

REVIEW of MAJOR ENVIRONMENTAL and ELECTRICITY ISSUES AFFECTING BIOMASS POWER

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1.0 ENVIRONMENT

This chapter covers the major environmental issues, including air, water, and waste, potentially affecting biomass power development.



1.1 Air

In response to the DC Circuit Court of Appeals' ruling in March, EPA asked a federal appeals court to remove a stay and allow it to move forward with its deadline for states to submit their implementation plans under the NO_x SIP call. If the request is granted, 19 states will have to submit NO_x reduction plans by September and they will have to install air pollution controls by May 1, 2003. (*Air Daily*; www.planetark.org, 4/12/00)

Results from the first year of the Ozone Transport Commission's NO_x cap-and-trade program show that the 912 combustion units surveyed emitted 20 percent less NO_x than allowed under their 1999 allocations. Almost 175,000 allowances were deducted and used for emissions during the 5-month ozone season in 1999, and the region's emissions were cut by more than half since 1990. Due to these results, the Commission is urging midwestern and southern states to not fight EPA's regional NO_x control efforts. (*Air Daily*, 3/29/00)

According to a federal court ruling, EPA cannot use its air monitoring guide and specifically, states cannot use the guidance or EPA's existing operating permit regulations to conduct more monitoring than required under the applicable standard. The court said that EPA tried to expand monitoring activities by using guidance rather than a rule. Industry groups are happy with the court's decision, because they say that the agency has been establishing regulations through non-binding guidance, which allows it to avoid the notice and comment requirements associated with rulemaking. (*Inside EPA Weekly—Special Report*, 4/17/00)

The Wisconsin Electric Power Co. (WEPCO) is going to ask EPA to allow it to use the Project XL program to establish a "sector-based" approach to New Source Review requirements in exchange for reducing air pollution over a period of years. Project XL was designed to reduce the regulatory burden on industry in return for improved environmental performance. WEPCO is offering to create a long-term strategy for reducing NO_x, SO₂, particulate matter, and mercury, instead of being subject to emissions mandates. EPA has not yet received the proposal and is "far from approving it." (*Inside EPA Weekly*, 4/14/00)

After several months of discussion, utility officials have given up on efforts to create a broad voluntary "off-ramp" that would have provided flexible New Source Review requirements in return for agreeing to set new limits for pollutants. Officials could not agree on the timing of the cuts, the severity of the pollution reductions, or the list of pollutants in the plan. (*Inside EPA Weekly*, 4/14/00)

EPA and the Chicago Board of Trade announced that the 8th annual acid rain allowance auction generated more than \$25 million. Each allowance authorizes a power plant to emit one ton of SO₂ in a designated year or any year thereafter.

Source: ENS, 3/30/00

Sens. Voinovich (R-OH) and Breaux (D-LA) introduced a bill that would require all new or revised CAA regulations to undergo a mandatory cost-benefit analysis. Environmentalists are strongly opposed to the bill and are expected to fight it this legislative session. (*Air Daily*, 4/7/00)

Seven universities have been awarded EPA grants to study the health impacts of fine particle pollution. EPA will give \$22.55 million to: University of California (\$3.5 million); Washington University (\$3.5 million); University of Texas (\$3.65 million); UCCSN/Desert Research Institute (\$1.6 million); State University of New York (\$3.5 million); Carnegie Mellon University (\$3.4 million); and University of Maryland (\$3.4 million). (*Air Daily*, 4/5/00)

A poll conducted by the League of Conservation Voters found that 71 percent of the respondents were “extremely” or “very” concerned about clean air and water issues. These environmental issues came in second after education (73 percent) but ahead of health care (70 percent) and taxes (59 percent). Around 77 percent of the voters said they support either stricter government environmental regulations or stronger enforcement of current laws, but only 42 percent believe that the government “does the right thing” on the environment. (*Air Daily*, 4/12/00)

1.2 Water

A federal judge has ruled that EPA and the states have the authority to identify which waterways are polluted by nonpoint sources of pollution and to decide the maximum amount of pollutants that can enter these waterways. The American Farm Bureau Federation and other agriculture and timber groups had filed suit claiming that EPA and the states should only be able to make these determinations for pollutants from point sources (e.g., discharged from pipes), but the court ruled that the CWA is designed to protect waterways regardless of the pollution sources. (www.gnet.org, 4/6/00)

1.3 Waste

EPA may list some fossil fuel combustion waste as hazardous. If it decides to do so, the waste would be subject to strict Resource Conservation & Recovery Act (RCRA) disposal requirements. In 1993, the agency listed some of these wastes as hazardous, but had to make a determination on the remaining waste this year. In 1999, EPA made a tentative recommendation that the remaining wastes would be determined as non-hazardous. However, EPA now believes that there is enough evidence that the waste poses a potential threat, so it plans to list most coal combustion waste subject to RCRA Subtitle C regulations when land disposed or used in coal mine filling. This would include “large-volume coal combustion wastes” from utilities and non-utilities, petroleum coke combustion wastes, and wastes generated by the combustion of coal and other fossil fuels together. EPA says that it is looking to regulate these wastes on a contingent listing basis which means that when they are managed in certain ways, they can be disposed of under less strict requirements. The most controversial part of EPA’s draft is the possibility that EPA may establish national management standards for handling the wastes. This will cause facilities to treat the waste as hazardous in most cases, out of fear of future liability under RCRA; one industry source says that as a result, “Nobody is going to touch this stuff.” (*Inside EPA Weekly*, 4/7/00)

1.4 Miscellaneous—Renewable Energy

A study by EIA finds that wind, solar, and biomass have “great potential” to provide power on some Native American lands. Fifty percent of the Native American population lives on 61 reservations/tribal jurisdictions, which appear to have renewable resources that can be developed for a levelized cost of 2 ¢/kWh above regional wholesale prices. This cost excludes transmission costs needed to connect the plant to the regional grid. Biomass was found to be the cheapest resource in 52 of the 61 areas and wind was found to be the cheapest resource in the remaining nine areas. (*Solar & Renewable Energy Outlook*, 4/15/00)

A demonstration by BG Technologies, Inc. showed that chicken litter can be successfully recycled into fuel and fertilizer. The company used chicken litter that was dried and turned into cubes in its gasification system, which produced a clean gas comprised of methane, hydrogen, and others. In May, the company plans to begin conducting a long-term test that enables the complete recycling of chicken litter and fertilizer. (EIN, *Renewable Energy Today*, 4/24/00)

Under two new government initiatives, farmers will be eligible to collect up to \$560 million for protecting environmentally sensitive land near the Chesapeake Bay and throughout the country. Pennsylvania, Maryland, Virginia, and Delaware will offer incentives to landowners to prevent soil erosion and runoff into the Bay; if all 100,000 acres are enrolled, payments would total \$210 million. Agriculture Secretary Glickman also announced \$350 million in payments to encourage farmers to enroll windbreaks, filter strips, grassed waterways, and shelter belts in the Conservation Reserve; it pays farmers an annual rent for idling sensitive land for ten years. This additional money was offered because participation has been falling short of its goals. Farmers can begin offering land for these payments starting May 1, 2000. (www.planetark.org, 4/14/00)

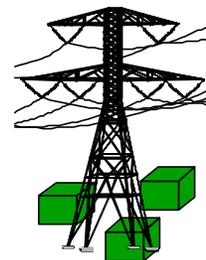
WoodFuel.com has established an online site that links buyers and suppliers of wood fuel products. The company finds local supplies of raw wood material, partners with quality wood processors, and forms alliances with transportation companies to deliver the fuel to customers.

Source: EIN, *Renewable Energy Today*, 4/20/00

SaveOurEnvironment.org is a result of a collaboration among sixteen of the country's largest environmental organizations. The website was designed to provide an easy way for visitors to contact legislators. The project is being funded by a grant from the Turner Foundation. (ENS, 4/21/00)

2.0 RESTRUCTURING

This chapter highlights federal- and state-level restructuring activities, emphasizing the role of renewable power.



2.1 Federal Activity

DOE has become the first federal agency to make a commitment to buy green power. It will buy three percent of its total power needs from non-hydro renewable energy sources by 2005 and 7.5 percent by 2010. To keep costs low, DOE will float bids for its electricity supply; sources say DOE's overall utility bill should not increase. (ENS, 4/21/00)

2.2 State Activities

2.2.1 California

Santa Barbara's City Council has voted to buy 90 percent of its total municipal electricity supply from green power; in doing so, it becomes one of the world's largest direct purchasers of renewable energy. The contract was awarded to clean 'n green and will be worth between \$1.6 and \$1.8 million a year. The municipalities of Santa Monica and Chula Vista have already switched to renewable energy and the cities of Santa Cruz and San Jose are planning to buy green power. (EIN, *Renewable Energy Today*, 4/25/00; ENS, 4/21/00)

Preferred Energy Services Inc. will use the name "Go-Green.com" to sell green power; it used to sell the power under the name "clean 'n green energy." It decided to change the name in preparation for spinning off the renewable energy portion into its own company. (*Solar & Renewable Energy Outlook*, 4/15/00)

2.2.2 New Jersey

GreenMountain.com's Enviroblend power option has been granted the Green-e certification. This is the first chance for the state's residents to buy Green-e certified power. Enviroblend is based on 50 percent renewable energy and 50 percent natural gas and hydro power. GreenMountain.com will also provide the EcoSmart product, which contains one percent of renewable sources. (DOE, *Electric Utility Restructuring Weekly Update*, 4/7/00; EIN, *Renewable Energy Today*, 3/27/00)

2.2.3 Pennsylvania

The General Services Administration (GSA) bought renewable energy for several federal facilities in Pennsylvania. Energy Cooperative of Pennsylvania's EcoChoice 100 product will provide Green-e certified power to the Liberty Bell Pavilion, EPA's Croyden facility, and six other federal facilities in the Philadelphia area. Approximately 2.7 million kWh a year will be needed to power these facilities. (*Solar & Renewable Energy Outlook*, 4/1/00)

2.2.4 Tennessee

On April 22, the Tennessee Valley Authority (TVA) began the Green Power Switch program, which is a green pricing program that will provide electricity from solar, wind, and landfill gas sources. In the initial test phase, customers will be charged a \$4 monthly premium for each 150 kWh block; eight MW will be available via 30,000 blocks. The first-year goal is to enroll 1 percent of the test market, around 8,000-9,000 residential customers, and beyond that, TVA hopes to enroll an additional 10 percent participation

rate from commercial customers. In this initial phase, 12 of TVA's 159 retail distributors will offer the program, and in the second year, 45 more distributors will be able to offer green pricing. Solar will provide 225-250 kW of power, wind will provide 2 MW of power, and landfill gas will provide 6 MW of power. Biomass and low-impact hydropower could be used in the future. The program is being promoted through radio and newspaper ads, bill stuffers, and a billboard. (*Solar & Renewable Energy Outlook*, 4/15/00)

2.2.5 Washington

A new law requires energy producers to disclose their energy sources to consumers. The producers will have to clearly and accurately state "basic information about the sources of power," in the hope that it will encourage the development of green power. (EIN, *Renewable Energy Today*, 4/17/00)

2.2.6 Wyoming

Wyoming Pacific Power is offering the "Blue Sky" program, where customers can buy shares of green power for a few extra dollars a month. One share represents 100 kWh a month. (DOE, *Electric Utility Restructuring Weekly Update*, 4/14/00)

2.3 Miscellaneous

Automated Power Exchange's Internet trading site, the APX Illinois Market, has been opened to green power trading among utilities, power producers, power marketers, and large end users (participants in this Illinois market can also access markets in Ohio and Pennsylvania). Traders can deal in renewable energy through "Green Tickets" which represent the premium buyers are willing to pay for environmentally friendly power. Only electricity generated from wind, solar, geothermal, biomass, landfill gas, and small (<30 MW) hydropower plants can be sold into this market, and buyers can buy any blend of green and brown power, up to 100 percent of either. Green power pricing is separated into two camps: commodity energy, traded and scheduled hourly from generators to end users; and Green Tickets, representing the premium that buyers pay and generators receive. Green Tickets are traded in a yearly market to avoid price fluctuations—buyers can lock in their green premium up to a year in advance. (ENS, 4/24/00)

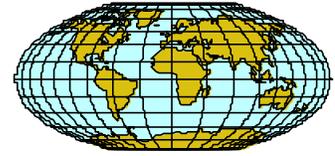
Six of the largest power marketers (American Electric Power, Aquila Energy, Duke Energy, El Paso Energy, Reliant Energy, and Southern Company Energy Marketing) have formed a consortium that will own and operate an Internet-based business-to-business trading platform. Initially, it will focus on electricity and natural gas trading, but eventually it will be expanded to include coal, emissions allowances, oil, and other energy-related commodities. This brokerless system is expected to be up and running by the end of 2000. (*Air Daily*, 4/14/00)

The Center for Resource Solutions (CRS) announced that three companies have met or surpassed national accreditation standards for their green power programs: Wisconsin Electric's "Energy for Tomorrow" program; The Tennessee Valley Authority's "Green Power Switch" program; and Madison Gas & Electric's "MGE Wind Power" program. CRS has accredited all of these programs under its CRS Green Pricing Accreditation Initiative. (EIN, *Renewable Energy Today*, 4/21/00)

Research conducted by XENERGY Inc. concludes that market rules can significantly impact green power markets even when policies and incentives are favorable. The company studied the Texas and New Jersey markets and found that Texas has the potential for a vibrant green power market, while New Jersey has to overcome some roadblocks. In NJ, barriers have been the shopping credits, the credit requirement for alternative suppliers, and the "wet signature" rule, which makes it more difficult to capture customers and raises costs. (<http://news.excite.com>, 3/23/00)

3.0 GLOBAL CLIMATE CHANGE

This section provides an overview of specific country efforts with regard to global climate change and greenhouse gas (GHG) emissions reductions.



3.1 Government Efforts

New Jersey has decided to voluntarily cut GHG emissions 3.5 percent below 1990 levels by 2005. State officials say they are the first state to commit to a specific GHG reduction. Their approach includes: energy conservation, pollution prevention, innovative transportation technologies, recycling and solid waste management, and natural resource protection. The program is slated to get \$320,000 in the FY2001 budget, and it is being supported by various businesses and environmental groups. (*Air Daily*, 4/19/00)

Seattle, WA's City Council has adopted a proposal to become a zero emitter of greenhouse gases. The city will meet its goal by relying on existing hydropower and developing new wind, geothermal, solar and landfill gas facilities, and implementing new energy conservation measures. If fossil fuels are needed to meet energy demand, it will offset the carbon emissions through other means such as forest production. (ENS, 4/13/00)

Denmark said that domestic trading in CO₂ emission quotas will start in 2001; it will be the first program of its kind in the European Union. Under this program, the state will give emission permits for free to power producers based on their emissions between 1994 and 1998. Since the domestic market is small, Denmark is looking to trade with other countries. (www.planetark.org, 3/30/00)

Sen. Lautenberg (D-NJ) is drafting a global warming resolution that would encourage domestic reduction of GHGs while maintaining the Senate's concern about implementing the Kyoto treaty until it is ratified by Congress. Sources say that this resolution could reverse current Congressional sentiment on the issue. (*Inside EPA Weekly*, 4/14/00)

Rep. Knollenberg (R-MI) is offering appropriations language that would permanently bar EPA and other federal agencies from spending money to implement the Kyoto treaty. Environmentalists and some Democratic congressional staff are "outraged" over the new language. One source says it is hypocritical—the point of the Byrd-Hagel resolution was to get more developing countries involved with the Kyoto treaty, but this new language would block the administration's efforts to achieve that goal. (*Inside EPA Weekly*, 4/7/00)

NASA and European Union scientists report that although a long cold winter led to a massive ozone loss in the arctic region, ultimately, man-made pollution is to blame. They found that chlorine contributed to the ozone loss, much of it stemming from man-made gases.

Source: www.planetark.org, 4/6/00

In a recent meeting, environment ministers from the G-8 nations agreed that early ratification of the Kyoto treaty was necessary and that 2002 was a good target for most countries, but they disagreed on specific issues. The differences ranged from ratification deadline to GHG emissions trading caps. Environmentalists feel that the meeting was a step forward. The G-8 nations include the U.S., Japan, Germany, Britain, France, Italy, Canada, and Russia. (www.planetark.org, 4/10/00)

Norway wants to take part in a European Union climate quota trading program set to start in 2005. Although Norway is not part of the EU, it was invited to a meeting to discuss a Europe-wide trading system.

In the past, Norway has wanted more liberal rules on the amount of CO₂ quotas to be purchased, but the EU members want more restrictions. (www.planetark.org, 3/30/00)

The latest efforts to create a national GHG emissions reduction program in Canada have failed and led to Quebec's minister walking out of the meeting and threatening to withdraw from future talks. He was upset because the federal government refused to discuss a proposal that would set different reduction targets for each province. The remaining ministers agreed to meet again, but officials acknowledged the probability that Canada may go into the next international meeting without a plan. (*Greenwire*; www.planetark.org, 3/29/00)

The director of the UK Dept. of Environment and Transport says that in the best case scenario, a planned UK GHG emissions trading program could account for 11 percent of Britain's carbon reduction targets by 2010. In a worst case scenario, it could only account for 3 percent. Under the planned program, companies that cannot meet their emissions reduction targets can buy the right to pollute more by buying permits from firms that have met their targets. (www.planetark.org, 3/28/00)

3.2 Non-Government Efforts

The World Bank's Prototype Carbon Fund closed its first subscription period very successfully, with \$135 million pledged by 15 companies and six governments. This exceeded the \$120 million target and was \$15 million short of a cap placed on the fund. The Fund was set up to transfer finance and technology to poor countries to help them reduce GHG emissions. Fund participants get emissions credits based on the amount of emissions they pay to reduce. Due to higher-than-expected demand, the Bank is planning to expand the program by raising the fund's cap to \$180 million. The additional money will be used to create a greater spectrum in its first 20 projects. (EPA, *Greenwire*, 4/24/00; 4/21/00)

Transalta, Canada's largest private sector utility, has pledged to invest in renewable energy and other green activities (new technologies, emissions trading, and offsets) in order to reduce its net GHG emissions to zero by 2024. The company is responsible for emitting around 6 percent of the country's total GHG emissions. (*Solar & Renewable Energy Outlook*, 4/1/00)

4.0 INTERNATIONAL

This chapter is limited to those international business and investment opportunities that could potentially affect U.S. developers of biopower/renewable energy.



4.1 Business/Investment Activity

Spain's biggest power company, Endesa, is building two plants to generate power from olive residues, known as "orujillo." In the past, orujillo was used to heat homes, but currently, people are using less of it, so it is creating a disposal problem. The power company is investing more than \$39 million to generate 32 MW, enough to power the domestic needs of 100,000 people. It will take 0.92 kg of olive oil waste to produce one kWh of power, and every plant is expected to consume 105,000 tonnes of orujillo a year. The plants are scheduled to be up and running by 2001. (www.planetark.org, 3/28/00)

The International Finance Corporation is planning to invest in the Renewable Energy and Efficiency Fund (REEF) in conjunction with Alliance Energy Renewable Resources, Ltd., DEG of Germany, the John Hancock Life Insurance Co., and others. REEF is the world's first private equity fund that will invest exclusively in renewable energy and energy efficiency projects. IFC will be the lead investor and will provide A- and B-rated loans totaling \$100 million; the UN will also give \$30 million to the fund. REEF will target on-grid projects including small hydro facilities, geothermal, wind, and biomass power plants, and cogeneration plants. It will also consider off-grid projects for funding. (EIN, *Renewable Energy Today*, 4/3/00)

The Philippines government recently changed energy regulations to stimulate renewable energy development, especially to attract private investment and international donor assistance. Policy changes include: eliminating certain requirements for providing back-up reserves by renewable resource facility operators; removing obstacles to biomass cogeneration facilities; and streamlining the approvals process for small hydropower facilities. (www.gnet.org, 4/24/00)

Sweden says that biomass is the strongest contender for replacing nuclear power in the country, but it cannot do it alone. At 92 Twh, currently, biomass power generated from bark, straw, rice husks, and wood chips, accounts for 19 percent of total energy production. Officials say that this could be increased by 40-50 TWh without harming the environment. In addition to biomass, they are also looking at solar wind, and small hydro power sources to help replace the nuclear power. (www.planetark.org, 3/28/00)

President Clinton is expected to announce an \$84 million clean energy program for Southeast Asia that will include renewable energy activities. Of the total amount, \$50 million is slated for a 4-year South Asia Regional Initiative (SARI), funded and implemented by USAID, that will promote cooperation and trade in clean energy in India, Nepal, and Bangladesh. The package will also include \$30 million for a 10-year agreement between USAID and Bangladesh to establish a new and separate clean energy program for the country. USAID will also provide \$4 million for a Grameen Shakti 5-year renewables program that will support the promotion and marketing of PV home systems

The International Energy Agency is planning a study, "Global Market Facilitation Initiative," that will outline its plan and recommendations for promoting renewable energy. According to Director Koch, "the objective is to analyze the key factors that generate or hamper market growth for renewable energy technologies in developing countries."

Source: *Solar & Renewable Energy Outlook*,
4/1/00

for rural electrification and small enterprises. (*Solar & Renewable Energy Outlook*, 4/15/00)

The European Union's Energy Commissioner says that the renewable energy industry should continue getting special regulatory treatment for the next ten years, to allow "fledgling technologies to take root." He said that the EU governments should be able to choose how to promote green energy until 2010, after which the European Commission will propose a comprehensive system. This will help the EU countries reach their overall targets of 12 percent of energy consumption from renewables and 20 percent of electricity generation from renewables by 2010. (www.planetark.org, 4/11/00)

The World Wildlife Fund (WWF) is planning to study the Philippines' energy sector in an effort to encourage the use of alternative energy sources. Once completed, WWF will submit recommendations to the Philippine government. (EIN, *Renewable Energy Today*, 4/6/00)

5.0 CURRENT AND UPCOMING REPORTS

According to EIA's *International Energy Outlook 2000*, global renewable energy consumption will increase between 1.1-2.7 percent annually from 1997 to 2020. The Middle East's renewable energy industry will have the highest growth rate, 3.0-5.6 percent per year over the next 20 years, and the Netherlands is expected to have the largest annual growth, 15-16 percent. EIA says most of the projected growth will be due to a 54 percent increase in hydropower consumption between 1997 and 2020. (*Solar & Renewable Energy Outlook*, 4/1/00)



In a recently released report, EPA and the Ozone Transport Commission (representing Northeastern states) say that air pollution reduction plans and credit trading programs work well together to reduce regional air pollution and lessen the impact on industry. The *1999 OTC NO_x Budget Program Compliance Report* also asks Midwestern states to join the Northeast states' efforts to implement EPA's emissions cuts. According to the report, eight Northeastern states participated in a model "NO_x Budget Program" that was similar to the NO_x SIP call, and they reduced their emissions by about 20 percent more than outlined in the plan. (*Inside EPA Weekly*, 3/31/00)

A report by the Electric Power Research Institute (EPRI) concludes that environmental regulations will lead to a major reorganization of the electricity industry in the future. The direction of current environmental policy will eventually lead to fuel switching away from coal and towards natural gas, where coal-fired power will drop from 55 percent today to 10 percent by 2020. *Energy-Environment Policy Integration and Coordination* also says that the shift to more natural gas will lead to steep price spikes. The authors' assumptions are: EPA will continue with its NO_x SIP Call; the electricity industry will have to reduce SO₂ by another 50 percent; and the industry will have to reduce CO₂ emissions to near-Kyoto levels. (*Inside EPA Weekly*, 4/21/00)

According to Population Action International, of 165 countries ranked, the U.S. emits more CO₂ per capita than all but four small countries. In 1996, the U.S. contributed more than 22% of global CO₂ emissions, mainly from fossil fuel combustion and cement manufacturing.

Source: ENS, 4/3/00

A report by the Union of Concerned Scientists shows that many states are supporting renewable energy—they have increased the use of wind, solar, geothermal, and biomass power by 40 percent since 1997. The report, *Clean Power Surge: Ranking the States*, says that the highest standards for percentage of sales from new renewables are Massachusetts, Connecticut, and Minnesota and Maine has the highest standard for sales from renewables overall. Due to size and minimum requirements, the largest markets for new renewables are expected to be in Texas, Minnesota, Massachusetts, and New Jersey. (ENS, 4/18/00)

The U.S. Public Interest Group studied the country's top polluting power plants and found that in 1999, 594 older plants emitted 12.5 million tons of SO₂, 5.4 million tons of NO_x, 2.3 billion tons of CO₂, and more than 91,000 pounds of mercury. *Lethal Legacy: The Dirty Truth About the Nation's Most Polluting Power Plants* also lists the states with the highest SO₂ and NO_x pollution. Ohio, Pennsylvania, Indiana, Florida, Illinois, Texas, West Virginia, Kentucky, Alabama, and Georgia emitted the most SO₂, and Ohio, Texas, Indiana, Kentucky, West Virginia, Florida, Illinois, North Carolina, Pennsylvania, and Missouri emitted the most NO_x. (*Air Daily*, 4/14/00)

REFERENCES

- DOE, 2000, *Electric Utility Restructuring Weekly Update*, April 14, 7.
- Environmental Information Network (EIN), 2000, *Renewable Energy Today*, April 25, 24, 21, 20, 17, 6, 3, March 27.
- Environment News Service (ENS) (<http://ens.lycos.com>), 2000, “AmeriScan,” April 21, 18, 11, March 30.
- ENS (<http://ens.lycos.com>), 2000, “Green Power Web Trading Opens in Midwest,” April 24.
- ENS (<http://ens.lycos.com>), 2000, “Seattle Pledges Zero Greenhouse Gas Emissions,” April 13.
- EPA, 2000, *Greenwire*, “International—Climate Change,” April 24, 21, March 29.
- Fieldston Publications Inc., 2000, *Air Daily*, April 19, 14, 12, 7, 5, March 29.
- Inside Washington Publishers, 2000, *Inside E.P.A. Weekly*, April 21, vol. 21, no. 16.
- Inside Washington Publishers, 2000, *Inside E.P.A. Weekly*, April 14, vol. 21, no. 15.
- Inside Washington Publishers, 2000, *Inside E.P.A. Weekly—Special Report*, April 17.
- Inside Washington Publishers, 2000, *Inside E.P.A. Weekly*, April 7, vol. 21, no. 14.
- Inside Washington Publishers, 2000, *Inside E.P.A. Weekly*, March 31, vol. 21, no. 13.
- news.excite.com, 2000, “XENERGY Study Finds Strong Potential for Green Power Market in Texas,” March 23.
- Rizer, Steve, ed., 2000, *Solar & Renewable Energy Outlook*, April 15, 1.
- www.gnet.org, 2000, “Court Affirms EPA’s Authority to Identify Waters Polluted by Runoff,” April 6.
- www.gnet.org, 2000, “Philippines Looks to Accelerate Use of Renewables,” April 24.
- www.planetark.org, 2000, “Canada Stumbles on Reaching Global Warming Plan,” March 29.
- www.planetark.org, 2000, “Danish Emission Trading to Start in January 2001,” March 30.
- www.planetark.org, 2000, “EU Renewable Energy Blueprint Nearing Completion,” April 11.
- www.planetark.org, 2000, “FEATURE—Spain Branches Out Into Olive-fueled Power,” March 28.
- www.planetark.org, 2000, “G8 Ministers Agree on Global Warming Accord,” April 10.
- www.planetark.org, 2000, “NASA, EU Report Massive Arctic Ozone Loss,” April 6.

www.planetark.org, 2000, "Norway Eager to Join EU Climate Quota Trade-Paper," March 30.

www.planetark.org, 2000, "Sweden Sees Biomass Partly Replacing Nuclear Power," March 28.

www.planetark.org, 2000, "UK Says Emission Trade to Meet 3-11% Kyoto Target," March 28.

www.planetark.org, 2000, "US Allots \$560 Million More for Soil, Water Protection," April 14.

www.planetark.org, 2000, "US Wants Stay Lifted on Emissions Reduction Rule," April 12.