

# Why some US electric utilities are experimenting with flat-rate pricing



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US electric utilities are borrowing a new business model from Netflix and other subscription services.

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Cell phones. Data plans. Movie and music streaming. Home energy bill?

The subscription craze has finally reached electric utilities in the US. At least three companies are testing a new billing model that charges users a flat monthly rate regardless of how much electricity they consume. Utilities are hoping it ushers in the era of a more efficient, greener grid.

## **How electricity bills work**

For more than a century, electricity bills came in one flavor: pay per kilowatt-hour. Initially, that price was fixed. But in the 1970s, US utilities began to experiment with dynamic pricing models, in which the cost per kilowatt-hour varied throughout the day depending on demand, similar to surge pricing on a ride-share app. In theory, dynamic pricing allows utilities to avoid switching on high-cost “peaker” plants, typically fueled by natural gas, and promotes energy and cost efficiency across the system.

Yet research found households only curbed their energy use during peak pricing if they received special training or advance notice of a price spike. In some cases, average users cut back, but only after extreme fluctuations. During the blackouts in Texas this February, retail electricity rates spiked 180-fold, prompting some of those who still had power to use less of it, while others were left with monthly bills of \$10,180.

Most electricity consumers don’t change their behavior in response to minor hourly price adjustments and don’t want to manage their monthly electricity bill. They want simplicity and low prices.

So far, utility bills have resisted the simplified, all-you-can-eat model for electricity that appears to have overtaken many of life’s daily services. The reason is simple. It costs Netflix or Verizon almost nothing to add one new customer, or to let one customer binge-watch a new series every night while another watches only one movie per month.

But for utilities, marginal costs are high: More electrons delivered means more fuel burned, and more stress on the grid. Those costs are also not entirely predictable, which means utilities have to build more power infrastructure than they usually need, so that there isn’t a blackout if everyone decides to run their AC at the same time.

## **Subscribing to electrons**

That’s starting to change. Utilities aren’t just suppliers of electricity anymore. They’re more like managers of a vast, intelligent network

of energy-producing and consuming devices. As solar panels, electric vehicles, household batteries, and smart thermostats proliferate and go online, utilities are experimenting with new ways for people to pay for power.

Flat rates are one of them. Since March of this year, Uplight, a technology partner of utilities, has rolled out a product called Plus in pilot programs with North Carolina-based Duke Energy, AES Indiana, and a third undisclosed Midwestern utility. Plus gives customers a single, consistent monthly price, often combined with programs and incentives such as smart thermostats, zero-carbon energy subscriptions, energy efficiency upgrades, and automatic credit card billing.

So far, utilities' efforts to plug customers into those technologies suffer from low enrollment and high signup costs. Flat-rate billing is a way to make these packages more attractive to customers. Ratepayers get one less bill to worry about. Utilities get predictable revenue. And grid managers get something even more valuable to prepare for climate change and extreme weather: More control over electrons.

## **A better rate in exchange for more control**

If utility managers could control every appliance connected to their grid, they could tweak the load to reduce or eliminate the need for peaker plants. Turning down the heat by one degree, or running washing machines only at night, for example, could save money and reduce emissions. They could also more easily incorporate renewables, matching power demand to times when the sun is shining or wind is blowing.

Akshaya Jha, an energy economist who studies electricity markets at Carnegie Mellon University, said it's unlikely that utilities would reach in and shut off your refrigerator, for example. But they could make it cycle one less time, or raise the thermostat one or two degrees. For the utility, says Jha, "this is less about a flat rate per se, and more about saying to customers, 'You get a better rate in exchange for letting us control more.'"

Demand-side management will become especially important as more vehicles, home heating systems, and other things that run on fossil fuels go electric, fueling overall demand.

## **Flat-rate electricity billing could be abused**

The Plus product is still a pilot, and the programs are small, reaching just 4,000 customers so far across the three participating utilities. But that's by design. Utilities need to find out how people will adopt and use these programs, before rolling them out to millions of customers, said Indy Ratnathicam, Uplight's chief marketing officer for Uplight.

One potential pitfall is abuse. What's to stop a user from plugging in every device from air conditioners to a bitcoin mining rig and running it non-stop? In these pilots, not much, Ratnathicam said. But contracts could be designed to kick in extra fees beyond a certain reasonable limit. "We want to offer the customer something that is one plus one equals three," Ratnathicam said. "It's a way to bundle it all together so that the value is greater than the sum of the parts."

And it could be a win for the climate. A June 2020 paper by economists at the Brattle Group, a consultancy, and Energy Impact Partners, a utility-backed energy investment firm, found that in a grid powered primarily by natural gas, each new fixed-rate billing customer would reduce emissions as much as taking one car off the road.