

WHY SUPPORT RESEARCH AT THE US DEPARTMENT OF ENERGY?

FOR STARTERS, TO CREATE SUSTAINABLE ENERGY FROM WATER.

The mission of the US Department of Energy (DOE) is to ensure America's security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions. Boston University receives \$7.7 million in competitively awarded funding from the DOE to meet those challenges.

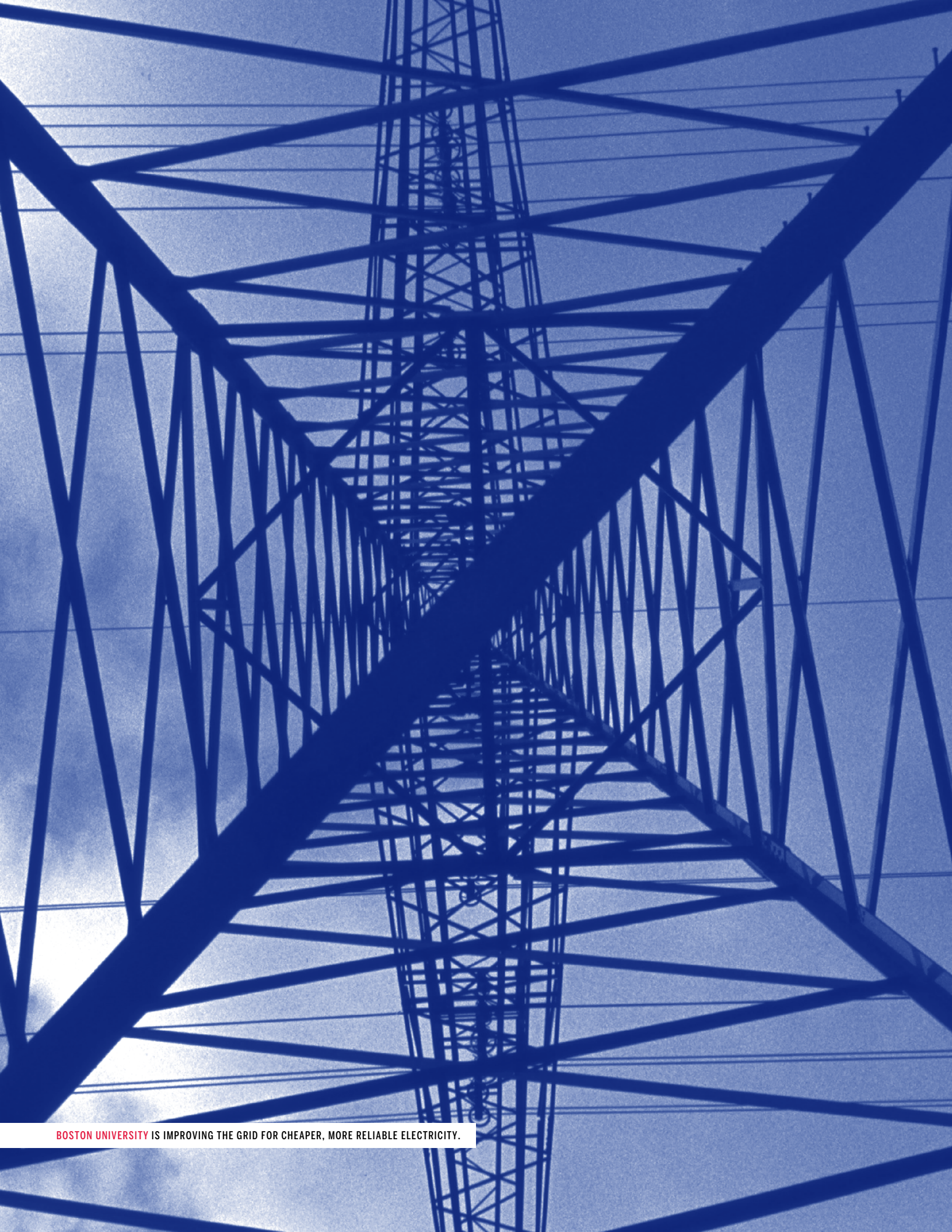
■ **CURRENT EVENTS: IMPROVING THE GRID FOR CHEAPER, MORE RELIABLE ELECTRICITY.**

The US electric grid is outdated, wasteful, and does not adapt well to system conditions, creating artificial bottlenecks that prevent low-cost power from sources such as wind and nuclear from reaching consumers. BU researchers are out to change that by making the grid more like the Internet, a controllable system in which hardware and software manage energy as it comes online—routing power over less congested lines, and re-directing the most cost-effective energy when and where it is needed. It is part of a DOE program named GENI (Green Electricity Network Integration), but there's no magic involved. Just advanced system optimization and applied computer science that makes the grid more responsive to line overloading, saving hundreds of millions of dollars and drastically increasing reliability.

■ **NO MORE ENERGY CRISIS: JUST ADD WATER.** "Development of Earth-Abundant Transition Metal Catalysts for Water Oxidation." If that doesn't make your head spin, how about what it means: separating water into its elements and then recombining them to release energy. That's Chemistry Professor Linda Doerrer's current project. And with the help of a grant from the DOE Office of Science, she hopes to gain a detailed understanding of the fundamental process of water oxidation and how it can be harnessed for environmentally sustainable energy.

■ **CLIMATE CHANGE: DON'T COUNT ON PLANTS TO SAVE US.** Plants help us by soaking up some of the CO₂ that contributes to climate change. But climate change is changing the way some plants live, possibly reducing the amount of CO₂ they can hold. Uh oh. Sounds like a vicious circle. Well, that's just what BU Biology Professor Adrien Finzi is looking to find out. Funded by a DOE grant, he's studying how climate change affects the life cycles of forests and their ability to sequester CO₂. The findings just may help us weather the threat of changing climate.

We hope you'll give strong consideration to supporting funding for DOE. If you have any questions or would like to discuss further the role that DOE research plays in our daily lives, please visit bu.edu/federal.



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