

## **Comments on Environmental Challenges and Opportunities of the Evolving North American Electricity Market, CEC, November 5, 2001**

It would be a great mistake to promote increased cross border trade in electricity without incentives that favor electricity produced with fuels or with generation plant designs that minimize or eliminate carbon dioxide emissions - as well as the emissions of other toxins like mercury, dioxins, sulfur dioxide and, nitrogen oxides.

There is a need to address the following considerations in any program aimed at electric power trade:

- 1) Curtailment of Fuel Waste Should Be Incentivized: As Thomas Casten of the Trigen Energy Corporation has illustrated in detail, conventional power plants that are located remotely from the consumers of the electric power, waste 67 percent of their fuel heat, and convert only 33 percent of their fuel into electricity. That is because the waste heat cannot be used for other purposes, and is discharged into the environment. In comparison, a combined heat and power plant (CHP), that is located near to the customer, allows the generator to use the waste heat for electricity, steam, and chilled water. Only 10 percent of fuel is wasted where the waste heat can be used.

The percentage of waste heat discharged from fossil fuel electric power plants is proportionate to the pollutants that are discharged from these same plants. These pollutants will cross country boundaries, and complicate and increase the expense to taxpayers of achievement of cross boundary agreements to control mercury, dioxin, acid rain, greenhouse gases and other pollutants. In short, business as usual involves a substantial incentive for energy waste. To counter this, there is a pressing need for a directed incentive program to favor cross boundary electricity trade from electric plants that use their waste heat, rather than discharging it into the environment. (Casten, Thomas, Turning Off the Heat: Why America Must Double Energy Efficiency to Save Money and Reduce Global Warming, Prometheus Books, 1998)

- 2) Green Power Should Be Incentivized: Regions of all three nations, such as the Great Plains of the United States, have excellent wind, solar and bio-resource fuel resources. States with such resources have expressed the wish to have extended power grids to distribute their green power. There is a need for a directed incentive program to favor electricity generated from these fuels, compared to fossil fuel sources, so as to recognize the reduced health and environmental costs to NAFTA nations downwind. Taxpayers should not have to pick up the costs of fossil fuel emissions.
- 3) Natural Gas Shortages Need To Be Addressed: The coal fired power plants being built in the United States, such as in Wisconsin, are deleterious to the environmental and human health of Canada. It would be beneficial if these were constructed to burn natural gas instead. However, North America is in the midst

of a terminal cycle of depletion of both petroleum and natural gas. Christopher Ellinghaus of the Williams Capital Group recently predicted that one third of the new power plants planned in the United States will not be completed because of a shortage of natural gas. The reserves do not exist to solve this problem. (Haryan S. Byrne, Too much power? Barrons, Aug. 6, 2001) Others have commented on the same issue. Simmons and Pursell point out that newer gas wells in the Gulf of Mexico are now showing 45 percent depletion in the first year. (Simmons, MR and DA Pursell, Depletion: The forgotten factor in supply and demand – some areas now hitting 15-20%, Offshore, Feb. 1999) Even Canada's reserves are beginning to show the strain of supplying the wasteful energy markets of the United States and Canada.

- 4) Address of Global Warming Also Requires Reduction of Electricity Waste: The governors of the New England states and the premiers of the eastern Canadian provinces in August 2001, agreed to reduce greenhouse gas emissions to 1990 levels by the year 2010, by 10 percent below that by 2020, and within several decades, to cut emissions 75 to 85 percent below current levels. These states and providence have also pledged to substantially reduce mercury emissions.

Generation of increased long distance cross boundary trade in electricity without consideration of plant design and fuel type, and the incentives needed to reduce emissions as discussed, would undermine this multi-state and province greenhouse gas cross-boundary compact, as well as deleteriously affect other US-Canadian agreements and treaties to reduce mercury, dioxin, and acid rain cross-boundary problems.

As the discussion paper notes, an environmental impact assessment by the US Federal Energy Regulatory Commission (FERC) prior to the introduction of competition in the US wholesale electricity market underestimated the effect on the use of coal. This type of electricity competition favors coal, rather than green power or distributed power. Furthermore, it has become standard practice at least in the United States to locate new plants next to the existing remotely located power plants because of the reduced regulatory impediments. But, these remote plants have no use for their waste heat.

And so, we can reasonably expect cross-boundary electricity trading, without countervailing incentives to reduce energy waste and promote green fuels, to aggravate the pollution problems and market instability that has become a hallmark of recent electric power generation. Cooperation, coordination and compatibility are not sufficiently robust approaches to this issue.

There is a need for specific negotiated cross-boundary agreements that provide for robust countervailing incentives, such as a tax on exported electricity in proportion to fuel waste or pollution loadings, the returns of which can be rebated to green fuels electric generation, CHP plants, or other similar facilities. Ample precedent exists for such programs, including the rebate of oil overcharges to energy efficiency programs in the United States. In summary, there is a need to specifically recognize the scale of present

taxpayer subsidies of energy waste and fossil fuel pollution in all three NAFTA nations, so as to promote energy efficiency, green fuel substitution, and reduced pollution flow across borders.

Prepared by Erik Jansson, Exec. Dir.  
Department of the Planet Earth  
701 E Street, SE, Ste. 200  
Washington, DC 20003

[planetearth@erols.com](mailto:planetearth@erols.com)  
(202) 543-5450  
Fax: (202) 543-4791