

Dear Paul DeCotis,
Energy Planning Board,

As you are aware, the priorities of Executive Order Number 2 are as follows: a “diversity of fuel supplies; (ii) protection of public health and safety; (iii) the needs of vulnerable communities; (iv) consumer cost impacts; (v) the relative economic competitiveness of the State; (vi) the State’s natural resources, (vii) the reduction of greenhouse gases; (viii) energy conservation and efficiency; (ix) clean and renewable energy resources; (x) the maintenance of reliable electric and natural gas systems.”

In accordance with these explicit objectives we believe that you have an obligation to make sure that New York places all future energy investments in clean, renewable energy. To best meet these objectives, reliance on nuclear energy and coal need be phased out, natural gas use brought to a minimum, hydropower maintained and wind and solar energy maximized while emerging sources of energy, such as geothermal, are kept in consideration. Only this will provide New York with a “diversity of fuel supplies” while protecting the health of the public, reducing greenhouse gases, relying on our own natural resources and taking into account long term consumer cost impacts.

Nuclear energy currently provides New York with 26% of our electricity from six nuclear energy reactors at four plants. Of these, Indian Point 2 and 3 in Buchanan, NY will expire in 2013 and 2015, respectively. The Nuclear Regulatory Commission has accepted applications to renew Indian Point’s license. Please do not let this happen. Even if Indian Point was a “safe” source of nuclear energy (which it is not; in August 2005 Indian Point 2 was leaking about two liters of radioactive water a day. While the NRC and EPA have stated that this was not a health risk, the EPA also deemed potential radiation levels at Yucca Mountain to be safe, a decision that was later ruled to be inadequate and illegal!), nuclear energy in itself is ultimately extremely dangerous because there is no satisfactory way to dispose of nuclear waste.

Currently the only long term storage solution that is even potentially acceptable is to bury spent fuel rods and other waste deep underground. Some scientists say that Yucca Mountain, the proposed burial site, should never be allowed to open because there are too many risks. These include the possibility of rock fractures and cracks in the ground that would leak water and corrode the storage containers and also the fact that the rain that seeps into the mountain each year could carry radioactive waste into drinking water. We currently have no safe solution to nuclear waste disposal, and there is no guarantee that any future proposals would be able to last the necessary 10,000 years it takes for radioactive waste to become safe. Because of this the re-licensing of current nuclear plants or the creation of new nuclear plants is in direct opposition to Executive Order Number 2.

Coal provides New York with 13% of its electricity. While the U.S. Geological Survey has predicted that coal could last the world for up to 1,125 years, and the United States could supply itself with coal for 300 years, if U.S. coal use increases exponentially by 4% a year, as predicted by the coal industry, we will run out in 64 years.

Also, while all coal mining is environmentally degrading, mountain top removal is the worst method used. Right now many of New York’s coal powered plants get their

coal from mountain top removal sites, including Trigen Syracuse Energy owned by SUEZ Energy Resources NA Inc in Syracuse.

Mountain top removal is a form of mining that first strips a mountain of all vegetation and topsoil, dumping this down the mountain. The top of the mountain is then detonated, and the debris is again dumped down the mountain. Next the coal is washed, creating coal sludge containing coal dust, clay and toxic chemicals such as arsenic, mercury, lead, copper, and chromium.

All of this debris and sludge are causing serious health problems for people living near the 470 Appalachian Mountains that have already been destroyed. Problems include liver failure, gall bladder problems, hair loss, and asthma. These people are not residents of New York but they are still people. This is not an industry that New York should support.

In the U.S. coal also causes 23,500 premature deaths annually, 38,200 non-fatal heart attacks, 554,000 asthma attacks, and billions of dollars in property damages. It accounts for ¼ of toxic mercury present in the atmosphere and releases more radioactive particles than a normally functioning nuclear reactor.

This past summer Governor Patterson came out in support of a new “clean” coal powered plant in Jamestown even after a similar project at the Huntley Plant in Tonawanda had to be cancelled because it was financially impossible. Furthermore, as stated on Governor Patterson’s website, “component technologies of CCS – carbon capture technology and sequestration technology – have been proven independently, they have never been proven to work in concert on the scale of a commercial power plant and over a long period of time,” meaning that this is a project proposing to use unproven and therefore unreliable technology. It is a project with absolutely no guarantee for success. Please do not spend \$6 million of precious state dollars on a potentially worthless project. This project is in direct opposition to Executive Order Number 2 in terms of the protection of public health, consumer cost impacts, the reduction of greenhouse gases, and the use of local resources, as coal is not a local resource.

Currently natural gas is used in a wide variety of roles which include powering generators, heating buildings, and creating consumer products. This energy source makes up 25% of energy used in New York. Right now this is acceptable because natural gas is still an abundant resource. However, natural gas is a by-product of oil meaning that as oil becomes scarcer and less economically feasible, so will natural gas.

Overall natural gas is a positive and clean energy source; however, no matter what you burn it will always leave some form of pollutants behind in the air, and in the case of a power plant, as heat in water. This heat can disrupt wildlife migratory patterns, egg laying, and in some extreme cases even kill wildlife.

Because of this natural gas is an excellent back up power source but it cannot ultimately be relied on as a stable source of energy. Maintaining natural gas power generation facilities is important, as outlined in Executive Order Number 2; however, this should not be the main priority.

Instead New York needs to focus on already established clean technologies such as hydroelectric, solar and wind power. Hydroelectric power is being used in many different countries and is reliable. This energy source makes up 18% of the energy used

in the New York. The energy is captured through the use of a dam that builds up water in a reservoir behind it, and then is released to create energy through the use of turbine generators. This is good because the water is renewable and a clean source of energy. However, it's also bad in that the reservoir can take up a large amount of land and may therefore displace many people and destroy many animal habitats and possibly some animals through the disruption of migratory patterns.

The only other downside to this is that in some areas there is not an excess of water so this technology cannot be implemented everywhere. Some places in New York that are currently using dams are the St. Lawrence-Franklin D. Roosevelt Power Project, the Niagara Power Project, Blenheim-Gilboa Pumped Storage Power Project, and Small Hydro Projects. Responsible management and maintenance of these facilities is very important to maintaining a clean and diverse energy supply for New York.

Solar power can be used in many places where nuclear energy or coal currently is used. It can also be used in conjunction with the national grid in a cost efficient way. Solar energy has been proven effective in heating, cooling, lighting, electricity, and hot water generation through use of photovoltaic systems and passive systems. Passive systems can be easily installed with little cost. These systems use a greenhouse heating effect. This means windows are placed on south-facing walls. They absorb the heat and transfer it inside. Fans and concrete floors can move the heat to the rest of the house. Variations of this can be used to store the heat or even cool the house through the use of desiccant systems.

The photovoltaic system is more common. It uses solar cells to generate DC power, which can be converted to AC power to use in homes for electricity, lighting, or heating. A four-inch cell can produce one watt of energy. Imagine the power that can be produced when a roof is covered with hundreds of these cells instead of shingles. A fixed system, such as that on a roof, or a tracking system can be used.

A tracking system, although more expensive, can generate more electricity since it follows the sun's path throughout the day. Placing the panel on a one- or two-axis design does this easily. One-axis designs follow the sun's path throughout the day while two-axis designs follow the sun as it moves throughout the day and the seasons. When connected to the grid the panels can generate electricity. Since solar power only collects what is naturally radiated from the sun, it does not pollute air or water resources. Only a minor amount of cadmium and arsenic are produced as a by-product and these are carefully recycled or disposed of properly.

Just as traditional sources of power are made financially viable through various forms of government subsidies, solar power, at least until it becomes more widely used, is greatly benefited by government financial assistance. Right now tax credits and net metering help, but for many New Yorkers solar power is still expensive. However, you can make it economically feasible.

Similarly, wind power, especially as the technology continues to develop, needs to be kept in mind. Fenner Wind Farm, near Syracuse, is an excellent example of a developing wind farm. While the project isn't perfect, it will ultimately generate enough power for 7,000 homes. Right now the turbines need to be shut down when the wind gets too strong, forcing us to lose tons of electricity, but as research continues, this technology becomes more efficient.

Right now solar power and wind power account for less than 1% of New York's electricity. This is not representative of a diversity of fuel supplies. All fossil fueled electricity as well as nuclear power is ultimately bad for the health and safety of New Yorkers. As fossil fuels run out, whether this happens in 10 years or 100 years, they will become less and less economically feasible and therefore more economically harmful to New Yorkers. Investment in clean and renewable energy is the only way to truly follow through with the objectives set forth in Executive Order Number 2.

As the class of Biology 225 at Le Moyne College, we are the future of New York and this issue is extremely important to us. Thank you for hearing our opinions and considering safer and greener energy alternatives. Please email a response to maggijt@stu.lemoyne.edu.

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