Energy data: Unlock innovation, cut pollution, save money

Nearly half of all American homes are now outfitted with advanced electricity meters, creating an unprecedented opportunity for data-driven energy savings.

—U.S. Energy Information Administration (2014); U.S. Census Bureau (2014)

The clean energy future envisions home appliances, electric vehicles, rooftop solar, and more operating seamlessly with the power grid. It requires a fundamental shift in the relationship between utility and customer – one powered by multi-directional flows of energy and information. With the deployment of modern sensors and advanced meters across the U.S., there are enormous quantities of energy-use data at our fingertips for the first time ever. Environmental Defense Fund (EDF) believes this data can revolutionize the grid, but only if people have access to it and the tools needed to control their energy use and electricity bills. That's why EDF created the Open Data Access Framework.

Knocking down data-access barriers

The U.S. now has unprecedented amounts of energy-use data, but few standards for collecting, protecting, and sharing that information. Currently, most energy data is gathered in ways that are slow or make it hard to use. Alternatively, the utility may have a monopoly on data and is unwilling to share it. Lack of access prevents third parties and technologies, such as smart thermostats, from digesting and synthesizing data into actionable steps that increase efficiency and lower pollution.

Data can also empower people to save money. A study[1] by the American Council for an Energy Efficient Economy demonstrates providing customers access to their electricity data in electronic format, combined with technology tools to interpret and manage that information, can yield household savings of 12 percent or more.

The smart, connected grid of the future is within reach – but entrepreneurs and customers must first have easy, secure access to data.

Open Data Access Framework

EDF and our partner, the Citizens Utility Board, are developing new guidelines for securely sharing and licensing energy data, called the Open Data Access Framework. These rules clarify the type of electricity data customers and

Open Data Access Framework

- Customer authorization
- Data collection
- Delivery methods
- Data sharing
- Timeliness
- Data security
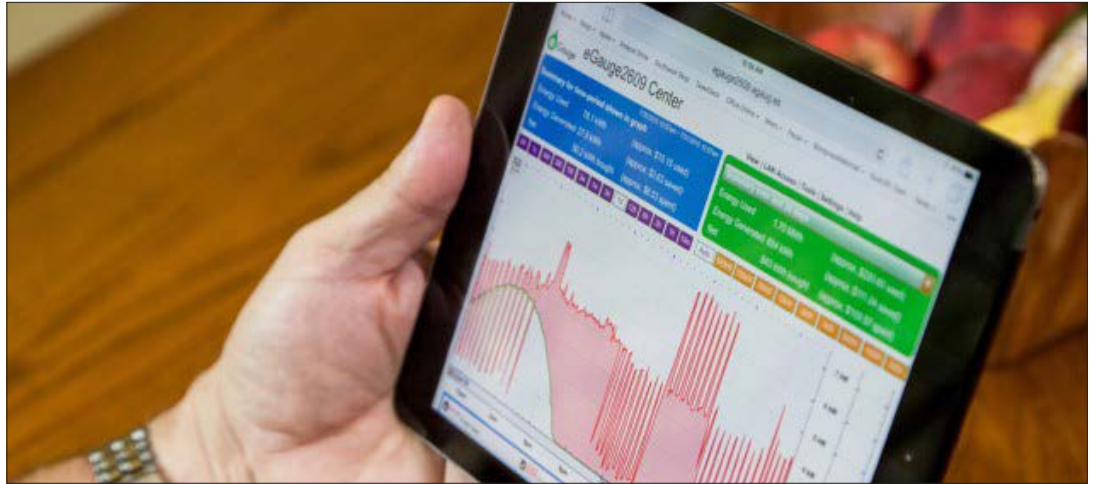
authorized third parties have access to and how the data should be delivered. The guidelines are designed to take advantage of the more than 50 million advanced meters that have been deployed across the country, giving customers the potential to understand their own energy use, and utilities the opportunity to use price signals as a motivator for behavioral change.

The Open Data Access Framework also makes it possible for innovators to create new tools and services that cut electricity bills and harmful pollution, without sacrificing security. By ensuring data is handled in a uniform, secure manner – and giving people the choice of whether or not to share their information with third party companies – the framework protects individuals' privacy.

Case studies

Green Button Connect

The Open Data Access Framework serves as a complement to the Green Button Connect My Data (CMD), part of standards developed by the U.S. Department of Energy "to provide utility customers with easy and secure access to their energy usage information." Such standards help avoid a divided, inconsistent market that would impede innovation and competitive solutions. Essentially, Green Button sets the technical standards for sharing data, while the Framework adds agreements about data authorizations for sharing, timeliness, and ownership. *CMD certification launches in 2016.*

Illinois leading the way

With substantial progress toward data access, Illinois is leading the way to a cleaner, smarter, and more efficient electric grid. The state's largest utilities, Commonwealth Edison (ComEd) and Ameren, agreed to use the Open Data Access Framework in 2015, and ComEd is rolling out Green Button Connect for all of its customers. In early 2016, Illinois embraced critical elements of the framework, allowing customers to share their data with third parties. As other states seek to adopt standards for energy-data access, this easily-transferable framework will serve as a model.