Subject the renewable energies and serious reconsideration of Natural Gas. .

In a time when New York State is faced with a budget deficit and one of the largest segments of that budget are Medicaid costs, it is important that resources are spent wisely.

The hydro facking method of drilling for Natural Gas is dangerous for the water resources, the environment, and the health of New York residents. The economic benefits have not been proven because true costs of extraction have not been figured into the calculation. I believe, before beginning to commit to such a practice, buildings and infrastructure should be updated. There is much leakage of our resources including the fossil fuels(an example would be the open windows of apartment houses in New York because the room are hot and dry). Our infrastructure is old and needs replacing. The construction job skills are available and more can be trained if need be. After we retrofit and plug our leaks then the state should examine its energy needs.

To proceed cautiously and fixing our immediate needs rather than full speed into another fossil fuel enterprise such as natural gas, is the road to take.

I attach a series of links from Stanford University on a peer reviewed paper that renewable energies are available now, what is needed is the political will to truly begin to build necessary living environment for New York's the 21st century.

I attach an article by Arthur Berman explaining how Natural Gas will disappoint economically and an article explaining the waste and large carbon footprint ,we have in our energy usage.

Margery Schab

http://www.postcarbon.org/reports/PCI-report-nat-gas-future-plain.pdf
http://www.theoildrum.com/node/7075

Study: By 2030, world can run on renewables

by Candace Lombardi

http://news.cnet.com/8301-11128_3-20029784-54.html#ixzz1CIUeLdjn

Scientists from Stanford University and the University of California at Davis have crunched the numbers and come up with a plan for how the world might economically and feasibly make the move to renewable energy in the next 20 to 40 years.

In a two-part paper (Part 1 PDF[1], Part 2 PDF[2]) published in the journal Energy Policy, Mark Z. Jacobson and Mark A. Delucchi show in great detail the who, what, where, and how of implementing a renewable energy-run world. It includes solutions to economic, material, and transport issues.

Jacobson, an atmospheric scientist and professor of civil and environmental engineering, is director of Stanford's Atmosphere/Energy Program and senior fellow at the Woods Institute for the Environment and the Precourt Institute for Energy. Delucchi is a research scientist with a background in economic, environmental, engineering, and planning of transportation systems at the Institute for Transportation Studies at U.C. Davis.

This latest study is an in-depth analysis of a plan originally put forth by Jacobson and Delucchi and published in the November 2009 issue of Scientific American[3].

The most interesting determination made as a result of the team's due diligence to the world of energy creation and use was just how much energy the world wastes producing and transporting other energy. The scientists estimated that the world could reduce its overall energy demand by as much as 30 percent just by transitioning away from combustion processes to more efficient electric processes for producing energy and hydrogen fuel cells.

Jacobson and Delucchi claim that the world's energy could be originated from 50 percent wind, 40 percent solar, 4 percent geothermal, 4 percent hydroelectric, and 2 percent wave and tidal power. They also agree that financial incentives and management systems aimed at conserving energy during peak demand times would be key.

Much of the plan revolves around the use of electricity and hydrogen fuel cells. That hydrogen would be produced by electricity which could be generated from wind and solar power.

The duo breaks down, step by step, which energy would be most efficient for a given use and how their idea of a world using renewable energy could work:

? Vehicles, train, and boats would run on electricity and hydrogen fuel cells.

? Airplanes would run on liquid hydrogen.

? Home heating and cooling systems would run on electricity.

? Hot water would be heated by solar.

? Commercial processes would run on a combination of electricity and hydrogen.

They address the intermittent nature of wind and solar in their plan as well. The study determines that wind and solar really could provide for the bulk of the world's electricity production needs as

long as they were connected to a grid with non-variable supplements like hydroelectric power.
But all of this change hinges on one very big component being successful. It's a recommendation that will likely have smart grid hardware and software executives dancing in their chairs when they read about it:
"With a system that is 100 percent wind, water and solar, you can't use normal methods for matching supply and demand. You have to have what people call a supergrid, with long-distance transmission and really good management," Delucchi said in a statement.
The plan drills down into what it would really take to for implemention including: the number of wind turbines and rooftop photovoltaic cells that would have to be manufactured; how many geothermal, hydroelectric, tidal and wave energy, and solar plants would have to be built; how much of each earth element would need to be sourced and mined; and the costs of transmission and kilowatts produced by each source.
"The actual footprint required by wind turbines to power half the world's energy is less than the area of Manhattan," said Jacobson. Jacobson noted that most wind turbines could be placed offshore, and that others could be implemented on land already used for agriculture as is already the case with many large-scale land wind projects in the U.S.

Jacobson and Delucchi have created an online interactive presentation[4] that explains some of the details of their proposed plan, as well as several other detailed reports, presentations, and a spreadsheet detailing their calculations (Excel file[5]). They can be found here[6].
Links:
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[1] http://www.stanford.edu/group/efmh/jacobson/Articles/I/JDEnPolicyPt1.pdf
[2] http://www.stanford.edu/group/efmh/jacobson/Articles/I/DJEnPolicyPt2.pdf
[3] http://www.scientificamerican.com/article.cfm?id=a-path-to-sustainable-energy-by-2030
[4] http://www.flypmedia.com/issues/plus/23/#1/1
[5] http://www.stanford.edu/group/efmh/jacobson/Articles/I/WWSEnergyPolicy-Spreadsheet.xls
[6] http://www.stanford.edu/group/efmh/jacobson/Articles/I/susenergy2030.html
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