

New app helps utility customers save energy with real-time data

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The app takes data from SDG&E and shows you when your energy usage spikes throughout the day.

The holidays are an energy-intensive time of year. Whether you hang just a few lights or illuminate the entire neighborhood with a winter wonderland display, chances are your carbon footprint will be just a little higher for the month of December. Scheduling your appliance-related chores for off-peak hours can help ease strain on the local power grid, and could even save you money in lower electric rates down the line. A new app developed by San Diego State University computer engineering professor Yusuf Ozturk makes it easy to know the best time to plug in.

Currently, most San Diego homeowners are billed for their total electricity usage by the local electric utility regardless of time of use. But some consumers with special electricity needs, such as owners of electric vehicles, can opt to be billed using a dynamic pricing model which charges them less for electricity used during off-peak hours and more for usage during peak hours. That's a model many San Diego businesses already operate under, and it could become an option available to all residents in the near future.

Using electricity during off-peak hours not only saves business owners and some other consumers money, it may also leave a smaller [carbon footprint](#), Ozturk said. "It's extremely difficult to convince people to cut their overall [energy usage](#) very much because you have to wash the dishes, you have to do your laundry," Ozturk said. "But you can shift your usage from peak hours to non-peak hours pretty easily for most tasks."

(Almost) Real-time data

The problem is that most people don't know when they're running their appliances at peak hours. Utility bills break down consumers' usage, but "most users do not look closely at their energy bill, and by the time they see it, it's too late," Ozturk said.

But if you could see in virtual real-time the potential benefits of delaying your laundry by a couple of hours, you could significantly change people's behavior, he said. That's the goal of his new [app](#), [EnergyElastics](#), available for Android devices for free on the Google Play store.

The Energy Elastics app has been developed to work with customer energy use data downloaded from San Diego Gas & Electric's (SDG&E) [Green Button](#). The user-friendly app allows customers to give the app access to their own data—delayed by one day—via the utility and shows

when energy usage spikes at different times during the day. The data goes back 13 months, offering a look at historical usage patterns.

EnergyElastics breaks your usage down into hourly chunks, calling special attention to peak and non-peak periods, and then forecasts how many fewer pounds of carbon might be emitted if you waited until off-peak hours. For consumers with time-of-use pricing, they can also see how much money they could save.

"Some people care about their spending, some care about their carbon footprint," he said. "We're assuming that if you let the user know, they'll change their behavior."

About the app

Eventually, the app will be able to sync with smart appliances to automatically schedule things like laundry and dishwashing for off-peak hours.

There's an optional social component to the app, too. The app allows users to build networks with their neighbors and friends, creating an element of competition and accountability.

So if you have a friendly decorating rivalry with the neighbors this holiday season, this year it's not just about who puts up the most lights—it's also who can be the greenest while doing so.

Provided by South Dakota State University

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