

Electric Power and Power Electronics Institute

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SOON THERE WILL BE AN INTERNET-CONNECTED THERMOSTAT IN YOUR LIFE

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Abstract

Residential thermostats control almost 10% of the nation's energy use, so it's important that they work correctly. In fact, most people can't program these thermostats and disable the energy-saving features. Recently, Nest and other companies have introduced Internet-connected thermostats. Texas has more Internet-connected thermostats than any other state. These units rely on sophisticated cloud-based algorithms, combined with several sensors, to manage indoor temperatures and save energy and money. How does one measure the energy-saving effectiveness of the algorithms used in the thermostats? Which company's thermostats save the most energy? Quantifying the effectiveness of cloud-delivered services, like the Internet-connected thermostat, is a new challenge.

Biography

Alan Meier is a senior scientist at Lawrence Berkeley National Laboratory. Meier's research has focused on how energy is transformed into useful services ... and then how to obtain those services with less energy. Meier studies energy use of consumer electronics, energy test procedures for appliances, and international policies to promote energy efficiency. At UC Davis, Meier teaches energy efficiency to graduate students from wide array of disciplines. He recently created a website to view demand and supply for electricity in various countries, in real-time, at currentenergy.ucdavis.edu .