to be few and far between](#).

“We have to recognize however helpful it might be,” she adds, “it’s part of a large process to get cleaner air from transportation and energy sources.”

The Future

As entrepreneurs, politicians, scientists and others move the pieces around the giant puzzle of cleaner energy, Simply Grid plugs away at fitting itself into a bigger part of the emerging picture.

In addition to their [other pilot project in Atlanta](#) and the recently announced ambulance electrification program, expansion plans include projects in Houston and a large city on the West coast.

And there may be a boost for charging those electric cars.

Hoffman thinks Simply Grid could help solve the “chicken and egg” problem of having too few EVs on the road to justify the capital costs of charging infrastructure and having too little infrastructure to induce would-be EV buyers.

“Our infrastructure could very easily be used to charge EVs,” said Hoffman, “when they reach critical mass.”

Keywords:



(2)

[More »](#)