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Ken Silverstein, Contributor
I write about the global energy business.

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Nuclear Energy Rising At The Expense of Renewable Power

Just before the Fukushima disaster hit three years ago, nuclear energy had been standing tall. But the earthquake and giant waves knocked out the legs from under the fuel source, killing Japan's nuclear ambitions as well as that of some other nations that had a robust nuclear power presence.

The tsunami turned Japan's world upside down. But it also dazed a global community that had planned to crank up the nuclear dial a notch. Some countries such as Germany, Italy and Sweden have chosen to scale back their nuclear production and to increase their renewable generation to help the continent meet its carbon reductions goals. But others, like China and the United Kingdom, are revving up their nuclear programs.

By 2020, Europe is supposed to have cut its carbon emissions by 20 percent — something for which it is set to do, with a little help from the global recession. After that, however, it may switch to give individual countries more flexibility by setting an overall European Union target of 40 percent by 2030.

Why the proposed changes? Renewables have high costs and they are a challenge to integrate on to the grid. The continent's biggest green producers, Germany and Spain, have tempered their spirit given that the annual price to customers is about $32.5 billion in both countries.

Both Germany and Spain get about 23 percent of their energy from renewables. But Germany plans to cut those subsidies by $2.5 billion while Spain will slash $3.5 billion.

At the same time, utilities with offshore wind energy interest in the UK are scrapping their construction plans: Iberdrola's ScottishPower won't build what was to be the world's largest offshore wind farm, saying that it would be infeasible. And the Guardian newspaper reports that Germany's RWE and British-owned Centrica have both pulled out of potential offshore wind deals.

"It is our view that the Argyll Array project is not financially viable in the short term … As construction techniques and turbine technology continues to improve, we believe that the Argyll Array could become a viable project in the long term," which is defined here as 10-15 years, says Jonathan Cole, head of offshore wind development for ScottishPower.

What now? Nuclear energy is getting off of its knees and it is perched to

rebound, at least in certain parts of the world: In the United States, four reactors at two plants are under construction while the U.S. Department of Energy has been increasing funding for advanced nuclear research and development.

Meantime, China, Korea, the UAE, Saudi Arabia and the UK are advancing nuclear production to address air pollution and climate concerns. China has 20 nuclear plants today and 28 more under construction — 40 percent of all projected new nuclear units, says the World Nuclear Association. A similar dynamic exists in the UK, which approved the construction of two reactors at Hinkley Point that will provide 7 percent of the UK's electricity.

"It will hopefully open the flood gates and unlock further investment in the sector, introducing a new phase of activity to deliver a fleet of new nuclear reactors generating low carbon electricity in the UK," says Daniel Grosvenor, head of Deloitte's UK nuclear practice. "It also shows that the UK can attract the international investment our energy sector desperately needs."

The deal, which was announced in October 2013 must still receive permission from the European Commission: Electricite de France will own 40-50 percent while another French national, Areva, will own 10 percent. Meantime, two Chinese national entities will own 30-40 percent. A shortlist of companies will buy the remaining 15 percent. The goal is to be operational by 2023.

Significantly, some high profile climate scientists are hitting the lecture circuit and publishing their views to express that higher percentages of nuclear energy are essential to combating climate change. They, in turn, are asking their environmental brethren to embrace this position — and to quit viewing nuclear energy from the perspective of 1979 when the partial meltdown at Three Mile Island occurred.

All this is happening after the release of the UN Intergovernmental Panel on Climate Change latest findings, which have concluded with 95 percent certainty that humans are mostly responsible for global warming. In 2007, it made the same assertion but with 90 percent assurance.

"Quantitative analyses show that the risks associated with the expanded use of nuclear energy are orders of magnitude smaller than the risks associated with fossil fuels," write the scientists, who include James Hanson at the Columbia University Earth Institute.

The Environmentalists' long-standing view of nuclear energy has "relaxed" but it has not changed. Renewables, they say, are both cheaper and safer.

In this country, they point out that five nuclear plants have been forced to close in the last year. Three of those are because the facilities cannot compete with cheaper combined cycle natural gas facilities and two have been tied to ongoing technical issues, one of which involved uncommon vibrations and a small radiation leak.

The Center for American Progress says that even if every major environmental organization halted its opposition to nuclear energy, the industry would still stumble. It's a function of economics — that developers can get other types of plants up-and-running much quicker and a lot cheaper. Southern Company's two nuclear units that are going up in Georgia are now expected to cost $15.5 billion, of which a federal loan guarantee will cover more than half.

Major energy transitions are lengthy, says Michael Shellenberger, president of the Breakthrough Institute, in an interview. Moving from wood to coal took more than a century while shifting from coal to natural gas is taking just as long. Renewables are getting there, he adds, although it will require activist governments. But nuclear generation is here and now, he emphasizes.

"Nuclear power is already providing 20 percent of our power in the United States and 80 percent of the electricity in France," says Shellenberger. "The right questions are how do we encourage a transition to it and how do we make it cheaper," and not to dismiss it because of a stale mindset.

The nuclear evolution will first get tested overseas before it may migrate to other parts of the world. China, the UK, and others, believe that the fuel source is critical to providing clean and reliable power — a prescription that developed nations may follow, unless internal politics would choke it off.
