

Re: Research: Wind power pricier, emits more CO2 than thought

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Source: <http://sci.tech-archive.net/Archive/sci.energy/2008-07/msg00113.html>

- *From:* "rlbell.nsuid@xxxxxxxx" <rlbell.nsuid@xxxxxxxx>
 - *Date:* Thu, 17 Jul 2008 00:28:27 -0700 (PDT)
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On Jul 16, 11:03 am, disgoftunwells <disgoftunwe...@xxxxxxxx> wrote:

On 16 Jul, 08:11, "rlbell.ns...@xxxxxxxx" <rlbell.ns...@xxxxxxxx> wrote:

On Jul 15, 2:13 am, disgoftunwells <disgoftunwe...@xxxxxxxx> wrote:

On 13 Jul, 03:52, Bill Ghrist <notmyn...@xxxxxxxx> wrote:

Regarding the arguments about whether wind power is mature...

If you go back and read the article originally referenced by this topic you will find that the premise has little if anything to do with the maturity of wind power technology. Rather it has to do with the amount and type of back up generation that must be provided if wind power is to be a major portion of total generation. The article specifically addresses the situation in the UK, and shows that it is not unusual to have periods of calm winds over all of the UK and continental Europe, sometimes for days at a time, meaning that you need an amount of backup generating capacity equal to the total wind

Re: Research: Wind power pricier, emits more CO2 than thought capacity.

Back on topic! Thanks.

And my response was it's an excellent article but there are several points that the author misses. He concedes he doesn't analyse the impact electric cars, which with a 30% market share might provide 10KWhrs x 10 million = 100 GWhrs flexible storage capacity.

Let me get this straight: During some parts of the winter when I plug in my hypothetical electric car, not only will I not get any charge, but the electric company will siphon some charge out of it. Even better, it can last every night for a week.

If you agree yes. Probably the easiest way is when you park your car, you set a time for when you want it fully charged. Cheap, complex software does the rest.

So the vehicle battery is used not for storage, but the charger interacts with the grid to manage the load curve, eliminating some of the need for peaking units that wind supplements fuel for. This makes the economic model for wind worse, not better. Baseload unit produce very inexpensive electricity that wind generators cannot compete against.

He also misses domestic boiler generators / micro CHP, though to be effective that will need improved gas storage facilities.

He did address those when he discussed the kind of gas turbines needed to track varying wind output.

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But he was focusing on GW turbines, not KW turbines (or PEM fuel cells).

No the GW turbines are the combined cycle units that are practically baseload units, with thermal efficiencies of up to 60%(GE H1). Tracking variations in wind output is for small peaking turbines in the low-to-mid MW range (5-50), with efficiencies less than 40%. CHP turbines have even worse efficiencies than the ones he referred to, and only make economic sense as a topping cycle for a forced air furnace where its high quantities of waste heat are a feature, not a bug (CHP = Combined Heat & Power). As CHP's are typically 15-50 kW, there would need to be hundreds of thousands of them.

And the weather analysis didn't cover all of UK and Continental Europe, but covered some of the UK and Denmark / Germany, which will put a premium on wind farms further away, like Lewis. Personally, I think Norway has the best potential for Wind Energy in Europe.

Pity about all that hydro development that economically fills their needs and allows them to export surplus power.

No – BECAUSE they have hydro, building wind allows them to export more. Every KWhr of wind energy can add a almost a KWhr to what they export (or about 0.8KWhr if its stored as pumped storage). And they don't have to worry about additional capacity. (Though for large scale, they might want to increase the power capacity of their hydro resources – i.e. add more turbines)

The problem is that they do not need the capacity and, as a money making venture, it is insufficiently lucrative. Selling a kWh of wind power is only a gain if they can sell it for more than it cost to produce. They also have the happy situation of buying cheap wind electricity when producers have too much of it and selling dear when there are wind electricity shortfalls.