M

MACRO

Measuring Energy

A company calculates our use of oil, natural gas, water, electricity, and the amount of garbage we produce all as a single unit. **BY KIRK KARDASHIAN**

IN 2010 the Massachusetts Department of Transportation launched GreenDOT, an ambitious initiative to reduce the greenhouse gas emissions of the state's transportation system 40% by 2020. When he heard the news, Tim Lasker, the sustainability specialist for the Massachusetts Bay Transportation Authority (MBTA), had one thought: How are we going to manage this? The first step was to review how much energy the MBTA was using for each task—but given that it was using different sources of energy (fuel oil, natural gas, electricity), how was Lasker to compare the efficiency of one to another? ¶ The answer was closer than he knew. Energy Points, a Boston company, had developed an algorithm it claimed could do just that. So last year Lasker fed three years' worth of data on heating, cooling, electricity, waste, and water from the MBTA's four oldest bus garages into EnergyPoints Analytics software—which translates the energy contained in various sources into a single common unit—and started

Points of light measured by a
satellite with a hypersensitive
spectroradiometer over multiple
orbits and scans of the planet

Month 00, 2010 FORTUNE.COM

asking hypotheticals. At the Quincy facility, an old horse-and-carriage garage built in the early 1900s, he learned the MBTA could save $112,121 and the energy equivalent of 29,561 gallons of gasoline in just one year by switching from fuel oil to natural gas for heat.

Energy Points uses 1.8 billion conversion factors to translate various energy units—mBTUs, kilowatt-hours—into an Energy Point, which is equivalent to one

by natural gas or at a wind farm. A gallon of water in the Northeast requires less energy to deliver than a gallon does in the Southwest. Energy Points accounts for those variables, helping firms understand their true energy consumption and cost from the source to the site.

"One part of their innovation is the basic analysis, which I think is robust," said Auroop Ganguly, an associate professor of civil and environmental engineering

HOW HOUSEHOLDS CONSUME ENERGY

Annual and monthly energy use by category—expressed in gallons of gas consumed—for the average household in five U.S. states, according to Energy Points.

"Even the most sophisticated people tend to think about environmental impact in adjectives—green, sustainable—not in numbers, and there's no visibility about where energy comes from." —*Ory Zik*

gallon of gasoline. Even the energy inherent in water and garbage can be expressed as an Energy Point. The company's software, which is built on data mining and mathematical modeling, is sold both directly to businesses and licensed to consulting firms. Armed with one unifying metric, companies can more easily track their energy use and expenses, and compare the costs and benefits of resource-saving projects. "A gallon of gas is just a choice of convenience—people know what it is," says Ory Zik, who co-founded Energy Points with Roy Stein. "The idea is to take complex networks of energy and make it simple and accurate."
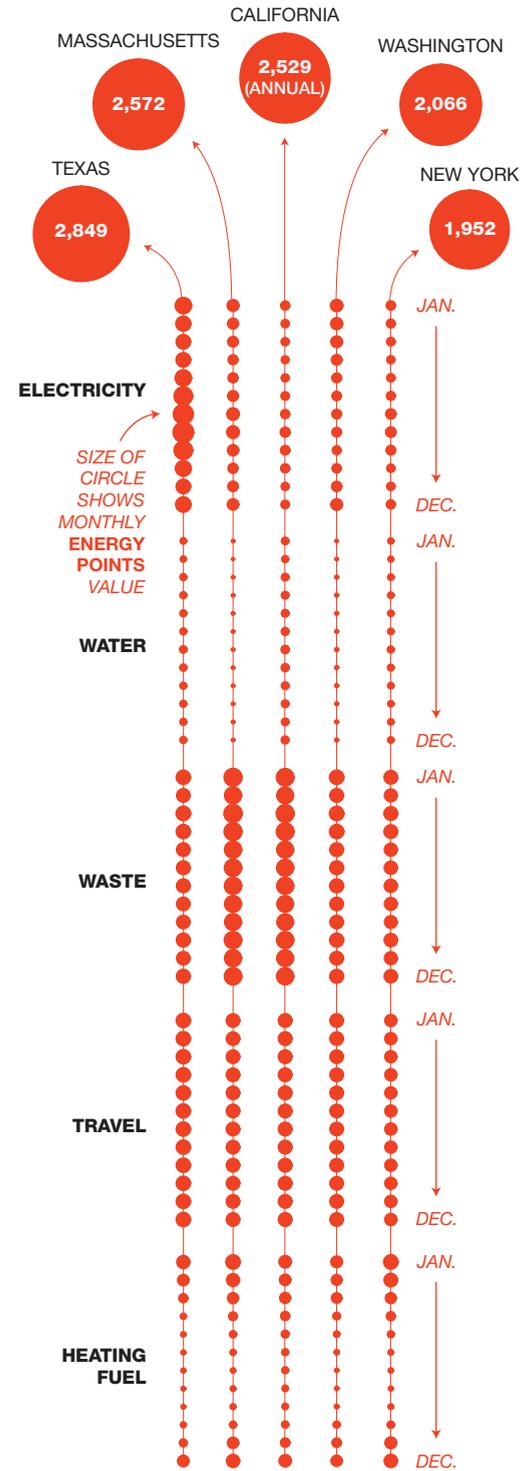
"Complex" is a bit of an understatement. Take electricity: A kilowatt-hour from a coal-burning power plant has a different carbon intensity than one generated

at Northeastern University. "The other part is turning that analysis into something that's actionable."

Zik, who holds a Ph.D. in physics and founded Greenpeace Israel, left the CEO spot at a solar company to spend a year at MIT working on the Energy Points idea and launched the company in 2011 with Stein, a longtime friend with a background in enterprise software and energy management. Microsoft and Accenture use Energy Points software to analyze their resource supply chain and recommend changes, often by assessing and reducing use of carbon. Companies as diverse as Wal-Mart, Wells Fargo, DuPont, and Disney already include a price on carbon in their long-term planning. While the words "carbon tax" are notoriously divisive, "energy productivity" is not. Neither is "saving money." F