

Fire Sale: The End of American Ownership of Clean Energy

By Josh Freed | Published: 05/22/14

The dramatic drop in federal support for clean energy has severely curtailed domestic investment in that sector. The loan program is over, and other federal programs like tax credits to incentivize clean energy are winding down. Apparently, Congress has decided to abandon federal involvement in what has been one of the fastest growing industries in the world¹ and a global market expected to reach \$2.3 trillion.² This posture puts at grave risk the ability of American companies to compete in one of the most vibrant sectors of this century.

But with Congress abandoning the field, others are moving in. Third Way analysis has found that this capital hole is beginning to be filled by funds from outside the United States. Chinese investment in U.S. clean energy jumped 130% in 2011 alone,³ and a French company took control of the second-largest U.S. solar panel maker.⁴ Foreign investment is a clear vote of confidence in the American clean energy sector. We should continue to encourage it. Unless the policy environment changes, American private sector investment and ownership of domestic clean energy companies will not only continue to decline, the U.S. will lose its leadership in the sector.

From the second term of the George W. Bush Administration into the first year of President Barack Obama's term, there was rough consensus on federal clean energy policy. Both Democrats and Republicans backed investments in clean energy to help American companies and innovators invent new technologies and deploy existing ones to compete in the emerging \$2.3 trillion global market. That consensus collapsed in 2011.

As federal support for clean energy evaporates, domestic private capital is disappearing with it. The result, however, is not the loss of all clean energy innovation or the end of any construction of wind turbines or solar facilities in the U.S. Instead, we are seeing a potentially more problematic shift. American clean energy companies are not able to secure financing for their projects and facilities and are cancelling plans or shutting their doors. Foreign companies are wisely seizing this opportunity to get access to what they believe will become a very vibrant American clean energy market. While it may not determine how many clean electrons get on the U.S. grid or whether American cars run on electricity or gasoline, this development could dramatically hamper U.S. companies' ability to compete in clean energy and, ultimately, could slow economic growth

and American economic leadership in the 21st century.

American Companies struggle for Capital

Collapse of Energy Policy Consensus

Congress's decision to end its support for clean energy has significant and immediate impacts. By 2014, federal clean tech investment is expected to drop 75%, from \$44.3 billion in 2009 to \$11.0 billion.⁵ In 2011, the government underwrote almost 20% of the total credit in the clean energy sector, more than the three largest private sector financiers combined.⁶ The government's pull-back from clean energy is likely to lead to a dramatic drop in private investment and threatens to knock the U.S. from its current spot atop world rankings for clean energy investment, a position the U.S. last held in 2008.⁷ This loss of private and publically-backed capital comes at a time when the clean energy sector has been one of the fastest growing industries in the U.S., attracting \$48.1 billion in clean energy investment in 2011.⁸

The collapse of a Congressional consensus on clean energy is even infecting federal support for leading-edge research and development, which has historically received strong, bipartisan support. The much-admired Advanced Research Projects Agency-Energy (ARPA-E), which funds fundamental research in emerging energy technologies, is struggling to maintain its very modest budget. For 2011, the entire budget was \$180 million,⁹ \$341 million less than requested by the president, and a decline from its 2009 and 2010 budgets.¹⁰ ARPA-E is now roughly the equivalent of one medium-sized venture capital fund.¹¹

Congress Turns its Back on History

There is certainly a need for reform of federal clean energy incentives. Unfortunately, some Members of Congress believe the government should play no role in encouraging the development of new energy industries and that the private sector should and will provide sufficient support for these businesses.¹² If clean energy fails, they argue, it is because it is not viable and not because of any flaw in the market.¹³ As Third Way detailed in our report, "Creating a Clean Energy Century," this view ignores the actual history of how new American energy technologies have been funded.¹⁴ It also makes inaccurate assumptions about how and when capital markets invest.

When the opportunities and/or risks are perceived to be in the national interest, the federal government has supported numerous industries and individual companies for centuries. As far back as 1789, the government imposed tariffs on coal imported from Great Britain in order to give domestic producers a competitive advantage in a developing domestic market.¹⁵

But the federal role has had a decidedly uneven tilt toward fossil fuel and other established

technologies. Energy tax policy has supported oil and gas exploration for over one hundred years. In 1916, Congress allowed oil and gas companies to expense intangible drilling costs.¹⁶ Over the past 50 years, the federal government has provided almost \$100 billion to support nuclear energy innovation and deployment.¹⁷ More recently, the government provided financial and technical assistance to refine research and development of hydraulic fracturing technology to stimulate oil and gas production.¹⁸ In fact, between 1918 and 2009, the federal government provided approximately \$447 billion (adjusted for inflation) in cumulative energy subsidies to the oil and gas industry.¹⁹ In contrast, between 1994 and 2009, the federal government invested less than \$6 billion to support the emerging clean energy sector.²⁰

American Private Capital Shrinks

The government has provided this support specifically because the private sector would not or could not. The debt markets do not take technology risks. The equity markets are not large enough to fund all of the required development, nor are the returns on investment sufficient to warrant the investments. The tax equity markets, which historically have bridged the gap between straight equity and debt, have declined due to the recession and global economic turmoil. In 2007, tax equity provided more than \$6 billion to clean energy projects.²¹ In 2012, it will have dropped to only half that value.²²

Demand for capital, however, is growing even as government support fades away. It is estimated there is demand for approximately \$10 billion in tax equity in the U.S. for clean energy projects in 2012.²³ Where will those funds come from? If they do not materialize, what happens to America's ability to compete in the global clean energy market?

Foreign Investment in U.S. Market on the Rise

Foreign Companies Expand Hold in U.S.

The stakes in the clean energy race are very high. Markets continue to expand 30-40% each year.²⁴ By 2016, the global solar market alone is expected to reach \$75.2 billion.²⁵ Wind energy is expected to continue to grow by double-digits annually, reaching \$93.1 billion by 2016.²⁶

The United States is losing this race. Already, eight of the ten largest solar manufacturers, a technology that was invented here, are based outside the U.S. Where the U.S. once led the wind market, last year China installed more turbines than we did.²⁷ Of the top ten largest wind turbine manufacturers worldwide, the U.S. holds just one spot. China holds four.²⁸

While the United States was the leading investor in clean energy on both an actual dollar and per capita basis in 2011, there is bad news on the horizon. The U.S. dropped to third in investment

growth and did not even make the top ten countries for investment growth over the past five years.²⁹ This has occurred in no small part because most countries in the developed world, and many emerging economies, are putting significant government support in place for their domestic clean energy markets. The United Kingdom, for example, has established a £15 billion Green Bank.³⁰ The China Development Bank has made available \$32 billion in low-interest credit facilities to Chinese solar and wind companies.³¹ Saudi Arabia wants to raise \$109 billion for its solar industry.³² Indonesia outpaced the rest of the world with a massive 521% growth rate in 2011. India was the second fastest growing clean energy market in the world in 2011, rising 52% to \$10.2 billion, according to analysis from Bloomberg New Energy Finance.³³ As Pew Clean Energy Program Director Phyllis Cuttino noted, "On a number of measures, India has been one of the top-performing clean energy economies in the 21st century."³⁴

Thanks to increased government investment, in 2011 Germany got 20% of its electricity from clean energy, up from only 6.4% in 2000.³⁵ Brazil meets 45% of its energy demand from renewable sources.³⁶ The U.K. doubled its clean energy, from 5% to almost 10%, in just one year.³⁷ As these countries and others grow robust domestic clean energy sectors and set aside capital to deploy those technologies, they are looking for opportunities to leverage their new businesses. This means looking for other markets to expand to and extend their competitive advantages. One foreign market stands out as having enormous potential demand with far less domestic competition than might be expected: the United States.

As Kevin Bullis of MIT's Technology Review warns: "But while the U.S. has led in early-stage funding, it often hasn't led in funding to build solar-panel factories and power plants. In the long term, that could hurt innovation in the U.S... If U.S. policy fails to encourage investment in clean-energy factories and power plants, it may fall to countries such as China, India, and Indonesia (which saw the fastest growth in clean-energy investment last year) to develop the technologies that will have the biggest impact on carbon dioxide emissions and job creation."³⁸

Chinese Investment Jumps 130%

The upshot is that capital continues to flow into clean energy in the U.S., but it is coming from overseas investors, led by foreign banks and insurance companies and their affiliates. Of the 26 main players active in the market in 2010, just six were based in the U.S.³⁹ And foreign investments are ramping up quickly. From 2006–2011, China invested more than \$6 billion in U.S. clean energy projects. Last year alone, Chinese investment in clean energy skyrocketed 130% to \$264 million annually.⁴⁰ This figure does not include the \$8 billion over 10 years that the China-based ENN Group announced in 2011 it would invest in U.S. clean energy.⁴¹ Another Chinese company, Ming Yang Wind Power, recently announced that it would open an R&D center in North Carolina. The siting decision was based on the company's belief that demand for offshore wind

turbines would skyrocket in the United States.⁴²

As Linden Ellis of chinadialogue and Jennifer Turner and Devin Kleinfield-Hayes of the Woodrow Wilson Center note, China's 12th Five Year Plan continues to bet big on clean energy. But an oversaturated domestic solar PV market and wages that are increasing 10%–25% annually are compelling Chinese companies and investors to look abroad. "US [clean energy] companies," they conclude, "are increasingly seen as a safe and affordable option for Chinese investors."⁴³

Chinese businesses are not the only ones to see the potential for profits in the U.S. clean energy market. Europe's third-biggest oil producer, Total, took a majority stake in SunPower Corp, the second-largest U.S. solar panel maker, for \$1.38 billion.⁴⁴ Meanwhile, U.S. companies like Natcore Technologies are picking up and moving overseas, saying it's impossible to find U.S. investors.⁴⁵

A Vote of Confidence in the U.S. Clean Energy Market

There is absolutely nothing wrong with foreign investment in the U.S. In fact, it is a vote of confidence that America will develop a strong domestic clean energy market. It also creates American jobs and tax revenues.⁴⁶ But why is it that foreign investors are dominating a sector of the American economy that in many cases we invented?

Fundamentally, it is because foreign investors look at the U.S. market as a long-term investment. They are strategic, rather than financial, investors and see long-term opportunity here even if, in the short-term, there are challenges. They like the abundant natural resources in the United States, our business and legal climate, the licensing opportunities that come with investment, and the diversification that comes from investing in stable markets outside of their home countries.

They do this because they have a longer-term vision than Congress does about just how important the clean energy sector will be to the broader economy in the years ahead. And it is important not just for domestic consumption and domestic energy security, but because it represents an enormous new global economic opportunity for the winners. A Congress apparently blind to the emergence of a clean and renewable energy sector in the U.S. is about to turn over the keys to this critical industry to others. The auto industry went down this same path. Are we going to let history repeat itself?

Conclusion

American innovators and companies created the modern clean energy sector. Now, we're on the brink of losing the market, not just globally, but domestically as well. That's because, at a time when clean energy is growing like gangbusters around the world on the way to an expected \$2.3 trillion market by 2020,⁴⁷ Congress is pulling back on federal investments. This is starving

American companies of capital and the ability to complete domestic projects. Foreign companies, however, have access to public and private capital from their home countries. They take a much longer view in their investment strategies and are beginning to move into the U.S. market in big numbers. While this may be fine for clean energy, it will cost U.S. businesses in terms of lost revenues and lost intellectual property, and cost the nation in terms of growth and economic leadership. In a 21st century that may well be defined by clean energy, this loss would be disastrous.

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