



## Aruba's New Windfarm

Posted by [Jerome a Paris](#) on December 30, 2009 - 10:03am in [The Oil Drum: Europe](#)

Topic: [Alternative energy](#)

Tags: [aruba](#), [wind](#) [[list all tags](#)]

As Copenhaguen ended, unsurprisingly, in confusion, I have the opportunity to give you a more positive tale, and show you it is possible for people - including even bankers amongst them - to work towards a more sustainable future without necessarily endangering our way of life.



*The Vader Piet 30MW wind farm on the island of Aruba.*

In this case, it involves the construction of a windfarm in a place where it will directly replace fuel-oil-burning power plants. As you'll be able to see below, this wind farm is quite remarkable in a number of ways which means that this experience will not be replicable as easily everywhere, but it shows that there are many places and energy systems which it is possible to materially improve under almost all criterai using renewable energy.

*(part of the [wind power](#) series)*

*Full disclosure: As indicated below, I financed the project discussed in this post last year.*

Amongst notable features, one can find:

- at around 60%, it has one of the highest capacity factors in the world, with 50% more power output per turbine than European offshore windfarms...; located on the Eastern coast of the island, it is exposed directly to the trade winds, which are highly regular and almost always in the same direction (allowing to put the turbines very close to one another); their almost constant strength also mean that tear and wear is actually likely to be less than usual, as there are very few brutal changes in regime and torque;



*it is a windy place...*

- it is now providing 20% of the island's overall electricity needs, replacing dirty and expensive fuel-oil in the process. At night, it will produce up to 60% of the demand. And thanks to the highly regular wind regime, this is very stable and predictable production; (even though they pushed for this project to happen, the local power company had quite a shock to see 'for real' how big a portion of their system the windfarm has suddenly become - as is still frequent, utilities have trouble taking wind seriously, but in this case the reality was quite compelling);



*see how the blades bend under the strength of the wind  
(the second one was switched off temporarily for visits,  
thus its different orientation in this picture).*

- the utility will save money on fuel imports and, more importantly, will actually end up with cheaper power: it buys the electricity from the wind farm at a fixed price over 15 years which is roughly equivalent to what it costs to produce electricity from their traditional oil-fired generators with oil prices at \$45/bbl. Who wants to bet on oil being consistently under \$45 for the next 15 years? In fact, the prime minister of the island, who was present at the inauguration, used the opportunity of that ceremony to announce lower power prices for the poorest households on the island...



*the windfarm is situated in a very isolated part of the island, invisible to everybody but it adds to that area's spectacular vistas.*

- and the reality is that the windfarm has received an enthusiastic welcome by the population of the island - the project team was telling me about how there were people all along the road clapping them when they were transporting the machinery to the site (not a trivial task, as the videos below show):

*turbine unloading*

*turbine transportation through the island  
both videos by [antholejuez](#) on youtube*

- and, finally (and this is where I come in), the windfarm was financed at the top of the financial crisis last year. I told the story in a blog post then ([How to keep on financing wind farms when banks have no money left.](#)) but it's worth underlining here that one of the most dangerous consequences of the crash is that traditional banking - lending to the economy - has been, and still is, directly impacted and curtailed, as the result of lack of liquidity and heightened risk aversion by banks (which are just as stupid and gregarious in systematically cutting off credit as they were enthusiastic at shoving it onto clients before). So it was an especially proud moment for me to see this project, because we really made a difference at the time, saving the wind farm from a potentially damaging delay, and saving very real economic activity on the island and amongst the suppliers (which are mainly European).

*erection works - same source.*

Wind is a capital-intensive but low risk activity where simple and stable financing structures are both necessary and useful - construction costs need to be spread out over a number of

years for power generation costs to make sense. Technical and operational risks are understood and very small if you have a competent project company, and the revenue profile is highly predictable, thus making it possible for lenders to provide a large part of the initial cost at a fixed price without requiring any benefit sharing, making this cheaper than equity and keeping the ultimate power price down.

This, called "project finance," is the boring kind of banking that makes the economy run but is sadly seen as unsexy or useless whenever new funny products are invented in the capital markets and create opportunities for bonus-generating bubbles... I've already been set aside as dreary 3 times in the past 15 years: emerging market bonds were all the rage in the mid-90s (until the Asian crisis), then the dot-coms were 'it' (until the crash), then the grand multi-product bubble of the past decade, with its mortgage-backed securities, collateralised loan obligations, credit default swaps and the rest. And having being bailed out, they're at it again, while project finance is still suffering - and wind or solar projects get built more slowly than they could as a result.



*It's real! It's generating power! It's very high!*



This work is licensed under a [Creative Commons Attribution-Share Alike 3.0 United States License](https://creativecommons.org/licenses/by-sa/3.0/).