

In years past we have seen rolling blackouts in various parts of our country. The entire transmission system continues to become more and more congested. As we celebrate Earth Day we must address America's aging electricity transmission grid. We must expand the use of distributive power.

Distributive power makes homes and office buildings more energy-efficient because it requires fewer electrical plants to be built in the future. Homes and businesses can use on-site power generation and storage systems like solar panels, microturbines and hydrogen fuel cells. This is a clean and efficient use of energy technology.

On one level the distribution of power very much is a grassroots effort. The people are in charge of this type of power and have the control to make their home or building more energy-efficient.

In my hometown First National Bank installed fuel cells in its new building in downtown Omaha that can produce 200 kilowatts of electricity using natural gas. The electricity produced by these fuel cells powers the bank's data center in a secure and reliable manner. The ultra-clean power plant located securely inside the First National's Data Technology Center assures that the facility has less than one second of power downtime a year.

At the Henry Doorly Zoo a fuel cell has been installed at the Lied Jungle that is a 200-kilowatt unit that serves 50 percent of its power needs. It operates at a 75 percent capacity factor and generates more than 1.3 million kilowatt hours annually.

Pamida in Omaha is putting micro wind turbines on top of their stores to offset their needs to purchase electricity during the day by generating their own. Many of the "big box" stores are starting this practice to save on energy costs.

Distributed energy can also benefit farmers and ranchers. Farmers can reduce their energy costs by installing microturbines to run their center-pivot irrigation systems. Additionally, before it closed, the ethanol plant in Mead, Neb., used a form of distributed generation called "closed-loop" in which the 25,000-cattle feedlot effluent was piped from the lagoon to provide methane to power the ethanol facility. Additionally, microturbines, solar cells and other forms of distributed energy can be used to reduce a farm's overall energy consumption through processes above, or just by reducing the amount of electricity they consume from the grid. Rural electric co-ops can be viewed as a collective form of distributed energy, with the co-op itself providing energy to its members.

Smart grid benefits include significant reduction in residential peak demand energy consumption through real-time energy pricing and as much as a 30 percent reduction in distribution losses due to optimal power performance and system balancing. It also will increase the ability to use distributed energy, increase conservation options and reduce outage time through prevention and faster response. Additionally, consumers could have the choice of which type of energy they receive (various types of renewable vs. traditional) as well as the ability to manage their own in-home automation. The technology would enable customers to better understand their energy use and enable them to make better-informed decisions on how to use their energy consumption, which could lower their energy uses and consequently their power bills.

Distributive power must be a part of a comprehensive energy plan. The expanded use of distributive power would lessen the load of current transmission lines, rein in energy price spikes and provide increased stability of our country's electrical grid.

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