THE CLEAN ENERGY ECONOMY IN THE UNITED STATES

The U.S. clean energy economy is present in every state, generating new industries and employing a wide variety of workers. Despite the absence of a federal clean energy policy and sustained investment, clean energy jobs grew at a faster rate than overall jobs from 1998 to 2007. By 2007, more than 68,200 businesses across all 50 states and the District of Columbia accounted for more than 770,000 jobs.[1] In comparison, the traditional energy economy, after decades of investment, now employs 1.2 million workers.

Data compiled by The Pew Charitable Trusts show that 65 percent of jobs in today's clean energy economy are in the category of "Conservation and Pollution Mitigation"[2]—a mature sector that reflects the growing recognition by the public, policymakers and business leaders of the need to recycle waste, conserve water and mitigate emissions of greenhouse gases and other pollutants. However, other sectors of the clean energy economy are growing quickly. Jobs in the "Clean Energy," "Energy Efficiency" and "Environmentally Friendly Production" sectors grew significantly between 1998 and 2007 and represent a snapshot of the clean energy jobs of tomorrow.

"While our economic engine has for years been powered by relatively inexpensive energy, there is evidence that this era is coming to a close. Meanwhile, we are increasingly aware of the serious impacts of global climate change—and how America's consumption of fossil fuels is contributing to a warming earth."

—National Governors Association report *Securing a Clean Energy Future*, 2007

Growth and Competition in the Global Clean Energy Economy

In addition to the growth in domestic clean energy jobs, the global clean energy economy has grown 230 percent since 2005. In 2009, $162 billion was invested in the global clean energy sector[3] and with a nod to the future, governments of the largest economies prioritized clean energy within their economic recovery funding by devoting more than $184 billion to the sector.[4]

Seeing opportunity, countries are jockeying for leadership. Governments with strong national policy frameworks have distinguished themselves as leaders. China, which in 2009 led the G-20 by attracting $34.6 billion in clean energy investments,[5] has seen some of the largest growth in its clean energy sector. Other countries with robust clean energy sectors as a percentage of their economies—such as Brazil, Spain, the United Kingdom and Germany—have strong nationwide policy frameworks, including renewable energy standards, carbon markets, priority loans for renewable energy projects and mandated clean energy targets.

The United States, on the other hand, attracted just $18.6 billion in clean energy investments in 2009[6] and lacks the necessary policy mechanisms to spur serious growth. The United States, Japan and Australia are notable for failing to enact a comprehensive clean energy policy, and they lag behind their G-20 counterparts which have passed such legislation.

"The United States has no long-term market signal to tell companies and consumers that it values low-carbon energy. It has no policies to discourage sending hundreds of billions of dollars a year overseas for energy. It does not offer adequate sustained R&D funding to be a serious competitor in this huge business."[7]

—**John Doerr**, partner at venture capital firm Kleiner Perkins Caufield & Byers, and Jeff Immelt, chairman and chief executive of General Electric

Clean Energy Companies Invest in Countries with Strong National Frameworks

Due to the lack of policy incentives, clean energy companies in the United States are taking their manufacturing production overseas:

- *First Solar*, an American solar module company, recently announced plans to build the world's largest solar plant in China due to feed-in tariffs in the country which mandate that utilities pay a premium for solar power.[8]
- *General Electric* announced plans to invest $453 million in wind turbine manufacturing in the United Kingdom, Norway, Sweden and Germany because of the strong incentives that support offshore wind energy in those countries. The move could add almost 2,000 European jobs.[9]
- *IBM* will invest $40 million to build an "energy and utilities solution lab" in China to develop new technologies for the smart grid. In this instance, investment in high-value research and development is being made for China's growing clean energy market.[10]

Without a Comprehensive Domestic Climate and Energy Policy, the U.S. Falls Behind G-20 Counterparts

Although the United States led the world in developing new clean energy technology, much of the manufacturing has moved overseas to take advantage of policy incentives that allow for cheaper development. The United States has a weak clean energy economy given the relative size of its overall economy because of a mixed policy framework—for example, no carbon policy and a patchwork of state renewable energy standards. In 2009, the United States ranked 11th among G-20 nations in clean energy investment intensity—clean energy investment as a percentage of gross domestic product.

> ***"The global markets are clearly moving toward a low-carbon economy. This shift represents a unique opportunity for countries that develop and sell cleaner energy technologies. Nations that delay will lose more jobs and the ability to compete globally, and may end up buying clean technology from foreign suppliers."***[11]
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> —**James E. Rogers**, CEO of Duke Energy

> ***"If the goal is to create a clean energy boom in the United States, then a strong renewable energy standard is among the best ways to go about doing it. Around the world, we've seen a clear pattern—once a country establishes clear, supportive, long-term policy support for renewables, significant investment follows. Investors are looking for a signal that the U.S. will be a healthy market over the long term. A renewable energy standard could accomplish that."***
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> —**Ethan Zindler**, head of North American Research, Bloomberg New Energy Finance

To create domestic, clean energy jobs and effectively compete in the expanding global clean energy marketplace, the United States must send a clear signal to investors and manufacturers alike by passing comprehensive climate and energy legislation. Such a measure would put the United States on a path toward reducing its carbon output, ending dependence on fossil fuels and taking advantage of the expanding global market for clean energy technologies. Unless it takes action soon, the United States will be left behind and forced to trade its dependence on foreign oil for a dependence on foreign clean energy.

ENDNOTES

1 "The Clean Energy Economy," The Pew Charitable Trusts, June 2009, p. 8. http://www.pewglobalwarming.org/cleanenergyeconomy/index.html.
2 *Ibid.*, p. 16.
3 "Who's Winning the Clean Energy Race? Growth, Competition and Opportunity in the World's Largest Economies," The Pew Charitable Trusts, 2010, p. 4. http://www.pewglobalwarming.org/cleanenergyeconomy/index.html.
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