



## **The Renewable Energy Outlook for Executives**

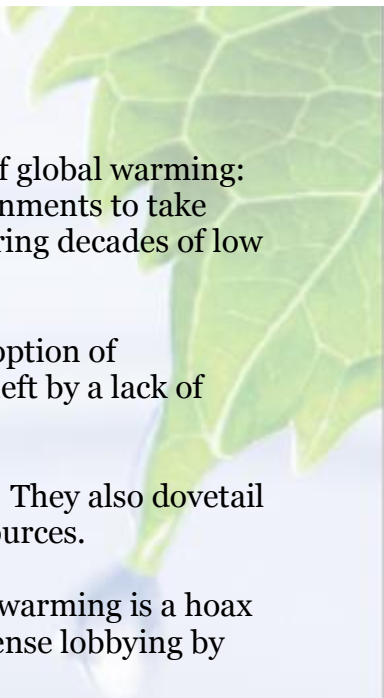
In a tough overall economy, with contraction and job losses haunting much of the energy sector, renewable energy stands out as a bright spot. In fact, renewables are the world's fastest-growing energy resource, according to the U.S. Energy Department's International Energy Outlook 2011.<sup>i</sup> With this growth comes a sharpening need for executive talent.

Wind and solar are the most prominent in this field, but hydro, biomass and geothermal are vibrant niches, as well. Cleantech in general is part of the trend, with expanding markets for green approaches to chemistry, waste management, transportation, and infrastructure.<sup>ii</sup> Only a portion of the jobs added in these areas will be managerial, but strong executives can have a large impact in the field.

Solar Market Insight from the SEIA<sup>iii</sup> notes that in 2010, the U.S. added 887 megawatts (MW) of grid-connected solar photovoltaic power, more than double the 435 MW installed in 2009. Over the past six years, U.S. growth has kept pace with the global market, with a market share of between 5% and 7% since 2005.

The outlook for wind is even more impressive. According to the American Wind Energy Association, the U.S. wind industry installed more than 2 gigawatts in the first half of 2011, making the total U.S. wind capacity 42.432 GW. AWEA says, "There are also 7,432 MW currently under construction including a 78 MW repowering project in California and over 2,500 MW of construction that started during the second quarter of 2011. These projects are spread across 28 states."<sup>iv</sup>

Growth in renewables and cleantech has a multiplier effect on adjacent areas of the economy. A boost for the makers of wind turbines or solar panels lifts companies in the supply chain, which can include engineers, installers, miners who produce the rare metals used in the renewable industry, electronics manufacturers, utilities, and even local housing markets. One recent study suggests that a rapid green economic recovery program in the US could create two million jobs. That's a lot of people who need executive leadership.



Several factors are driving the expansion in renewables. One is urgency of global warming: the steady accumulation of evidence of climate change is prompting governments to take many of the steps that were initiated in the late 1970s, but were stalled during decades of low oil prices.

Many states have enacted a broad range of incentives to encourage the adoption of renewables, particularly wind and solar. They have stepped into the void left by a lack of federal direction.

These state-by-state measures help open the energy sector to alternatives. They also dovetail with a federal push to make the US more independent of foreign energy sources.


Public opinion is favorable, too. Even among Americans who think global warming is a hoax or a negligible risk, renewable energy is popular,<sup>v</sup> a surprise, given the intense lobbying by fossil fuel producers and the voices they fund.

A less tangible but quite significant factor is glamour. Customers, shareholders and regulators can confer a halo effect on companies that have taken credible steps to reduce greenhouse gas emissions and cut the impacts of global warming. The halo is brightest for renewable energy companies. They are attractive places to work, for both executives and other employees.

Executives seeking positions are well aware (or should be) that the renewables outlook is part of an overall employment shift in the economy. Old-style manufacturing jobs and management have eroded, but renewable energy positions are taking their place, at least in part. The shift is creating high-paying skilled jobs at all levels, from blue collar to management. These circumstances present great opportunities for leaders who can navigate the transition.

Managers who want to work in renewable energy might consider a relocation. In energy, geography trumps everything else. Not every state, city or country has abundant rivers for hydropower, or steady sun for solar, or strong prevailing breezes for wind power. Geothermal depends on geology, and that favors only some parts of the US. Biomass, at least in some its forms, hinges on the proximity of forests and plenty of wood, or agricultural waste.

The industry needs managers who focus on execution. The ideal candidates have overseen wind and solar installations before -- but because the industry is new, those managers are in short supply. Depth and breadth in project management in other industries might translate easily to renewables, particularly experience with large energy deals. In the same vein, a background in project finance can demonstrate knowledge of the steps in bringing a transaction from plan to completion.



Regulations themselves are a source of green jobs. Renewables require regulatory support, and are getting it from a number of local, state and federal sources. These regulations and funding sources are often erratic and uncoordinated. Some rules are poorly designed, or have paradoxical consequences in practice. Thus candidates who can show experience negotiating a complex regulatory landscape have an important and marketable skill. There will be substantial opportunities for environmental consulting firms that can help clients comply with the new rules.

Candidates with utilities experience are in strong demand. Energy generation and transmission are among the oldest technologies of the modern era, and many newcomers to the field don't understand the challenges for utilities of combining base load power, like coal and nuclear, with intermittent power sources like wind and solar. Mastery of utility operations, particularly transmission, will be a major asset for candidates.

In short, the renewable energy picture for candidates who lack experience is positive if they are disciplined and focused on providing what the market needs. Seasoned executives have a wide array of possibilities, and genuinely visionary leaders have an exciting field to choose from.

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<sup>i</sup> <http://www.eia.gov/forecasts/ieo/pdf/0484%282011%29.pdf>

<sup>ii</sup> Robert Pollin, Heidi Garrett-Peltier, James Heintz, and Helen Scharber, "Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy," PERI, [http://www.peri.umass.edu/green\\_recovery](http://www.peri.umass.edu/green_recovery)

<sup>iii</sup> <http://www.seia.org/galleries/pdf/SMI-Q2-2011-ES.pdf>

<sup>iv</sup> <http://www.awea.org/learnabout/publications/reports/upload/2Q-2011-Public-Market-Report.pdf>

<sup>v</sup> Leiserowitz, A. (2010) "Climate change risk perceptions and behavior in the United States," in S. Schneider, A. Rosencranz, and M. Mastrandrea, eds. *Climate Change Science and Policy*. Island Press.