

Interview David Corchia

'Photovoltaic solar power may become bigger than wind'

David Corchia manages EDF Energies Nouvelles, a subsidiary company of the power giant EDF. In early 2000, EDF-EN began expanding its wind energy business, which remains its main activity. The company is now investing heavily in solar power as well as biomass, micro hydropower and biofuels.

*David Corchia,
chief executive EDF-Energies Nouvelles*



Photo: Stéphane de Bourgies

What prospects for growth do you see?

We have a strong presence in the US and in nine European countries, including five strategic ones, namely France, Italy, the UK, Greece and Portugal. From the moment we took off, about seven years ago or so, we were the forerunners. But in Germany and Spain, even early on, it was already too late for us to secure the best wind sites. We now own a little over 1,000MW in net capacity and span all segments of the industry chain. Our goal is to have 3,000MW net capacity by 2011 and we have 12,000 MW in our development pipeline. And this pipeline continues to grow.

Growth in wind energy is very strong, although at different paces depending on the country. Thus, a diversified international presence is necessary. If you look at Germany, growth is continuous but it is slowing down. When a country is well equipped, this process doesn't last forever. The quicker things move, the less time there is to grasp opportunities. Growth is extremely strong in Portugal but at some point this will slow down, given the size of the country and its installed capacity. In Italy, growth is slightly slower and will last longer,

but the potential is the strongest in France or in the UK. In these two countries, growth will be strong for at least eight to ten years.

So there'll still be strong growth in Europe, even if the rate of this growth slows down. And what about the United States?

In most European countries, we still have a good period of strong growth for wind ahead of us. In the US, we're right at the beginning stages. For the next five years, we won't see the difference between the two sides of the Atlantic. But looking ahead ten years from now, the US will keep accelerating to surpass Western Europe. And we are also developing in new territories, primarily Eastern Europe (Poland, Romania, Bulgaria), North America (Canada and Mexico) and Asia (China and India). In China, there is a potential for more than 5,000MW per year, equivalent to what is built in the US. But we're going forward carefully because wind energy is a local business; you have to be a local company. You have to be "from the neighbourhood". And this is the case everywhere. In the US, you don't send a Californian team to develop projects in Minnesota.

How do you see the prospects for solar energy?

I strongly believe photovoltaic solar power may become an even bigger market than wind. Growth in photovoltaic power is very strong because its development is no longer supported solely by Germany but also by France, Spain, Italy, Greece, as well as by certain US states and some Canadian provinces. The cost of solar electricity is still extremely high but this is not relevant in view of the potential of this source of energy. We're helping to create an industry that will provide economically competitive solutions in the long run. And to do so, political decision makers must provide financial support and visibility. That will generate stronger demand for photovoltaic equipment, larger production volumes, and therefore economies of scale. New technologies, like thin films, will keep emerging. And finally, the cost of electricity will dramatically decline.

You describe a virtuous circle of profitability. But there are those who disagree, who say that we should not start industrial production too early as this could slow down second-generation research.

Industrial research is all the more productive if it is supported by the marketplace. We create a demand, inject money into the industry and the industry generates the research. When the business potential is real, the private sector is very efficient at doing this type of research and development. Just so long as we don't break the engine. Looking ahead to three, four or five years from now, the costs of photovoltaic electricity production will be much lower, perhaps half of what we have today.

There are still cost considerations. Wind-generated electricity must be heavily subsidised by premiums or guaranteed rates and solar electricity is five times more expensive.

Wind energy will remain a centralised form of generation sold on the wholesale electricity market. The European wholesale price for electricity is around €60 per MWh. Wind energy is sold at between €80 and €90 per MWh in Europe.

Indeed, in many countries, those prices are usually guaranteed for the next 15 or 20 years. Of course, it is very positive for investors like us because it gives us the certainty of cash flow over a long period. But the reverse is also true; we, the producers, also guarantee supply over a long period. The price will not rise along with the price of fossil fuels. Most experts expect the price of energy to continue rising. At some point, wind energy will become cheaper than conventional electricity. This is already the case for certain projects built in the early 2000s in the United States. In Minnesota or in Texas, those projects sell their electricity under long-term power purchase agreements at around \$30 or \$35 per MWh. If you add the federal tax credit of approximately \$20 per MWh, you reach an overall cost for society that is below the \$60 to \$70 price for gas fired electricity. We'll have wind electricity that is not only green but also cheaper than grey electricity.

What about the costs of solar energy?

That's different. There are two distinct markets for solar: solar farms and distributed energy systems. Solar farms have a capacity ranging from hundreds of kilowatts to tens of megawatts and are installed on the ground or on very large roofs. Those are connected to the grid and deliver electricity to the wholesale market. Solar farms are the main driver for volumes today as they are large and generate higher volumes than small individual rooftop systems. But in a few years time, solar energy will be widespread; panels on rooftops will become the dominant market. This is a market that takes longer to develop but our belief is that in five years, ten years

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at the latest, there will not be a single house, not a single roof, built in France without solar panels.

Tariffs for solar farms range between €300 and €400 per MWh in Europe. It is very likely that solar farms will never be competitive with wind or other large, centralised means of production. But distributed energy will be competitive with the retail market. In Europe, retail electricity prices are between €100 and €200 per MWh. Tariffs for photovoltaic systems built on roofs are between €400 and €500 per MWh. But my guess is that the industry will be capable of taking production costs down to €200 or even €150 per MWh (in sunny countries) by 2013 or 2015. That means distributed photovoltaic energy has the potential to become competitive within five to seven years and supply electricity at today's grid price. But to reach that objective we need a sustainable support that allows solar farms to develop and generate the large volumes needed to reduce production costs.

What are the prospects for other renewable energy sources?

The potential for hydropower is very low because most sites in Western European countries and in the US already have the necessary equipment. But there are opportunities for hybrid projects, essentially in islands that are not connected to the continent. In those projects, excess wind energy at nights is used to pump water up to an elevated storage facility and you then benefit from dual energy generation (wind and hydro) during the day when electricity demand is high. We are developing such a hybrid project in Crete. Biomass has very strong potential but it takes time to fully realise it. Biomass projects must be located close to where the biomass is produced. It is absurd to transport biomass over long distances. And the context is different. We are used to wind and solar projects where electricity tariffs are fixed for 15 or 20 years and where the fuel is free. It is more difficult to contract for biomass over very long periods at a fixed price. But we are doing it – you simply need a different economic model. ■