

Protecting U.S. Security Interests Means Fortifying Our Grid

BY **SCOTT BROWN**
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Since World War I, many of the national security issues confronting the industrialized world, and particularly its leader, the United States, have concerned energy. The restructuring of the Middle East, new security alliances arising from World War II, and the sprawling nature of America's overseas military installations all reflect our dependence on foreign oil and the shipping lanes that deliver it to our shores. Over the past decade, however, radical changes in energy markets and technology have fundamentally altered the foundation of our strategic interests.

Driven by innovations in unconventional oil and gas extraction, the United States is now the world's leading producer of both natural gas and oil. If, as experts predict, domestic demand for oil declines as consumers shift to more fuel-efficient automobiles, the United States will likely be a net exporter of energy within 10 years.

Although the country is reducing its dependence on oil, we are increasing our reliance on electricity and the infrastructure required to generate, transmit and distribute it. U.S. electricity demand has been flat over the past seven years due to the economic downturn and the improved efficiency of appliances, lighting and buildings. But the electrification of the transport sector may reverse that trend. According to The Brattle Group, a global consultancy, full electrification of land-based transport by 2050 would increase total electricity demand by almost 60 percent.

This transformation of the energy sector has several repercussions for our country's political and strategic interests. First, we must consider fundamentally altering our global defense posture to focus more on securing America's electrical grid. We also need to strengthen efforts to address the cybersecurity of our power infrastructure – an effort that should be a new focus of our military alliances. Finally, we need to concentrate on the sustainable and reliable production of electricity, particularly distributed renewable production technologies that can make our grid more resistant to cybersecurity threats and less dependent on world markets.

The threat of a cyberattack on our electricity infrastructure is real. In September, Symantec published a report detailing emerging threats from hackers thought to be backed by the Russian government. The report noted that hackers have penetrated the operational networks of U.S. energy companies and could potentially control or disrupt power grids that supply

electricity to millions of people. Similar attacks on Ukrainian power systems in 2015 were used to shut down the electricity supply for hundreds of thousands of Ukrainians for several hours. Many power infrastructure systems, including natural gas pipelines and storage, are not subject to any cybersecurity oversight or regulation.

Renewable resources can help us harden our systems and fortify our energy supply. Wind and solar generation require no fuel, eliminating a key source of vulnerability. U.S. military forces have recognized the strategic value of this secure source of energy as military bases around the world are building renewable power projects, in many cases with storage capacity, to supplement and harden their sources of power. Michael McGhee, the executive director of the Army Office of Energy Initiatives notes that solar with battery storage provides “additional energy security and resiliency” to armed forces installations and reduces their vulnerability to cyberattacks and other grid interruptions.

A thoughtful approach to our national security requires more than a debate over the size of our defense budget. The United States faces a new economic order, new international players, new threats and new opportunities. Fifty years ago a security stance built around sources and supply lines for foreign oil made geopolitical sense. A forward-looking security policy should focus on hardening our electricity grid by investing in cybersecurity, accelerating the deployment of distributed renewable electricity generation and storage, and protecting our transmission and distribution infrastructure.

Scott Brown is chief executive officer and managing partner at New Energy Capital.