



P E R S P E C T I V E S

by **Rinaldo S. Brutoco**

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Wow! Fareed Got it Wrong Again

Read the science

Fareed Zakaria is a man deserving of considerable respect. He is not only a great columnist, television host, interviewer, and pundit, but he is also an opinion maker. The general public listens to him. So do kings, potentates, politicians, and major corporate executives all over the globe. Hence there's no joy when we are compelled to call him out. That said, Fareed has been making a number of major miscalculations that require rebuttal.

On his July 24th broadcast on the subject of "tackling climate change," Fareed once again propounded his view that nuclear energy is a major potential contributor to climate change remediation. Wrong. He also argued strongly in favor of burning more natural gas in power plants. Also, problematic. And finally, he offered a few other pleasant but ineffectual ways to heal the biosphere like planting more trees (a good idea, but woefully inadequate to remediate the climate crisis) and creating incentives to buy electric cars (a good idea—particularly if they are hydrogen fuel cell electric cars).

Frankly, Fareed's staff is not doing enough scientific homework to inform his policy recommendations. They must pay more attention to the science of climate remediation than to the lobbyists and other pundits in the East Coast intelligence "bubble" who have clear economic agendas which further imperil our wounded biosphere. Fareed is simply too important as an interpreter of public policy to allow this scientifically deficient view of how to deal with climate change to persist.

Burn more natural gas. Really? While it halves the CO₂ pollutant compared to coal, burning natural gas produces 100 percent more CO₂ than hydrogen consumed in a fuel cell which has zero polluting emissions if the hydrogen is produced from renewable energy.

The entire world is embracing this idea. McKinsey, Goldman Sachs, Boston Consulting, and all major European governments have concluded that "green hydrogen" (hydrogen made from renewables) is the "game changer" that is ready for immediate deployment. This isn't a technology of the future. Neither are fuel cells which have been around for over 100 years and are now being produced in mass quantities all over the world in various sizes.

Green hydrogen powering fuel cells, where the only byproduct is pure water vapor, is widely accepted as the replacement right now for fossil fuels in cars, trucks, buses, locomotives, electricity generation, the making of "green steel" and "green cement."

Sorry Fareed, but it's hard to believe your staff hasn't informed you better about the science of climate change. Burning natural gas is not a way to reduce greenhouse gases! Burning more natural gas only makes things worse. We must get on with remediating climate change at once with 100 percent green alternatives that are ready today. Let's move with urgency as Germany, France, and Spain are doing,

working to convert their economies over to hydrogen. So much for the misguided belief that burning more fossil fuels in any way helps with climate change—it doesn't make sense on its face.

Secondly, by pushing the nuclear option, Fareed is simply echoing the nuclear lobby's position without critical independent thought. The only beneficiaries of the campaigns to extend the life cycle of existing plants and trying to build new ones, are the handful of giant companies that control nuclear energy globally. The nuclear industry never rests in its attempts to capture more government money. No matter the risk to the public. No matter the lack of economic or environmental merit.

Remember, the Fukushima Daiichi meltdown of March 2011? It has still not been stopped! The Japanese government's most recent estimate is that it will take at least 40 more years to clean up the pollution from that "incident." Candidly, that's a wishful assessment given they have not yet found a way to 1) stop the reaction from continuing underground; and 2) are continuing to leach millions of gallons of nuclear wastewater into the Pacific Ocean in addition to the 1.25 million tons stored in massive tanks above ground, with no way to remove the highly radioactive tritium. The Japanese "solution" is to dump it directly into the ocean.

Let's also remember that scientists estimate that a vast area around Chernobyl will remain uninhabitable for several hundred years or longer.

The nuclear industry likes to say, and Fareed likes to parrot, that very few people have been killed in nuclear accidents. That's because they only count radioactive deaths from direct exposure. As the residents of Hiroshima learned in the years after 1945, the direct deaths are only the beginning of the death toll as multiple varieties of cancer and other health impacts emerge over the ensuing decades.

In 2014, the World Business Academy published a definitive whitepaper as an open letter to the noted climate scientist **James Hansen** addressing this question, entitled "[Nuclear Power: Totally Unqualified to Combat Climate Change.](#)" To this day not a single conclusion, or even one of its 42 footnotes, has been challenged, even by Professor Hansen. Among other conclusions, it found that:

"Nuclear power plants are not 'carbon free.' They do not emit carbon...as they split atoms... but...Significant amounts of fossil fuel are used indirectly in mining, milling, uranium fuel enrichment, plant and waste storage construction, decommissioning, and ultimately transportation and millennia-long storage of waste. There is plenty of carbon in that footprint that is rarely acknowledged, computed, or mediated.

"In addition, [the industry] obscures the fact that nuclear power plants' radiation footprint is far more lethal than the carbon footprint of any other industry. Additionally, the industry's rhetoric masks the astronomical costs for thousands of years of storage that could be better invested in rapidly developing renewable fuels with a zero-carbon footprint like solar, wind, geothermal, and ocean thermal energy conversion, which don't carry harmful, let alone lethal, side effects."

The same paper pointed out that it would take decades of construction just to refurbish or replace the existing nuclear "fleet" now operating beyond safety margins, that this would cost many billions of dollars that might otherwise be spent on less fraught clean power technologies, and anyway, there aren't even enough trained personnel in the world to build an adequate number of new plants to make any appreciable impact on climate change. And, we still have no known method for safely storing the high-grade nuclear waste that will remain toxic for thousands of years. That's real environmental pollution that lasts a thousand years. Please, Mr. Zakaria, read the science.