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MAINE GOVERNOR BACKS FPL IN FIGHT TO USE EMISSION TRADING CREDITS AT WYMAN PLANT

FPL Group has received strong public support from Maine Gov. Angus King (I) in its fight to use emission trading credits to help meet new state air quality standards for its oil-fired Wyman power plant in Yarmouth, Me.

In a series of local press interviews Aug. 18, King attacked state environmental groups led by the Natural Resources Council of Maine, which is campaigning to prohibit use of emissions trading for Wyman

The groups want to force FPL to make $50-million in equipment upgrades at the 846-MW, four-unit plant to cut nitrogen oxide output by 1,500 tons/year. FPL proposes to spend $10-million on upgrades at the plant for two-thirds of the required reduction and use emissions trading to cover the rest.

The Maine Board of Environmental Protection issued a preliminary ruling in June banning use of trading credits and will vote again in September to finalize the decision. FPL

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Inside This Issue

GROUPS PETITION COURT TO ORDER EPA TO DECLARE FOSSIL WASTE HAZARDOUS

A coalition of environmental groups wants the U.S. Environmental Protection Agency to regulate fossil plant combustion wastes as hazardous. They have petitioned the U.S. Court of Appeals for the District of Columbia Circuit to review an earlier EPA ruling that fossil fuel wastes do not warrant such regulation.

Hazardous waste regulation of fossil combustion wastes would increase compliance costs by at least $860-million annually for the electric utility industry alone, according to the Edison Electric Institute.

The coalition includes the Citizens Coal Council, the Conservation Law Foundation, the Clean Air Council, the Clean Water Action Alliance of Massachusetts, the Izaak Walton League of America and others. They charge that fly ash and other plant wastes are polluting ground water and poisoning wildlife.

From burning one billion tons of coal annually, utilities and manufacturers produce 115 million tons of waste, the groups stated. The generators dispose of 70% of this in landfills, waste lagoons, quarries, and both active and abandoned

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NEW HAMPSHIRE HIGH COURT UNANIMOUSLY REJECTS LOCAL OBJECTIONS TO AES PLANT

The New Hampshire Supreme Court, in a unanimous decision August 18, rejected claims from local opponents that state environmental guidelines had not been followed and upheld a state siting permit for a 720-MW, gas-fired power plant in Londonderry, N.H., developed by AES.

The ruling appeared to remove the last legal obstacle to construction of the $300-million plant. AES had already said earlier in August it was going ahead with plant construction this month to meet a June, 2002 start up deadline.

In its ruling, (Docket No. 99-471), the court said that the New Hampshire Energy Facility Site Evaluation Committee had properly followed procedures and state environmental rules in approving the plant in May, 1999.

Local citizens group Londonderry Neighborhood Coalition (LNC), backed by the town council, argued that the committee had erred by allowing the use of selective catalytic reduction technology instead of SCONOx technology at the plant.

But the court supported the siting committee decision saying that that SCR was reliable and proven in past applications while SCONOx "was not yet available and had not been demonstrated to be technically feasible" for the AES plant.

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maintains that, if it is forced to make the $50-million investment, it may consider closing the plant.

King, who had said little about the case up to now, charged that the NRCM position against emission trading "bizarre" and "so wrong on so many counts" that he felt he had to make a statement.

King said that Maine had a particular problem since it is downwind of all of the rest of the Northeast and therefore had a major interest in reducing pollution sources in nearby states. Trading for credits with plants in Massachusetts or New Hampshire, he said, would have a direct impact on Maine air and was "the sensible way to go."

He said use of credits instead of direct controls was not "backsliding" and that eliminating all use of credits would be "terrible environmental policy."

King also accused the environmental groups of distorting the facts in the case and using a scare tactics to drum up public support. This included making charges that pollution from Wyman had gone up 275% since 1996 without noting that the plant had run three times as much in the last year due to increased power demand Also he said that opponents were raising complaints about soot from the plant when that was a separate issue and was not involved in the BEP decision. "Basically, their facts were wrong, their science was wrong and their policy was wrong," the governor said.

FPL officials in Maine welcomed the governor's statements, saying they could have some impact on the final BEP vote. But at the same time, according to Allen Wiley, FPL director of regulatory affairs, the company believes it can turn the vote around based on the scientific facts of the case.

FPL, in final comments to the Board Aug. 15, stressed that the plant emissions did not have a measurable impact on ozone non-attainment in Maine and that the only way to bring Maine into compliance with federal standards was by reducing transport from out of state.

It said that the combined use of credit trading and upgrades at Wyman would reduce total pollution in the state by 62% compared to 46% with just a direct clean up at Wyman.

FPL said that rejecting emission trading would be a "reckless" policy which could harm other industries in Maine and also negatively impact pollution control efforts throughout the region. "If upwind states were to adopt an approach similar to Maine's, the entire regional approach to emissions reductions would collapse," FPL said. "This is not a 'clean hands' policy, it's a 'hand-cuffed policy.'"

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Also the court found no clear evidence that use of SCR system would have an "unreasonable adverse effect on air and water quality."

Also, the court rejected claims by plant opponents that the siting committee should have required use of fog monitoring equipment at the new plant site. It said that testimony from two experts established there would be no fogging at the site and the committee decision was reasonable.

It rejected claims by plant opponents that the siting committee had failed to ask for comments on its ruling and also had failed to demand comprehensive data from AES on plant emissions. It said plant opponents had been given full opportunity to comment on the project and that the data used in the case was sufficient to make a ruling.

Finally the court ruled that the siting committee had properly given "due consideration" to all points of view on the project. This included the results of a March, 1999 non-binding referendum in which 55% of town voters opposed the plant.

The court noted that several local and regional planning groups had supported the project and also the town council backed the plant at the time the permit was granted. The town changed its position later after new members were elected..

LNC officials said they would continue to fight the plant including separate permits for a gas pipeline and power lines. But a spokesman for the town said there appeared to be few legal options left to stop construction.

AES said that the court decision cleared the last legal obstacle and capped a "fair" and "rigorous" review of the project by the state.

GROUPS PETITION COURT TO ORDER EPA RULING ON FOSSIL WASTE...begins on page 1

coal mines, they added. "These practices are contaminating community and agricultural water supplies and poisoning fish," the coalition stated.

EPA regulates hazardous wastes under Subtitle C of the Resource Conservation & Recovery Act (RCRA). In 1980, Congress ordered the agency to study the impacts of combustion byproducts that result from burning coal and other fossil fuels. In 1988, EPA issued a report to Congress concluding that "coal combustion waste streams do not exhibit hazardous characteristics," and that existing state and federal regulatory programs minimize the risk to health and the environment. Therefore, EPA said it would not regulate as hazardous the four major waste streams from coal combustion: fly ash waste, bottom ash waste, slag waste and flue gas emission control waste.

EPA did not address other wastes, such as oil combustion waste, fluidized-bed combustion waste, non-utility coal combustion waste, and high-volume wastes that are co-managed (or disposed of) with low-volume wastes such as boiler blowdown, coal pile runoff, boiler washes and cleaning wastes. In 1991, an Oregon group called the Bull Run Coalition sued, seeking a full report, and in 1999, told Congress that those wastes "present low inherent toxicity [and] are seldom characteristically hazardous." It added that Subtitle C regulation would unnecessarily duplicate existing state requirements, which EPA said are becoming more strict.

Earlier this year, EPA presented its final report, concluding that all combustion wastes from fossil fuels should continue to be regulated as solid waste under RCRA Subtitle D, not as hazardous waste under Subtitle C, and should be sub-

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ject to state regulatory jurisdiction.

Ann Brewster Weeks, counsel for the Clean Air Task Force—which is representing the environmental groups at the appeals court—said the wastes should be considered hazardous. However, EPA could develop a regulatory regime that is "less than full-blown Subtitle C," she told *Utility Environment Report*. The environmental groups want the court to order EPA to "go back to the drawing board, and come up with some Subtitle C regulations for the areas that are most troubling," Weeks said. Those include disposal of combustion wastes in open pits, unlined landfills or mines.

A spokesman for the Edison Electric Institute (EEI), Washington, D.C. said the groups "are trying to accomplish in court what they were not able to do through the regulatory process." EEI has estimated that hazardous waste regulation would increase annual compliance costs by $860-million for the electric utility industry alone, "based on conservative estimates." It also complained that "broad-based state regulatory programs that are now in place will be replaced with stringent 'one-size-fits-all' federal regulations." In addition, EEI has charged that "the environmentalists really are attacking the use of coal to generate electric power—not the management of coal combustion wastes."

The organization noted that coal combustion products (CCPs) are widely recycled in applications such as cement production, highway and bridge construction, structural fill, snow and ice control, waste stabilization and in agricultural processes. Currently, about 30% of CCPs are recycled, or more than 100 tons per year, it estimated. EEI noted that using fly ash in concrete reduces energy consumption, and said that increasing the content in concrete from 15% to 50% would eliminate up to 600 million tons of carbon dioxide (CO2), while utilizing all the fly ash produced. EPA has encouraged the recycling of these byproducts, EEI noted.

Classification as hazardous waste "would have a chilling effect on utilities' ability to provide these products to other industries," and would result in more wastes, said the EEI spokesman. Even if EPA provided an exemption for re-use, there would be problems, he added, saying "Imagine, it's called hazardous if you dispose of it, but not hazardous if you throw it down on a highway." The result would be more lawsuits, he predicted.

PG&E'S PLAN TO TRANSFER HYDRO ASSETS SLAMMED BY CALIF. ENVIRONMENTAL GROUPS

Environmentalists blasted Pacific Gas & Electric's latest proposal to transfer its vast 3,896 MW hydroelectric system to a new California-based affiliate as self-serving and inadequate to protect the watersheds and river systems in which the utility operates.

Touting it as a means of bringing stability to the state's volatile electricity prices and power supply, PG&E filed a settlement agreement with the California Public Utilities Commission Aug. 9 to spin off its hydro generating assets.

"There are no environmental assurances in this deal. It's completely inadequate," said Dan Kirschner of the Environmental Defense Fund. EDF broke off negotiations with PG&E after failing to secure adequate environmental protections.

The settlement would create a compact requiring PG&E to share 90% of the profits from its hydro operations with customers. This revenue-sharing mechanism would provide a natural hedge to protect customers against volatility because their payments from PG&E would increase with higher prices, the company said.

The agreement would prevent PG&E from exercising market power during periods of peak power demand by ramping up hydro production and includes a proposed agreement with the California Independent System Operator prohibiting PG&E from bidding low cost hydro power into the market to raise power prices.

However, Kirschner accused PG&E of exploiting California's current power supply shortage to garner public support for an environmentally unsound plan to transfer its valuable hydroelectric assets to an unregulated affiliate. "This is the 'me first' approach," Kirschner said. "They're being extremely opportunistic in suddenly claiming that this is a rate stabilizing measure."

PG&E failed to garner support in the California Legislature last year for its controversial divestiture proposal—a plan universally opposed by environmentalists, consumer groups, commercial fishing interests, rural irrigation districts and water agencies, and competing non-utility generators.

They feared that transferring the world's largest privately-held hydroelectric system to an unregulated affiliate would enable PG&E to exercise market power by controlling a low cost source of power, cause environmental damage, and impinge on agricultural, fisheries, and recreational resources.

PG&E subsequently submitted an application to the California Public Utilities Commission last fall to auction off its hydro assets in the same way it sold its fossil-fueled power plants. PG&E's auction proposal was likewise condemned as self-serving and flawed by the same parties that had opposed the utility's divestiture proposal in the legislature.

The PUC held public hearings in May and June on PG&E's auction proposal. Meanwhile the utility pursued separate negotiations with various parties leading to the settlement. If approved by the PUC, the settlement agreement would supplant PG&E's application before the PUC to auction its 68 hydroelectric power houses, 110 generating units, 174 hydroelectric dams, 360 miles of canals, tunnels, and flumes, and approximately 140,000 acres of watershed land.

The agreement would establish a market value of $2.8-billion for PG&E's hydroelectric system which would offset PG&E's stranded hydro investment under California's restructuring law and enable the utility to end its electric rate freeze before the March 31, 2002 deadline. Last June, the Association of California Water Agencies, or ACWA, appraised PG&E's hydroelectric system as worth between $3.14-billion and $4.34-billion.

The settlement also would require PG&E to establish a $70-million fund to enhance environmental quality, water quality, and recreational opportunities in the five major watersheds in which PG&E's hydro facilities are located.

PG&E also would donate, or protect through conservation easements, approximately 140,000 acres of watershed lands

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for public use. Agricultural and fishery interests would be protected by requiring PG&E to honor all existing water agreements with downstream users, the company said.

The settlement agreement has been endorsed by a coalition of consumer advocates, business, labor, agricultural and water interests. However, these groups represent only a fraction of the more than 70 parties to PG&E's hydroelectric proceedings. Notably absent from the settling parties were some of PG&E's harshest critics, including environmental groups, commercial fishing interests, independent power producers, and most rural irrigation districts and water agencies.

"They told us that's all they were giving us, and if you wanted more for the environment you can get it elsewhere," Kirschner said.

"We thought it was too big of a give away for ratepayers to stomach, let alone it's not good for the environment. It is an end run around an auction or proper valuation."

He dismissed PG&E's plan to spend $70-million on watershed protection as a "giant step backwards" from the $225-million that PG&E proposed spending last summer. Restoration of PG&E's Battle Creek project, which represents less than 2 percent of PG&E's entire system, required $50-million alone, EDF noted.

Moreover, the agreement places major obstacles to environmental improvements because PG&E would be able to veto any environmental project, Kirschner said. The agreement also lacks any firm commitments to improve stream flows and would not permit any current water use agreements to be modified.

Kirschner noted that the revenue sharing agreement would be completely phased out after 40 years, at which time PG&E Corp. would own the hydro system outright.

The Utility Reform Network, or TURN, signed the settlement agreement even though the consumer group believes that retaining PG&E's hydro generation in the regulated utility would be the best option for consumers and the environment. "This was the best thing that we could get with a utility buy in," said Nettie Hoge, TURN's executive director.

Auctioning off PG&E's hydro generation to multiple unregulated companies would create greater environmental problems, she said. Moreover, the Federal Energy Regulatory Commission will still retain jurisdiction over environmental licensing for the facilities, she stressed.

Independent power producers, for their part, have consistently backed a competitive auction of PG&E's hydro assets to determine their true market value, which is widely believed to be several times greater than their $1.6-billion book value.

"We believed that the best way to protect the environment and ratepayers was to foster a truly competitive market through an auction of the hydro assets with protection of the environment and resources," said Jan Smutny-Jones of the Independent Energy Producers Assoc.

"I'm not sure simple transfer of these assets to an affiliate gets you there."

However, the PUC may be reluctant to allow PG&E's hydro system to be sold to unregulated companies, given the price spikes in San Diego this summer which some politicians' and regulators' have blamed on generators withholding power to earn higher profits, consumer groups said.

Rural water agencies—many of which would like to acquire PG&E's hydro generating facilities in their watersheds—appear equally disenchanted with the settlement. Only one of the ten rural water agencies that had been negotiating with PG&E signed the agreement.

That agency—Tuolumne Utilities District—is not seeking to acquire PG&E's generation but is solely interested in guaranteeing its water delivery rights from PG&E's hydro facilities, said Dan Smith, regulatory affairs director for ACWA, which represents 430 California public water agencies that deliver 90% of the state's water supply

Yuba County Water Agency, Placer County Water Agency, and the Kings River Conservation District, all want to own and operate PG&E's hydro generating assets, he said. Meanwhile Oakland-based East Bay Municipal Utility District has put together a power purchasing agreement with rural water districts located in the Sierra foothills.

The PUC will likely hold public hearings on the settlement agreement in the coming months and conduct an environmental review as required by the California Environmental Quality Act (CEQA).

The Federal Energy Regulatory Commission, which licenses the hydro facilities, must also approve PG&E's transfer of its hydroelectric system.

"The CEQA review process itself will ensure that there are no significant environmental impacts as a result of this transfer," said Gordon Smith, PG&E's president and CEO. "In addition, keeping the hydroelectric facilities and associated watershed lands together protects the public interest in these assets."

ALLOWANCE TRADING

NOx Allowance Outlook

COOL WEATHER LEAVES MARKET STAGNANT AS ALLOWANCES PRICES RUN $640/TON

The market for NOx Budget Program allowances remained in the doldrums, with few trades and soft prices. On Wed. Aug. 23, most sources had not seen any activity, and reported their last trades at $640/ton on Aug. 21 or 22, for vintage 2000 allowances.

"It's brutal," said one player, who blamed the cool summer weather for the lack of interest. He expects the price to drop further since generators and marketers have excess allowances to sell. Another commented, "There's not a whole lot of interest."

Calling the market "stagnant," one source said there are only occasional trades, with a marketer on one side and a "natural" on the other, referring to a generator that needs allowances for compliance.

Another player reported bids and offers for 2000 allowances ranging from $600 to $650. For 2001, he has seen a $565-$625 range.

NOx allowance traded as high as $925 in January, but have fallen pretty steadily from there. In July, prices moved over $700, but have fallen back.

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SO2Allowance Outlook

ALLOWANCE PRICES CREEPING UPWARD AND HOLDING ABOVE $150/TON MARK

Prices for sulfur dioxide allowances moved upward, and stayed above the $150 mark in recent trading. At presstime on Wed., Aug. 23, the most recent trades were averaging about $154.50/ton.

Sources described the market as fairly active, and one saw an offer on Wednesday of $155.75

There is no regulatory or market news affecting prices, players said. "It seems to be the direction of the market right now. It's walking steadily upward," one said. Another source said marketers have been pushing up the price, and the increase is not due to new demand from power plant owners.

SO2 allowances traded as low as $133 in March and again in May. They ran up as high as $156 in July, but then dropped below the $150 mark before the recent rise.

TIGHT NOx MARKET IN CALIFORNIA APPEARS TO BE EXACERBATING SUPPLY TROUBLES

As if California didn't already have enough to worry about, the environmental costs of power generation may make an already troubled power supply market even worse.

According to sources in the region, the supply of nitrogen oxide emissions credits has tightened severely, and Los Angeles-area generators are feeling the squeeze as higher prices for credits translate into higher prices for electricity. The cost of the credits has jumped from $3-$4/lb. last summer to a current $40-$50/lb.

"There is no question that credits at this level eat into your spark spread," said one NOx broker. "It's changing the cost of generation."

The cost of running gas-fired peaking units, which emit about 4 lbs. of NOx for each MWh of power generated, has climbed to about $300/MWh for fuel and credits, one generator said. The California Independent System Operator capped prices in its real-time and ancillary services markets at $250/MWh on Aug. 3, pushing power from those generators out of bounds because it is prohibitively expensive.

Although some industry watchers doubt that the cost of peakers is that high, they believe the cost of some inefficient units is near the cap.

The supply of the NOx credits has become scarce this summer because generators have had to run their units—including their most polluting ones—constantly to meet heavy loads. The allocation of credits was also reduced this year as part of an effort to limit NOx emissions.

The problem could get worse with the allocation of credits being cut each year until 2003.

The high-cost NOx credits could complicate ISO Chief Executive Officer Terry Winter's plan to have 3,000 MW of new peaking capacity available next summer. Peakers emit high levels of NOx and consume more credits than larger power plants. A 480-MW gas-fired plant, for example, emits only 0.08 lb./MWh of NOx.

UTILITY ENVIRONMENT REPORT

◆ Biweekly and Monthly ◆

Allowance Prices

	SO_2		NOx	
Date	Biweekly	Monthly	Biweekly	Monthly
Sept. 8, 1999	178.00	--	1,200	--
Sept. 22, 1999	179.50	178.75	900	1,050
◆				
Oct. 6, 1999	186.00	--	800	--
Oct. 20, 1999	188.00	187.00	500	650
◆				
Nov. 3, 1999	188.00	--	700	--
Nov. 17, 1999	163.00	175.50	850	775
◆				
Dec. 1, 1999	160.00	--	750	--
Dec. 15, 1999	153.00	--	725	--
Dec. 29, 1999	146.00	153.00	675	717
. . . . .				
Jan. 12, 2000	140.00	--	925	--
Jan. 26, 2000	115.00	127.50	900	912.50
◆				
Feb. 9, 2000	135.00	--	875	--
Feb. 23, 2000	137.00	136.00	725	800
◆				
March 8, 2000	133.00	--	900	--
March 22, 2000	137.00	135.00	875	887.50
◆				
April 5, 2000	136.00	--	850	--
April 19, 2000	139.00	137.50	800	850
◆				
May 3, 2000	137.50	--	800	--
May 17, 2000	132.50	--	775	--
May 31, 2000	143.00	137.66	675	750
◆				
June 14	146.50	--	625(2001)	--
June 28	150.00	148.25	700	662.50
◆				
July 10	156	--	735	--
July 24	147	151.50	670	702.50
◆				
Aug 23	154.50	--	640	--

Biweekly prices are for current year allowances and are based on phone surveys with brokers, traders and utilities. Monthly prices are the averages of the biweekly prices for the issues dated that month. Prices are measured in dollars per ton.

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Traders believe one side effect of the higher price and scarcity of NOx credits has been increased liquidity in California bilateral markets. They explain that the problem has gotten so bad for some generators that they have begun to buy power from others so they do not expend their own precious NOx credits.

EMISSION CONTROLS

NOX COMPLIANCE TIME FRAME IN NORTHEAST SEEN LIKELY TO BE EXPENSIVE FOR UTILITIES

Power plants in the eastern states will spend top dollar to meet federal nitrogen oxides emissions standards because of the tight time frame to reach compliance, according to a report by a Cambridge, Mass., research and consulting company.

The Fuld & Company report says that power plants lack time to explore alternative technologies, so will be forced to install expensive Selective Catalytic Reduction technology to meet Environmental Protection Agency requirements by 2003. The rules mandate that the states reduce NOx by 85% from 1990 levels or reach a 0.15 lb./mmBtu emission rate, whichever is lower.

The EPA's NOx State Implementation Plans (SIPs) ruling calls for nineteen eastern states by Oct. 28 to submit plans showing how they will reach emissions reductions targets. So far Massachusetts, Connecticut, Rhode Island and New Jersey are the only states that have submitted plans.

The total cost to power plant owners in the 19 states will be $7-million to $12-million for the SCR technology, the report said. Fuld & Company estimated SCR costs to be $51/kW for an easy installation at a 800-MW unit to $121/kW for a difficult 200-MW unit.

Since few suppliers provide SCRs, the technology is likely to become even more expensive as demand rises. And when costs are passed on to consumers, fledging competitive markets will suffer, according to study co-author Ravi Krishnan, associate director, Public Utilities Practice, Fuld & Company.

"One of the objectives of deregulation is to lower electricity costs. The EPA regulation promotes the implementation of higher-cost technologies (like SCR) due to its strict timelines and required reductions. This creates an inflationary market for SCR equipment and technology, which is passed on to the consumer through higher electricity rates. This does not lower generation costs, instead increases generation costs and works against one of the principles of establishing competitive markets," Krishnan told UER.

"Therefore, we believe that the strict timeline to meet the reduced NOx requirements is imposing unnecessary costs on consumers because the deadline is driving up demand on a finite amount of capital and labor. Moreover, it is not providing opportunities for other innovative control technologies, which can attain similar performance over an extended period at lower costs," he said.

Krishnan added that a two or three-year extension would give plant owners time to explore a mix of technologies that could be implemented in phases. He cited combustion modifications or gas conversion technologies as approaches to be explored.

Unless the deadlines are extended, an uneven playing field will emerge nationally, he said. Generating units in states outside the NOx SIP area do not have to comply with the strict emission control requirements, giving them a generating cost advantage.

The EPA ruling was handed down in 1998 and reaffirmed by the federal D.C. Circuit Court of Appeals in March 2000. It calls for a reduction in the state-to-state transport of air pollution from about 140 coal-fired power plants, representing 100,000 MW, according to Fuld & Company.

Over the past 20 years, the U.S. has reduced NOx emissions by only 13% compared to a 60% reduction in the Czech Republic, 38% in the UK, and 31% in Germany, according to the study. Electric utilities account for 33% of the U.S.'s annual NOx emissions, the report said.

Copes of the report are available by contacting Patti Kane, Gumpert Communications Inc. 781-444-5543, ext. 887 or e-mail pkane@gumpertcom.com.

CALIF. REGULATORS EYE SUNLAW'S 550-MW, 'SUPER CLEAN' NUEVA AZALEA PROPOSAL

The California Energy Commission has begun reviewing an application submitted by Sunlaw Corp., Los Angeles, for the 550-MW natural gas-fired Nueva Azalea power plant to be located in South Gate, in the industrial heart of the Los Angeles basin.

Sunlaw characterizes the plant as the world's first "super clean" power project. The facility will employ SCONOx emissions control equipment—developed by Sunlaw affiliate, Goal Line Environmental Technologies— which will control nitrogen oxides to one part per million (1 ppm). Sunlaw says the plant will likely exhaust air that is cleaner than the Los Angeles basin air it takes in.

After extensive testing, the South Coast Air Quality Management District declared that SCONOx, a platinum-based catalytic converter that does not use ammonia, to be the lowest achievable emission rate (LAER) in practice. As a result, SCAQMD adopted a new NOx emissions standard of 2.5 ppm, averaged over 15 minutes for gas turbines rated from 3 MW to 32 MW as the standard for best available control technology in its service area. (UER, 24 April '98, 8; 26 Sept '97, 6).

Sunlaw is confident it can adapt the SCONOx system to the larger Nueva Azalea system. SCONOx is currently installed only on Sunlaw's operating 28-MW Federal Cold Storage plant in Vernon where NOx emissions are measured at 1 ppm, according to Bob Danziger, the co-chairman and former chief executive officer of Sunlaw. The plant is permitted for 25 ppm and it is now selling emissions credits at $40/lb.

Danziger said the emissions credits sales have paid off SCONOx development costs and sales are also funding the development of Nueva Azalea. The company is no longer looking for a partner to help develop the project, he said.

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Sunlaw has had the project on the drawing board since late 1997 but did not file its application until March of this year.

The $256-million development will be located at an industrially-zoned site that is near the intersection of two major Los Angeles freeways. The site is currently occupied by a diesel truck station.

The plant will consist of two power islands, each with a combustion turbine and steam turbine, a common electric generator and a heat recovery steam generator. Each HRSG will be fitted with a SCONOx catalytic emission control system for reducing NOx, carbon monoxide, volatile organic compounds (VOC) and sulfur dioxide. The turbines will use dry low NOx combustion.

The schedule calls for construction to begin in late 2001 and commercial operation to begin in the second quarter of 2003. Sunlaw plans to sell the power through direct sales agreements and in the spot market through the California Power Exchange.

The CEC review process takes about 12 months and will cover issues such as public health and safety, air quality, hazardous materials, environmental impacts, environmental justice and engineering design. There will be multiple public hearings, both in South Gate and in Sacramento.

STATE REGULATIONS

CITING WILDLIFE, PUC OFFERS ALTERNATIVE ROUTE FOR PG&E TRANSMISSION UPGRADE

Pacific Gas & Electric's proposed transmission system upgrade northeast of San Jose would imperil endangered species at the Don Edwards San Francisco Bay National Wildlife Refuge, officials warned.

The refuge—which is predominantly tidal marshes—is home to the endangered salt marsh harvest mouse, California clapper rail, fairy shrimp, and Contra Costa gold fields, a plant species.

PG&E's project entails construction and operation of a new 24-acre Los Etreros Substation and 21-kV connections with four transformers, a new 7.3 mile-long 230-kV double-circuit transmission line from the existing Newark Substation to the Los Etreros Substation, and distribution line upgrades.

PG&E has proposed running the transmission line through the heart of the refuge, which lies along the eastern shore of the San Francisco Bay about 15 miles north of San Jose.

The California Public Utilities Commission—which must approve the project—has prepared a Draft Environmental Impact Report that identifies an alternative that would minimize adverse environmental impacts.

The alternate route would locate the transmission line on the eastern edge of the refuge next to Interstate 880 away from the endangered species areas and vernal pools, the last remaining vernal pool complex in the San Francisco Bay.

PG&E's proposed route would run through the vernal pools, creating greater chance of bird strikes by shore birds, water birds, and migratory birds, as well as adverse impacts from construction, said Clyde Morris, director of the wildlife refuge.

BUSINESS BRIEFS

MITSUBISHI BUYING STAKE IN NATSOURCE: Mitsubishi Corp. has agreed to make an equity investment in Natsource LLC, a firm that brokers energy and emissions allowances. Mitsubishi, based in Japan, will hold the unspecified minority stake through Mitsubishi International Corp., its principal American subsidiary.

Under the agreement, New York-based Natsource will assist Mitsubishi in developing the emerging electricity trading and environmental markets in Japan, and throughout Asia, the companies stated. According to Natsource president Jack Cogen, those markets "have the potential to quickly evolve into the largest in the world."

The new Japan-based operation will specialize in brokering electricity, emissions, and weather risk trading. In addition, the partners will target greenhouse gas (GHG) emissions associated with global climate change. GHG trading has the potential to become a $200-billion a year market, with as much as a third of the demand expected from Asia, Natsource said.

BEAIRD GETS $55-MILLION PACT FOR WIND TOWERS: Beaird Industries has received a $55-million contract from FPL Energy to build up to 800 wind turbine towers by the end of 2001. The initial order of 242 towers will be delivered to FPL Energy's wind energy project in West Texas.

Beaird, based in Shreveport, La., is a subsidiary of Industrial Holdings Inc., headquartered in Houston. In July, Beaird received certification from the Germanischer Lloyd Certification Agency in Germany to build wind towers in that country. The 50-meter tubular towers are designed to operate in conjunction with the Vestas V-47 660-kW wind turbine.

IFC STARTS UP 1-MW FUEL CELL SYSTEM: International Fuel Cells (IFC), a subsidiary of United Technologies, has brought on-line a 1-MW fuel cell system at the U.S. Postal Service's mail processing center in Anchorage, Alaska. It consists of five 200-kW PC25 cells, supplied by the South Windsor, Conn., company.

The fuel cells run in parallel with the grid of the Chugach Electric Association, which will operate and maintain the units for the Postal Service. They will provide the primary power for the facility, and are meant to keep it operating during grid outages.

The $5.5-million complex was funded by Chugach, the Postal Service, the Dept. of Defense, the National Rural Electric Cooperative Assn. and the Electric Power Research Institute. It will produce 11 million fewer pounds of carbon dioxide each year than a comparable-sized fossil plant, said IFC, and 200,000 fewer pounds of other pollutants.

ASTROPOWER SEES BOOM IN PV SALES: AstroPower Inc. is reporting dramatic growth in sales of solar photovoltaic (PV) equipment. For the second

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BUSINESS BRIEFS

quarter of this year, total revenues ran almost $12-million, up 49% over the same quarter last year, while product revenues were about $11-million, representing an increase of more than 52%. Net income grew 115%, to $957,000, from $445,000 in last year's second quarter.

The company, based in Newark, Del., credited a $6-million order in June from the Los Angeles Dept. of Water & Power (LADWP). It also mentioned increased market demand from a German on-grid program, and from other programs in Asia and South Africa. AstroPower, which is partly owned by GPU, is traded on the Nasdaq market as APWR.

APC INSTALLS 22-KW PV SYSTEM: Applied Power Corp., has installed a 22-kW solar complex for the Colton Electric Utility in Colton, Calif. The system is integrated into a 120-foot carport structure at the city's Public Works Administration Building.

The PV system will supply electricity to the grid during peak energy use periods, and the municipal utility expects to install more PV systems in the future. The system includes 288 Siemens Solar SR-100 modules and a Trace Technologies inverter, which controls the array to capture the most sunlight.

APC is a subsidiary of IDACORP, which owns Idaho Power. APC is headquartered in Lacey, Wash., and has offices in Colorado and Massachusetts.

BALLARD GETS $1.5-MILLION IN FUEL CELL ORDERS: Ballard Power Systems, Vancouver, B.C., has received orders totaling C$2.1-million (US $1.5-million) from Honda Motor Co. and another unnamed automaker. Under the pacts, it will provide its Mark 900 Series Fuel Cell Power Modules and support services.

Ballard says the Mark 900 utilizes low-cost materials and is meant for high-volume manufacturing. This will reduce costs and accelerate the commercialization of fuel cells, the company says. It has already provided Mark 900 units to Ford and DaimlerChrysler, which hold equity stakes in Ballard.

The company also has joint ventures with GPU International, Coleman, Alstom and Ebara to commercialize fuel cells for stationary and remote applications.

KINKO'S TO BUY WIND CREDITS FROM N.Y. PLANT: Kinko's Inc., which runs a chain of copying outlets, will buy "Pure Wind" certificates from an 11.5-MW wind project in New York. PG&E Corp's National Energy Group is building the project in Madison, N.Y., and expects to start operating it in September.

The PG&E unit will sell the output into the New York Independent System Operator (NYISO) grid, but it is separately selling certificates to companies that want to take credit for supporting renewable energy. The parties did not disclose the price, but said the certificates will cover 4.5 million kWh, or 50% of Kinko's New York electric demand.

Total output for the Madison Windpower facility in an average year will avoid 12,000 tons of CO2, 65 tons of SO2, and 19 tons of NOx, based on equivalent generation from fossil fuel plants in the state, according to PG&E Corp. Kinko's Pure Wind(SM) certificates represent savings of about 750 tons of emissions.

Kinko's said the effort is part of an environmental program that includes using efficient lighting, avoiding paper products from old-growth forests, and offering customers recycled and tree-free paper stocks. Kinko's, based in Ventura, Calif., already buys renewable energy for 90 stores in that state, it noted.

The city of Fremont opposes the I-880 route and supports locating the transmission line closer to the bay or underground. Local high tech business parks are also concerned about the proposed routing.

Officials at the wildlife refuge support the alternate route next to I-880 because it is furthest away from the refuge and endangered species habitat and would have less construction and bird strike impacts.

CREES WIN ALLIES IN FIGHT WITH NSP OVER 500-MW MANITOBA CONTRACT

The Pimicikamak Cree Nation of Canada, which has been raising fairness and environmental questions about Northern States Power's (now Xcel Energy) selection of Manitoba Hydro for a 500-MW power contract award, secured some powerful allies in mid-August, as Minnesotans for an Energy Efficient Economy (E3) and the Izaak Walton League filed a petition with regulators asking that review of the award be stayed.

Since last March, the Pimicikamak Cree Nation (PCN) has been alleging that NSP's competitive all-source bidding process contained unfair elements and that the award, if implemented, would exacerbate an already grave environmental situation in Northern Manitoba.

In their Aug. 18 petition before the Minnesota Public Utilities Commission, ME3 and the Izaak Walton League asked the agency to defer ratification of NSP's award to Manitoba Hydro, pending an investigation into issues raised by the Pimicikamak Cree.

"This issue has been brewing for some time and this was our first opportunity to let the PUC know that we are concerned with issues that the Pimicikamak Cree Nation and others have been raising about this potential source of power," said William Grant, director of the Midwest office of the Izaak Walton League.

The ME3/Izaak Walton petition is endorsed by five Minnesota State Legislators. Writing to Public Utilities Commis-

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sion chair Gregory Scott, they recalled that state statutes direct the PUC to take environmental externalities and socio-economic costs into account when making energy rulings.

"We strongly urge the commission to stay consideration of the proposed supply contract and conduct an investigation…into its potential environmental and socio-econmic consequences," the legislators wrote.

The Cree contend that Manitoba Hydro's Lake Winnipeg, Churchill River, and Nelson River project, built in the 1970s, involves diversion of the entire river systems and transformation of Lake Winnipeg into a giant reservoir. The impoundment and seasonally-inverted controlled release of water through the system has flooded millions of acres of boreal forest habitat and caused serious damage to thousands of miles of productive shoreline, they say.

The 500-MW award, if approved, would replace an existing contract that Manitoba Hydro has with NSP and that expires in 2005. Although the Canadian utility contends that very little would change with respect to plant operations, the Pimicikamak Cree argue that load following issues and other factors will "effectively make a bad situation worse."

A key question on the fairness issue is whether Manitoba Hydro was given a competitive edge over other bidders because of its ability to supply NSP with short-term power. NSP senior planning engineer David Zuck rejected that notion, saying that while the company did seek short-term energy in the context of the long-term bidding process, it was done equitably.

"We did not consider Manitoba Hydro's short-term offers in the selection process," he said. Moreover, in mid-July, an independent auditor's report found that NSP's competitive bidding process was "reasonably and fairly implemented."

The PUC is currently considering comments on that report and will approve or reject the Manitoba Hydro award after it has weighed the evidence.

The Pimicikamak Cree, discouraged by their inability to get Manitoba Hydro to release detailed bid information submitted in NSP's all-source solicitation, filed a motion August 9 to have the PUC compel disclosure.

The Cree contend that without this information, it cannot properly judge whether the award to Manitoba Hydro is in the public interest. "At this time, absent the most basic information, PCN cannot reach any definitive judgments regarding how Manitoba Hydro's bid has been evaluated by NSP in terms of environmental factors," the Cree told the PUC on Aug. 18.

In addition, the possible use of thermal generation for export has emerged as an issue. On March 3, the government of Manitoba announced it had approved a proposal by Manitoba Hydro to build a 225-MW natural gas-fired plant at the utility's existing Brandon thermal generating station.

"In operating its hydroelectric generating system, Manitoba Hydro must maintain some water in reserve to protect against the occurrence of drought," said Greg Selinger, the minister responsible for Manitoba Hydro. "With the gas turbine plant in place to provide energy backup during low river flow situations, Manitoba Hydro will be able to sell additional energy on the more lucrative long-term market." The $180-million Brandon facility is scheduled to go into operation in May 2002.

Commenting to the PUC on Manitoba Hydro's refusal to disclose details of its bid proposal, the PCN said it "does not know, nor does the commission, how Manitoba Hydro's winning bid has been evaluated in terms of environmental externalities and whether it has been assumed that there are any air emissions associated with increased thermal generation."

To squelch any abiding inclination NSP might have to release Manitoba Hydro data to the Cree, attorney Eric Swanson of Winthrop & Weinstine, St. Paul, and counsel to Manitoba Hydro, wrote to NSP attorney Christopher Clark on Aug. 10 confirming that "Manitoba Hydro considers the entirety of its bid to be trade secret information."

"The bid proposals of Manitoba Hydro contain highly confidential and trade secret information regarding pricing, proposal features, operating characteristics, agreement terms, and other factors," Swanson declared.

"The release of even part of this information would damage Manitoba Hydro and have a chilling effect on future bidding processes in Minnesota."

The PUC is scheduled to rule on the Pimicikamak Cree Nation's motion to compel disclosure on Aug. 31. Also on Aug. 10, the Minnesota Attorney General sent a series of interrogatories to Clark on the NSP/Manitoba Hydro agreement.

Among these are the questions on whether there are any reciprocal supply arrangements or other risk management tools between the two utilities and if these in any way affected NSP's contract award to the Canadian utility.

OHIO COAL INDUSTRY CAMPAIGNS AGAINST DATA MANDATES IN RESTRUCTURING LAW

Fearing negative repercussions for high-sulfur coal, Ohio coal industry officials are mounting a full-court press to try to neutralize a proposed environmental reporting requirement included in the state's new electric industry customer choice law, set to take effect Jan. 1, 2001.

As it stands now, Ohio's electric utilities would be required to periodically include information on customer bills about their sources of power—for instance, whether the power is generated by coal-fired plants, nuclear, natural gas or oil-fired facilities, or whether it originates from renewable energy sources such as wind, solar, biomass, geothermal or hydro.

The environmental reporting requirement was a chief legislative goal of groups like the Ohio Environmental Council and Ohio Citizen Action, which lobbied aggressively in a state where coal accounts for about 91% of all generation. In addition to identifying power sources, utilities also must provide a brief description of the environmental consequences of generation choices, such as acknowledging that coal-fired plants emit pollutants like sulfur dioxide and nitrogen oxide.

The Ohio Coal Association argues the reporting requirement should go a step further. The trade association has drafted language it wants included in the reporting requirement. It would place a "cost component factor in to see if coal is the cheapest fuel out there," said OCA President Mike Carey. Association officials are confident coal would likely represent the least-expensive fuel source, an important factor that they contend should be taken into account by customers.

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On Aug. 28, the OCA will submit its proposed changes to the Ohio legislature's Joint Committee on Agency Rule Review in Columbus. The committee has the final say about the content of the environmental disclosure inserts.

Shari Weir, consumer issues director for Ohio Citizen Action, told *Utility Environment Report* the coal industry is "mounting an all-out assault" on the reporting requirement. Her group strongly opposes efforts to include the coal industry's proposed cost comparison.

"It would be a big disservice to Ohio consumers if these rules get gutted," she said.

ENVIRONMENTALISTS FIGHT ENVIROPOWER PLANS FOR TWO COAL-FIRED PLANTS IN IND.

EnviroPower LLC has drawn swift objections from environmentalists with its mid-August application for a second, waste coal-fired merchant peaking plant in Indiana.

Lexington, Ky.-based EnviroPower is planning two facilities—a 600-MW and a 500-MW facility in Sullivan and Pike counties, respectively. Company officials claim the projects will burn coal as cleanly as anyone in the U.S. EnviroPower expects both plants to be in commercial operation in 2003.

While environmentalists are skeptical of the claim, they maintain that, even if true, more coal-fired power plants are not needed in Indiana, a state that relies on coal for more than 90% of its electric generation.

In its latest filing, for the Sullivan County plant, the company asked the Indiana Dept. of Environmental Management for several permits, including a Prevention of Significant Deterioration construction permit and a Title V operating permit. A similar request was made for the Pike County facility. EnviroPower also will need approval from the Indiana Utility Regulatory Commission.

Plans call for burning a combination of waste coal and coal produced at nearby Kindill Mining surface mines in Sullivan and Pike counties. Emission control systems would include limestone injection/baghouse controls to limit sulfur dioxide emissions from the circulating fluidized boilers and a Selective Non-Catalytic Reduction (SNCR) system to control nitrogen oxide emissions from the boilers.

Company officials contend the plants would provide environmental benefits by ridding the landscape of waste coal, or "gob." Some coal presumably produced by Kindill Mining, a subsidiary of AEI Resources, also would be burned in the plants.

Andy Knott, air and energy policy director for the Hoosier Environmental Council, said "It sounds like they're trying to use a coal-fired power plant as a waste incinerator, and that doesn't sit very well with us," The HEC, one of the leading environmental groups in Indiana, probably will intervene at IDEM and, eventually, the IURC, against the projects.

According to EnviroPower, the plants would use technology that burns coal at lower temperatures than conventional power plants. The end result, it says, should be lower emissions of sulfur dioxide and nitrogen oxide.

But Knott argues that lower burning temperatures could create additional pollution problems. "They're talking about one of the main benefits of these facilities is that they will burn coal-mining waste that does not have a very high Btu content, and we're hearing these [plants] will operate at lower temperatures than other power plants. That raises questions of how well these plants will deal with organics" such a polyaromatic hydrocarbons. "We're going to get high levels of organics coming from the stacks because they're operating at lower temperatures," Knott told *Utility Environment Report.*

SITING BOARD REJECTS REHEARING PETITION ON PG&E GENERATING'S ATHENS, N.Y. PLANT

Opponents plans a court challenge to what would be New York's first merchant power plant, following the state Siting Board's rejection of petitions to rehear its June 15 order approving PG&E Generating's 1,080-MW Athens unit.

The last remaining approval required for the plant is from the U.S. Army Corps of Engineers, said a PG&E Gen spokesman, adding that if the Corps permit is received this summer, site preparation could start next month (EUW, 19 June, 17).

An attorney for Citizens for Hudson Valley (CHV), however, said it planned an appeal of the siting board's latest order, issued Aug. 10. The appeal must be filed within 30 days at the Appellate Division of New York State Supreme Court, according to a board spokesman noted.

PG&E Gen's application is the farthest along of power plants proposed under New York's "Article X" process, under which state siting boards, not local authorities, have the final say.

The Athens siting board found some Town of Athens zoning ordinances unduly restricted and granted waivers—which the town did not oppose. The board rejected CHV's argument that the constitutionality of overrides of local laws by a state "law of general applicability" is determined case by case.

The board also rejected CHV and two other intervenors' claim that PG&E Gen must investigate alternate sites they identified as "apparently usable, based on a short-form environmental assessment."

The burden of proof remains with the intervenors, not the applicant, the board found. "Applicants need not present, and the board need not consider, alternate sites unless applicants own or have options on such sites...an intervenor advocating an alternative must submit evidence that the alternative is superior to that proposed."

Because PG&E Gen has "refused to commit to serving New York State," CHV and the other intervenors claimed, the board could not legally find Athens was selected under an approved procurement policy, or that it will be in the public interest.

"In CHV's view, the only competitive entry that would comply with the Public Service Commission's policy would be entry under terms that resemble the service obligations of vertically-integrated utilities under cost of service regulation," the board declared.

On the contrary, the board found, a competitive power market should include many sellers, including new entrants, that are free to maximize sales and profits.

PG&E Gen testified that Athens will submit to the New York State Independent System Operator's dispatch and com-

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mitment procedures, the board noted, and that under the ISO tariff, Athens would most benefit by selling through the ISO.

Even if most of Athens output was sold to the New England ISO—and there is no evidence it would—the NYISO could still use it to maintain service reliability.

CHV's concerns about the plant's impact on a "unique and internationally renowned viewshed" were dealt with extensively in the case and CHV cites no evidence the approval of the Athens unit rests on any error of fact or law, the board found.

TECHNOLOGY

WEPCO'S PLEASANT PRAIRIE PLANT PICKED FOR FIRST MERCURY CONTROL PROJECT

Wisconsin Electric's Pleasant Prairie coal plant has been selected by the U.S. Department of Energy to participate in the nation's first full-scale mercury emissions control program.

ADA-Environmental Solutions of Littleton, Colorado, will conduct the program with support of the Electric Power Research Institute. Tests involve the injection of activated carbon and other sorbent materials into one-fourth of the flue gas flow ahead of the particulate control device and measuring mercury reduction.

In addition, the program will evaluate the impact on plant equipment and on ash properties. WEPCO said it has been conducting "bench-scale" mercury removal activities at Pleasant Prairie this summer.

The move to full-scale demonstration seeks to gain additional technical information and to enhance the understanding of the process. Total cost of the program is estimated at $6.8-million. The DOE will pick up most of these costs with EPRI and participating utilities contributing one-third of the funding. WEPCO recently set a goal of reducing mercury emissions at its power plants by 40% over the next 10 years (UER, 30 June, 1).

AEP IN DEAL WITH CERACRETE TO EXPAND PILOT USING COAL ASH, SCRUBBER RESIDE

American Electric Power and Ceracrete Technologies Inc., a unit of Environmental Solutions Inc., are poised to expand a pilot program that uses coal ash and scrubber residue to create a "high-value" product.

Phil Robinson, president of Richmond, Va.-based Environmental Solutions, said his company is seeking to secure certification from national construction and transportation organizations for PaveMend, a high-performance concrete-repair material that is about 50% coal ash, plus sand and a proprietary chemical compound.

He said PaveMend shows real promise for filling potholes because it is "very user friendly" and sets much more quickly than traditional repair materials, thereby shortening the time that traffic lanes must be closed for fixing.

"What we are trying to do is get market credibility, because when you introduce a new product to the construction and transportation industries you need to prove that it can perform," Robinson said.

He noted that Environmental Solutions engineers monitoring the durability of PaveMend observed a test patch after it was run over at least 40 times per day by 20-ton lift cranes and fuel-filled tanker trucks for more than 120 days.

They found that areas repaired with a PaveMend patch showed evidence of traffic on its surface but lacked cracks or delamination. In comparison, a competitive quick repair product installed next to PaveMend for the same period showed excessive cracking.

Ceracrete already operates a pilot plant at AEP's big Mountaineer coal station in New Haven, W.Va. The coal station generates more than 280,000 tons of coal ash per year; the pilot plant uses a small portion of that ash to make Seabees, an interlocking concrete product used for erosion control.

Robinson said the pilot plant is capable of producing up to 3,000 60-pound bags of PaveMend per eight-hour shift, a pace that would consume 45 tons of coal ash per shift, or nearly 50,000 tons a year if the pilot plant were operating around the clock, 365 days a year.

He said that as PaveMend—and other products based on the Ceracrete formula—gain market credibility through testing and certification, Environmental Solutions plans to expand the capacity of its plant at the Mountaineer station, perhaps as soon as 2001.

Over time, Robinson added, it may be necessary to build another Ceracrete plant at another site, perhaps closer to West Coast markets for the product.

Kevin Dennis, AEP's environmental engineer at the Mountaineer station, said Ceracrete "provides tremendous environmental benefits because it takes recyclable raw materials and reuses them instead of sending them to a solid waste disposal facility."

NEW VENTURE SEEKS TO BUILD COMPRESSED AIR ENERGY STORAGE PLANTS IN TX. AND LA.

A Houston-based company plans to build several gas-fired peaking plants that it said would use only half as much fuel for each kWh generated and produce only about one-third of the emissions of a conventional plant of similar size.

Ridge Energy Storage of Houston said that by 2004 it plans to develop more than 2,000 MW of gas-fired peaking plants in Texas and Louisiana enhanced by compressed air stored in underground salt caverns.

Compressed air energy storage (CAES) is not new, but its use in electricity generation has been very limited. CAES has been used for more than 20 years on a 290-MW plant in Huntorf, Germany, and for 10 years on a smaller plant in McIntosh, Ala., but Ridge said it plans to use CAES technology on a much larger scale.

The CAES projects planned by Ridge will use electricity to

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compress air for storage in an underground cavern at night and during weekends when system demand and prices are low.

Ridge Chief Executive Officer Dine Glasgow said that during weekdays, when demand and prices are high, the compressed air will be recovered from the cavern and fed into the turbine—eliminating the need for a compressor to be run during plant operation.

The company said the modified CTs "produce electricity with emissions reductions of over 60% compared to plants of similar size. In addition, CAES plants use only about 50% of the natural gas required by other combustion turbine configurations to produce a kWh of electrical power."

Added Glasgow, "With CAES you are able to store energy and 'roll' power forward into the peak market."

Ridge Energy Storage—a joint venture of The Ridge Group and Energy Storage & Grid Services—has recently reached agreements with Texas Brine Corp. and another, unidentified company that entitle Ridge to use 10 existing salt caverns, including six in Texas and four in Louisiana.

Glasgow said that each of the 10 sites has access to gas pipelines, transmission lines, and water, and that each has the potential to support at least one 300-MW peaking plant. He added that some of the sites could support a second 300-MW plant, but others could not because of transmission constraints.

Ridge said it is pursuing "tolling agreements" under which energy marketers or other companies would agree to supply gas to the proposed plants and be entitled to the plants' electricity output.

Glasgow said his company "has started development on one site," which he declined to identify, "and is involved in permitting for three or four others. Our plan is to get to financial closing on the first project in the first quarter of 2001, and then to develop two or three additional plants per year" thereafter.

Another Houston-based company, Haddington Energy Partners, already is developing a 200- to 480-MW, gas-fired plant in Norton, Ohio, that will use CAES technology, and is in earlier stages of developing other CAES-based plants.

RENEWABLES

BAY AREA POOL AWARDED 9-MW 'GREEN' CONTRACT TO SUPPLY CITY OF OAKLAND

The City of Oakland has awarded a one-year contract to supply 9 MW or 47,000 MWh of green power for all of its municipal buildings, traffic lights, and street lights to ABAG Power, the Assn. of Bay Area Governments' power purchasing pool.

ABAG Power will buy the electricity from the Northern California Power Authority and the "green tickets" for green power credit from Calpine and the Automated Power Exchange, said Scott Wentworth, Oakland's project manager for the green power contract.

Calpine will supply 95% of the green tickets to the city while APX will sell the remaining 5 percent of green tickets, representing new renewable energy capacity in California, he said.

Green tickets are traded on APX's green power exchange and represent a measured amount of renewable energy generating capacity which can only be sold once. "We want green tickets to validate that we're buying green power, that somebody is actually generating renewable energy on our behalf," Wentworth said.

"Granted, it is a little strange to buy a green ticket from one company and electrons from another company, but that's what's actually happening."

As a non-profit with low overhead, ABAG Power beat out five other offers for the city's green power contract, which has been approved by the Oakland City Council but has not been finalized yet. Oakland is already a member of ABAG's natural gas power purchasing pool.

Oakland officials last fall specified that bidders should include distributed generation resources located within the city. However, the city only received one offer from a photovoltaic firm which required a 15-year contract, Wentworth said.

ABAG Power is charging the city a premium of about $34,000 for the green power for the first nine months of the contract, in addition to $36,000 which the city has already spent in installing 36 real-time meters.

Oakland currently pays $3.8 billion a year for electricity.

PS COLORADO ADDS 36 MW TO WINDSOURCE PROGRAM; WIND SUPPLIES NOW AT 56 MW

Another 36 MW of wind power will be added to the Windsource program of Public Service Co. of Colorado, bringing the utility's total to 56 MW, officials said Tuesday.

The company claims Windsource is the largest such "customer-driven" program in the country. Development will span a total of five-years, with 4 MW of the new 36 MW program in service by year-end and another 6 MW in service by the spring of 2001.

Of the 36 MW total, the company will own 10 MW, which will be added at its Ponnequin Wind Facility, located in northern Colorado just below the Wyoming border.

The Ponnequin site currently produces about 20 MW of wind power. Separately, the company is negotiating with enXco to build, own and operate a 25-MW unit at Peetz, Colorado, which is close to the Nebraska state line.

The company said enXco was selected as the developer in a competitive bidding process. There is no date certain when the enXco unit will be in service.

Public Service Co. customers buy wind power in 100-kWh blocks on a monthly basis at a premium over regular power prices. Currently, the block of 100 kWh cost about $2.50 more per month than the normal retail rate.

There are more than 15,000 customers currently subscribed with Windsource, including about 400 businesses and four wholesale customers.

Several significant commitments to Windsource have been made within the past several months, including the federal government's commitment to purchase 10 MW of wind power for various facilities in Colorado, and the University of Colorado's commitment to purchase 750 kW, or the output of one turbine, annually.

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UTILITY SUBSIDIARIES BUILDING 100-KW THIN-FILM PHOTOVOLTAIC ARRAY FOR GSA

The U.S. General Services Administration is developing a 100-kW solar photovoltaic array at the Suitland Federal Center in Suitland, Md. The complex will use the newer thin-film technology, rather than the more common crystalline design.

Applied Power Corp. (APC) will design and build the complex, while Pepco Energy Services will act as project manager. APC, based in Lacey, Wash., is a subsidiary of IDACORP, which owns Idaho Power. Pepco Energy Services is a subsidiary of Potomac Electric Power, Washington, D.C.

The companies claim the facility will be one of the largest PV arrays in the country. APC and Pepco have begun construction, and expect to bring the plant on-line in September. The $1-million project will include 2,800 amorphous silicon modules that will convert sunlight directly to electric power for the facility's central cooling facility.

This "thin-film" technology is different from the crystalline or polycrystalline silicon designs most commonly used in PV applications.

According to the partners, the thin-film design performs better in high temperatures, and costs less to manufacture. They called the project a "showcase" for amorphous silicon technology, which will also demonstrate to other organizations the short construction time required for PV installations.

Edward Kern, vice president of engineering for APC, explained that the more widespread crystalline or polycrystalline technologies derive from the same "heritage" as computer chip production.

Individual solar wafers are manufactured and placed between glass, which involves more handling and a more cumbersome production process that raises costs.

In contrast, thin-film, amorphous silicon technology is more like creating tinted glass—a continuous process that is about 20-30% cheaper, Kern estimated. However, the resulting solar arrays are about half as efficient as with wafers. Therefore, using the thin-film design can double the required space, wiring, structural material and labor.

For that reason, the cost of using either type of technology is currently "a wash," said Kern. "The trick now is to tweak it, to raise the potential" of thin-film PV, he added. Wafer technology has already reached its efficiency potential, he noted.

The project will produce power for roughly 66 cents/kWh, Kern said, basing those figures on PV calculations from the Dept. of Energy's National Renewable Energy Laboratory. The estimates do not include tax considerations, just simple interest and principal payments. The 66 cents/kWh cost applies to both technologies, though the thin-film type requires more space.

GSA said the project demonstrates its commitment to clean technologies, and it funded the work as part of the Planet GSA program and the President's Million Solar Roofs initiative.

Under that program President Clinton set a goal for the federal government of 2000 solar installations by the end of the year. DOE is providing some funds through the Utility Photovoltaic Group, a group of utilities pursuing PV.

MANAGEMENT

SOUTHERN MARRIES ENERGY RESEARCH AND ENVIRONMENTAL POLICY FUNCTIONS

In a corporate restructuring, Southern Company has joined its energy research and environmental policy functions under a single executive saying that the two areas were becoming more related as Southern tries to develop cleaner energy production technologies to meet environmental standards.

Southern said that Charles Goodman, who already heads its energy research effort will also take over environment policy responsibilities in the new post of senior vice president, research and environmental affairs.

Bob Woodall, who had previously been Southern's vice president for environmental policy retired in May opening the way for the two positions to be combined.

Goodman will be based in Birmingham, Ala., and report to Charles McCrary, president of Southern Company Generation, which operates the company's regulated utility and merchant plants in the Southeast totaling over 36,000 MW.

Goodman will oversee Southern company's environmental compliance effort and also major research work on clean coal technologies and fuel cell systems Southern said it had spent over $4-billion since 1990 on environmental upgrades at its plants and on research.

RESEARCH

NEW EPA SURVEY FUELS ENVIRONMENTAL GROUP'S ATTACK ON UTILITY INDUSTRY

Using newly released information on toxic emissions by the U.S. Environmental Protection Agency, a national environmental group is taking aim at electric utilities, accusing them of being the biggest polluters in the nation, far outstripping industries such as chemical manufacturing and refining.

According to "Clear The Air—The National Campaign Against Dirty Air," EPA's Toxic Release Inventory is the nation's premiere database of information on how much toxic air, water and land pollution is released each year by various industries. The group said a serious gap in the compendium was recently closed when coal- and oil-burning electric utilities were required to disclose their air, land and water pollution.

"When EPA released the newest data to the public…electric utilities instantly became known as the biggest toxic air polluters in the U.S.," said Clear The Air.

Clear The Air claims the EPA information demonstrates electric utility emissions "can and do in fact present serious public health concerns. It also shows that special pollution exemptions for power plants have contributed to the massive quantity of toxic materials released by the electric power industry."

The information ranks Southern Co. as the biggest electric utility air polluter in the U.S., with American Electric Power a close second. Rounding out the Top Ten are the Tennessee Valley Authority, Carolina Power & Light, FirstEnergy, Cin-

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ergy, LG&E Energy, Ameren, Dominion Resources and Dayton Power & Light.

An LG&E spokesman sharply criticized the study. "It's obvious the groups that released the study have an agenda, and that agenda is to eliminate coal-fired generation." LG&E Energy, he noted, has invested heavily in coal-fired generation, which has produced low-cost power for customers and stimulated economic development.

The spokesman also denied the power plant emissions pose health risks to individuals.

Clear The Air, based in Washington, D.C., is a joint project of three groups: the Clean Air Task Force, the National Environmental Trust and the U.S. Public Interest Research Group's Education Fund.

Clear The Air was initiated by the Pew Charitable Trusts through a grant to Pace University.

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