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## Emerging “Greenomics” and the Future of Nuclear Power

While Kermit the frog complains that it's not easy being green, the lament for nuclear power has been that it is not easy becoming green. This is despite its definite environmental advantages and President Bush going so far as to dub nuclear power a renewable earlier this year. However, given an emerging trend in environmentalism, this all might start to change.

The trend is for the green revolution to embrace market forces as discussed in a recent editorial in *The Economist* (April 23, 2005, p. 11). *The Economist* likens this development to Rachel Carson joining hands with Adam Smith, where “command and control regulations” are replaced with “incentive-based greenery,” such as carbon-based emissions trading. (To take the analogy about as far as it can go, we can imagine that Ms. Carson is holding Mr. Smith's invisible hand as they walk along the silent spring.)

This change has particular relevance to nuclear power. *The Economist* notes that Europe's greens tend to “demonize any complex technology” such as next-generation nuclear plants and opines “(a) more sensible green analysis of nuclear power would weigh its (very high) economic costs and (fairly low) safety risks against the important benefit of generating electricity with no greenhouse-gas emissions.”

Now, the past views of *The Economist* toward nuclear power have not been favorable because the magazine believed that nuclear power was too costly relative to other energy sources. While it is not taking a position on nuclear power in this editorial, *The Economist* is acknowledging an important benefit of nuclear power, and suggests that a cost-benefit analysis is in order. The breakthrough here is the ability to quantify the environmental benefit. We knew that it existed, but until it was quantified, the type of cost-benefit analysis that *The Economist* cites could not be performed.

Cost estimates show that benefit of forgoing greenhouse gases is likely to be quite substantial. A recent study by the British economics consultancy Oxera shows that in order to cut greenhouse gases by the desired amount, it would cost the British taxpayers 4.4 billion pounds if this were done by building more nuclear plants, versus 12 billion pounds if Britain were to rely on traditional renewable energy, such as wind power. This results a difference of 7.6 billion pounds or about 15 billion dollars.

The ability not just to quantify the benefits of nuclear power in this way, but to levy these costs, is crucial to making the green case for nuclear. This view was expressed by the WNA's John Ritch in an op-ed piece appearing in *The Washington Post* last week, when he stated “(o)nce governments begin to impose a real price on environmental damage – through emissions trading or carbon taxes – the balance will decisively tilt toward nuclear.”

But something else is happening as well. As the debate turns to the treatment of externalities (global warming, etc.), nuclear power benefits in another way. We all know that one of the biggest “problems” associated with nuclear power has been addressing the waste issue. However, all energy sources have waste, and much of this waste is spewed into the atmosphere, unlike the case with nuclear waste.

In the world of avoiding externalities and their associated costs, the ability to confine waste suddenly becomes an asset for nuclear power. Mr. Ritch recognizes this when he states in his op-ed “(i)n truth, waste is nuclear power's greatest comparative asset. Unlike carbon emissions, the volume is minimal and can be reliably contained and managed.”

Thus, the fact that you have to confine and isolate nuclear waste, which would seem to be a huge negative for nuclear power, becomes a positive when it is recognized that you can confine and isolate it. Contrast this not just to carbon gases, but mercury, which is released into the atmosphere when burning coal. By not containing it, the mercury ends up in fish and ultimately in the people that eat the fish, representing a classic example of an externality.

It may turn out to be one of the great ironies of nuclear life if those aspects of nuclear power which appeared to be the biggest negatives turn out to be the biggest positives, and the biggest positives turn out to be the biggest negatives. To wit, it is now easier to write a cover story extolling the virtues of nuclear waste than nuclear fuel, particularly uranium, whose cost has increased four-fold since the beginning of the decade and shows no sign of slowing down.

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