



Metropolitan Policy Program

at BROOKINGS

CONTACTS: John Fairbanks, 202-797-6087, jfairbanks@brookings.edu
Carrie Collins, 301.664.9000, ccollins@bcc-associates.com
Rachel Harvey, 202-797-6073, rharvey@brookings.edu

For the new report, go to: http://www.brookings.edu/metro/clean_jobs.aspx.

For individual metro profiles, go to: http://www.brookings.edu/metro/clean_jobs_profiles.aspx.

AMERICA'S CLEAN ECONOMY DRIVING GROWTH AND INNOVATION

*But market and policy challenges prevent clean sector from reaching its full potential,
and global competitors are pulling ahead*

WASHINGTON, D.C.—America's "clean" economy employs millions of people across the country's largest metropolitan areas, but market challenges and policy uncertainty are hindering the sector's ability to keep pace with other nations, according to a new report from the Brookings Institution Metropolitan Policy Program.

The report, "Sizing the Clean Economy: A National and Regional Green Jobs Assessment," was produced in association with the Battelle Technology Partnership Practice and is the first comprehensive study of the metropolitan geography of this important economic sector, focused on the country's 100 largest metros.

"The clean economy sector is already an important source of industrial innovation, good-paying manufacturing jobs, and exports for a nation that needs them," said Mark Muro, a senior fellow at the Metropolitan Policy Program and a co-author of the report. "Key segments show great promise for helping us use resources more efficiently, improving our national security, protecting our environment, and remaining competitive in rapidly-changing global markets."

Muro said America's major economic competitors, such as China and Germany, have jumped out ahead in terms of supporting clean economy development.

"We risk giving away what should be a significant competitive advantage for the U.S.," Muro said. "In 2004, for example, Chinese clean energy project financing trailed America's. By 2010, China's investment was more than double ours. Meanwhile, we are seeing U.S. companies losing market share at home and abroad."

The report includes several important findings about the size, the breadth, and the importance of the clean economy. It identifies several obstacles to America's clean economy reaching its full potential, including policy gaps that undercut market demand, financing shortfalls that lead to uncertainty and instability for investors, and an inadequate system for supporting innovation. It also makes policy recommendations for creating a stronger platform for future growth and sustainability.

Among the major findings:

- **Jobs:** The clean economy employs about 2.7 million people, more than the fossil-fuel industry and twice the size of the biosciences sector
- **Growth:** The U.S. clean economy grew by 3.4 percent between 2003 and 2010, slightly behind the 4.2 percent growth of the overall economy, reflecting heavy job losses in the building and housing industries. However, newer clean energy and related segments of the clean economy grew by 8.3 percent during this period, albeit from smaller bases. This growth was nearly twice as fast as the growth of the rest of the economy
- **Manufacturing and Exports:** The U.S. clean economy is much more driven by manufacturing and oriented towards exports than the economy as a whole. About 26 percent of clean economy jobs are in manufacturing, compared to 9 percent in the broader economy, and the value of exports, on a per-job basis, is twice that of a typical American job. In 2009, clean economy establishments generated nearly \$54 billion in goods and services exports.
- **Opportunity:** The U.S. clean economy offers more opportunities and better pay for low- and middle-skilled workers than the national economy as a whole. Median wages are about 13 percent higher than the economy overall, and a large share of jobs are held by workers with relatively little formal education. Sixty-eight percent of clean economy jobs fall into the middle wage range, compared to 43 percent for the economy generally.
- **Diversity:** The U.S. clean economy has a broad reach across the economy, including into diverse group of industries, and it permeates all of America's metropolitan areas. There is tremendous variation in how regions specialize in the production and deployment of clean products and services. Most employment is in mature segments of the economy, from manufacturing to providing public services, while a smaller, but fast-growing portion is made up of younger, energy-related companies.

What is needed now, the report states, is smart, strategic decisions and investments from the public as well as the private sector.

“The United States should be at the vanguard of developing and deploying new, clean technologies,” said Bruce Katz, Vice President and Director of the Metropolitan Policy Program. “The brutal truth is, unlike our global competitors, we have no strategic framework for expanding the clean economy. We have too few financing tools, and we provide too little support for necessary innovation.

“This is not an area where the public sector needs to get out of the way,” Katz said. “Government leaders, at all levels, need to get in the game. Otherwise, we will watch the rest of the world pull away from us.”

Jonathan Rothwell, Senior Research Analyst at the Metro Program and another of the report's authors, said opportunities are waiting as consumers and investors worldwide respond to the growth potential in the clean economy.

“Just as it does in fossil-fuel industries, the public sector plays a role in developing the clean economy,” Rothwell said, “but that doesn't mean that there isn't fundamental market demand. Many consumers are increasingly willing to pay a premium for clean products as varied as organic food, green buildings, and electric cars.”

Meanwhile, Rothwell said, global investment has soared in recent years, with approximately \$1 trillion flowing into clean energy segments alone. Venture capital in particular has dramatically shifted in the last two decades towards clean technology, and now represents 16 percent of all U.S. venture capital.

“Growth in the clean economy will be affected by policies,” he said, “but these market trends are a harbinger of the sector’s undeniable significance going forward.”

“Sizing the Clean Economy” adopts a sensible definition of this sector, identifies and categorizes clean economy establishments, and tracks their growth and change. In addition to job growth statistics the report provides trend data on wage, production, and export data.

The report’s policy recommendations include:

- **Scale up the market:** The federal government, for example, can install a system of carbon-pricing or set up national clean energy standards. States can also adopt clean-energy standards and promote energy efficiency and renewable energy adoption. Local governments can adopt expedited permitting for green projects, set building standards, and create innovative financing tools.
- **Boost financing:** Steps could include the creation of new, risk-tolerant finance entities and the reform of tax provisions to encourage smarter clean economy investment.
- **Drive innovation:** The nation and its states needs to invest more and differently in the clean economy innovation system. Significant increases in energy and environmental sciences R&D are imperative, but so is continued institutional experimentation. Among the needs are to create and sustain more energy innovation hubs, increase the funding of ARPA-E, and launch new water sciences and regional clean economy consortia initiatives.
- **Focus on regions:** States and the federal government should place regions at the center of their economic development thinking even as regional innovation and industry cluster programs and regional actors more sharply identify their competitive strengths and formulate “bottom-up” strategies for supporting growing clusters.

Accompanying the new report are profiles describing the clean economy sector in all 50 states and in the nation’s 100 largest metros. A comprehensive mapping tool that allows users to see how the clean economy is distributed across the 50 states and in the 100 largest metros, will also be available online.

The Metropolitan Policy Program at Brookings—*Created in 1996, the Metropolitan Policy Program (MPP) provides decision-makers with cutting-edge research and policy ideas for improving the health and prosperity of metropolitan areas including their component cities, suburbs, and rural areas. To learn more visit: www.brookings.edu/metro.*

Battelle is the world’s largest nonprofit independent research and development organization, providing innovative solutions to the world’s most pressing needs through its four global businesses: Laboratory Management, National Security, Energy, Environment and Material Sciences, and Health and Life Sciences. Battelle created the Technology Partnership Practice (TPP), which focuses Battelle’s broad experience to better serve economic development organizations, universities, and nonprofit technology organizations across the U.S. <http://www.battelle.org/>