Earth Networks℠

e5 by Earth Networks™
energy ∣ efficiency ∣ ease
environment ∣ earth

EnergyHub™

Introducing e5: A New Innovation in Demand Response…

Intelligent Home Energy Management Powered by Real-time Weather Information

The problem with traditional demand response programs? They conserve energy at the expense of occupant comfort, and place the burden of thermostat installation, setup and support on the utility.

The Solution? e5. An innovative energy efficiency and demand response program, e5 maximizes energy savings and demand response capacity by **putting the consumer's comfort first**. Consumers join the program by installing a qualified thermostat, available at major retailers and online, without having to go through the utility. (A utility-distributed option is also available.)

Utilities that choose e5…

- Only pay for the demand response capacity delivered
- Benefit from continuous monitoring and forecasting of system demand response capacity
- Enjoy lower support costs (no calls about thermostat)
- Experience reduced churn

- Weather-optimized thermostat control for lower energy bills
- 15% avg energy savings without sacrificing comfort
- More demand response capacity than other solutions
- Remote home energy audit for consumer

What's the Secret to e5's Success? Real-time, hyper-local weather information

e5 combines data from Earth Networks' exclusive network of more than 8,000 weather stations with sophisticated modeling, algorithms and Earth Networks' vast data processing infrastructure to optimize energy use without sacrificing comfort.
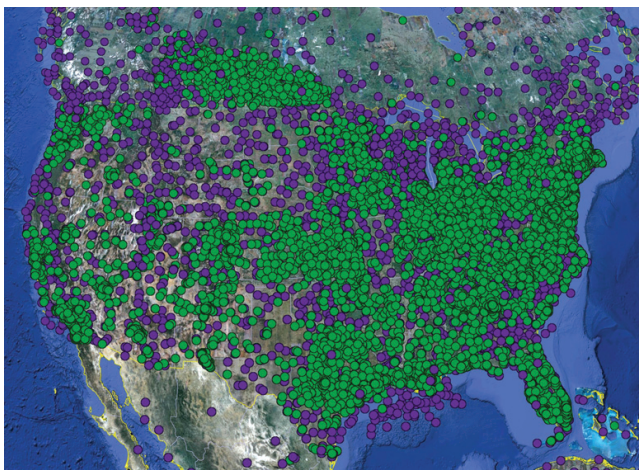
Live conditions from the Earth Networks Weather Network—the world's largest, with more than 8,000 stations—enables the precise weather forecasts and house modeling that allows e5 to provide more demand response capacity than other solutions.

Earth Networks' state-of-the-art, neighborhood-level weather stations update every two seconds, resulting in more precise weather forecasts and house modeling than other solutions that rely on observations from airports that can be as much as an hour old.

Intelligent weather forecast and energy market data allows e5 to predict the probability of demand response events and take pre-emptive actions to maximize demand response capacity and minimize impact on consumers.

To learn more, contact
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How Does e5 Work?

STEP 1: Multi-Channel Customer Acquisition

Customers are acquired via direct-to-consumer marketing. This includes leveraging the considerable reach of Earth Networks' WeatherBug® brand with advertising on the popular WeatherBug.com website, within WeatherBug's top-rated mobile apps and on its desktop application. Other marketing tools include in-store promotions at major retailers, and outreach to existing owners of qualified thermostats and to the utility's customer base.

This Summer…
Keep Cool **AND** Save Money

Find Out How
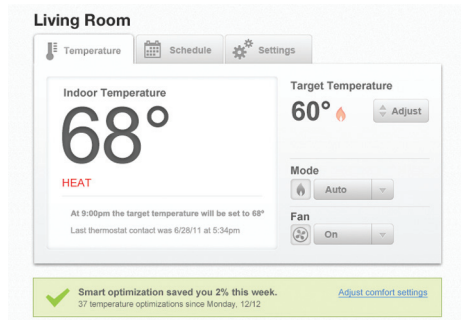
STEP 2: Easy Installation and Setup

Earth Networks has partnered with EnergyHub, Inc., to implement e5 through an interactive online system that puts customers in control of making informed decisions about their energy consumption. Once registered for e5, consumers with a qualified Internet-enabled thermostat, available from leading home improvement stores and online, simply input their temperature settings and the highly intuitive e5 cloud application does the rest. EnergyHub's user-friendly energy management tools feature:

- Web and mobile apps for remote control
- Guided schedule setup for easy and efficient programming
- Customer engagement that helps maximize energy efficiency

STEP 3: Precise House Modeling With Hyper-Local Weather Conditions

e5 combines hyper-local weather information with internal house temperature and HVAC information from Internet-enabled thermostats to develop a thermal model of the house. The model is used to determine how the structure responds to varying weather phenomena, and to develop detailed strategies to optimize HVAC control for energy efficiency and demand response purposes. The model is continuously updated with the local weather conditions impacting the house as the weather changes.
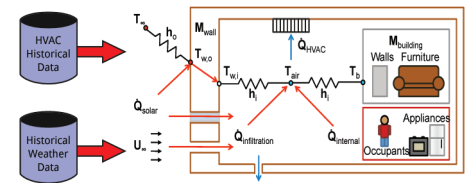
Representation of a house and variables needed to model its behavior

STEP 4: Automatic Climate Control Optimization

Based on the house modeling, e5 provides a daily Intelligent Comfort Plan for each controlled home. This automated plan optimizes climate control based on the occupant's selected comfort ranges, the thermal properties of the home, and the predicted weather for the day. If the weather develops materially different from forecast, if the occupant changes his or her comfort settings, or if a demand response event is called, e5 sends the thermostat new set points that accommodate the changes. No monitoring or interaction is required by the homeowner.

STEP 5: Next-Generation Demand Response

With accurate models and baseline data for all the controlled structures, e5 continuously monitors and forecasts system demand response capacity for each hour of the day for the next 24 hours. e5 uses weather forecast and energy market data to predict the probability of a demand response call for the next five days. When a demand response call is anticipated, e5 takes action, such as by pre-cooling or pre-heating, to maximize demand response capacity and minimize the impact on occupants.

When a demand response event is called, e5 sends new set points to participating thermostats. The set points are optimized to meet demand response commitments and maintain house temperatures within the occupant-defined "grid emergency" temperature range.