

Re: Can Nuclear Power Deliver?

Source: <http://sci.tech-archive.net/Archive/sci.energy/2006-01/msg00286.html>

- *From:* "T.Keating" <tkgoogle@xxxxxxxxxxx>
 - *Date:* 29 Jan 2006 19:43:19 -0800
-

On Mon, 30 Jan 2006 01:47:15 +0000 (UTC), rlbell@xxxxxxxxxxxxxxxxxxxx
(Richard Bell) wrote:

>In article <1138540734.954500.181220@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
>T.Keating <tkgoogle@xxxxxxxxxxx> wrote:

snip... to shorten up thread.,

>> The efficiency of fossil fuel power plants generally benefits from
>>increasing scale of economy. (Small gas turbines are not nearly as
>>efficient as larger ones, etc..)

>

>This is a serious issue, as the wind can fall off faster the plant can ramp up
>power, and the efficiency of a combined cycle plant falls off rapidly as the
>load decreases. A wind farm would need several units, so that there would

There is no requirement for CG power plant to be located anywhere near
wind farm.

>only be short intervals of part load operation, but that puts a severe limit
>on the largest unit, and all of the others are smaller, some of them MUCH
>smaller.

As for the rest of your speculation..

Wind is quite predictable... with plenty of lead time..

They're usually spread out over a wide area, which evens out the
production of energy. Wind drops off in one area, it will take
minutes up to hours before wind velocity drop off reaches
the other end... The effect moderates even more as wind farms are
constructed over large geographic areas. (I.E. Overall wind farm
output increases or decreases gradually over time.)

As for predictability, a series of remote weather stations will do
nicely.

>>

>>>>

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>>>>>

>>>>>But will the backup powerplants be able to pay for themselves, if they are
>>>>>only run intermittently. The other problem is that most combined cycle units
>>>>>are fuelled by natural gas. A further problem is that, per watt, small means
>>>>>expensive, but larger units may not be able to load follow.

>>>>

>>>>H2 can fuel the CG plants, additionally..

>>>> Biomass converted into NG will also work..

>>>>

>>>>You missed the point. The electricity produced by the wind turbines must not
>>>>only pay for the wind turbines, but must also pay for the down time of the
>>>>combined cycle plant. Or do the wind turbines produce the H2 that is burned
>>>>by the thermal plant. If you have enough biomass available to run the thermal,
>>>>why are you wasting money on a windfarm?

>>>>

>>>>No you miss the real point..

>>>>

>>>> Continued large scale burning of fossil fuels will DROWN their
>>>>country.(Denmark)

>>>>

>>>>That's all very well, but these schemes must somehow pay for themselves.
>>>>People are just awful about only looking at the short term, so if you
>>>>are to do anything without imposing a dictatorship, your solution must be
>>>>attractive.

You still miss the point..

Large scale conversion of fossil fuels into CO2 == Coast line
submergence around the world.

At some point, governments will start imposing significant carbon
taxes on fossil fuels . Those taxes will help compensate for the
environmental damage that's coming down the pike. Once that occurs..
Fossil fuels will no longer be cheap..

The fossil fuel/ GW problem is of one the "Tragedy of Commons"
type problems that government is empowered to solve.

I.E.. "We the people of the United States, in order to form a
more perfect union, establish justice, insure domestic tranquility,
provide for the common defense, promote the general welfare,..."

I would say preventing 20% of US from be submerged falls in the
"promote the general welfare" category..

>>>>

>>>> Now what's the REAL price of burning fossil fuels??

>>>> I place it in the range of 10 to 100x the market current cost!!

>>>>

>>>>But the only cost that matters is what people pay out of their pocket. Your
>>>>cost is a fantasy, even if it is accurate, because it shows up nowhere on any
>>>>balance sheet.

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Another ridiculous statement..

Where was the balance sheet when the US banned Slavery? or when governments imposed minimum wage? or imposed retirement taxes? or when OSHA imposed work safety rules? or when states imposed Workmans Comp insurance? or when the EPA imposed pollution control standards? or when the DOL imposed safety standards for mining? or when the FDA imposed food inspection, labeling, handling, and content requirements?

In the summary... Citizens will always tradeoff increased costs in return for tangible benefits to the society as a whole.

>>

>>As for making H2 from surplus electricity..

>> It's easy to do. requires little capital, relatively eff..(~94%),

>>and the facilities to convert back into electricity already exist...

>

>However, the cheapest surplus electricity comes not from wind turbines, but

>from base load plants. If wind cannot compete economically with baseload

>generation, H2 production from surplus electricity will not help.

>

You still miss the point..

Fossil fuels are currently cheap because the market doesn't pay the full costs for their transport and usage.

>>

>> H2 is added to biomass reaction in order to make it a more

>>efficient process. (I.E.. It's cracking long chain HC's Replacing

>>C-C bonds with a pair of H-C bonds, the H2 has to come from somewhere.)

>>

>>

>> Burning biomass directly lacks efficiency and has significant

>>pollution/shighting issues.

>>

>>>>

>>>>H2 and/or NG can be pumped back in to depleted NG wells.

>>>>

>>>>Sync can be achieved using a accurate time base and ..

>>>>

>>>>

>>>>If it is economical to produce H2 with electricity that you could not sell,

>>>>then wind turbines make even less sense, as they will be competing, on price,

>>>>with nuclear power and hydroelectric power. Currently, the only thing that

>>>>competes with those two on price is coal.

>>

>> As the power generating capacity of RE grows, there will be times

>>when there will be a surplus of RE power.. (more than the region can

>>handle, I.E. high winds at night.) Thus making it practical to store

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>>the surplus energy in some other form such as H2 or CH4. That surplus
>>can be used during times when the wind is clam and/or peak power usage
>>required.

>

>If storing surplus electricity from wind as H2 makes sense, it makes sense to
>do it with base load plants (this is worth repeating), so unfettered markets
>avoid wind power if it costs more than base load generation.

You're off you're rocker..
unfettered market crap got us into this GW mess.

Markets simply can't solve "Tragedy of Commons" type problems, since
they by definition, they don't pay all of the costs and suffer the
consequences.

"The definition of insanity is doing the same thing over and over
again and expecting different results." ..Albert Einstein..

>>

>>As for CG plants... efficiency of those plants increases with scale.
>>same goes for steam.. up to a point.. same goes their cooling and
>>pollution control systems..

>>

>> As for digging up and burning Coal.. using it is no bargain and
>>burning it moves Denmark one step closer to submersion.

>

>The only way to keep people from digging up coal and burning it is exploiting
>nuclear power.

Err no.. Taxing will do nicely..

Land based nukes are way.. way.. too dangerous.. their fixed
location make them easy to target and their resulting destruction
produces collateral effects well beyond the comprehension of most
humans. (You're included in that subset).

>>

>>>

>>>>

>>>>>The main problem for global warming is that the climate models are not good
>>>>>enough to predict anything. No model has been good enough to "predict" the
>>>>>climate from 1995 to 2005, given all of the available data. Even

>>worse, there

>>>>>is now a vested interest in predicting calamities, as no funding body pays

>>>>>for negative results.

>>>>

>>>>>I don't care that they don't have a good model..

>>>>> GW is here now..

>>>>

>>>>>How do you know? It used to be warmer, just not recently. Can you prove

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>>>that this variation is abnormal? No, because the models are not good enough
>>>predict anything.

>>

>>

>> Hurricanes are a thermally driven phenomenon.

>>

>> In 2005 GW broke several historical atlantic basin records.. like

>>the most cyclones (27), the most hurricanes(15), the most cat-5's(3),

>>the most intense hurricane ever recorded(Wilma) which occurred

>>unusually late in the hurricane season.

>>

>> A new aspect started occurring in 2004 with Frances.

>>Hurricanes with SUPERSIZED eye diameters&walls. Prior to recent

>>seasons hurricane eyes walls were fairly small, in the range of

>>8(Andrew), 13(Camile) up to ~20 miles in diameter, but now we're seeing

>>them with diameters in the 50 to 60 mile range.

>>

>> 2004 had one(1) which fell into that mega eye category (Frances)..

>> 2005 had three(3).. (Katrina, Rita, Wilma.)

>>

>> 2006.. Average winter temps in South Florida are way above normal(5C

>>higher).. well beyond last years starting point..

>

>When it comes to climate, we need more than a few decades of data.

We already have several decades of data, and it's nothing like what
we're seeing now.. Right now (night time) it's in 70's.. tomorrow it
will be in 80's..

By the time you get around making up your mind.
it will be way to late to do anything meaningful.

>>

>>

>>As for the cause of GW.

>>

>> Atmospheric CO2 measurements don't lie.

>> Historical ice core data confirms CO2 at unprecedented levels.

>> CO2 is of organic nature(12C/13C isotope ratio) (mankind).

>> The chemical/optical, IR trapping, characteristics of CO2 is well

>>known.

>> Solar energy input & spectra is well known.

>> Apply Occam's Razor.

>>

>>

>>=====

>>

>>

>> If anything.. we've probably crossed one or more positive feedback

>>tripping points, and from this point onwards GW effects will scale

>>upward in an ever increasing rate.

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>>

>> Humanity threw the dice... and is going to loose.. big time..

>>

>

>Than we better get those new nuke plants up and running. Unlike global warming, nuclear proliferation will not kiil us all at once.

Just in time for you to watch N. Korea and/or Osama and/or Iran and/or whomever is the new kid on Nuke block. Blackmails Canada with destruction of one or more of it's nuclear power plants. What will you do? Pay up.. or watch them blow one up? How about next year? And the year after that? Are you prepared to relocate the entire human population from one of Canada's provinces when you don't pay up?

Oh.. while your at it.. don't forget to compensate the US for the isotope laden fallout that crosses the boarder. Hmmm.. I think half of Alberta's oil sands will do quite nicely.

P.S. Don't forget..it will be several centuries before the areas affected will be safe enough to repopulate.

• *Follow-Ups:*

◆ ***Re: Can Nuclear Power Deliver?***

◇ *From:* Richard Bell

◆ ***Re: Can Nuclear Power Deliver?***

◇ *From:* Karl Johanson

• *References:*

◆ ***Can Nuclear Power Deliver?***

◇ *From:* Citizen

◆ ***Re: Can Nuclear Power Deliver?***

◇ *From:* T.Keating

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