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Commentary and Research
From Dr. Frank Clemente

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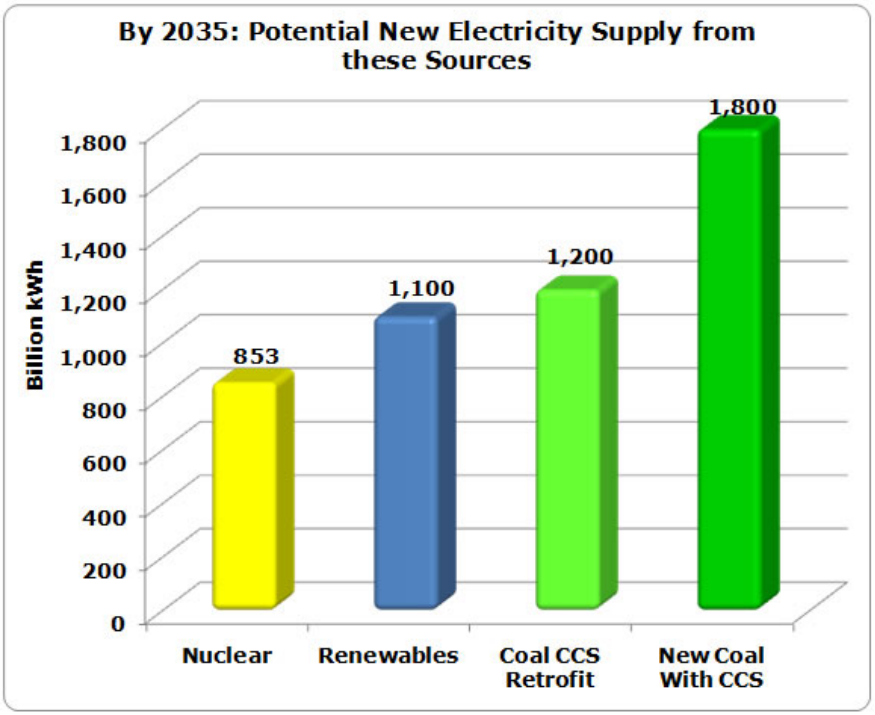
The National Academy of Sciences on "America's Energy Future"

The National Academy of Sciences is the most respected scientific organization in the world. In July of this year, the Academy published a major assessment of ***America's Energy Future***, detailing major policy options open to the United States. [1] Importantly, Dr. Steven Chu, U. S. Secretary of Energy, was a member of the committee that wrote the report.

Coal with CCS is regarded as the most viable means of meeting growing electricity demand over the next several decades.

In regard to the importance of CCS in reaching climate change policy goals, Secretary Chu recently indicated:

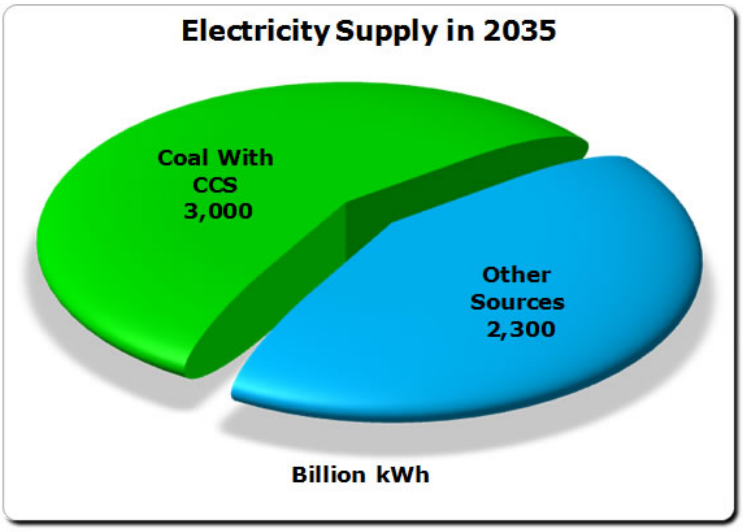
"Coal ... is likely to be a major and growing source of electricity generation for the foreseeable future... we must make it our goal to advance carbon capture and storage technology." [2]



With CCS, coal will continue to provide over 50% of America's electricity:

The Academy views new natural gas-based electricity with a skeptical eye due to escalating and volatile prices:

"... the committee, along with most observers, concluded that over the 30-year life cycle of a NGCC plant the price of natural gas would be likely to rise, the year-to-year variations could also be large ..." [1]



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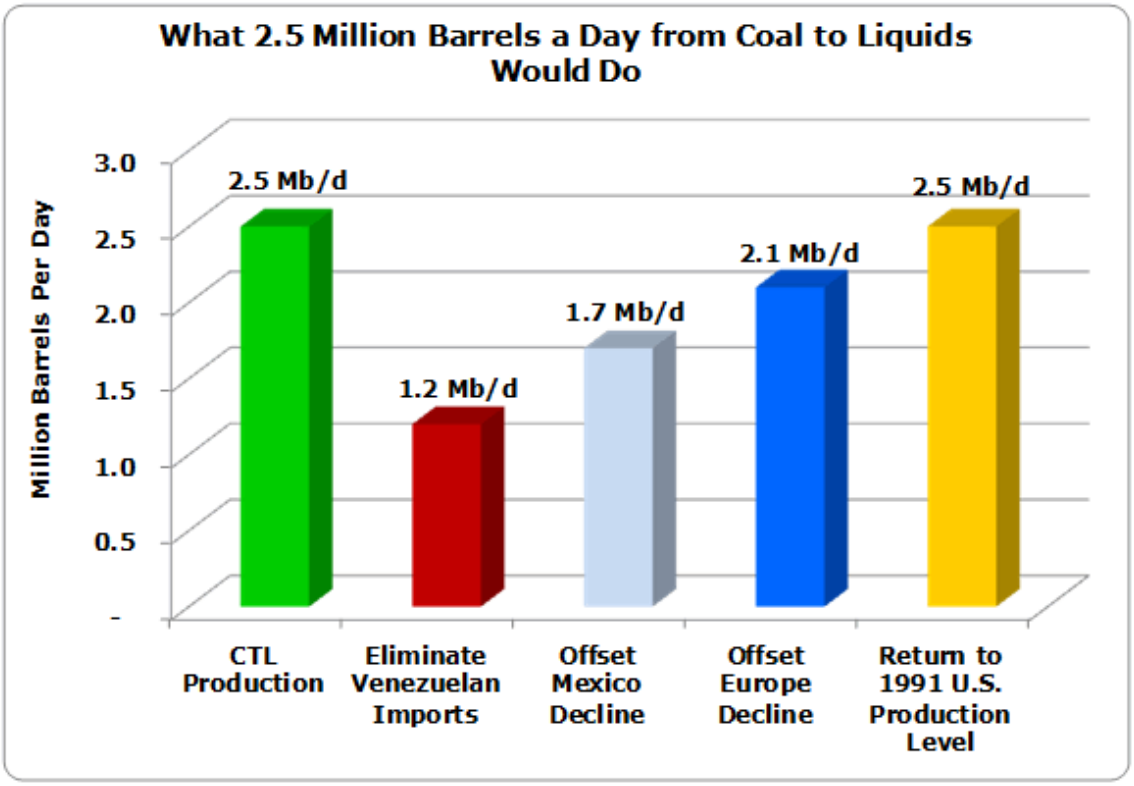
(Continued from front)

America's energy security can be greatly enhanced by converting coal to liquid fuel (CTL):

The Academy concluded that CTL could yield 2-3 million barrels of liquid fuel per day:

"Coal-to-liquid fuel production, with or without CCS, is the least expensive option for producing alternative liquid fuels." [1]



The coal resources are there. Over 25% of the world's coal is in the United States:

> "U.S. recoverable reserves of coal are well over 200 times the current annual production of 1 billion tonnes, and additional identified resources are much larger. Thus the coal resource base is unlikely to constrain coal use for many decades to come." [1]

References:
[1] National Academy of Sciences, America's Energy Future, July, 2009
[2] Steven Chu, USDOE, October, 2009
Note: 2035 electricity data extrapolated from EIA's 2030 forecast, http://www.eia.doe.gov/

About Frank Clemente, Ph.D.

Dr. Clemente is a Professor at Penn State University where he specializes in research on the socioeconomic aspects of energy policy. His work has appeared in *World Oil*, *Public Utilities Fortnightly*, *Oil and Gas Journal* and a variety of other energy related media. *The materials presented here are solely the responsibility of the author and do not represent Pennsylvania State University in any manner.*