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"Clearly written, assiduously researched, and never fantastical, *Power after Carbon* is a delight-filled primer for how to overhaul our electricity grid for the twenty-first century. If Fox-Penner can imagine and explain a carbon free system, then surely we can conceive of a way to build it!"

-Gretchen Bakke, author of The Grid: The Fraying Wires Between Americans and Our Energy Future

"Peter Fox-Penner has once again written a book that captures the zeitgeist of the electric utility industry at a pivotal moment. How we decarbonize the US power supply and incorporate new technologies, while still providing reliable and affordable electric service, is a daunting task. *Power after Carbon* lays out both the challenges and possible paths forward in a clear and cogent way, and should be required reading for anyone who wants to understand this industry."

-Sue Kelly, former President and CEO, American Public Power Association

POWER AFTER CARBON: Building a Clean, Resilient Grid Peter Fox-Penner

As the electric power industry faces the challenges of climate change, technological disruption, new market imperatives, and changing policies, a renowned energy expert offers a roadmap to the future of this essential sector.

The damaging impacts of climate change are steadily rising, threatening the global economy. With this, the rapid development of sustainable energy has taken on a new urgency, with a focus on renewables producing electricity to meet the needs of a sustainable, electrified economy. At the same time, the power industry is facing unprecedented challenges and disruption brought on by new technologies, new competitors, and policy changes. The result is a collision course between energy demands and the need for sustainable energy production.

While many propose solutions that rely exclusively on the promise of smart buildings, small-scale renewables, and other locally distributed green energy sources, these will not be enough to meet our increasing needs for clean power. Although efficiency and distributed generation are essential, *Power After Carbon: Building a Clean, Resilient Grid* (Harvard University Press / 19 May 2020) points to the indispensability of large power systems, battery storage, and scalable carbon-free power technologies, along with the expanded grids and markets that will integrate them into a single large system. Yet even as its role in energy production and security has never been more vital, the electric power industry faces a deeply challenging and uncertain future.

Fox-Penner discusses urgent and timely questions including:

- Will artificial intelligence and edge computing increase or decrease the efficiency and size of the power grid?
- The solution to climate change is often (and inaccurately) described as "electrify everything" with carbon-free power. Can the grid really handle this? What could go wrong?
- Solar and battery storage keep getting cheaper. How long before customers abandon the grid entirely?
- Electricity deregulation, introduced in the 1990s, was supposed to substitute markets for government planning and control. Why is there renewed talk of national grid planning in the 2020s?
- Twenty years after electric deregulation, utilities were supposed to be extinct dinosaurs. Yet they sure don't look like they're dying, much less dead. Why are they still attractive and what is their future?

Because of his distinctive perspective, which blends academic, industry, and policy backgrounds, Peter Fox-Penner is able to offer combined expertise and insight few others can provide. Here he lays bare the changing business models for local electric utilities, the role of markets and regulation in these new models, and how climate policies, new technologies—including artificial intelligence—and political movements will interact with industry structure and organization. Grounded in deep and wide-ranging research, written and organized for maximum clarity and impact, **Power After Carbon** will be essential reading for those interested in the very practical challenges of how to address the effects of climate change in an increasingly energy intensive world.

ABOUT THE AUTHOR:

Peter Fox-Penner is Director of the <u>Boston University Institute for Sustainable Energy</u> and Professor in BU's Questrom School of Business; Chief Strategy and Impact Officer for Energy Impact Partners, and an advisor and former chairman of The Brattle Group. He previously served as a senior official in the United States Department of Energy and the White House Office of Science and Technology Policy. His published works include the widely acclaimed *Smart Power*. To learn more about the book and upcoming author events, visit <u>bu.edu/ise/pac</u>.

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