The Oil Drum: Europe
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

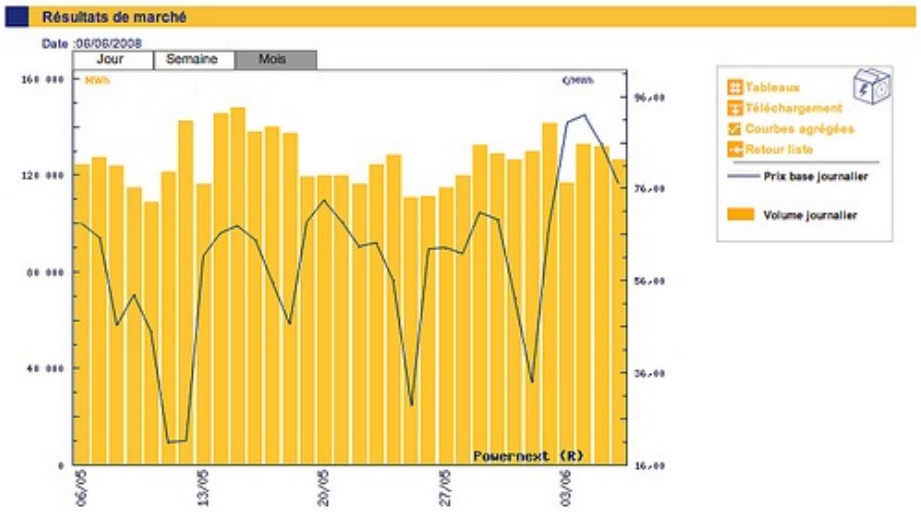
Fierce pride - yes it works! (or, first ever bank-financed offshore wind farm inaugurated!)

Posted by Jerome a Paris on June 5, 2008 - 8:30pm in The Oil Drum: Europe
Topic: Alternative energy
Tags: finance, offshore wind, wind [list all tags]

This is me in front of the windfarm which I helped finance two years ago. It's up and running, and will be generating clean energy for the next 20-25 years - at a price guaranteed not to increase for the whole period. It was inaugurated yesterday and christened *Princess Amalia windfarm*, after the young daughter of the Dutch crown prince.

All my wind diaries are now listed in this Windpower index story.

Now that European wholesale power prices are becoming higher than the feed-in tariff paid to wind farms in most countries that have them (ie it's getting cheaper to buy "subsidized" wind power than regular, "competitive" power on the free market), it's particularly sweet.



French day-ahead electricity prices on [Powernext](#) (free reg. required).
The regulated tariff for wind power is 82 EUR/MWh or lower.

Of course, the costs (and the tariffs) for offshore wind are still slightly higher than for onshore, but this is likely to change quickly as the sector moves away from semi-experimental construction procedures to standardised methods, and as the current bottlenecks in the supply chain recede as more production capacity is put in place.

The fact remains: onshore wind costs 40-70 EUR/MWh and offshore wind power costs 90-120 EUR/MWh today and both will cost that, or less, in 15 years' time. Can any other electricity source say that, except for hydro (which cannot increase its production capacity) or solar (which needs a few more years of development to see its still high costs - 250-350 EUR/MWh - come down to more attractive levels)?

Wind's only obstacle today is the still widespread perception that it is not a "serious" energy source, that it's only a small part of the solution, and that it's not really reliable anyway.

It was heartening to see earlier this week this ad in all French newspapers, whereby all the big French utilities (including almost-all-nuclear EDF) publicly supported wind power and insisted they would continue to invest in the sector:

Énergie éolienne : *les raisons d'un engagement*

LE CHANGEMENT CLIMATIQUE, lié à l'émission de gaz à effet de serre, est une donnée incontestée. La remise du prix Nobel de la paix 2007 à Al Gore ainsi qu'aux membres du Groupe d'experts intergouvernemental sur l'évolution du climat en témoigne, s'il en était besoin.

L'Union Européenne poursuit des objectifs ambitieux pour réduire les émissions de gaz à effet de serre, et la France s'apprête, dans la foulée des conclusions du Grenelle de l'Environnement, à se doter d'une politique qui permettra de contribuer très efficacement à relever ce défi. Cette politique, dans le domaine de l'énergie, doit s'insérer dans un cadre global visant à garantir la sécurité d'approvisionnement et la compétitivité.

Pour cela, le développement d'un bouquet énergétique peu émetteur de gaz à effet de serre constitue un instrument privilégié et le développement des énergies renouvelables, une pierre angulaire de cette politique au même titre que l'énergie nucléaire et l'efficacité énergétique.

C'est bien dans ce cadre que s'inscrit l'essor de l'énergie éolienne, propre, inépuisable et bien répartie sur notre territoire.

C'est la raison pour laquelle les industriels et les producteurs d'énergie se sont engagés résolument dans le développement de cette filière. Ils y ont, chacun, investi de façon très significative, conscients de participer ainsi à la diversification et à la sécurité d'approvisionnement de leur pays, dans un cadre économique, environnemental et social parfaitement maîtrisé, respectueux des réglementations et des attentes de leurs concitoyens et des consommateurs.

Pierre GADONNEIX, *Président d'EDF*
Jean-François CIRELLI, *Président de Gaz de France*
Charles BEIGBEDER, *Président de POWEO*
Gérard MESTRALLET, *Président de SUEZ*

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(It was somewhat less heartening to see Poweo's Beigbeder's self-serving and bad faith ode to competition in today's Le Monde - I will respond separately to that article).

But as power generation manufacturers like GE, Siemens and others get a increasingly large share of their turnover from selling wind turbines, as Vestas (the leading wind turbine manufacturer) sees its market capitalisation reach EUR 15-20 billion, as foundries, steel makers, gearbox manufacturers, shipping companies and others see massively increasing orders coming their way from the wind industry, and as local farmers and public officials realize that they can get extra income, and extra local jobs, maybe the tide of "seriousness" will turn readily enough.

And as wind capacity installed each year continues to increase by 20% or more each year worldwide, its share of world production will quickly reach undismissable levels. This year, a number of symbolic threshholds were reached - 100GW of installed capacity, one exajoule of annual electricity generation, 40% of electricity produced from wind in Spain on some days. All of this, essentially starting from scratch less than 10 years ago. what will another 10 years bring us?

Massive unreliability, as we need to wait for wind to blow to turn on our computers or our air conditioning? Or simply new ways to run the grid, as the experience of Denmark (which has enjoyed a number of days when more than 100% of its electricity needs was produced by wind) or Spain shows? The French grid operator, RTE, long extremely wary of wind power and its unreliability, had this to say in its latest annual report (big PDF, in French, see p.49):

> The second point is about wind's contribution to peak demand: despite wind's intermittency, **wind farms reduce the need in thermal power plants to ensure the requisite level of supply security. One can speak of substituted capacity**.
>
> The capacity substitution rate (ratio of thermal capacity replaced to installed wind capacity) is close to the average capacity factor of wind farms in winter (around 30%) for a small proportion of wind in the system (a few GW). It goes down as that proportion increases, but remains above 20% with around 15GW of wind power.

Intermittency is a real issue, but it is one that can be dealt with at what, so far, appears to be an extremely low cost - investment in the grid, something that's useful in any case if we want resilient systems.

Ah, but wind farms are **ugly**!