

# Cape Clean Air

March 31, 2003  
Attorney General Thomas Reilly  
1 Ashburton Place, 20th Floor  
Boston, MA 02108

Dear Attorney General Reilly,

Residents of Cape Cod deeply appreciate your past and continuing efforts to reduce air pollution in Massachusetts, particularly from the so called “Filthy Five” coal and oil burning power plants. In your editorial article published in the Cape Cod Times (May 22, 2000) titled “Fighting for the air we breathe” you said: “According to a recently released study by Harvard researchers, two Massachusetts power plants alone are causing some 159 premature deaths per year. And that is on top of thousands of avoidable asthma attacks and emergency room visits per year.”

At the end of that article you rhetorically asked: “Given the health impacts at issue, the citizens who live downwind of these power plants should not have to wait another decade for an end to the pollution. How many people are going to die or face respiratory problems in the interim?”

That is why, for many of us who live downwind from the Canal Plant in Sandwich, one of those “Filthy Five,” it seems so utterly incongruous that you would support a moratorium on the proposed offshore wind farm on Nantucket Sound.

## **On Health Effects**

Certainly you must realize that the addition of pollution free wind energy will displace the equivalent power generated by coal and oil fueled plants, thereby reducing harmful emissions linked to disastrous health effects.

Indeed, the proposed wind farm will generate approximately 1.5 million megawatt-hours of pollution free electrical energy every year. Since electrical energy can't be stored in the grid, this wind energy will displace that equivalent power generated by other fossil fueled plants in New England. For example, the two power plants you note in the Harvard study, Salem Harbor and Brayton Point, annually generate about 4 million and 9 million megawatt-hours respectively.

By simple calculation the energy produced by the offshore wind farm could potentially replace 10 percent of those plants' combined output, resulting in a equivalent reduction of the plants' polluting emissions, and hence a commensurate decrease of their detrimental health effects.

Using data from the Harvard study, we can answer your rhetorical question of how many people are going to have to die or face respiratory problems in the interim... in this case, the interim of waiting for resolution to *your* moratorium for all offshore wind farm development.

In a linear extrapolation of the Harvard data I calculate that that approximately 15 premature deaths, some 5,000 asthma attacks, 45,000 restricted activity and respiratory symptom days and other related maladies could be eliminated each year if the wind farm is constructed. In addition to relieving human suffering and loss of family members, the yearly monetary savings amount to about \$90 million dollars, primarily based on the EPA value of a human life.

These calculations have been validated as reasonable by Dr. Jonathan Levy, Assistant Professor of Environmental Health and Risk Assessment, an author of the Harvard report you quoted. The outcome would be comparable for the back-off of any other coal or oil fueled plant or combination thereof since their polluting emission rates are similar.

### **On the Environment**

Next, consider the wind farm's impact on offsetting power plant emissions. Using ISO New England's formulas for marginal emission rates, we calculate that the reduction of carbon dioxide resulting from the insertion of this wind energy would be over one million tons every year. That's comparable to one-fifth of the emission from Mirant's Canal Plant, the second largest in the state. Consequences of increasing amounts of carbon dioxide on global warming are understood and reductions are called for by the world's scientific community in the Kyoto Protocol. At a recent forum organized by the Massachusetts Technology Collaborative in Barnstable, Stephen Burrington, then Vice-President of the Conservation Law Foundation said: "Time is of the essence," referring to the urgent need to begin efforts on curbing carbon dioxide. The impact of anticipated sea level rise on the Cape was vividly portrayed on maps depicting areas of future submerged land mass.

In addition to carbon dioxide, we calculate 4,600 tons of sulfur dioxide, and 1,400 tons of nitrogen oxides per year will be eliminated. These sulfur and nitrogen oxide pollutants form fine particulate matter in the atmosphere with concentrations greatest within five to twenty miles downwind of the source (not from the midwest) and are the central cause of the health effects noted in the Harvard Study.

### **On Energy Consumption**

Mr. Reilly, in a recent talk at the Cod Chamber of Commerce legislative breakfast you said that the amount of energy from the wind farm, best case, would perhaps meet the need of half the Cape and Islands. May I correct your numbers with substantiated data. The average power output of the wind farm is expected to be 170 MW. NStar has said the year around average consumption of power the Cape and Islands is 230 MW. Therefore, the Nantucket wind farm will contribute essentially three-quarters of the annual energy consumed on the Cape and Islands, not one-half.

At that same talk you asked rhetorically: "Where is it [the wind power] going to go? Is it going to Hyannis, Martha's Vineyard, Nantucket?" You answered your own question by saying: "No, the electricity goes into a grid... and just as likely it will end up in Maine... or New York." Again, your comment needs correction to dispel this gross misconception for the public.

It is true that the wind power will go into the Cape Cod grid at the Barnstable insertion point. But by the laws of physics, that power will be expended first on the Cape and Islands unless the wind farm is generating more than is consumed on the Cape and

Islands. In that case, the excess will be exported in the transmission lines across the canal. These facts were verified by Charles Salamone, NStar Director of System Planning, at a stakeholder meeting in Hyannis sponsored by the Massachusetts Technology Collaborative.

Who buys the power on the grid is a complex contractual agreement between merchant power plant owners and consumers. In other words selling and buying arrangements are an accounting procedure. Once electrons are inserted on the grid they know not where they come from and are pushed along by an electromotive force (from the wind farm) to the nearest load, in this case, to the Cape and the Islands.

### **On Public Resources**

Mr. Reilly, you also asked: “Is renewable energy so important that we are going to turn over 28 square miles of public space over to private developers for nothing, nada, nothing?”

The argument that wind farm may well be distributed over [now] some 24 square miles is somewhat disingenuous. Each 16 foot monopole occupies only 200 square feet of sea surface. The sum of 130 such poles is considerably less than one acre, about the same area as an oil tanker that serves the Canal Plant or a wharf in public space that accommodates commercial fishermen. Since there are no restrictions on boating, sailing, or fishing between and among the wind turbines, this loss of an acre of sea surface is a small sacrifice to ensure the benefits of pollution free power.

With respect to the question of free use of public space, I would put that argument in perspective and balance it with a current activity in our federal waters, namely the fishing industry.

The fishing industry is mining the ocean, that is seeking and removing a valuable public resource. This enterprise is emptying the fisheries of the northeast region to the point of impending depletion. In fact, new rules may shut down the cod fishery. In addition, trawlers rake the seabed every day dragging nets with chains that harm a wide variety of sea-life and sea-grass habitat to harvest bottom fish. Archeological artifacts on the bottom are disturbed and in some cases hauled up, including a live WW II torpedo off Race Point. Thousands of lobster trap buoys and lines are a hazard to navigation of small craft sometimes fowling propellers. And indeed, it is ship strikes and fishing gear that entangles and kills whales, not wind turbines monopoles.

This fishing business is a one-billion dollar industry in the northeast coastal states. Of that, \$280 million dollars is from Massachusetts alone. And the cost to the private fishermen for their federal permits to take this public resource Mr. Reilly? Nothing, nada, nothing!. The fish in federal waters are free for the grabbing. Now, compare the fishing industry and its detrimental environmental effects to the wind farm enterprise which removes nothing from the sea and will provide the majority of the electrical energy needs for the Cape and Islands with pollution free renewable power. The balance is obvious.

### **On National Security**

In your talk to the Cod Chamber of Commerce you said renewable energy is important for our national security. Here I would agree. Consider again the Canal Plant as a case in point. For example, if the wind farm output of 1.5 million megawatt-hours a year were to

offset one-quarter of Canal's production of 6 million megawatt-hours, it would save burning over two million barrels of imported oil every year. That's equivalent to four tankers the size of the Prestige that recently sank off the coast of Spain. And it would certainly be a step in reducing our reliance on imported oil as well as helping to decrease payments by at least \$60 million dollars to foreign suppliers. Of course, Canal alone won't be backed-off, but certainly a combination of fossil plants will be, several of which burn oil.

### **So Who Makes the Choice?**

Mr. Reilly, you also mentioned that you'll be sitting down with Congressman Delahunt's staff and Sen. O'Leary's staff and look at the coasts to see where the best places are for wind power. What will your criteria be? Will it be based on technical considerations such as wind resource, water depth, and wave height, or on the nebulous criteria of who's view is most valuable or diminished?

Instead, I would suggest you sit down with competent wind energy professionals such as Professor Jim Manwell of the Renewable Energy Lab at UMass Amherst and Dr. Bruce Bailey, President of AWS Scientific, a specialist in renewable energy.

These experts have made presentations at the Massachusetts Technology Collaborative public outreach meetings in Hyannis and their indications point to Nantucket Sound as the optimum site. Even the U.S. Army Corps of Engineer's preliminary examination of alternative locations in New England reveal that engineering screening criteria point to the Sound as the most technically feasible location that would allow a reasonable return on private investment.

The matter of who's view is most in jeopardy is entirely subjective and debatable. One can argue that all ocean views, be it the Vineyard Sound off Falmouth, Buzzards Bay, Cape Cod Bay, Cape Ann, etc., are all equally exquisite. The point remains, that even if those vistas are somehow less important to some eyes, that those alternate locations lack one or more of the technical criteria that verify Nantucket Sound to be the optimum location for such a wind farm.

### **The Answer to Your Question, Rescind Your Call**

In light of these arguments and the enormous societal benefits to the residents of the Cape and the New England region, I ask you to rescind your call for a moratorium and let the intensive permitting process continue. To quote yourself: "We have long known air pollution is the is the single biggest environmental health threat that we face today." The connection to the wind farm is inextricably linked. To address your original question: "How many people [living downwind of power plants] are going to die or face respiratory problems in the interim?" Indeed, the compelling answer is: 15 premature deaths, some 5,000 asthma attacks, and 45,000 restricted activity and respiratory symptom days each year *your* moratorium is in effect.

Respectfully,  
Charles W. Kleekamp, P.E., Ret.  
Director, Cape Clean Air