

Preface to the 2001 Edition of
Brittle Power: Energy Strategy for National Security
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Fear of further terrorist attacks has led many people to ask that Rocky Mountain Institute re-release the 1982 book *Brittle Power: Energy Strategy for National Security*, which has long been out of print. Unfortunately it is still very current. In the 20 years since we first prepared it as a Pentagon study, little has changed, and little of that change is for the better. Apparently those who read and understood it in the early 1980s are no longer making policy, and their institutional memory has been lost. A new generation of policymakers evidently believes that America's sole energy security problem is imported oil, and that any domestic supply that can replace it will improve energy security.

In this sincere but misguided belief, Federal energy policy continues to promote the most centralized, unforgiving, and vulnerable sources and infrastructures, while ignoring or suppressing the more efficient, diverse, dispersed, localized, and renewable options that could in time make major supply failures impossible by design. At present, the Department of Energy, apparently unwittingly but quite effectively, is undercutting the antiterrorist mission of the Department of Defense. We therefore offer this book in its entirety to remind all our fellow-citizens that while dependence on Mideast oil is risky, dependence on much of the existing and proposed domestic energy infrastructure is even riskier—and that both risks are unnecessary and uneconomic. That's because an inherently resilient energy system builds faster, does more, works better, costs less, and wins in the market when allowed to compete fairly.

Some may wonder why, especially at this sensitive time when our country is under attack by asymmetric warfare, we are posting on the Web such a detailed analysis of domestic energy vulnerability. Our answer is the same as it was 20 years ago: we consider it a patriotic duty. We prepared this study with care not to give ideas to the malicious, and put it through formal classification review to ensure its discretion, because we were, and remain, convinced that terrorists and rogue states already know these vulnerabilities all too well and are exploiting them all over the world—while most policymakers in our own government, and the citizens they serve, evidently do not realize the problem exists or how to solve it. Therefore discussing this distressing subject is less dangerous than not discussing it—while watching our own government continue to make the U.S. energy system even more frighteningly vulnerable.

At this moment, for example, the whimsically named Homeland Energy Security Bill, being strenuously advanced in the U.S. Senate, aims to double the throughput of, and prolong for more decades America's dependence on, the Trans-Alaska Pipeline System (Foreign Affairs: Fool's Gold in Alaska). Similar proposals were lately sought to be attached to the must-pass Defense Authorization Bill, whose antiterrorist goals they would directly undermine. This comes less than two weeks after one drunk with a rifle shut down that same pipeline, and a sixth of U.S. oil production, for 60 hours with a

single shot. As a centerpiece of energy security, a less prudent choice can hardly be imagined. It would indeed create arguably the fattest terrorist target in the country. Can nobody connect the dots?

For those who may wish to dip into Brittle Power's 500 pages and 1,200 references as an occasional reference rather than absorbing its entire narrative, we'd suggest starting with The Atlantic Monthly's 1983 lay summary "The Fragility of Domestic Energy" (The Fragility of Domestic Energy) or the 1984 book chapter "America's Energy Jugular" (Reducing Vulnerability: The Energy Jugular) written for security professionals. An 08 October 2001 brief for the Montreux Energy Forum, a group of energy-industry leaders, is also posted for quick orientation (Critical Issues in Domestic Energy Vulnerability, Aspen Clean Energy Roundtable).

Many parts of Brittle Power, such as Chapter 13's explanation of how to design inherently resilient systems, are timeless. Some, like Chapter 10's summary of community energy initiatives, turned out in California's 2000–01 electricity crisis to offer inspiring examples of how quickly bottom-up mobilizations can work: we had all forgotten how good those early-1980s efforts really were! Appendix One, on how scale affects the economics of power systems, has been expanded to book length in RMI's Small Is Profitable: The Hidden Economic Benefits of Making Electrical Resources the Right Size (www.smallisprofitable.org). (The electricity market's recent dramatic shift toward distributed generation is one of the few bright spots in U.S. energy security: the inherently resilient supply options that deprive attackers of effective and attractive targets are finally coming of age.) Appendix Two and other technical treatments of renewable energy technologies and their economics are updated in RMI energy and utility publications posted elsewhere on this site. And energy efficiency techniques—the fastest, cheapest, most versatile way to reduce energy vulnerability—have undergone revolutionary advances in design and implementation, summarized in Natural Capitalism (www.naturalcapitalism.info).

Brittle Power's findings remain broadly correct today despite many changes in detail. Attacks on centralized energy systems have probably become more frequent since 20 years ago, when they were already occurring every few days around the world. To be sure, some additional precautions have been taken since then. High-school kids can probably no longer sneak into major pipeline control centers at night for beer parties; some of the softer targets have been modestly hardened; marine tanker shipments of liquefied natural gas into Boston Harbor were suspended for five weeks after the 11 September 2001 attacks; certain limited precautions have lately been taken at nuclear power plants, though they continue to operate upwind of many major cities. However, in a world where ferocious, competent, and globalized attackers shop around for the softest targets, these measures offer no real security. Neither do even strenuous efforts to forestall attack through counterterrorist intelligence. The only effective protection is to make the architecture of the energy system inherently less vulnerable, and to address the conditions that feed the pathology of hatred. Both of these strategies would cost less than current antiterrorism efforts, and would in time displace as much as complement them.

—ABL & LHL
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