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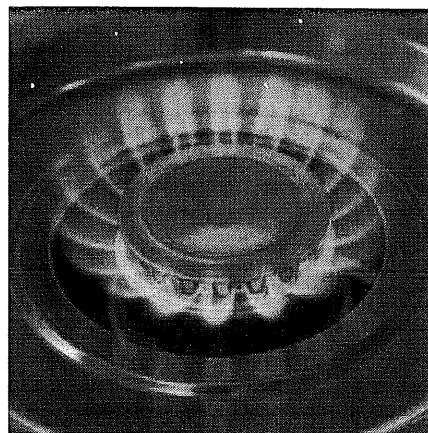

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IEA's "Golden Age of Gas Scenario" Leads to More Than 6°F Warming and Out-of-Control Climate Change

By **Joe Romm** on Jun 7, 2011 at 12:50 pm

The International Energy Agency has just issued a special report titled, "[Are We Entering a Golden Age of Gas?](#)" The answer to that question is "yes" only if you are a natural gas producer who doesn't care much about humanity. For the rest of us, the report makes clear natural gas by itself does nothing to avert catastrophic climate change. Quite the reverse.



The UK *Guardian's* [story](#) put it well:

Natural gas is not the "panacea" to solve climate change that fossil fuel industry lobbyists have been claiming, according to new research from the International Energy Agency.

Reliance on gas would lead the world to a 3.5C temperature rise, according to the IEA. At such a level, global warming could run out of control, deserts would take over in southern Africa, Australia and the western US, and sea level rises could engulf small island states.

Not exactly a champagne moment.

UPDATE: I've added a featured comment (and link) by Tyler Hamilton, business columnist at The Toronto Star.

Ironically, the IEA report is built around what it calls "The Golden Age of Gas Scenario (GAS Scenario)" — except, of course, the acronym for "Golden Age of Gas Scenario" should be GAG Scenario not GAS Scenario. And GAG is exactly what the planet would do if the dash to gas becomes our primary energy policy, rather than a high and rising price for CO₂.

The reason is clear. Absent a high CO₂ price, gas displaces as much low-carbon electricity as it does high-carbon coal. That was precisely the point made by Nobuo Tanaka, executive director of the IEA, at a London press conference:

"While natural gas is the cleanest fossil fuel, it is still a fossil fuel. Its increased use could muscle out low-carbon fuels such as renewables and nuclear, particularly in the wake of Fukushima. An expansion of gas use alone is no panacea for climate change."

The *Guardian* notes, "The IEA also warned that gas could push out renewables, if governments come under pressure to

reduce renewables subsidies and opt for gas instead, as gas companies have been urging.

The report itself makes clear that in the GAG scenario:

Natural gas displaces coal and to a lesser extent oil, driving down emissions, but it also displaces some nuclear power, pushing up emissions.... This puts emissions on a long-term trajectory consistent with stabilising the concentration of greenhouse gases in the atmosphere at around 650 ppm, suggesting a long-term temperature rise of over 3.5°C.

Note that the GAG scenario assumes that not only does oil production peak in 2020 — **but so does coal!**

Table 3.3 Global energy consumption, CO₂ emissions and CO₂ emissions intensity in industry and buildings sectors in the GAS Scenario

	Energy consumption (Mtoe)			CO ₂ emissions (Mt)			CO ₂ emissions intensity (tonnes CO ₂ per ton)		
	2008	2020	2035	2008	2020	2035	2008	2020	2035
Industry									
Total	2 351	3 087	3 426	5 056	6 304	6 212	2.2	2.0	1.8
<i>Coal</i>	<i>646</i>	<i>794</i>	<i>728</i>	<i>2 947</i>	<i>3 642</i>	<i>3 312</i>			
<i>Oil</i>	<i>332</i>	<i>354</i>	<i>316</i>	<i>1 035</i>	<i>1 107</i>	<i>988</i>			
<i>Gas</i>	<i>466</i>	<i>666</i>	<i>819</i>	<i>1 074</i>	<i>1 555</i>	<i>1 913</i>			
Buildings									
Total	2 850	3 288	3 782	2 946	3 177	3 254	1.0	1.0	0.9
<i>Coal</i>	<i>125</i>	<i>123</i>	<i>86</i>	<i>482</i>	<i>476</i>	<i>333</i>			
<i>Oil</i>	<i>344</i>	<i>350</i>	<i>318</i>	<i>998</i>	<i>1 010</i>	<i>914</i>			
<i>Gas</i>	<i>617</i>	<i>724</i>	<i>859</i>	<i>1 467</i>	<i>1 692</i>	<i>2 007</i>			

Notes: Total energy consumption includes electricity, heat and direct use of renewables. Emissions intensity refers to direct emissions only, i.e. excluding CO₂ emissions from electricity generation.

Yet we still get 650 ppm and more than 6°F warming even with that incredibly optimistic assumption — and with the additional optimistic assumption that industrial coal consumption (and CO₂ emissions) only rises 22% from 2008 to 2020. And assuming we don't have a lot of that gas leaking into the air (see [New study questions shale gas as a bridge fuel and is natural gas cleaner than coal?](#)).

Oh yes, and then we have the assumption that we can actually stabilize at 650 ppm. In fact, once we go above 450 ppm, the carbon-cycle feedbacks are going to accelerate and shoot us to much higher levels of greenhouse gas concentrations — see ["NSIDC bombshell: Thawing permafrost feedback will turn Arctic from carbon sink to source in the 2020s, releasing 100 billion tons of carbon by 2100."](#)

In any case, 650 ppm is probably sufficient to lead to the ultimate disintegration of the Greenland ice sheet and many tens-of-feet-of-sea-level-rise — see [New study of Greenland under "more realistic forcings" concludes "collapse of the ice-sheet was found to occur between 400 and 560 ppm" of CO₂](#). That SLR is likely to kick in sooner rather than later — see [JPL bombshell: Polar ice sheet mass loss is speeding up, on pace for 1 foot sea level rise by 2050](#).

Finally, back in October, the National Center for Atmospheric Research published a complete literature review, "Drought under global warming: a review," (See [NCAR analysis warns we risk multiple, devastating global droughts even on moderate emissions path](#)). That study makes clear that Dust-Bowlification may be the impact of human-caused climate change that hits the most people by mid-century, as the figure below suggests (click to enlarge, "a reading of -4 or below

I wish they would be more accurate with statements like above.... we know that we are more than likely to get 3ft or more of rise what ever action we take now.

sea level rises will more than likely engulf small island states.

Absolutely