Schedule WPD-6

Power Plant Comparison Data and Backup

			Comparison of Robert's, DOE and Vantage Numbers								
Ref. #	Selected Power Plants	Capacity (MW)	Technology	Constr. Start	Constr. Complete	Schiff Harden Estimate ($/KW)	DOE Estimate ($/KW)	Vantage Calculation ($Mil)	Vantage Calculation ($/KW)	Included	Analysis
1	Nebraska City	682	PC Subcritical	Jun-05	Jul-09	$1,267	$1,282	$630	$924	yes	Vantage cost data based on the $630M construction cost estimate from the Omaha Public Power District press release to the Lincoln Journal Star newspaper dated July 10, 2009
2	Rodemacher 3	661	Fluidized Bed	N/A	2009	$1,512	N/A		N/A	No	No analysis done based on different technology applied.
3	Comanche 3	750	PC Supercritical	Sep-05	Sep-09	$1,795	$1,733	$1,300	$1,733	yes	Costs correlate
4	Prairie State Energy Campus Unit 1	800	PC Supercritical	Sep-07	Jul-10	$1,812	$2,437	$1,900	$2,375	yes	Vantage cost data based on the $1.9B construction cost estimate from the Prairie State Energy Campus press release dated May 10, 2010.
5	Prairie State Energy Campus Unit 2	800	PC Supercritical	Sep-07	Jul-10	$1,812	$2,437	$1,900	$2,375	yes	Vantage cost data based on the $1.9B construction cost estimate from the Prairie State Energy Campus press release dated May 10, 2010.
6	Plum Point	665	PC Subcritical	Mar-06	Aug-10	$1,954	$1,954	$1,300	$1,954	yes	Costs correlate
7	Lockwood IGCC	600	IGCC	N/A	2011	$2,000	N/A		N/A	No	No analysis done based on different technology applied.
8	Elm Road Unit 1	615	PC Supercritical	Jun-05	Feb-10	$2,032	N/A	$1,150	$1,870	yes	Vantage cost data based on the $1.15B construction cost estimate from the WPPI Energy press release dated March 2010.
9	Elm Road Unit 2	615	PC Supercritical	Jun-05	Jun-10	$2,032	N/A	$1,150	$1,870	yes	Vantage cost data based on the $1.15B construction cost estimate from the WPPI Energy press release dated March 2010.
10	Cliffside	825	PC Supercritical	Jan-08	2012	$2,182	N/A	$1,800	$2,182	yes	Costs correlate
11	Trimble County	750	PC Supercritical	Jul-06	May-10	$2,289	$1,467	$1,161	$1,528	yes	Vantage cost data based on the $1.2B construction cost estimate in current rate case..

Ref. #	Selected Power Plants	Capacity (MW)	Technology	Constr. Start	Constr. Complete	Schiff Harden Estimate ($/KW)	DOE Estimate ($/KW)	Vantage Calculation ($Mil)	Vantage Calculation ($/KW)	Included	Analysis
12	Oak Grove Unit 1	800	PC Supercritical	Jun-07	Dec-09	$2,289	$1,125	$900	$1,125	yes	Vantage cost data based on the $900M construction cost estimate from the Fluor press release dated June 2007. SH included both unit cost in their estimate.
13	Oak Grove Unit 2	800	PC Supercritical	Jun-07	Jun-10	$2,289	$1,125	$900	$1,125	yes	Vantage cost data based on the $900M construction cost estimate from the Fluor press release dated June 2007. SH included both unit cost in their estimate.
14	Sandy Creek	900	PC Supercritical	Aug-07	2012	$2,289	$1,111	$2,000	$2,222	No	Based on construction estimate, project will not be complete until 2012.
15	JK Spruce	750	PC Supercritical	Sep-07	2010	$2,469	N/A	$1,000	$1,333	yes	Vantage cost data based on the $1B construction cost estimate from the San Antonio Express news article dated Feb. 6, 2009.
16	JW Turk	600	PC Supercritical	In development	In development	$2,589	$3,433	$1,600	In development	No	Construction delayed due to environmental permitting issues. Costs not included in analysis
17	Longview	700	PC Supercritical	Jun-07	Mar-11	$2,600	N/A	$1,800	$2,340	yes	Costs correlate
18	Desert Rock Unit 1	750	PC Supercritical	In development	In development	$2,667	$2,000	$2,000	In development	No	Construction delayed due to environmental permitting issues. Costs not included in analysis
19	Desert Rock Unit 2	750	PC Supercritical	In development	In development	$2,667	$2,000	$2,000	In development	No	Construction delayed due to environmental permitting issues. Costs not included in analysis
20	Virginia City Energy Center	595	Fluidized Bed	N/A	2012	$3,025	N/A		N/A	No	No analysis done based on different technology applied.
21	Edwardsport IGCC	600	IGCC	N/A	2012	$3,916	N/A		N/A	No	No analysis done based on different technology applied.
22	Iatan Unit 2	850	PC Supercritical			$2,339	$2,339	$1,988	$2,339		Based on the most recent cost reforecast of $1.99B.
23	Walter Scott Unit 4	790	PC Supercritical	Sep-03	Jun-07	N/A	$1,200	$1,200	$1,519	Yes	DOE, Publication
24	Weston Power Plant Unit 4	525	PC Supercritical	Oct-04	Jun-08	N/A	$774	$774	$1,474	Yes	DOE, Trade Publication

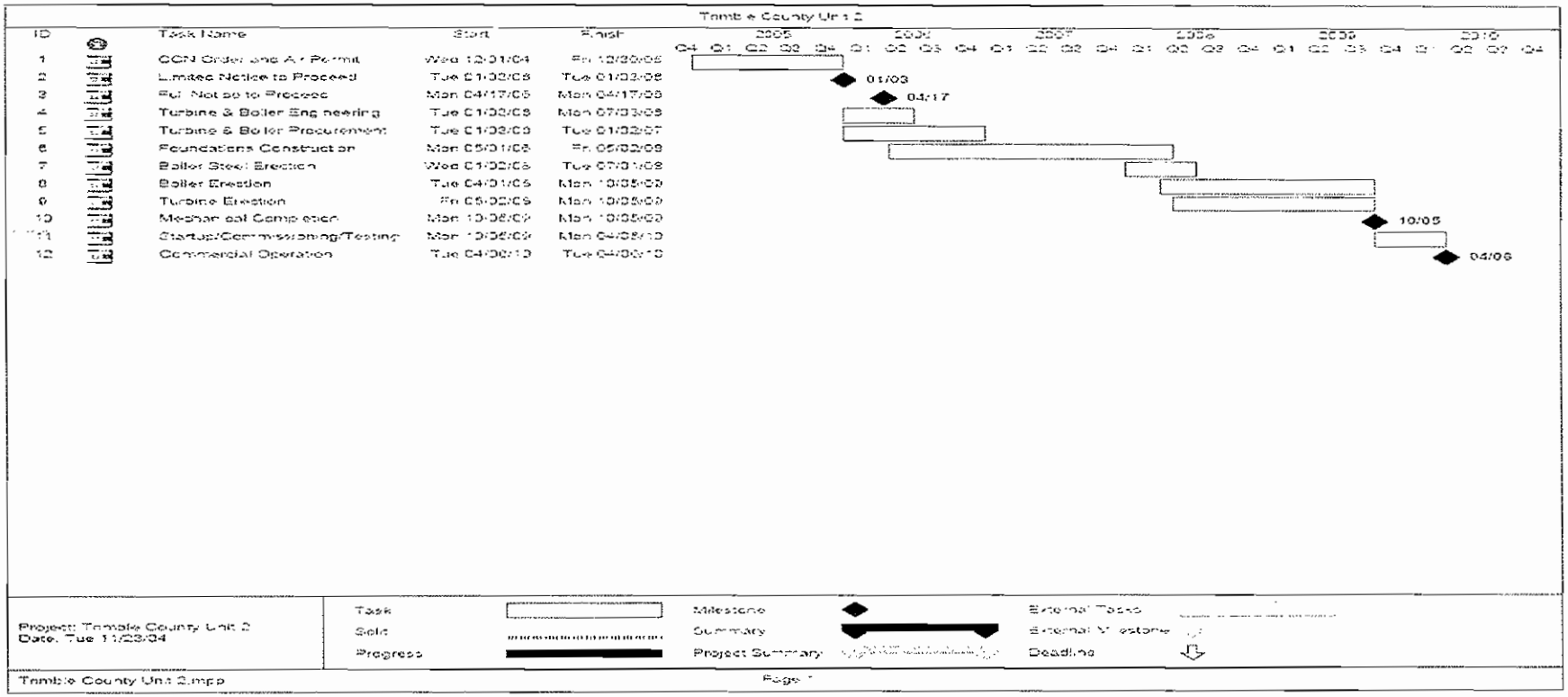
Power Plants In Vantage Peer Group Selection

Ref. #	Project	Developer	Location	Fuel	Technology	Constr. Start	Constr. Method	Size (MW)	Cost Basis ($Mil.)	$/kW	Source of Cost
1	Nebraska City Unit 2	Omaha Power Public District	Nebraska City, NE	Coal	PC Subcritical	Mid 2005 to July 2009	EPC Kiewit	682	$630	$924	$630M construction cost estimate from the Omaha Public Power District press release.
3	Comanche 3 Power Station Expansion	Xcel Energy	Comanche Station, CO	Coal	PC Supercritical	Fall 2005 to Fall 2009	EPC Shaw	750	$1,300	$1,733	DOE Data and article from Power Technologies.com web site;
4	Prairie State Energy Campus Unit 1	American Mun. Power, Southern Illinois Power Corp., Peabody Energy, Illinois Mun. Power, MJMEUC, Kentucky Muni. Power, Prairie Power, Northern Illinois Mun.	Washington County, IL	Coal	PC Supercritical	October 2007 to Mid 2010	EPC Bechtel	800	$1,900	$2,375	Vantage cost data based on the $1.9B construction cost estimate from the Prairie State Energy Campus press release dated May 10, 2010.
5	Prairie State Energy Campus Unit 2	Same as above	Washington County, IL	Coal	PC Supercritical	October 2007 to Mid 2010	EPC Bechtel	800	$1,900	$2,375	Vantage cost data based on the $1.9B construction cost estimate from the Prairie State Energy Campus press release dated May 10, 2010.
6	Plum Point Energy	EIF Plum Point LLC, Empire District Electric Co., East Texas Electric Coop, MJMEUC, Municipal Energy Agency of MS., John Hancock Life Ins., Dynegy	Osceola, AR	Coal	PC Subcritical	March 2006 to August 2010	EPC Black & Veatch	665	$1,300	$1,955	DOE
8	Elm Road Generating Station Unit 1	WPPI Energy, Madison Gas and Electric, Wisconsin Electric Power	Oak Creek, WI	Coal	PC Supercritical	June 2005 to February 2010	EPC Bechtel	615	$1,150	$1,870	Vantage cost data based on the $1.15B construction cost estimate from the WPPI Energy press release dated March 2010.

Ref. #	Project	Developer	Location	Fuel	Technology	Constr. Start	Constr. Method	Size (MW)	Cost Basis ($Mil.)	$/kW	Source of Cost
9	Elm Road Generating Station Unit 2	WPPI Energy, Madison Gas and Electric, Wisconsin Electric Power	Oak Creek, WI	Coal	PC Supercritical	June 2005 to February 2010	EPC Bechtel	615	$1,150	$1,870	Vantage cost data based on the $1.15B construction cost estimate from the WPPI Energy press release dated March 2010.
10	Cliffside Unit 6	Duke Energy	Cleveland County, NC	Coal	PC Supercritical	January 2008 to 2012	EPC Shaw	825	$1,800	$2,182	Duke Newsletter and Trade Publication
11	Trimble County Unit 2	EON, IMEA, IMPA	Trimble County, KY	Coal	PC Supercritical	July 2006 to Mid 2010	EPC Bechtel	760	$1,161	$1,528	2010 Rate Case, Interview with witness
12	Oak Grove Unit 1	Illuminant	Franklin, Tx	Lignite	PC Supercritical	Summer 2007 to December 2009	EPC Fluor	800	$900	$1,125	Vantage cost data based on the $900M construction cost estimate from the Fluor press release dated June 2007. SH included both unit cost in their estimate.
13	Oak Grove - Unit 2	Illuminant	Franklin, TX	Lignite	PC Supercritical	Summer 2007 to June 2010	EPC Fluor	800	$900	$1,125	Vantage cost data based on the $900M construction cost estimate from the Fluor press release dated June 2007. SH included both unit cost in their estimate.
15	J K Spruce	CPS Energy	San Antonio, TX	Coal	PC Supercritical	September 2007 to 2010	EPC Calaveras Power Partners	750	$1,000	$1,333	Vantage cost data based on the $1B construction cost estimate from the San Antonio Express news article dated Feb. 6, 2009.
17	Longview Power	Siemens Financial Services, GenPower Holdings	Morgantown. WV	Coal	PC Supercritical	June 2007 to March 2011	EPC Siemens Aker	769	$1,800	$2,341	Trade Publication/ Modern Power Systems
22	Iatan 2	KCP&L	Weston, MO	Coal	PC Supercritical	December 2005 to Late 2010	Hybrid EPC/Multi-prime	850	$1,988	$2,339	March 2010 Reforecast
23	Walter Scott Unit 4	MidAmerican Power	Council Bluffs, IA	Coal	PC Supercritical	September 2003 to June 2007	EPC Hitachi	790	$1,200	$1,519	DOE, Publication
24	Weston Power Plant, Unit 4	Wisconsin Public Service Corp	Wausau, Marathon County, WI	Coal	PC Supercritical	October 2004 to June 2008	EPC Washington Group	525	$774	$1,474	DOE, Trade Publication

Project	Iatan 2	Trimble County Unit 2
Developer	KCP&L	EON, IMEA, IMPA
Location	Weston	Trimble County
State	MO	KY
Fuel	Coal	Coal
Technology	PC Supercritical	PC Supercritical
Construction Start	Dec-05	7/1/2006
Construction Finish	Late 2010	Mid-2010
Construction Method	Hybrid EPC/Multi-prime	EPC Bechtel
Size (MW)	850	760
Cost Basis ($000, 000)	$1,988	$1,161
$/kW	$2,339	$1,525
Source of Cost	March 2010 Reforecast	2010 Rate Case
Cost/kW difference	$814	
Projected Price Differential when adjusted for size.	$691,750,000	
Initial Engineer	B&M since 1990's	B&M did estimate in 2002
Estimate for Project	B&M did PDR in 2004, with updates afterward.	Cummins and Barnard Engineering from Michigan did development of detailed process.
Commission Approval	Jul-05	Nov-05
Bid for Services	Issued RFP for Owner Engin	Issued bid in early 2005 for EPC. Three months for initial bids. Detailed negotiations on scope, schedule, price and other commercial terms then proceed through remainder of 2005. Limited notice to proceed in early 2006 timeframe.
Major Equipment Types	Alstom Boiler and AQCS, Toshiba Turbine Generator	Duscon-Babcock Boiler, Hitachi Turbine Generator, Siemens AQCS
Commercial Operation:	Late 2010	Scheduled for commercial operation in June 2010. Achieved 200MW load on May 24, 2010
Reference Testimony of Paul Thompson, LGE, Case No. 2009-00548		

Exhibit JNV-5, Summary Schedule of TC2 Project Execution



Nebraska City Unit 2 Coal-Fired Power Plant - Nebraska City, NE

As Kiewit's first modern coal-fired power plant construction project, the Nebraska City Unit 2 facility has been an exciting success. The new plant at Nebraska City more than doubles the current power output at the original facility that was built in the 1970s.

A Kiewit-led joint venture was awarded the contract to engineer, procure, construct, start-up and test a 660-megawatt coal-fired power plant with an IHI subcritical pulverized coal boiler; five IHI coal mills; a Toshiba steam turbine; TEI condenser and feedwater heaters; Flowserve condensate, circulating water, closed cooling water and boiler feedwater pumps; and an 18-cell cooling tower. The new plant incorporates state-of-the-art emission controls, including an Alstom spray dryer absorber and pulse jet fabric filter baghouse; a selective catalytic reduction system; and fly-ash and bottom-ash handling systems.

Additionally, a powdered activated carbon injection system provides a 12-day supply of powdered-activated carbon that is conveyed to the spray dryer absorber supply ducts and used for mercury control in the flue gas at the facility. All components of the system work together to feed the powdered activated carbon from a carbon silo into the spray dryer absorber inlet duct through 24 duct injection lances, thereby minimizing the mercury component in the flue gas to the client's specified levels.

The plant was named as one of POWER magazine's 2009 top plants.

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OPPD unveils new power plant near Nebraska City
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OPPD unveils new power plant near Nebraska City
The new plant includes features that make it more energy-efficient and environmentally friendly than older power stations. But it also doubles the amount of coal being burned in OPPD's side-by-side plants
Story Discussion JOE DUGGAN / Lincoln Journal Star | Posted: Friday, July 10, 2009 12:00 am | No Comments Posted
Font Size: Default font size Larger font size
Together, Nebraska City Station 1 (tall chimney) and Station 2 will generate more than 1,330 megawatts of electricity. (Gwyneth Roberts / Lincoln Journal Star)
NEBRASKA CITY - The Omaha Public Power District dedicated a new 682-megawatt coal-burning power plant Friday.
The new plant includes features that make it more energy-efficient and environmentally friendly than older power stations. But it also doubles the amount of coal being burned in OPPD's side-by-side plants south of Nebraska City and increases the release of greenhouse gases.
The new plant also powers 405,500 more air conditioners, a point not lost on anyone who attended the dedication ceremony on a 82-degree, 76-percent humidity day.
With all the headlines about alternative energy, cheap, abundant coal still turns on the lights in Nebraska - now and in the foreseeable future. And so the conflict between global warming and a developed world continues.
OPPD calls its new $630 million plant Nebraska City Station 2. The utility built the new project on the banks of the Missouri River right next to Station 1, which was finished in 1979. Together the two plants will generate more than 1,330 megawatts of electricity.
"Construction was long and complex, but we are exceptionally proud of the result," said W. Gary Gates, president and CEO of OPPD.
In Nebraska, only the 1,365-megawatt Gerald Gentleman Station near Sutherland, owned by the Nebraska Public Power District, has a greater generating capacity. The Nebraska City plant is the first completed in the state since 2005, when NPPD finished the 250-megawatt Beatrice Power Station.
OPPD serves a population of more than 750,000 people in 13 counties in eastern Nebraska.
The new plant includes scrubbers, high-efficiency burners and a carbon injection system to reduce such pollutants as nitrous oxide, mercury, sulfur dioxide and ash.
Tougher federal regulations on emissions mean the new plant releases one-tenth of the pollution of the 1979 station, said Ray Lynn, technical supervisor at the station.
But since OPPD switched on the new station in May, the combined stations are consuming 135 train cars of coal every 20 hours.
District officials point out that the coal is a low-sulfur variety mined from the Powder River Basin of Wyoming. Plus, they designed the new plant so that

emerging clean coal technology - perhaps carbon capture and storage - can be added in the future.
The utility broke ground on the plant in 2005. Other utilities participated, including NPPD and those in Nebraska City, Falls City, Grand Island, Missouri and Minnesota.
OPPD financed the plant through a 40-year bond, Gates said. Rate increases will be necessary to help pay off the debt.
But the utility will still offer some of the lowest electrical rates in the country, Gates said. And that wasn't lost on Gov. Dave Heineman, Friday's guest of honor, who said low public utility costs help the state attract new business.
"It's very, very important to Nebraska," Heineman said.
Reach Joe Duggan at 473-7239 or jduggan@journalstar.com.
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Comanche 3 Power Station Expansion, CO, USA

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Key Data

Announcement of contract	April 2004
Site preparation work started	September 2005
Construction to begin on Unit 3	January 2006
Start of operation	Autumn 2009
Output	750MW
Plant type	Super-critical pulverized coal
Location	Comanche Station near Pueblo, Colorado

Full specifications

Xcel Energy has begun constructing its first new coal-fired electric generating unit in nearly 30 years. The Comanche Station near Pueblo, Colorado, is the site for a new 750MW supercritical pulverised coal-generating unit. This adds to two existing units that generate about 660MW. When the Comanche 3 unit is complete, the site will provide nearly 1,400MW of electricity, sufficient for about one third of Colorado's communities. The project is estimated to cost about $1.3bn.

Alstom won the contract from Public Service Co. of Colorado, doing business as Xcel Energy. Alstom will design, supply, erect and commission a high-efficiency, supercritical boiler for the unit. Mitsubishi Heavy Industries (MHI) will supply the supercritical steam turbine for the plant, MHI's first such order from the US. Delivery is planned for June 2007. MHI's Nagasaki Shipyard and Machinery Works will design and manufacture the turbine. Construction and installation work will be done locally.

The plant is planned to go into commercial operation in 2009, and will provide Xcel Energy customers with reliable electricity from the United States' large domestic coal resources.

Comanche Unit 3 will feature advanced emission controls, with extra controls being fitted on the two existing units at the plant. These will help reduce overall emissions of sulphur dioxide (SO_2, by 65%) and nitrogen oxide (NO_x, by 30%) emissions, even despite the

Expand Image
Comanche Station at dusk.

Expand Image
Comanche Station site.

Expand Image
Comanche steam blow.

doubling in overall electric generation. The Colorado Public Utilities Commission has approved construction.

Expand Image
Comanche transmission towers.

Construction progress

"Construction of all the road works proposed under the project have been completed and has cost $7.5m."

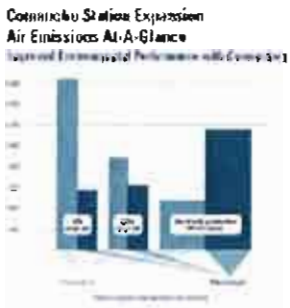
By mid 2009, the construction on the Comanche Unit 3 was 73% complete. Nearly 98% of the engineering works were completed. All the important equipment and components have been made available on the site, while 90% of the materials were procured.

Due to labour shortages, the construction went slightly behind the original schedule. However, the cooling tower has been constructed and the scrubbers and emission controls have been installed at Unit 1 and Unit 2 to reduce emissions of sulphur dioxide and nitrogen oxide by 65% and 30% respectively, Scrubbers have been installed to control sulphur dioxide and new burners have been installed for nitrogen oxide control. The insulation and its aluminium protection cover remains to be completed.

Construction has been completed on the flooring, sides and roof of the building that accommodates the steam turbine generator, while the generator rotor has been set.

Comanche Unit 2 is scheduled to be operational by 2009 end. Power will be transported between the Comanche Station and the Unit 3, via a new transmission line. The line will have two separate circuits that will be strung on one tower, besides a path that runs parallels to the existing facilities. Nearly 67% woks on the line were complete until the end of 2008. The line has the capacity to transport 345KV power.

Construction of all the road works proposed under the project have been completed and has cost $7.5m.



Expand Image
Comanche Unit 3 will feature advanced emission controls reducing sulphur dioxide (SO_2, by 65%) and nitrogen oxide (NO_x, by 30%) emissions, even despite the doubling in overall electric generation.

Low-sulphur coal

Alstom's boiler is the core of one of the most advanced steam plants to have been built in the US. It will burn low-sulphur Powder River Basin coal and has Alstom's TFS 2000 firing system. This system, coupled with a selective catalytic reduction system, will have some of the lowest nitrogen oxide emissions in the USA.

Supercritical units operate at higher temperatures and pressures than sub-critical units (Comanche 1 and 2 are sub-critical). The higher pressures increase turbine efficiency and power output, so less coal is used to produce the same amount of electricity. While initial capital costs of a supercritical unit are slightly higher than sub-critical units, the total cost is much less over a unit's life.

"The high pressure, high temperature advanced steam cycle also significantly increases plant efficiency, minimising emissions and fuel costs."

The high pressure, high temperature advanced steam cycle also significantly increases plant efficiency, minimising emissions and fuel costs. Similar ALSTOM boilers already operate in Europe and Asia.

Expand Image
When Comanche Unit 3 is

finished, the whole site will provide electricity for a third of Colorado's communities.

Residential, business and wholesale customers

Xcel Energy is a major US electricity and natural gas energy company based in Minneapolis, Minnesota. The company proposes to own 500MW of the 750MW unit. Two wholesale customers - Intermountain Rural Electric Association of Sedalia, and Holy Cross Energy of Glenwood Springs- may take ownership of the remaining 250MW.

Xcel Energy serves residential and business customers as well as wholesale customers. These include Aquila in Pueblo, Holy Cross Energy in Glenwood Springs, Grand Valley Power in Grand Junction, Yampa Valley Electric in Steamboat Springs, Intermountain REA in Sedalia, and the cities of Julesburg, Burlington and Center.

Comanche Station is located a quarter mile from Rocky Mountain Steel Mills in Pueblo. The steel mill is the single largest commercial account for Xcel Energy in Colorado, and the only direct electric customer in the immediate area. All other electricity that Comanche generates is transported to the power grid or sold to the Pueblo-area electric distribution company, Aquila. Aquila is one of Xcel Energy's largest wholesale customers, purchasing two-thirds of its power from Xcel Energy.

Union-only construction

Over 1,000 workers will be needed over three to four years, with around 40 extra full -time employees once the unit is online. Only union labour are being utilised to complete the Comanche 3 project according to an agreement reached between Xcel Energy and the Colorado Building Trades Council. The council represents 23 unions across the state including carpenters, labourers and others. Preference has been given to local workers, even if contractors are based out of state.

A low water-use system for Comanche Unit 3 will use both water and air for cooling, reducing water use by about half. The Pueblo Water Board has determined that water supplies are adequate. Road improvements make it easier for equipment, materials and workers to travel to Comanche Station. The road project has cost approximately $4m.

Coal supplier and railroad provider have not yet been determined. Fuel will be delivered using the existing rail spur. The plant currently uses about 75 railcars of coal a day. That should double when the new unit is in service. Additional transmission is needed to link the Comanche Station to the Daniels Park substation, south of Denver.

As part of a Least-Cost Plan Settlement agreement, Xcel Energy will make donations to the local Pueblo community.

Related Projects:

Conventional Thermal
- Kusile Power Station
- Medupi Coal-Fired Power Station
- Fiume Santo Power Station
- Wayang Windu Geothermal Plant
- Riverside Coal Fired Plant

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News Stories

News

Area Businesses are Getting a Boost from Workers Building Prairie State Energy Campus

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Jamie Forsythe
May 10, 2010
For the News-Democrat

LIVELY GROVE - At 9 a.m., the phones start ringing at Waller's Market in Lively Grove with lunch orders from workers at the Prairie State Energy Campus under construction just a few miles away

Two employees man the phones at Waller's for the next three hours, writing down orders on top of Styrofoam containers and totaling bills. Another half-dozen workers prepare the meals in the full kitchen, which owner Dave Waller said he added two years ago along with a sitting area in preparation for the influx of construction workers.

The place is hopping until well past noon as Waller mans the meat counter and his sister, Marilyn Wienstoer, stocks shelves, prepares pizzas ordered and rings out customers. Another sister Donna Waller-Weber keeps everything running smoothly in the kitchen.

At 11 a.m., Prairie State employees in training start arriving from the mining school set up just two miles northwest of Waller's Market.

They are among 2,300 working at the $3.9-billion energy campus that is under construction. It will include a 1,600-megawatt pulverized coal power plant, which will be powered by the adjacent underground Lively Grove Coal Mine spanning 200 acres. The first 800-megawatt generating unit at Prairie State is expected to be complete in June 2011 with the second 800-megawatt generating unit to be completed 10 months after Unit 1. At least 500 permanent skilled jobs are expected at the energy campus.

"Long term, we are hoping the county will have the skill set necessary to fill the permanent jobs at Prairie State and the coal mine that will be feeding Prairie State," said Bob Myerscough, interim coordinator for Randolph County Department of Economic Development

Rob McCramie, of Belleville, a shift supervisor at the power plant, said a new school opened back in October and currently has 25 students enrolled with another 19 expected to be added in the next few weeks

The trainees and their instructors flood the cafeteria window at Waller's where they order up lunch one at a time. The kitchen staff work fast and have lunches prepared in a few minutes.

McCramie said he frequents Waller's a couple times a week. On Friday, he ordered chicken tenders with a side of barbecue sauce.

T.J. Prazer, of St. Louis, a student at the training center, said he comes to Waller's practically every day. "I give them most of my paycheck," he joked

Bob Jarrett of Coulterville, an electrician at the power plant, said he eats at Waller's at least three times a week. "I know these are good people," he said. "The food is excellent and very reasonable."

Once the 11 a.m. crowd dies down, workers from Prairie State Energy Campus start pouring in. "Those who can get away come in here and eat," Waller said.

"Everyone who comes in here is super nice," Wienstoer said. "We meet a lot of good people," Waller added, noting a lot of workers originate from Chicago, Michigan or other places around the country where work is hard to find.

Construction workers who can't get away can still enjoy lunch from Waller's, which delivers to the campus at 11:30 a.m. every weekday.

Mascoutah Hotel May Profit from New Power Plant Guests

Prairie State Air Permit Review Process Successfully Concludes

Peabody Closes on Agreement With American Municipal Power-Ohio to Purchase 368 Megawatts of the Prairie State Energy Campus

Prairie State Energy Campus Completes Financial Closing

AMP-Ohio Joins Prairie State Energy Campus Partner Group With Commitment to 300 Megawatts of the Project

Prairie State Energy Campus Advances To Full-Scale Construction

Lively Grove businesses aren't the only ones benefiting from Prairie State Energy Campus The economic effects of the $3 9 billion project expand far beyond Washington County and into Randolph and St Clair counties

"They are going to our restaurants, shopping at our stores and buying fuel and other necessities," Myerscough said "It has been a positive impact "

Renee Smith, owner of the Butcher's Block in Sparta, said the energy campus has brought business to her fresh meat and deli shop "There's a lot of nice people working out there," she said

Holly Perry, manager at Pistol City in Coulterville, said the restaurant has seen a "steady increase" in customers "We get quite a few of them in here," she said of the construction workers, "usually they come in and eat in the afternoon

"A lot of time when they get rained out they come in and drink," she added

Construction workers not only need a place to eat, but a place to stay as well Myerscough said the energy campus has "positively" impacted housing in Randolph County "The rental units are full," he said, and individuals have taken the opportunity to provide temporary housing for workers by setting up camp ground areas

Mike Minks, president of the Marissa Chamber of Commerce, said every home previously vacant in town is now rented out "It's helped our housing market in town," he said

Mike Patel, owner of the Sparta Motel, said he's usually over 50 percent capacity due to long-term occupants from the energy campus "Everybody is doing good," he said of businesses in town. "There are slow economies elsewhere but here it (Prairie State Energy Campus) is a plus "

Minks agrees "I would have hate to see what this area would have been like without Prairie State," he said "I think it would have been really ugly this recession we went through without Prairie State It made things better for our little community "

Click here to visit the Illinois Chamber of Commerce Energy Council Blog to read Executive Director Tom Wolf's thoughts on this article

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Case Study: Plum Point Energy Project

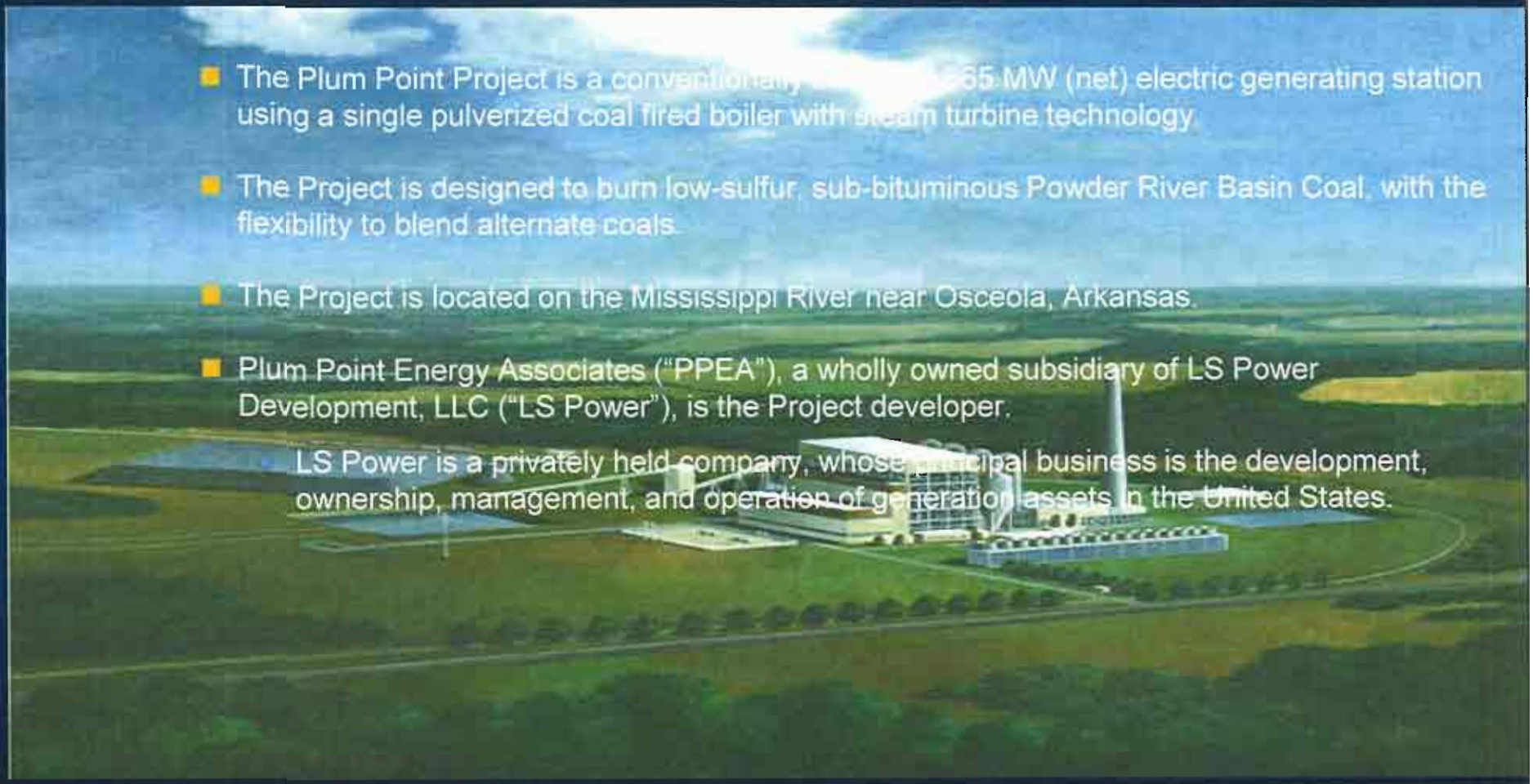
Financing a Public Power Minority Investment in a Developer Sponsored Merchant Coal Plant

Edward P. Meyers
Goldman, Sachs & Co.

January 18, 2007

Goldman Sachs

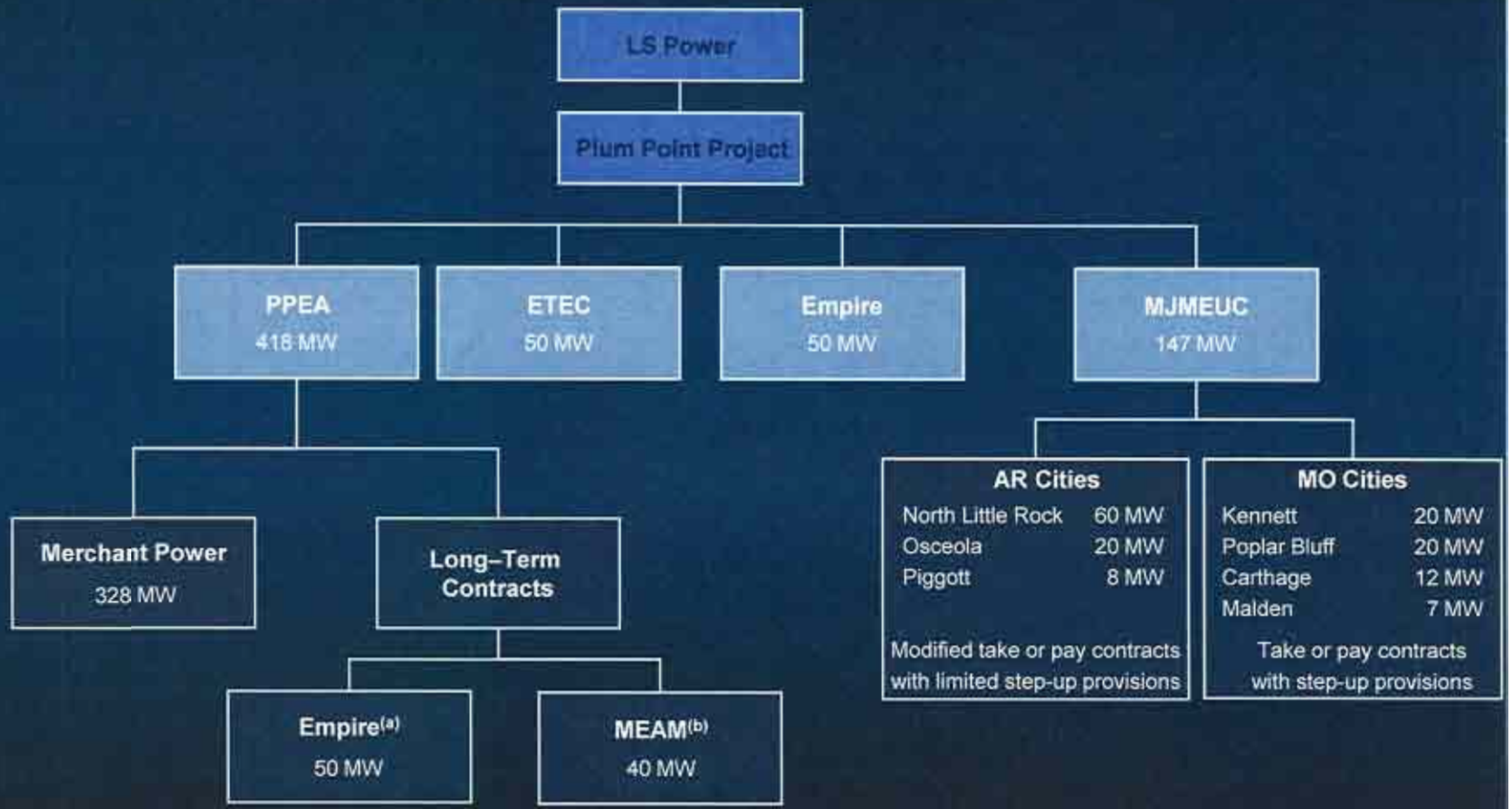
Plum Point Project Overview



- The Plum Point Project is a conventional [redacted] 665 MW (net) electric generating station using a single pulverized coal fired boiler with steam turbine technology.
- The Project is designed to burn low-sulfur, sub-bituminous Powder River Basin Coal, with the flexibility to blend alternate coals.
- The Project is located on the Mississippi River near Osceola, Arkansas.
- Plum Point Energy Associates ("PPEA"), a wholly owned subsidiary of LS Power Development, LLC ("LS Power"), is the Project developer.
  - LS Power is a privately held company, whose principal business is the development, ownership, management, and operation of generation assets in the United States.

Goldman Sachs

Plum Point Project Ownership Structure at Financial Close



(a) At Empire's option, the long-term contract can be converted into an additional 7.52% ownership interest in Plum Point from PPEA.
(b) MEAM's long-term contract converted into an ownership interest in May 2006 from PPEA.

Goldman Sachs

Plum Point Project Financing Structure – PPEA

- PPEA retained Goldman Sachs, CSFB, and Merrill Lynch as Joint Lead Arrangers.
  - The PPEA total financing package consisted of:
    - $423 million First Lien Term Loan
    - $50 million First Lien Revolving Credit Facility
    - $102 million First Lien Synthetic Letter of Credit Facility
    - $175 million Second Lien Term Loan
    - ~$225 million in equity
  - The Synthetic Letter of Credit facility will back up $100 million of tax-exempt notes.
- PPEA entered into a five-year gas hedge agreement with J. Aron, to hedge approximately 84% of the on-peak output for 328 MW of net capacity.
  - 90% correlation between on-peak power prices and natural gas prices in Entergy
  - PPEA purchased a put spread, whereby they are protected if natural gas prices fall to levels within a predetermined cellar

Goldman Sachs

Plum Point Project Financing Structure – MJMEUC

- MJMEUC entered into an Interim Financing Facility with Goldman Sachs of up to $215 million to finance its ownership interest until the public offering of their bonds, which occurred in May 2006. The Interim Financing Facility consisted of:
  - A bridge loan up to $50 million, and
  - A put option to place up to $215 million in bonds to Goldman Sachs.
- MJMEUC issued $278.8 million Fixed Rate Tax-Exempt Bonds with a final maturity in 2036.
  - MBIA Insured; underlying ratings of Baa1/BBB-/A-
  - MJMEUC will issue ~$30 million Tax-Exempt Notes to complete financing its ownership interest in the Project.

Goldman Sachs

Plum Point Financing Structure – Other Owners

- ETEC, Empire and MEAM each individually provided financing for their respective ownership interests.
  - ETEC raised its capital through the National Rural Utilities Cooperative Finance Corporation ("CFC").
  - Empire used capital available from general corporate sources.
    - The remaining 50 MW in Empire's long-term PPA is not eligible for buyout until five years after commercial operation.
  - MEAM issued $103.5 million in Special Obligation Bonds to finance the acquisition, construction, and equipping of a 6% undivided interest.

Goldman Sachs

Plum Point Project Financing Highlights

- Plum Point will be among the lowest variable cost resources in the Southeast United States. The Project has completed and received all Federal, state, and local permits, and has all approvals necessary to begin construction.
- Significant leverage achieved despite construction risk
- Pro forma for the offering, total debt / kW of $1,732. At the end of the hedge period, Plum Point is projected to have total debt / kW of $1,481.
- PPEA initially entered into two long-term power purchase contracts, one with Empire for 50 MW, and the other with MEAM for 40 MW.
  - MEAM converted its contract into an ownership interest in May 2006.
  - In additional to its original ownership interest, Empire has an option to convert its long-term power purchase contract into an additional ownership interest at a future date.
- PPEA has subsequently sold the remainder of its merchant capacity under long-term contracts, and the output for Plum Point is fully subscribed.

Goldman Sachs

Keys to Marketing the Bonds
Attributes of the Project

- MJMEUC, in considering several power supply alternatives for its members in Southern Missouri and Northeast Arkansas, decided to participate in Plum Point because of the following attributes:
  - Proximity to member load
  - Fully permitted status of project
  - Attractive all-in cost of power
  - Proven technology
  - Likelihood of meeting schedule

Goldman Sachs

Keys to Marketing Bonds

Strong EPC Contract with Experienced Contractors

- EPC Contract
  - Fixed price/guaranteed completion date of August 1, 2010.
  - Contractor is a joint venture of Gilbert Central Corp. (subsidiary of Kiewit), Zachary Construction, and Overland Contracting (affiliate of Black & Veatch).
  - EPC contractors are currently constructing the Nebraska City 2 project on behalf of OPPD. NC2 is of similar size and technology to Plum Point.
- Significant Liquidated Damages and penalties for non-performance
- All-risk builders' risk insurance
- Delay in Start-Up Insurance
- Total construction cost estimate: $1,048,000,000;
  - MJMEUC portion: $307,000,000
  - MJMEUC portion includes cost of facilities, interest during construction, funding of required reserves, and costs of issuance of bonds.

Goldman Sachs

Keys to Marketing Bonds
Permits / Transmission / Fuel

- Environmental
  - State-of-the-art emission controls
  - Fully permitted by Arkansas Department of Environmental Quality
  - Air permit is final and unappealable
- Transmission into Entergy/SWPP
  - Construction cost estimate includes cost of delivering power and energy to the point of interconnection with Entergy transmission system.
  - Each individual participant is responsible for transmission from that point to its own system.
- 20-year coal transportation contract
  - Burlington Northern Santa Fe Railroad will utilize an existing mainline to deliver coal.
  - EPC Contractor's scope of work includes interconnection with the railroad and construction of a facility rail loop.

Goldman Sachs

Keys to Marketing Bonds

Bond Security

- MJMEUC's revenues are derived from the long-term PPAs with each of seven Purchasers.
- The Unit Power Purchase Agreements require the Purchasers to pay their respective share of all Plum Point Project costs, including debt service, whether or not the Project is operating or operable ("Take-or-pay").
- These payments are not conditioned upon the performance or nonperformance of the Commission or any other person or for any cause whatsoever.
- The contracts also require each Purchaser to increase its entitlement share, up to a cap of 200 percent, in the event that a default has occurred with respect to another Purchaser.

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Keys to Marketing Bonds
Bond Reserve Requirements

- Debt Service Reserve Fund
  - Equal to the Maximum Annual Debt Service
  - Funded from bond proceeds
- Operating and Maintenance Reserve Requirement
  - Represents approximately 60 days' working capital requirements
  - Fully funded from bond proceeds prior to commercial operation
- Reserve and Contingency Account
  - Maintain a reserve and contingency fund with minimum amount cash to support plant operation
  - Funded from revenues at the rate of $50,000 per month after Plum Point achieves commercial operation, up to a minimum level of $3 million.

Goldman Sachs

Keys to Marketing Bonds
Ratings / Insurance / Road Show

- Ratings
  - Close collaboration with rating agencies
  - Detailed and thorough explanation of project, project participants, and contracts
- Insurance
  - Arranged four-day site visit for insurance providers to ensure complete familiarization with the project and project participants
- Investor Road Show
  - Extensive marketing and interactive Internet Road Show explaining details regarding
    - The overall transaction
    - Contract summaries
    - Bond security
  - Coordinated follow-up program to answer additional questions regarding the transaction

Goldman Sachs

Financing Takeaways

- Scheduling and overall development of the Project are not always completely under your control – be flexible
  - PPEA – senior/subordinate structure
  - MJMEUC – interim financing with permanent take-out
  - MEAM – Convertible power purchase agreement
  - ETEC – RUS financing
  - Empire – combination of ownership and PPA participation

Goldman Sachs

Financing Takeaways

- Relatively unknown developer with limited track record in coal projects raised questions
  - Offset with strong EPC contract and performance guarantees for reputable contractors
  - Exposure to large merchant component of overall capacity had to be isolated from individual co-owner's risk profile
- Small, unrated power purchasers within MJMEUC portion had to be shown as having sufficient economic strength to support take-or-pay and step-up obligations
- Bond insurance can be a very effective way to neutralize credit concerns
- Investors will need extra time to analyze and understand new, complex credits – allow for this

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LS Power Affiliate Signs Engineering, Procurement and Construction Contract for Arkansas Coal Plant

OSCEOLA, Ark. (January 16, 2006) – Plum Point Energy Associates, LLC ("Plum Point"), a member of the LS Power Group ("LS Power") announced today that it has executed a contract with Plum Point Power Partners, a joint venture of Zachry Construction Corporation, Black & Veatch, and Gilbert Central Corp, an affiliate of Kiewit Construction Company, for the engineering, procurement and construction ("EPC") of its 665 megawatt pulverized coal plant in northeast Arkansas.

"Each of these entities has provided EPC services on past LS Power projects and we are confident in their capabilities," said Michael Witzing, Executive Vice President of LS Power.

"We are excited about working with the LS Power organization, a leader in the power generation industry, to provide turnkey EPC services for one of the first new major coal fired plants to be built in the southeastern U.S. in years," said Tom Kaczmarski, Project Executive of Plum Point Power Partners.

Plum Point has issued a limited notice to proceed to Plum Point Power Partners to begin engineering and procurement related activities. On-site construction will begin in the spring of 2006 and the project is scheduled to begin commercial operation in early 2010.

The project will provide reliable, low-cost electricity to wholesale purchasers utilizing proven, pulverized coal boiler technology along with advanced emission controls – making it one of the cleanest coal-fired plants in the U.S. Plum Point is finalizing definitive arrangements with a number of municipal utilities, electric cooperatives and other entities for joint ownership in the project and/or long-term power sales agreements.

The LS Power Group

In addition to the Plum Point Energy Station, members of the LS Power Group have multiple coal fired projects in advanced development in Texas, Georgia and Nevada. Founded in 1990, the LS Power Group is a fully integrated power plant owner, developer and manager with offices in New York, New Jersey, Missouri and Florida.

Zachry Construction Corporation

Zachry Construction Corporation (ZCC) is a privately held company founded in 1924 and based in San Antonio, Texas. ZCC is one of the largest power industry contractors in the United States with over 50,000 MW of installed power in the U.S. and currently has over 2,600 MW under construction. The company's website address is www.zachry.com.

Black & Veatch

Black & Veatch Corporation is a leading global engineering, consulting and construction company specializing in infrastructure development in energy, water, information and government markets. The employee-owned company has more than 90 offices worldwide. Black & Veatch is ranked on the Forbes "500 Largest Private Companies in the United States" listing. The company's website address is www.bv.com.

Gilbert Central Corp

Current Articles

Archives

Gilbert Central Corp is a subsidiary of Peter Kiewit and Sons, Inc (PKS). PKS is one of the nation's largest construction companies with extensive experience in design-build power plants. The company's website address is www.kiewit.com.

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Bringing Energy Forward

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ELM ROAD GENERATING STATION

A power plant expansion on the shore of Lake Michigan is the largest private construction project in Wisconsin's history.

Coal is beginning once again to dominate the U.S. market for new electricity generation, and Bechtel is playing a major role on the Elm Road Generating Station project in eastern Wisconsin.

Working for Wisconsin Energy, Bechtel is constructing two coal-fired steam-turbine generating units and related civil works next to the existing Oak Creek power plant on the west shore of Lake Michigan. The expansion--Bechtel's largest lump sum project ever--will provide enough energy to power more than 1 million households.

The first unit is on track to begin operation in 2009; the second will follow in 2010. And at a value of $2.15 billion, it's the biggest lump-sum turnkey project in Bechtel's history.

Elm Road will be among the most efficient coal-fired power plants in the world, in part because of its innovative cooling system. Rather than using cooling towers, in which water recirculates from condensers to the cooling tower and back, sending heat into the air, Elm Road will use a more efficient

Photo Gallery

PROJECT DETAIL

LOCATION
Oak Creek, Wiscons

CUSTOMER
Elm Road Services L
a wholly owned sub
Wisconsin Energy C

BECHTEL BUSINESS
Power

WPPI energy

POWER REPORT

March 2010

what's inside

members

Wisconsin
Algoma
Black River Falls
Boscobel
Brodhead
Cedarburg
Columbus
Cuba City
Eagle River
Evansville
Florence
Hartford
Hustisford
Jefferson
Juneau
Kaukauna
Lake Mills
Ladi
Menasha
Mount Horeb
Muscoda
New Glarus
New Holstein
New London
New Richmond
Oconomowoc
Oconto Falls
Plymouth
Prairie du Sac
Reedsburg
Richland Center
River Falls
Slinger
Stoughton
Sturgeon Bay
Sun Prairie
Two Rivers
Waterloo
Waunakee
Waupun
Westby
Whitehall

Michigan
Alger Delta CEA
Baraga
Crystal Falls
Gladstone
L'Anse
Negaunee
Norway

Iowa
Independence
Maquoketa
Preston

WPPI Energy is a regional power company serving 51 customer-owned electric utilities. Through WPPI Energy, these public power utilities share resources and own generation facilities to provide reliable, affordable electricity to more than 195,000 homes and businesses in Wisconsin, Upper Michigan and Iowa.

Elm Road Generating Station Begins Commercial Operation

On Tuesday, Feb. 2, Unit 1 of the Elm Road Generating Station (ERGS), the newest coal-fired power plant in Wisconsin, began commercial operation. WPPI Energy is a partner in the ERGS, along with We Energies and Madison Gas & Electric Company. WPPI Energy owns 8.33 percent of this 1,230-megawatt supercritical coal generation project located in Oak Creek, Wis.

The ERGS project will add diversity and low-cost energy to WPPI Energy's power supply portfolio over the long term.

"In the history of WPPI Energy, one of the most important resource decisions our members made was to participate as owners in the new Elm Road Generating Station," said WPPI Energy President and CEO Roy Thilly. "This plant will serve our customers for decades to come at a cost far lower than new plants being proposed today, and it will be by far the cleanest and most efficient coal plant in the Midwest."

The $2.3 billion dollar power plant is being built in phases and is the largest private construction project in Wisconsin's history. The second ERGS unit is still under construction and scheduled to be in service later this year.

With the addition of the ERGS units, WPPI Energy will have the most modern fleet of generators in Wisconsin. This important new resource is supplemented by our existing, long-term, purchased power agreements with other utilities and a rapidly growing renewable resource base.

Elm Road Generating Station Project Highlights

- *Construction began in June 2005*
- *Includes two new supercritical pulverized coal units*
- *Will produce a total of 1,230 megawatts, capable of powering more than one million homes*
- *The largest private construction project in Wisconsin's history*
- *Employed more than 2,000 workers at the peak of construction*
- *Constructed by Bechtel Power Corp.*
- *WPPI Energy owns 8.33 percent of the ERGS project*

From the CEO: The State of WPPI Energy

Roy Thilly, rthilly@wppienergy.org

The past year has been especially challenging for our member communities. As members continue to recover from the worst economic downturn since the Great Depression, WPPI Energy is focused on the need to control costs and provide excellent service while maintaining our long-term, strategic focus.

Fortunately, our shared strength and the unity of purpose and member participation that drive our joint action agency have put WPPI Energy in a very strong position today and going forward. Our business plan provides the direction that enables WPPI Energy to effectively provide our communities with reliable, affordable power for the long term.

Three critical and strategic decisions the Board has approved in recent years have positioned us with our members to provide excellent, competitive electric service for the long term.

First, one of our most important business plan objectives is to help customers use electricity more efficiently and eliminate waste. Energy efficiency is the most cost effective solution for the long-term economic health and competitiveness of our communities, our region and our nation. By helping our customers save energy, we can:

- Help customers keep their bills down
- Defer investing in expensive new generation resources
- Reduce our carbon footprint
- Build our credibility with key regulators and legislators, and
- Limit our future costs under impending greenhouse gas regulation.

Our decision to increase efficiency program spending over the last three years is helping all of our customers–large and small–cut waste and lower their energy bills.

Second, to meet Wisconsin and Michigan renewable portfolio standard (RPS) mandates, we made the strategic decision to lock in 20-year renewable energy contracts early at favorable rates. WPPI Energy had resources in place six years early to meet the RPS requirements, which not only helps to lower costs, but it also will help us manage whatever climate change regulations Washington, D.C. enacts in the next year or two.

Finally, we have carefully planned power supply resources to affordably and reliably meet members' needs. We have sufficient resources in place to meet projected loads through at least 2020, providing valuable flexibility in a time of regulatory uncertainty. We are able to substitute beneficial, new resources but we are not being forced to act at a bad time.

Our power supply is flexible, allowing us to take advantage of attractive, short-term market energy prices.

continued on page 7

QUICK TAKES

WPPI Energy News in Brief

Federal Climate Change Legislation Process Continues

Although Senate action appears to be stalled, it is anticipated that the U.S. Congress will continue to debate climate change legislation in 2010. WPPI Energy and our members will remain fully engaged in this debate to advocate for legislation that balances the need to preserve the environment, ensure a secure energy future and mitigate costs for Midwest consumers.

Landmark Legislation Introduced in Wisconsin

On January 7, Wisconsin Governor Jim Doyle introduced the Clean Energy Jobs Act, which would implement recommendations of Governor Doyle's Global Warming Task Force and grow the state's green economy.

Public Power Fuels Economic Development

In November 2009, representatives from local, county, regional and state organizations gathered for WPPI Energy's "Sustainability in Your Community" economic development workshop. The workshop highlighted the importance of enhancing economic development through sustainability.

WPPI Energy's 51 member utilities contribute to the economic well-being of their communities by providing excellent hometown service; local control; reliable, affordable and environmentally-responsible power; and innovative energy services to meet the needs of businesses large and small.

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MEMBER SPOTLIGHT

Independence, Iowa

independence, iowa fast facts

County: Buchanan

Population: 6,014

Member Website:
www.indytel.com

Did you know:
Independence Light & Power, Telecommunications:

- Is a member of the Iowa Association of Municipal Utilities, one of the largest and oldest organizations of its kind in the country.
- Employs four linemen and a line superintendent with more than 52 years of service.
- Added telecommunications to its services in 2000, including a locally owned cable and telephone system and high-speed data network.
- Received the American Public Power Association's Reliable Public Power Provider gold designation in 2007 and 2009 for providing the highest degree of reliable and safe electric service.

WPPI Energy member since 2006.

New light fixtures on the bridge near the Wapsipinicon Mill are installed.

Independence, Iowa is located on the banks of the Wapsipinicon River, nestled in Northeast Iowa. Founded in 1847 and known for its Midwestern hospitality and strong work ethic, the community's name was inspired by the signing of the Declaration of Independence. In 1893 Independence Light & Power, Telecommunications (IL&P, T) began delivering reliable electric power to the city, with a mission of providing first-class, quality service for the lowest possible cost. In 2006 the utility entered into a long-term power supply contract with WPPI Energy. Today the utility offers dependable service to nearly 3,000 homes and businesses.

Valuable Resources

The utility owns and operates eight diesel generators with a total generating capacity of 21,250 kilowatts. The generators range in vintage from 1957 to 2000 and are fully functional. WPPI Energy purchases the entire output from IL&P, T, which helps meet capacity and reserve requirements. WPPI Energy can call upon this generation when it is economical or necessary during periods of peak electric demand in the region. The sale of energy from IL&P, T's locally owned resources helps offset the community's wholesale power costs.

Building Support for Renewable Energy

Community members in Independence voluntarily purchase electricity from clean, green resources through the utility's Renewable Energy Program. Renewable energy sold through the program for residential and business customers is Green-e Energy certified. Utility customers are able to purchase renewable energy for an additional $3.00 per month for each block of renewable energy, the equivalent of 300 kilowatt-hours (kWh). The electricity generated for the program, provided by WPPI Energy, comes from a combination of wind, solar and organic materials. The utility's program makes investing in renewable

continued on next page

Independence, Iowa

energy easy and affordable for all community members.

The community's participation level in the program increased, in large part, thanks to an impressive response by local citizens to a utility challenge from Utility General Manager Darrel Wenzel encouraging commercial and residential utility customers to subscribe to the program. During the course of the challenge, customers increased purchases by 29 percent.

Independence Light & Power, Telecommunications office facility.

A Greener, Brighter Future

Residents and businesses in Independence are committed to preserving precious resources for future generations and improving the quality of life in their community by working with the city to make greener choices. The utility is working with the City of Independence to replace traditional incandescent traffic and walk signals with energy efficient light-emitting diode (LED) signals. The city has eight controlled intersections, with a total of 45 eight-inch stoplight signals, 162 twelve-inch signals, 57 walk signals and three arrow signals, all with traditional incandescent bulb traffic signals. The current system consumes more than 107,000 kWh, with an annual energy cost of $12,800. Upon completion of the LED retrofit, the system will consume only 14,400 kWh per year and cost $1,730, significantly reducing the city's energy costs. The utility was able to fund the retrofit by taking advantage WPPI Energy's zero-interest, revolving loan program for members.

In addition to improved efficiency, the new LED lights will offer improved visibility and reduce the maintenance associated with traditional traffic signals. The LED modules are expected to last 10 times longer than their incandescent counterparts, decreasing the downtime for the signals and reducing maintenance costs.

Reducing Costs

As a resource on energy efficiency and conservation, IL&P, T supports energy management programs and services that help customers save energy. Several schools in the Independence Community School District upgraded lighting fixtures by installing high efficiency fluorescent lamps and electronic ballasts. Wapsie Valley Creamery, a large dairy in Independence, installed a quick-close door to their refrigerated storage, replacing an older leaky strip curtain. The new door prevents the escape of refrigerated 37 degree air and reduces frost in the refrigerated area while still allowing fast access to the area for movement of cold products. The energy efficiency upgrade is estimated to save the company more than $1,800 annually. These projects illustrate the utility's commitment to reducing energy costs and making the community a better place to live and work.

Routine maintenance on traffic lights.

Public Power Leader

During Public Power Week IL&P, T celebrates the value of having a community-owned electric system to power local needs. Public Power Week is a national, annual event sponsored in conjunction with the American Public Power Association, the national service organization for community and state-owned electric utilities in Washington, D.C.

During Public Power Week, the utility hosts an open house to educate customers about energy efficiency, safety and important matters that are happening in the electric and telecommunications industries. Held each October, the event draws more than 1,000 attendees. The event features representatives from local appliance companies, including heating, ventilation and air conditioning contractors who conduct product demonstrations on energy efficient appliances and educate customers about home energy efficiency. The utility also sets up educational displays and offers giveaways and drawings for LED holiday lights and compact fluorescent lights. Public Power Week allows the utility to celebrate the value of having a community-owned electric system to power local needs and provide excellent customer service.

MEMBER NEWS

GreenMax HOME

A little energy is all it takes.

Stoughton Homeowners Build Second GreenMax Home

Homeowners John and Rebecca Scheller are gearing up to create a net zero impact on the nation's energy supply. The Schellers recently completed construction on their net zero energy home (NZEH) in the WPPI Energy member service territory of Stoughton, Wis.

A NZEH is one that produces as much energy as it consumes. The Schellers' NZEH combines renewable energy technologies with advanced, energy-efficient construction. For more information, visit www.greenmaxhome.com.

Plymouth Utilities' Green Fleet on Display at State Capitol

In September 2009, Plymouth Utilities' plug-in hybrid electric utility line truck was the guest of honor at a press conference at Wisconsin's State Capitol. The truck, which served as a backdrop for the event, was recognized by Wisconsin Governor Jim Doyle as an example of the types of green vehicles that will advance clean energy goals in Wisconsin. Governor Doyle announced that Wisconsin received $15 million in Recovery Act funds to help local governments and private businesses invest in alternative fuel and advanced technology vehicles.

Plymouth Utilities' plug-in hybrid electric utility line truck.

STATE UPDATES

michigan

Energy Optimization

WPPI Energy continues to work with its Michigan member utilities to develop energy optimization programs as required by the 2008 Public Act 295. The Michigan utilities began offering a package of energy-saving programs to customers during the first quarter of 2010.

Local Control for Alger Delta CEA

Alger Delta CEA is now regulated by its membership, thereby increasing local control for homes and businesses. As a result of a recent resolution by the Board of Directors of the Alger Delta Cooperative Electric Association and subsequent approval by the Michigan Public Service Commission, the Alger Delta Board is now responsible for establishing, maintaining and applying all rates, charges, accounting standards, billing practices and terms and conditions of service.

Iowa

Energy Efficiency Plans

WPPI Energy members in Iowa filed plans with the Iowa Utilities Board in December 2009 establishing energy-saving goals and three-year strategies for meeting those goals. As part of the plans, the utilities will offer new energy-saving programs for customers beginning in 2010.

wisconsin

Wind Siting Regulations Reformed

In September 2009, Wisconsin Governor Jim Doyle signed a bill reforming wind energy siting regulations in the state, calling upon the state Public Service Commission to create uniform regulations for new wind farms in Wisconsin. The law is anticipated to prevent the previously existing patchwork of rules that restricted the development of green economy jobs and clean energy resources.

Malmstead Serving Menasha, New London, Oconto Falls

WPPI Energy welcomes Mike Malmstead, energy services representative serving the member communities of Menasha, New London and Oconto Falls.

Mike Malmstead, (920) 205-9057, mmalmstead@wppienergy.org

WPPI Energy Member Customers Receive Energy Efficiency Grants

WPPI Energy's RFP for Energy Efficiency program continues to make energy-saving projects a worthwhile business investment for large power customers by providing grant funding for energy efficiency projects.

Recent grant incentives were awarded to the following customers:

• Iron County Medical Care Facility, a customer of the municipal electric utility of the City of Crystal Falls (Mich.), received $30,000 to upgrade the facility's air handling units and to add high efficiency variable speed drives to improve indoor air quality and save energy.

• Pride Sports Inc., a customer of Florence Utilities (Wis.), was awarded $20,123 to upgrade its existing air compressor system with a new system that will increase storage capacity and add variable speed control to reduce energy use.

• Thilmany, LLC, a customer of Kaukauna Utilities (Wis.), will receive $119,000 for new mixers for its wastewater lagoon to increase oxygen transfer, reduce foam spray and decrease electric costs.

• SCA Tissue North America, a customer of Menasha Utilities (Wis.), will receive $150,000 for a new high efficiency aeration blower which will save on energy use and maintenance at its treatment plant.

WPPI Energy invites qualified customers to submit proposals for the next round of RFP bidding, which closes on March 26, and invest in energy efficient improvements. The RFP for Energy Efficiency program is open to all qualified commercial, industrial and institutional power customers served by WPPI Energy member utilities. Visit www.wppienergy.org/rfp for details.

Ahead of the Curve

Our sustainability efforts, which include energy efficiency initiatives and renewables, illustrate our commitment to provide reliable, affordable and environmentally-responsible energy for the long term. To learn more about sustainability initiatives by WPPI Energy and our 51 member utilities in Wisconsin, Upper Michigan and Iowa, visit www.wppienergystewardship.org.

Roundy's Receives $190,000 Energy Award

Officials from Oconomowoc Utilities and WPPI Energy joined Governor Jim Doyle and Focus on Energy (Focus) for the presentation of a $190,570 grant for Roundy's Supermarkets to help complete energy efficient lighting projects at its distribution facility in Oconomowoc.

Roundy's recently replaced nearly 2,000 metal halide fixtures with high bay fluorescent fixtures. Nearly 1,600 of them have occupancy sensor controls to dim when the area is not in use. The project will significantly reduce carbon emissions, save Roundy's nearly $400,000 annually in energy costs and conserve enough energy to power 450 homes each year.

The funding was provided by Focus, which works with eligible Wisconsin residents and businesses to install cost-effective energy efficiency and renewable energy projects. Through Oconomowoc Utilities' and WPPI Energy's participation in the Focus program, Wisconsin customers, like Roundy's, have access to energy-saving information, resources and financial incentives. Residential and business customers of WPPI Energy members in Michigan and Iowa have access to similar opportunities through their local utilities.

L-r: Peggy Jesion, WPPI Energy; Robert Duffy, City of Oconomowoc; Dennis Bednarski, Oconomowoc Utilities; Don Rosanova, Roundy's; Wis. Governor Jim Doyle; Warren Graham, Focus on Energy; Greg Hoffmann, WPPI Energy; and Richard Axt, Roundy's.

DATEBOOK: *Spring 2010*

Mark your calendar for these upcoming events, conferences and technical workshops for commercial and industrial utility customers:

Commercial Practical Energy Management
Focus on Energy, www.focusonenergy.com/training
- March 23, 2010 | Eau Claire, WI

Schools Practical Energy Management
Focus on Energy, www.focusonenergy.com/training
- March 26, 2010 | Eau Claire, WI
- April 14, 2010 | Madison, WI
- April 20, 2010 | Brookfield, WI
- April 27, 2010 | Green Bay, WI

Demand Control: Your Action Plan to Savings
The Energy Center of Wisconsin, www.ecw.org/university/
- March 31, 2010 | Eau Claire, WI

The Right Way to Go Geo: Residential and Commercial Buildings
The Energy Center of Wisconsin, www.ecw.org/university/
- April 7, 2010 | Rothschild, WI
- April 8, 2010 | Green Bay, WI

Renewable Energy Options: Applications for Commercial-scale Development
The Energy Center of Wisconsin, www.ecw.org/university/
- April 21, 2010 | Green Bay, WI
- April 22, 2010 | Rothschild, WI

Industrial Practical Energy Management
Focus on Energy, www.focusonenergy.com/training
- May 6, 2010 | Eau Claire, WI

That's because every dollar you save on energy costs goes straight to your bottom line.

Your local utility's membership in WPPI Energy gives you access to energy solutions that save money, boost productivity and reduce maintenance costs.

In Wisconsin, Focus on Energy offers grants and financial incentives to help you offset the costs of energy efficiency and renewable energy installations. Call **800.762.7077** or visit **focusonenergy.com.**

In Iowa and Michigan, customers have access to similar opportunities through their local utilities. Call **800.255.9774** or visit **www.wpplenergy.org.**

Take action today. See results tomorrow.

WPPI energy
The way energy should be

focus on energy
The power is within you.

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From the CEO: The State of WPPI Energy: continued from page 2

In recent months, this has made a tremendous difference in helping offset upward cost pressures related to the economic recession.

Furthermore, our power supply will be among the cleanest and most efficient in the Midwest. Our strategic investment in the new Elm Road Generating Station will pay dividends for years to come. As these two units come online over the next 12 months, WPPI Energy's generation fleet will position us well going forward, as older, less clean plants will face higher carbon regulation costs and the possibility of early retirement.

We also continue to work hard to provide leadership and have a seat at the table in policy and legislative arenas. Our engagement in our state capitols and Washington, D.C. this year has been predicated on protecting our customers. The Midwest relies heavily on coal to power our factories and offices, which makes us a carbon-intensive region. We must ensure that any climate change legislation is shaped to mitigate costs to the maximum extent possible for Midwestern consumers and that our members have the tools they need to help customers through the transition ahead. We will continue to strongly advocate policies that work for our small electric systems and public power utilities.

Going forward, we must plan ahead for a carbon-constrained future. The electric industry is moving toward technological change on all fronts, from new renewable applications, energy storage, carbon sequestration and new nuclear plant designs to smart grid mechanisms that will give customers more control of their energy consumption. These research and development efforts are promising, but expensive. We must make the right choices, providing customers with new services while maintaining affordability.

At the end of the day, our shared strength and the collective leadership of our staff and our 51 members have put WPPI Energy in a good position to maintain the strong, locally controlled public power advantage that is so beneficial to our communities and to meet the difficult challenges ahead.

Ask the Experts

"What does it mean to build green, and how can my business take advantage of the benefits of sustainable design and incorporate energy efficiency measures?"

Building green results in improved performance, efficiency and comfort. Green building features can be incorporated in a building at any stage, but the most significant benefits can be achieved during initial design.

WPPI Energy's New Construction Design Assistance program works with prospective building owners and developers, design professionals, and construction contractors to deliver high-performance, non-residential buildings that provide improved energy efficiency, peak load reduction, improved systems performance, and greater comfort. Energy savings are accomplished by increasing efficiency improvements in lighting, HVAC, and other building systems. The program seeks to capture holistic energy savings by encouraging the design and construction of buildings as integrated systems.

WPPI Energy's new office and operations center is the end result of successful planning, something customers can achieve through the New Construction Design Assistance program. The new facility, which was built to achieve Leadership in Energy and Environmental Design New Construction Gold standards for energy efficiency and sustainability, uses a number of green technologies, including:

- Daylighting
- Geothermal heating and cooling system
- Reused and recycled content building materials, including cellulose insulation
- Pervious paving systems
- Direct digital control and automation system for HVAC, and more.

Like WPPI Energy, business customers can achieve energy savings and demand reduction in new buildings, additions or major renovations. For more information on WPPI Energy's New Construction Design Assistance program and energy efficient technologies for your business, visit www.wppienergy.org.

your questions answered

Have a question you'd like answered by one of WPPI Energy's experts? E-mail your inquiry to PowerReport@wppienergy.org.

Ben Dickson, Energy Services Coordinator for WPPI Energy, (608) 834-4506, bdickson@wppienergy.org

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Cover Story - June 2009

Southeast's Top Projects - 1

Cliffside Steam Station Modernization

Project Cost: $1.8 billion

The $1.8 billion modernization of Duke Energy's Cliffside Steam Station on the Rutherford/Cleveland county line in North Carolina will add capacity to the coal-fired electrical power plant and reduce emissions through the introduction of cleaner coal technologies.

The Shaw Group of Baton Rouge, La., began construction on the project in January 2008 and was more than 30% complete in April The company provides engineering, procurement and construction services Approximately 1,000 workers were onsite this spring, with peak expected at between 1,600 and 1,800 The project is scheduled for completion in 2012

Duke is adding an 825-megawatt advanced cleaner-coal unit, number 6, and a flue gas desulfurization scrubber to its existing Unit 5. It will retire four 1940s-era, 200-megawatt units once the new unit comes online.

The modernization will increase the plant's output by 80%, from 760 to 1,360 megawatts and reduce most emissions Duke Energy adds between 40,000 and 60,000 new customers each year. It serves approximately 4 million U.S. customers and has approximately 36,000 megawatts of electric generating capacity in the Midwest and the Carolinas

Sulfur dioxide emissions will decrease by half, if the new unit is operated at maximum capacity. Air emissions systems will remove 99% of the sulfur dioxide emissions and 90% of the nitrogen oxide emission from the flue gas.

The plant currently emits approximately 150 lbs of mercury annually, but once the new facilities are operational and the old units offline, the equipment will remove up to 90% of the mercury.

Advertisement

The unit's closed-loop cooling towers will require less water and decrease thermal effects on the Broad River. The plant currently withdraws 420 cu ft of water per second to cool the plant, but once the new units are operational and the old retired, it will draw about 50 cu ft of water per second

The company selected the new supercritical pulverized coal unit because it is able to use a variety of high- and low-sulfur fuels

Duke received $125 million in federal clean coal tax credits for the project The power company has committed to making Cliffside Unit 6 carbon neutral by 2018

Key Facts:

Location: Rutherford/Cleveland county line, N.C.
Owner: Duke Energy, Charlotte, N.C.

Project Overview

Cliffside Steam Station located on the Rutherford/Cleveland County line in North Carolina.

On March 13, 2009, Duke Energy received a final revised air permit for the new, state-of-the-art Cliffside Unit 6 from the North Carolina Department of Environment and Natural Resources, Division of Air Quality. The permit designates that the unit is a minor source of hazardous air pollutants.

This designation confirms Cliffside Unit 6 will have among the strictest, most effective air emission controls available to protect public health and the environment. The Cliffside Steam Station is located on the Rutherford/Cleveland County line in North Carolina.

Construction began on January 30, 2008, and is on schedule for completion in 2012.

Once Cliffside Unit 6 comes on line in 2012, and units 1-4 are retired, the facility will generate more than double the electricity available for customers than the current units, with significantly lower emissions. Duke has committed to retiring 800 additional megawatts of older coal-fired generation, making Unit 6 carbon neutral by 2018.

The project ensures Duke Energy will continue to meet our customers' need for clean, affordable and reliable electricity in the future.

Cliffside Unit 6

- 825-megawatt advanced clean-coal unit
- 4-year construction period
- $1.8 billion estimated cost for construction
- 2,200 new construction jobs
- $100 million annual construction payroll
- 20-30 permanent jobs
- $125 million in federal clean-coal tax credits to benefit customers

Cleaner Air

- An innovative arrangement of proven air emission control systems will remove 99 percent of sulfur dioxide emissions, 90 percent of nitrogen oxide emissions and 90 percent of mercury.
- Total plant mercury emissions will be cut by 50 percent.
- Duke Energy will retire Cliffside units 1-4 (200 megawatts) before the new unit comes on line.
- Retirement of additional 800 megawatts of older, less efficient coal-fired generation will make Cliffside Unit 6 carbon neutral by 2018.

Environmental Benefits

- Cooling towers on Cliffside Unit 6 will require less withdrawal from Broad River and will significantly minimize thermal impacts to the river.
- To the extent possible, the new unit is being built to accommodate the installation and operation of future carbon control technologies.
- The wet scrubber will generate, as a by-product, wall board quality gypsum for the building industry.

Cliffside Modernization Fact Sheet (/pdfs/NG-Cliffside-fact-sheet.pdf) (pdf, 138 KB)

IGCC Fact Sheet (/pdfs/igcc-fact-sheet.pdf) (pdf, 315 KB)

Generating Electricity with Coal (/about-energy/generating-electricity/coal_fired.asp)

Sulfur Dioxide Scrubbers (/environment/air-quality/sulfur-dioxide-scrubbers.asp)

Selective Catalytic Reduction (/environment/air-quality/selective-catalytic-reduction.asp)

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Fluor Awarded Full Notice to Proceed for TXU's Oak Grove Project.

Publication: Business Wire
Date: Thursday, June 21 2007

You are viewing page 1

TCEQ Approves Oak Grove Air Permit

IRVING, Texas -- Fluor Corporation (NYSE: FLR) announced today that it has received a full notice to proceed from a subsidiary of TXU Corp., Oak Grove Management Company LLC, to complete engineering, procurement, construction and commissioning (EPC) services

for the estimated $1.8 billion Oak Grove power plant project.

As announced in June 2006, Fluor began engineering and procurement services from its Greenville, South Carolina, project execution office awaiting approval of the air permit from the Texas Commission on Environmental Quality (TCEQ), which was received on June 13, 2007. The company booked approximately $80 million for this work in the second quarter of 2006. Fluor's remaining portion of this fixed-price contract award will be booked in the second quarter of 2007.

"Fluor looks forward to completing a world-class facility at Oak Grove that will help TXU provide a new, reliable energy source to its customers with state-of-the-art emissions controls," said David Constable, president of Fluor's Power Group.

"TXU has partnered with Fluor on many projects over the years because of its expertise, reliability and project management skills. Working together on this project, we will drive industry-leading quality and efficiency in the development of Oak Grove in order to help meet Texas' near-term energy needs," said Chuck Enze, CEO of TXU Generation Construction.

The Oak Grove project, a nominal 1,600 MW super-critical lignite power plant, which will include best available control technology to minimize emissions, will be located in Robertson County, Texas. The new plant will have among the lowest sulfur dioxide, nitrogen oxide and mercury emissions in the nation and will be 75 percent cleaner than the average U.S. coal plant.

Oak Grove will be constructed at the site of a previously planned power plant that has significant infrastructure already in place. Both Unit 1 and Unit 2 at Oak Grove are expected to be substantially complete and generating electricity in late 2009 and mid-2010 respectively. This will help address

BLACK & VEATCH PROVIDING SUSTAINABLE ENVIRONMENTAL TECHNOLOGY FOR SANDY CREEK ENERGY PROJECT

Overland Park, Kan. (December 12, 2007) -- Black & Veatch, a leading global engineering, consulting and construction company, and its joint venture partners have been awarded a contract for the development of the Sandy Creek Energy Station, a 900-megawatt facility that will deploy some of the most efficient and reliable technology for coal-fueled plants.

The project, which represents one of the largest single coal-fueled power generation plants ever undertaken by Black & Veatch, is among the largest utilizing supercritical steam generators in the United States. The plant will have advanced technology solutions that are designed for sustainability through enhanced efficiency and environmentally friendly systems, processes and components.

"Supercritical technology enables plant owners to produce more electricity with less fuel, making it more efficient with lower emissions than plants with subcritical boilers." said Myron Brase, Project Director for Black & Veatch. "This project will provide much needed electric capacity for the immediate Waco, Texas, area as well as being an additional wholesale electricity source for the surrounding regions."

Sandy Creek Power Partners, the engineering, procurement and construction contractor, is a joint venture among Overland Contracting Inc., a wholly-owned subsidiary of Black & Veatch, Zachry Construction and Gilbert Central Corporation, an affiliate of Kiewit Construction Company. The Sandy Creek Energy Station project is being managed by Dynegy.

"In addition to the Sandy Creek Energy Station, we are working with this team of companies for the engineering, procurement and construction of the new Plum Point Energy Station currently under construction in Arkansas," said Mike Herfurth, Project Director for Dynegy. "We believe this team's experience and capabilities are well-suited for this type and size of project."

Dean Oskvig, President and CEO of Black & Veatch's global energy business added, "Our established relationships with proven partners are an advantage that we bring to the industry, helping further ensure that a high-level of technical expertise and the best technology solutions are aligned to meet our client's complex challenges."

About Black & Veatch
Black & Veatch is a leading global engineering, consulting and construction company specializing in infrastructure development in energy, water, telecommunications, management consulting, federal and environmental markets. Founded in 1915, Black & Veatch develops tailored infrastructure solutions that meet clients' needs and provide sustainable benefits. Solutions are provided from the broad line of service expertise available within Black & Veatch, including conceptual and preliminary engineering services, engineering design, procurement, construction, financial management, asset management, program management, construction management, environmental, security design and consulting, management consulting and infrastructure planning. With more than $2 billion in revenue, the employee-owned company has more than 100 offices worldwide and has completed projects in more than 100 countries on six continents. The company's Web site address is www.bv.com.

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New Coal Plant Underway near San Antonio, Texas

Preliminary construction begins on $1 billion coal-fired power plant from CPS Energy
SAN ANTONIO EXPRESS-NEWS (KRT)
via NewsEdge Corporation
Updated: 02-6-2009 12:21 pm

Mar. 22--CPS Energy officials Tuesday celebrated the start of construction on their new $1 billion coal-fired plant at Calaveras Lake, the first new coal plant to be built in Texas in 15 years.

When finished, Unit 2 of the J.K. Spruce Power Plant will be capable of generating 750 megawatts. CPS provides electricity to some 630,000 customers, and is adding more than 1,000 per month.

CPS will spend more than $200 million on environmental controls for the facility, and another $400 million to upgrade emissions controls on its other coal-fired power plants.

"All in all, CPS Energy is investing more than a half a billion dollars to have the best suite of qualified power plants in the U.S., or most likely anywhere else for that matter," said Milton Lee, general manager and CEO of the utility.

The last hurdle to build the plant was crossed when the Texas Commission on Environmental Quality approved its permit earlier this year. Environmental groups fighting the plant dropped their opposition after CPS agreed to step up its conservation and renewable energy goals.

CPS Energy has agreed to raise its target for energy efficiency and conservation to 65 megawatts by 2016 and for renewable energy to 15 percent of capacity by 2020. The old targets were 30 megawatts by 2011 and 10 percent of capacity by 2015.

"Spruce 2 is going to have the best available emissions control technology in the United States," said Mayor Phil Hardberger, who also serves on the CPS Board of Trustees. "And they did that in part because they listened to the community and the community's desires to have an environmentally friendly plant."

1 2 next

Longview Power Plant Steams Ahead of Schedule: VP Says It Will Begin Operating Several Months Earlier Than Planned

Wednesday, August 13, 2008 1:51 PM

The objective of Longview Power LLC, Huguenard said, is to provide "clean, reliable and sustainable power generation." The firm has spent $800 million so far on the local project.

It will be an advanced supercritical pulverized coal-fired power station, he said. It will use 2 million tons of coal per year, provided by Mepco, a Monongalia County-based coal company, and brought to the power plant by a 4.5-mile conveyor belt.

The plant will use low NOx burners and selective catalytic reduction (SCR) to reduce nitric oxide emissions; inject hydrated lime to drop out hydrochloric and sulfuric acid; a fabric filter baghouse to collect particulates, and flue gas sulfurization, using limestone, to remove sulfur oxide and mercury.

Pyles wants monitoring in place to make sure these clean air systems work.

"We will have to keep on the state to monitor them and make sure they do not exceed projections," he said.

Longview won't be able to take advantage of treated water from the underground mine pool for the plant's operation, Huguenard noted. It isn't the right quality. Instead, the company will pipe from the Monongalia River, connecting in Pennsylvania.

To see more of The Dominion Post or to subscribe to the newspaper, go to http://www.dominionpost.com/.

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Private investors take the Longview in West Virginia
01 June 2007

Construction is now underway at the Longview plant, one of the first of the USA's new wave of supercritical coal-fired plants. The project embraces a number of important innovations, not least in boiler design.

Longview is among the first half dozen or so of a new generation of supercritical coal-fired power plants to start construction in the USA after a long hiatus (others being CBEC 4, Weston 4, Comanche 3, Elm Road and Iatan 2, see MPS, April 2007, pp 14-18). The developers of the 700 MWe (net) (769 MWe gross) plant in West Virginia (on the border of western Pennsylvania), can also claim a number of other firsts.

One particularly noteworthy feature of Longview (formerly known as Robinson Run) is that it is the first supercritical pulverised coal (PC) plant in the world to employ a low-mass-flux vertical-tube Benson boiler, to be supplied by Foster Wheeler (under a $200 million contract) using technology licensed from Siemens. There is such a boiler in operation, retrofitted into the Yaomeng plant in China by Mitsui (now Doosan) Babcock (also a Benson licensee), but that is subcritical. There is also one under construction, again being supplied by Foster Wheeler, at Lagisza in Poland. This is supercritical, but CFB rather than PC.

Among the advantages of vertical, compared with spiral wound, tubing is that it is self supporting, simplifying structural design, facilitating installation and reducing costs (with, eg, less field welding needed and installation of support straps avoided).

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Location of the Longview site

The Longview site, as of end March 2007

Commercial structure of the Longview project

Longview consortium structure: scope split

Cross section of Longview boiler

Another major attraction is that it allows once-through operation down to 20% of full load.

The key to the low-mass-flux vertical-tube Benson boiler is its rifled (also called internally ribbed) evaporator tubing. The rifling is of special geometry developed by Siemens, with Benson-licensed boilermakers Doosan Babcock and Foster Wheeler the first users.

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The rifling design improves heat transfer properties (notably avoiding deterioration of transfer with increased steam quality), allowing the boiler to operate with a low mass flux, comparable with that of drum boilers. This yields a number of advantages, including "natural circulation" or "positive flow" characteristics, basically meaning that increased heat input to a tube is automatically compensated for by increased flow (and vice versa). The concept was proven in a test section at the Farge coal-fired plant, Germany, and, at commercial scale, in the horizontal-exhaust-gas-flow vertical-tube HRSG of the Cottam combined cycle plant in the UK.

IPP and private equity

Other firsts claimed by the developers of the Longview project include: first US supercritical coal plant developed by an IPP; first greenfield coal plant in the north east of the USA for over 20 years; first major private equity participation in a new US coal plant project; and first Siemens "steam reference plant in the US." The plant's developers believe some form of carbon cap and trade system is inevitable in the future and have agreed to fund a non-profit organisation to handle carbon dioxide offsets, to the tune of $500 000. They have also undertaken to treat acid mine water in nearby abandoned mines, addressing a pre-existing environmental problem and providing the plant with a water supply, avoiding the need to take river water.

Longview, which is located on a greenfield site in a mine mouth location at Maidsville, north east of Morgantown, near the Monongahela River, some 70 miles south of Pittsburgh, will run on Eastern bituminous coal (to be supplied by conveyor). The efficiency will be 43.3% (LHV) (heat rate = 8600 Btu/kWh), with steam conditions of 250 bar and just under 600°C (ie supercritical but certainly not in the realm of ultrasupercritical, or to put it another way "leading edge not bleeding edge").

The project finally received all necessary permit approvals and commenced construction in February 2007, with financial close and notice to proceed. The construction period is 48 months, with about 1500 craftworkers employed at the peak. "Substantial completion"/power plant operation is slated for spring of 2011.

With a total cost of $1.83 billion (50% equity) the project represents one of the largest single private investments in the history of West Virginia.

The project is 100% owned by Longview Power, LLC, which is in turn 100% owned by GenPower Holdings, LP, an entity created in October 2006 to invest in power projects. It was set up by GenPower, LLC, a privately held Boston based power plant developer, and First Reserve Corporation, the oldest and largest private equity firm focused exclusively on energy investments with $12.5 billion under management. GenPower LLC contributed its portfolio of projects, which included Longview. First Reserve made a five-year commitment to support development activities, investing $500 million in Longview and setting aside $500 of equity for new projects.

The Longview investment thesis can be summarised thus: electricity demand growth will eliminate present oversupply by 2011, coal fired plants will retain dispatch advantage over gas fired plants for baseload, and new supercritical plants will have a distinct advantage over old coal units.

The plant will sell power and capacity through a five-year 300 MW power purchase agreement with PPL EnergyPlus, LLC. The balance of the project's generation will be sold on a merchant basis into PJM, said to be the largest and most liquid competitive wholesale electricity market in the USA.

The project will benefit from an attractive mine-mouth fuel supply contract that is estimated to significantly reduce fuel costs. As a result of this, combined with the technology to be employed, Longview expects to have a very competitive cost of dispatch.

Construction consortium

Construction will be guaranteed on a joint and several basis by a consortium of Siemens and Aker Kvaerner Songer, under a fixed-price, date-certain EPC contract, incorporating performance and completion guarantees, with a substantial completion date of 12 March 2011. The total consortium order volume is around $1.3 billion.

As well as licensing the boiler technology, Siemens, as EPC consortium leader, has a $405 million contract to provide turbine island design, as well as major turbine island equipment, including the steam turbine, generator, plant control system and, via its Wheelabrator subsidiary, an advanced air quality control system to reduce the emissions of particulates, sulphur dioxide, mercury, and sulphur trioxide. Burns and Roe are providing detailed engineering for the Siemens scope, under subcontract.

Aker Kvaerner Songer, under a contract valued at $654 million, will provide construction services and materials for the turbine island and boiler island. The power plant is located within about 50 miles of Aker Kvaerner Songer's Canonsburg campus.

Innovative environmental permitting

As part of the public comment process for its air permit application, Longview reached an innovative arrangement with US Federal Park and Forest Service land managers to purchase SOx allowances in excess of regulatory requirements under the Acid Rain Program to offset acid deposition impacts from Longview on Dolly Sods National Forest and Shenandoah National Park. This arrangement was incorporated as a requirement under Longview's air permit. The adopted permit condition also provides a mechanism for Longview to fund SOx controls on existing area SOx sources in lieu of allowance purchases, to achieve the same effect – no increase in acid deposition in Class I areas. Subsequent to issuance of its final air permit in March 2004, Longview reached agreement with the National Parks Conservation Association, Sierra Club and Trout Unlimited to amend several of the permit requirements, and perhaps more importantly, establish a non-profit 501(c)(3) corporation funded by Longview to investigate and fund efforts to mitigate acid deposition and CO2 emissions.

Dealing with mine water

In addition to minimising and mitigating the impacts of its air emissions, Longview has made a significant commitment to eliminating existing (and potential for) discharges of untreated acid mine water from abandoned underground coal mines in the area. In particular, Longview has contracted with AMD Reclamation, Inc (AMDRI), a non-profit 501(c)(3) entity established and operated by GenPower, to construct and operate water treatment facilities to pump and treat 10 million gallons per day of treated mine pool water. Without this economic commitment by Longview, the mine pool water would be discharged untreated into local rivers and streams. In particular an abandoned coal mine was in danger of overflowing due to the gradual rise of groundwater and the flooding of highly acidic mine water into Dunkard Creek, which flows into the Monongahela River, would have severe ecological impacts.

The water initially will be treated and released, but once Longview is operational, the water will be used for cooling at the power plant.

AMDRI has built and is now operating the first primary treatment plant, which has received grants and loans totalling $7.5 million from the Pennsylvania

Department of Environmental Protection and various state agencies, with a second facility to follow shortly.

In addition, Longview will be funding an ongoing programme to assist in the reforestation of West Virginia strip mining lands and assist in the treatment of waters through a foundation to be established with the Sierra Club and Trout Unlimited once the plant goes into comm ercial operation.

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DESERT ROCK™ Desert Rock Energy Project

4th Edition www.desertrockenergyproject.com September 2007

Welcome to the Navajo Nation Fair and Rodeo

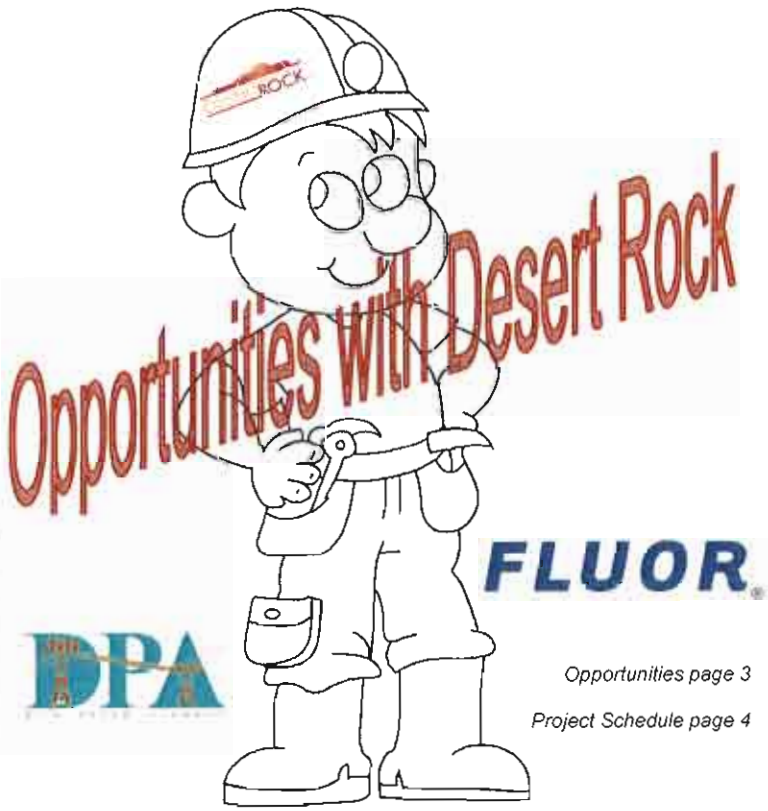
This edition of the Desert Rock Energy Project newsletter is presented in conjunction with the 60th Annual, 2007 Navajo Nation Fair and Rodeo in Window Rock, Arizona. At the Fair, the Honorable Joe Shirley, Jr., President of the Navajo Nation, announces the signing of a program management agreement with Fluor Corporation for the management of design, procurement and construction efforts for the two 750 MW units at Desert Rock in northwestern New Mexico, on the Navajo Nation. The signing of the program management agreement is an important step in kicking off the project construction effort. Described in this edition, on page 3, are the opportunities that will exist as the project is constructed and when it is operating. The Desert Rock Energy Project brings jobs and taxes to the Navajo Nation and will provide training in numerous trades associated with the construction and operation of a high-tech, modern power generation facility. With an average of 1,000 construction jobs over four years, Desert Rock will also bring 400 permanent, operating jobs with an average yearly salary of $60,000. This edition also describes Desert Rock's efforts to minimize pollutant emissions from the coal fired plant. A detailed description of some of the best technologies to be used at Desert Rock to accomplish this can be found on page 4.

Desert Rock Chooses Fluor

Fluor Corporation will be Desert Rock's program manager.

The Honorable Joe Shirley, Jr., President of the Navajo Nation, announced at the Navajo Nation Fair and Rodeo that Fluor Corporation had been awarded the contract to perform program management services for the design, procurement, and construction of the Desert Rock Energy Project. Fluor, who has been working with Desert Rock to finalize the details of the work, will begin to develop the scope of the components of the project and request proposals from major equipment suppliers before the end of 2007. The project is expected to cost $3 billion and will take 4 years to build after construction starts in 2008. For almost a century, Fluor has provided the experienced program and project leadership that has successfully delivered many of the

continued on page 3



Opportunities page 3

Project Schedule page 4

The Most Stringent Air Permit in the United States

"The emission limits required by the EPA's proposed permit for the Desert Rock power plant, planned by Sithe Global, Inc. and the Navajo Nation, are some of the most stringent in the country and would set a new level of performance for coal-fired plants in the United States." ***US EPA, July 19, 2006***

The proposed air permit for the Desert Rock Energy Project will be the most ***stringent*** of any permit issued in the U.S. The Project must receive its air permit (Prevention of Significant Deterioration permit) from the United States Environmental Protection Agency (the "EPA") in order to begin construction and operations. As part of the process to issue such a permit, Desert Rock had to demonstrate that it will be built and will operate with the best available emissions control technology as well as meet all federally mandated levels of pollutant emissions. The EPA prepared studies that examined the capabilities of existing technology for the control of pollutant emissions including those of Sodium Dioxide ("SO_2"), Nitrous Oxides ("NOx"), Carbon Monoxide ("CO"), Volatile Organic Chemicals ("VOC"), Fine Particulates ("PM"), Fluorides ("HF"), and Sulfuric Acid ("H_2SO_4"). In every pollutant category, Desert Rock's proposed air permit will allow smaller amounts of a pollutant to be emitted than what will be allowed by other air permits of three similar power plant facilities in the U.S, but one category in one of the permit. In some categories, other recent air permits will allow new coal facilities to emit ***4 times*** more pollutants than the Desert Rock proposed air permit will allow. The chart below demonstrates how clean Desert Rock will be compared to other coal fired projects that have received their air permit and have begun construction.

The Prairie State power facility in Illinois has ordered equipment and is starting site work. The Springerville Unit #4 is currently under constriction by Salt River Project (SRP) in Arizona. The Elm Road power facility is an expansion of an existing We Energies facility in Wisconsin and is being constructed on Lake Michigan. All of these facilities will have pulverized coal boilers; have successfully received their air permits; have withstood scrutiny (and sometimes law suits) from various regulatory arms, environmental groups and the US EPA; and are being constructed to meet start-up schedules in the next 4 years.

	Desert Rock	Prairie State	Springerville #4	Elm Road
SO_2	0.06 lb/mmbtu	0.182 lb/mmbtu	0.155 lb/mmbtu	0.15 lb/mmbtu
NOx	0.06 lb/mmbtu	0.07 lb/mmbtu	0.111 lb/mmbtu	0.07 lb/mmbtu
CO	0.10 lb/mmbtu	0.12 lb/mmbtu	0.15 lb/mmbtu	0.12 lb/mmbtu
VOC	0.003 lb/mmbtu	0.004 lb/mmbtu	.0475 lb/mmbtu	0.0035 lb/mmbtu
PM	0.01 lb/mmbtu	0.015 lb/mmbtu	.015 lb/mmbtu	0.018 lb/mmbtu
PM_{10}	0.02 lb/mmbtu	0.035 lb/mmbtu	.055 lb/mmbtu	0.018 lb/mmbtu
Fluorides	0.00024 lb/mmbtu	0.00026 lb/mmbtu	.00044 lb/mmbtu	0.00088 lb/mmbtu
Sulfuric Acid Mist	0.004 lb/mmbtu	0.005 lb/mmbtu	established at start-up	0.01 lb/mmbtu

Comparison of air permits for coal power projects currently being constructed in the United States to Desert Rock's proposed air permit.

continued from page 1

Navajo Employment Opportunities

Navajo Employment Preference and Navajo Business Preference

The Desert Rock Energy Project will create new employment opportunities for the Navajo Nation. The agreements structured with the Navajo Nation require that Desert Rock and its contractors implement Navajo Employment Preference and Navajo Business Preference. The project can generate an average of 1,000 jobs during the 4-year construction period. Long-term employment at the facility will employ up to 200 people at the power plant and an additional 200 people associated with employment at the mine expansion.

Working closing with organized labor councils, including the Southwest Regional Council of Carpenters and the New Mexico Building and Construction Trades Council, the project will provide hands-on, detailed technical training for all of its workers. The skills will be used to better the opportunity for employment by hundreds of local people. Desert Rock will train operators, electricians, instrumentation technicians, mechanics, welders, and others.

A project of this scale needs numerous local businesses to provide products and services that go to support its operation and the people working there. Jobs will be created indirectly from the creation of these businesses. With an average salary of more than twice the present average salary of Navajo workers, wages that do not exist now will be spent at local businesses creating a secondary economic boost to the Nation. ✣

Fluor Corporation

world's most complex projects in a variety of industries across six continents. The diverse expertise of Fluor's project managers allows them to build the Desert Rock Energy Project on schedule and within budget.

The preliminary engineering and procurement efforts are already underway in Fluor's Greenville, South Carolina project execution office. Fluor estimates that the Desert Rock Energy Project will create, on average, approximately 1,000 per year construction jobs for the region.

"We are excited about the opportunity to work with the Navajo Nation to add quality jobs and utilize local businesses to make a positive economic impact in the community." says David Constable, Group President of Fluor Power. "We look forward to delivering a world-class, clean-coal facility at Desert Rock."

Now headquartered in Irving, Texas, Fluor is a FORTUNE 500 company with revenues of $13.2 billion in 2005. ✣

Desert Rock's Recent Accomplishments

The Project is progressing successfully.

Over the last three months the Desert Rock Energy Project has seen good progress.

- On July 25, hearings concluded for the Environmental Impact Statement by the Bureau of Indian Affairs ("BIA"). The comment period continues as the BIA considers comments from interested parties.
- On August 15, the San Juan County Commissioners unanimously approved a resolution allowing for the issuance of Industrial Revenue Bonds for the project.
- As, mentioned in this newsletter, Desert Rock has chosen Fluor Corporation as its program manager to lead the efforts to design, procure equipment and construct the 1,500 MW project. ✣

Project Schedule

Construction will begin in early 2008 with the first unit on line in 2012.

With the signing of the program management agreement with Fluor Corporation, the Desert Rock Energy Project is on its way to starting the design and procurement process. Site work will begin in early 2008 to prepare the site for construction activities.

Desert Rock and its project contractors will inform the public of when hiring will take place. A Project Labor Agreement is being negotiated with local labor unions to set the ground rules for employing skilled workers to help build the power plant. In 2008 a contract will be executed with a reputable construction company who will be required to adhere to the guidelines of the negotiated Project Labor Agreement.

Steam turbine shipment from overseas

March 2008 – Begin Site Work

May 2008 – Begin Foundation Construction

June 2009 – Start Receiving Major Plant Components

February 2010 – Begin Boiler Construction

October 2010 – Begin Turbine Generator Construction

Late 2012 – Unit 1 Starts Operating

Early 2013 – Unit 2 Starts Operating ❖

Modern Technology Enables the Cleanest Coal Plant

Below is a partial list of pollutants, and the technologies utilized to remove them, which will make Desert Rock the cleanest coal power plant to date in the US.

CO_2

Carbon Dioxide is suspected to be a greenhouse gas causing global warming. The Desert Rock Energy project will utilize the most advanced super-critical, pulverized coal boiler available today. It will produce steam at very high pressures making the power plant very efficient. A high efficiency plant means the plant will burn up to 20% less coal than most coal power plants to make the same amount of electricity. Less coal means less CO_2.

Mercury

Mercury in our lakes and water ways gets into the fish and other marine animals we eat. Mercury, like CO_2, is a global issue. The mercury that is in our water comes from forest fires and power plants as far away as China. Desert Rock recognizes the problem and is installing bag house filters and wet flue gas desulfurizers to help remove the mercury. Carbon injection will be used if these other technologies fall short of removing between 80 and 90% of the mercury in the exhaust gas.

SO_2

Sulfur dioxide has been known to cause acid rain. It is formed by the combustion of sulfur contained in coal. To reduce the emission of SO_2, Desert Rock will employ low oxidation Selective Catalytic Reduction ("SCR"), a wet flue gas desulfurizer and a wet flue stack to remove 98% of SO_2.

NO_x

Nitrogen oxides are believed to aggravate asthma conditions, produce ozone and help cause acid rain. Desert Rock will employ low NO_x burners and SCR technologies. With the SCR, ammonia is injected in the boiler. As ammonia and exhaust gas flow through a catalyst, NO_x is converted into water and nitrogen. Nitrogen makes up most of the air we breathe, and is harmless. The SCR will remove 98% of the NO_x produced from the plant. ❖

SITHE GLOBAL

Desert Rock Energy Project

The Desert Rock Energy Project is a proposed 1,500 MW mine mouth coal-fired electric power plant located southwest of Farmington, San Juan County, New Mexico. The projects is being jointly developed with the Dine' Power Authority, an enterprise of the Navajo Nation and chartered to promote and facilitate the development of energy projects on the Navajo Nation. The project would be fueled by low sulfur coal mined from the adjacent BNCC Navajo Mine, and will provide needed electrical power to utilities in the Southwest The Navajo Nation, through the DPA, has the option to become an equity owner in the project.

Desert Rock is expected to have the lowest emissions of any power plant in the United States by combining a supercritical coal boiler, advanced flue gas treatment and low sulfur Navajo coal, it is also equipped with a hybrid natural draft dry cooling tower which reduces water consumption by 80 percent when compared to a typical wet cooled plant

The Desert Rock Energy Project's Draft Environmental Impact Statement (EIS) has been released by the Department of Interior, Bureau of Indian Affairs and recommends approval of the Preferred Alternative which includes the 1,500 MW Desert Rock project and associated rights of ways The Notice of Availability of the Draft EIS was published in the Federal Register June 22, 2007.

Using the most effective technology available, the project will be able to control over 90 percent of NOx emissions, 98 percent of SO2 emissions, and 80 percent of the mercury emissions. The project is designed to have a heat rate of less than 8,700 Btu/kWh, 15 percent more efficient than similar subcritical plants.

The construction of this $4 billion power plant will make the project one of the largest taxpayers on the Navajo Nation. The estimated annual benefits to the Navajo Nation will exceed $50 million annually, which is more than 30 percent of the current Navajo Nation's general budget. The plant will average 1000 employees during the 4 year construction period, and 200 full time personnel during normal operations.

Desert Rock will provide over $5 million dollars to impacted Navajo Chapters for capital improvements to Chapter houses, and Senior Centers, as well as Scholarships and job training In addition to development activities with the Navajo government, Desert Rock Energy Company, LLC is becoming integrated into the Navajo community As a major sponsor of the 2007 Navajo Nation Fair and Rodeo which showcases Navajo art, song and dance, fry bread competitions, and other activities that reflect the Navajo culture, Desert Rock is committed to the cultural, economical, and environmental stewardship of the community it serves

- 1,500 MW mine mouth coal-fired electric power plant
- San Juan County, New Mexico
- Expected to have the lowest emissions rate of any coal-fired power plant in the US
- Estimated $4 billion investment will spur economic development for the Navajo Nation
- Developed jointly with the Dine' Power Authority

High Country News
For people who care about the West

The death of Desert Rock?

Sithe Global is going back to the drawing board on the proposed coal-fired power plant.
News - March 31, 2010 by Laura Paskus

The 1,500 megawatt coal-fired Desert Rock power plant – proposed for tribal land in the Four Corners region near Farmington, N.M. -- once seemed like a slam dunk. A joint venture of the Navajo Nation and energy company Sithe Global, the plant promised the tribe much-needed jobs, along with millions in revenue and coal royalties. In 2003, when it was launched, coal's star was rising: The Bush White House refused to acknowledge the existence of climate change, and regulatory agencies were generally more permissive.

Seven years later, though, Desert Rock looks all but dead. The economy is flailing, and investors worry how future climate change legislation will affect energy development. Meanwhile, electricity demand in the Southwest is declining, and with public utilities scrambling to keep up with statewide mandates to generate more power from renewable energy sources, nobody is currently seeking new sources of coal power.

So Sithe Global, which the tribe had expected to fund the $4 billion project, is going back to the drawing board, says Sithe Executive Vice President Dirk Straussfeld. Suddenly, everything is up for review – including the plant's design as a coal facility.

From the beginning, Desert Rock's developers cited California's growing demand for electricity. But in 2007, the state's Public Utilities Commission essentially banned utilities from signing contracts for electricity from coal-fired power plants. Instead, it required them to generate or purchase power with emissions comparable to or lower than modern natural gas facilities. And not one of the six Southwestern public utilities listed in Desert Rock's 2007 environmental impact statement is planning to add new coal power to its mix.

Uncertainty is the biggest challenge facing investment in coal right now, according to energy economist Jonathan Lester. No one knows whether Congress will eventually pass a cap-and-trade program or a carbon tax or perhaps something else entirely, any of which could impact coal plants in particular, since they're among the nation's largest source of greenhouse gas emissions. In some cases, investors may balk entirely, says Lester. In others, they're likely to demand higher returns to insulate plants against potential climate costs. "Right now, they are faced with the worst of all possible worlds: They just don't know. And that kills investment."

Before backpedaling on Desert Rock in late March, Sithe Global — 80 percent of which was purchased in 2005 by the investment firm The Blackstone Group — withdrew from two other coal-fired power plants it had planned in the United States.

In February, it abandoned a proposed 300 megawatt waste-coal plant in Pennsylvania. The following month, it altered plans for the Toquop Energy Project near Mesquite, Nev., which was originally envisioned as a natural gas plant but was switched to a coal-fired power plant in 2007. Now the pendulum has swung back again: The Blackstone Group plans to invest $1.4 billion in a 700 megawatt natural gas plant with a 100 megawatt solar component at the Toquop site.

Investors weren't the only problem; Desert Rock also recently came up against significant permitting setbacks. In September 2009, the Environmental Protection Agency revoked the plant's major air-

quality permit, originally granted under the Bush administration. In addition to the issue of greenhouse gas emissions, a number of other details required review, says Colleen McKaughan, associate director for the EPA's Region 9 Air Division. These included concerns related to fine particulate emissions, which can aggravate asthma and are major cause of haze.

The EPA's decision vindicated environmentalists and tribal activist groups -- including Dine Citizens Against Ruining Our Environment (Dine CARE) and Dooda (which means "No!") Desert Rock – who argued that the plant would have exacerbated the air-quality problems caused by the two massive coal plants already in the Four Corners region. Without the permit, declared Dooda Desert Rock's Elouise Brown, the plant was dead.

The Navajo Nation insists Desert Rock is still on track, however. Straussfeld says the company is now actively reviewing the project in order to take into account all the changes in the economy, in regulatory permitting and in electricity demand. It can only go forward if it has customers, he says, and much has changed: "Load growth pretty much went away. And investment in coal projects is being viewed very critically by the public utilities commissions."

For now, Sithe has no plans to resubmit its application to the EPA for the coal plant's air permit. Before it can make a decision, Straussfeld says, the company will have to figure out what Desert Rock's future might hold.

Laura Paskus is a freelance writer and former High Country News *editor based in Albuquerque, New Mexico.*

For an in-depth look at the rise and fall of Desert Rock, watch for Paskus's upcoming investigative story for HCN.

Add Comment

Desert Rock

This plant was a terrible idea from the start, embraced by interests married for a variety of reasons to the short, and willing to overlook the long, term impacts of this project on the environment. I suspect jobs were always a significant factor for supporters, but let's face it, at some time we must, collectively, say; enough is enough, or we won't have a livable planet to fight over. Kudos to Laura Paskus, who has illuminated the evolution of this tug-of-war from early on. Our unwitting citizenry would be blessed if we had more of her.
Peter Neils

Reply

False choice--Coal vs Gas

Coal is horrible, but gas is not better. See the documentaries, CRUDE, A Land Out of Time, Split Estate, and Gasland. No one is talking about cutting our individual energy footprints. Why not? No one is talking about the population explosion. Why not? We need renewable non-polluting energy, birth control, and conservation.

Reply

amazing

How far we have come. We are willing to promote unsustainable "green" policies to out weigh the requirements of our population. Californians want it all...every entitlement they can scrape up as long as it does not impact the all mighty "green" policy. It's not just them either....there's the prestigious Cape Cod family who wanted power for the people without the wind turbines in their picturesque view. My guess is that most of the readers of this article and the author live in an area where all they desires and wants are met.; lights at night, an air conditioner for cooling, a car to drive, money in their pocket for the a beer at the club. So what other recommendations are out there for the man who wants the dignity of a job for his family in the Four Corners region? Here's one for an article....establish personal accountability and a lack of hypocrisy. Get off the entitlement train America! It is unsustainable.... Oh to add to the rant...Climate change has been happening for years...we've call it the seasons and temperature fluctuations...Suppose you'll blame the dinosaurs or mammoths next for warming up the Ice Ages some centuries back. Have a nice day.

Reply

Desert Rock

This is an April Fool's joke, right? The writer should get serious. Miners' deaths. CEOs sucking the surviving miners dry and ruining their environment (check out the Google Earth pics of the Upper Branch mine). Air pollution. The list goes on.

The glorious Southwest has lots of wind and lots of sun. How 'bout developing those options for energy? Everything has drawbacks, but I can't think of those two as having anything that would approach coal's horrors.

No contest on CA's list of delusions, however....what kind of idiots would vote out property taxes (Prop. 13) and thereby gut the State's economy? Maybe only AZs idiots, which are 50th in per capita spending on students' education, are still cutting education funding, and just submitted a "Race To The Top" grant app to the Feds that placed 40th out of 40 states competing. Yikes. And the Governor doesn't even have a college education.

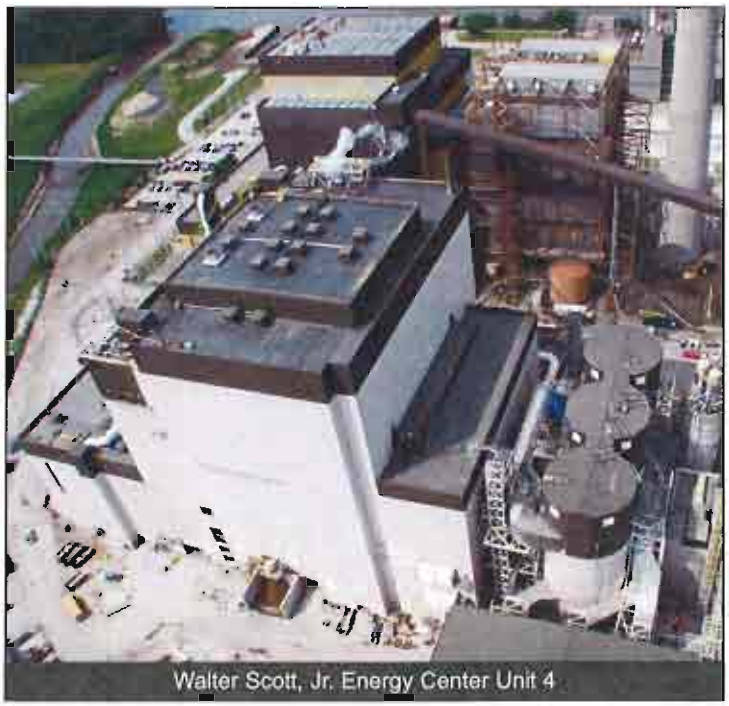
I do wish this was an April Fool's joke, believe me!

Reply

JUST THE **FACTS**

Walter Scott, Jr. Energy Center's New 790-Megawatt Unit

To ensure a long-term positive impact on Iowa's economy and a secure supply of electricity, MidAmerican Energy built a 790-megawatt coal-fueled electric generating facility at the existing Walter Scott, Jr. Energy Center.


Walter Scott, Jr. Energy Center Unit 4

Walter Scott, Jr. Energy Center Unit 4 is a $1.2 billion investment and is the largest electric generation project in Iowa.

- Construction began in September 2003 and employment numbers peaked at more than 2,000, with an estimated $300 million in construction payroll.
- With the addition of Unit 4, Walter Scott, Jr. Energy Center will employ 207 people with an annual payroll of $17.5 million.
- The plant was placed in service June 1, 2007.

Construction of the plant required approximately:

- 15,000 tons of structural steel in the boiler building alone,
- 92,000 cubic yards of concrete,
- 230,000 lineal feet of pipe (approximately 44 miles),
- 5 million lineal feet of wire (approximately 947 miles) and
- More than 28,000 boiler tube and piping field welds.

Annual Property Tax Payments

Walter Scott, Jr. Energy Center Unit 4 is expected to generate approximately $3.7 million in annual property tax payments. Approximately $1.8 million will be distributed to Pottawattamie County, the city of Council Bluffs, the Lewis Central School District and other local governmental bodies.

Walter Scott, Jr. Energy Center Units 1, 2 and 3 generate approximately $3.4 million in annual property tax payments. Approximately $2.7 million is distributed to Pottawattamie County, the city of Council Bluffs, the Lewis Central School District and other local governmental bodies.

Environmental Considerations

Consistent with MidAmerican's Environmental RESPECT Policy, the company operates the plant in an environmentally responsible manner. MidAmerican employs the best available control technology to control air emissions and meets or exceeds all required environmental standards for a new, coal-fueled generation plant. The plant features a supercritical boiler design which allows for coal to be burned more efficiently at higher pressures and temperatures, requiring less coal and resulting in fewer emissions for the same electrical output.

Walter Scott, Jr. Unit 4 uses low-sulfur Wyoming coal as a fuel source.

(continued on back)

MidAmerican ENERGY
OBSESSIVELY, RELENTLESSLY *AT YOUR SERVICE.*

August 2007

Environmental features of the new plant include:

- SCR – selective catalytic reduction system for reducing emissions of nitrogen oxides,
- Scrubber – spray dryer absorbers for reducing emission of sulfur dioxide,
- Baghouse – a large set of filters to collect more than 99 percent of particulates,
- Activated Carbon Injection – captures and removes mercury from flue gas and
- Low NOx burners and separated over-fire air system.

Background

MidAmerican is the developer and operator of the project. Several other power industry partners also are involved in ownership. Those joint owners include:

- Central Iowa Power Cooperative,
- Corn Belt Power Cooperative,
- Lincoln Electric System,
- Municipal Energy Agency of Nebraska
- and the following Iowa cities – Alta, Cedar Falls, Eldridge, Montezuma, New Hampton, Pella, Spencer, Sumner, Waverly and West Bend.

Transmission of Electricity

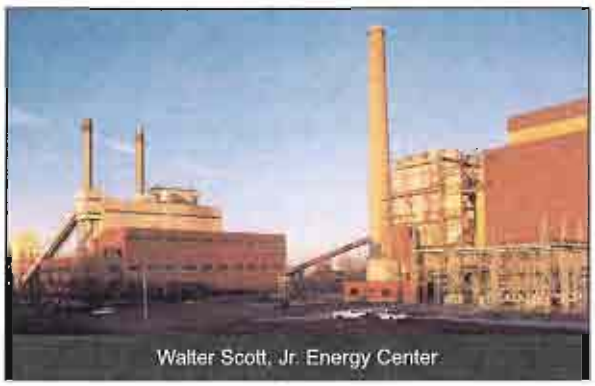
As part of the project, new transmission lines and substations were built to strengthen the existing transmission system and to enable the delivery of the new electric supply. A 124-mile, 345,000-volt electric transmission line was constructed between the Walter Scott, Jr. Energy Center and Des Moines, Iowa, and approximately 14 miles of 161,000-volt electric transmission was constructed between Walter Scott, Jr. Energy Center and Omaha, Neb.

JUST THE FACTS

Walter Scott, Jr. Energy Center Units 1, 2 and 3

Plant Ownership

Walter Scott, Jr. Energy Center Units 1, 2 and 3 are jointly owned by MidAmerican Energy Company, Central Iowa Power Cooperative, Corn Belt Power Cooperative and the cities of Atlantic and Cedar Falls, Iowa. MidAmerican is the principal owner and the operating partner of the facility. The Walter Scott, Jr. Energy Center is located four miles south of Council Bluffs, Iowa, along Interstate 29 and in close proximity to Interstate 80.


Walter Scott, Jr. Energy Center

Background

The Walter Scott, Jr. Energy Center began generating electricity in 1954 when the 43-megawatt Unit 1 was placed in service. A second unit, with a capacity of 88 megawatts, was completed in 1958; and a third unit, with a capacity of 690 megawatts, was completed in 1979.

The electric generating process begins with pulverized coal being blown into the water-wall boiler for combustion. The boiler heats the process water to a high-pressure, super-heated steam (up to 1,000 degrees Fahrenheit). The high-pressure steam drives three turbines and the power generator. The steam is then condensed back to process water in the condenser and the process water is then recirculated in a continuous, closed-loop process.

High voltage (345,000 volts, 161,000 volts and 69,000 volts) transmission lines carry electricity from the plant to substations where it is then distributed to customers throughout Iowa and the Midwest.

Walter Scott, Jr. Energy Center Units 1, 2 and 3 produce approximately 5.6 billion kilowatt hours of electricity per year.

Fuel Source

Coal offers MidAmerican Energy a cost-effective and reliable fuel source. The Walter Scott, Jr. Energy Center uses low sulfur western coal. Low sulfur coal achieves low emissions of sulfur dioxide. Boiler design and efficient operations minimize emissions of nitrogen oxides and particulate matter. The plant burns about 3.5 million tons of low sulfur western coal annually.

Environmental Considerations

Walter Scott, Jr. Energy Center Units 1, 2 and 3 use 550,000 gallons per minute of Missouri River water to cool steam into water. The water is pumped from the river, through the condenser and then back to the river. None of the river water is consumed by the power plants. Approximately 5 percent of coal is noncombustible ash. MidAmerican recycles most of its ash to be used in concrete or production of aggregates for road construction. Unsold ash is deposited into an on-site settling pond.

The on-site settling pond for ash provides successful nesting sites for two endangered bird species – the piping plover and the least tern. The birds nest in the shore of the ash ponds where ash deposits resemble river sandbars.

Economic Development Benefits

The Walter Scott, Jr. Energy Center employs 146 people and produces an annual payroll of about $7.8 million.

For more information, contact:

Walter Scott, Jr. Energy Center
7215 Navajo Street
Council Bluffs, IA 51501
712-366-5300

MidAmerican ENERGY
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August 2007

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MidAmerican Energy's Balanced Electric Generation Development – 2004-2008

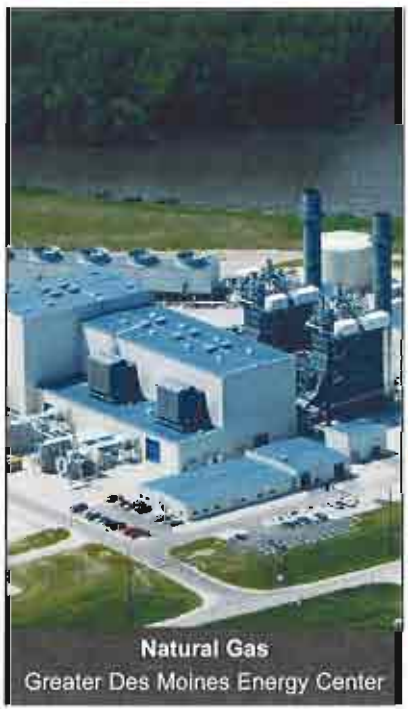
MidAmerican Energy Company has an obligation to meet customers' energy needs with affordable electricity provided in an environmentally responsible monner.

Next year, MidAmerican Energy will complete the final year of a $3.35 billion investment in new electric generation infrastructure to meet a growing customer base with a larger appetite for electricity than it had 10 years ago. MidAmerican Energy had 644,000 electric customers in 1997 and 714,000 customers at the end of 2006, an increase of 70,000 customers. During that time, annual electricity consumption per customer has increased a total of 11 percent, from 8,463 kilowatt-hours in 1997 to 9,376 kilowatt-hours in 2006. That's an increase of a little more than 1 percent a year.

New Electric Generation Infrastructure – 2004-2008

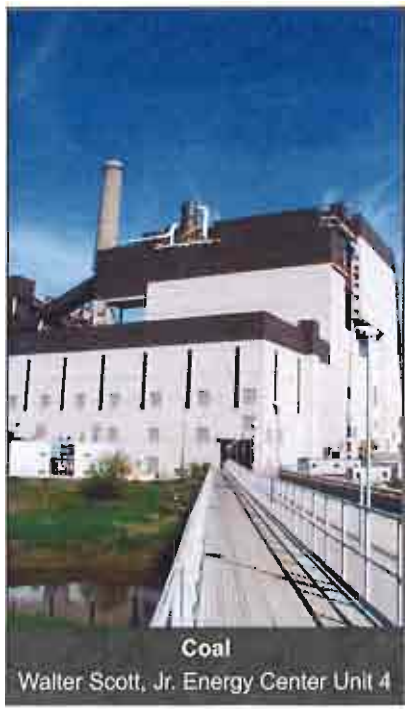
Wind
Century Wind Project

1,000 megawatts



Natural Gas
Greater Des Moines Energy Center

573 megawatts



Coal
Walter Scott, Jr. Energy Center Unit 4

471 megawatts

In December of 2004, the Greater Des Moines Energy Center, a 573-megawatt natural gas-fueled, combined-cycle power plant was placed in service in Pleasant Hill.

That same month, MidAmerican Energy completed the Intrepid Wind Project in Soc and Buena Vista counties in northwest Iowa. The 107 1.5-megawatt wind turbines, located near the town of Schaller, have a 160.5-megawatt capacity. Since then, the company has built 216 more wind turbines and leads all regulated utility companies in the nation in ownership of wind energy generation. Next year, when MidAmerican Energy completes its wind expansion plan, the company plans to own more than 1,000 megawatts of wind energy in Iowa, which would be enough to provide power to 336,000 homes.

The combination of the company's existing wind turbines and planned wind expansion would bring the amount of MidAmerican Energy's electric generation capacity from renewable energy sources to approximately 18 percent. That amount of renewable energy generation is equivalent to removing approximately 682,000 cars – approximately 43 percent of the registered automobiles in Iowa – from the road and eliminating the emissions they place into the atmosphere.

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On June 1, 2007, the Walter Scott, Jr. Energy Center Unit 4, owned by MidAmerican Energy and 14 public power entities, was placed in service. MidAmerican Energy's share of the 790-megawatt coal-fueled power plant is approximately 471 megawatts.

Walter Scott, Jr. Energy Center Unit 4 is the first of its kind power plant in the nation to employ advanced supercritical technology, which means less coal is required to generate an equivalent amount of energy produced by the last generation of coal-fueled power plants built in the 70s and 80s. As a result, there is a 15 percent reduction of carbon dioxide produced per megawatt of generated electricity.

The new electric generation totaling more than 2,000 megawatts from diverse fuel sources – 50 percent from wind, more than 25 percent from natural gas and less than 25 percent from coal – reflects MidAmerican Energy's approach to meeting customers' energy requirements with a balanced portfolio of electric generation assets.

At the same time that MidAmerican is investing in providing a reliable supply of energy, it continues investing millions of dollars in the company's 19 energy-efficiency programs to help customers be wise energy consumers. Since the inception of the company's energy-efficiency programs in 1990, more than $400 million has been invested in programs that provide financial incentives and demonstrate to customers how to use energy as efficiently as possible.

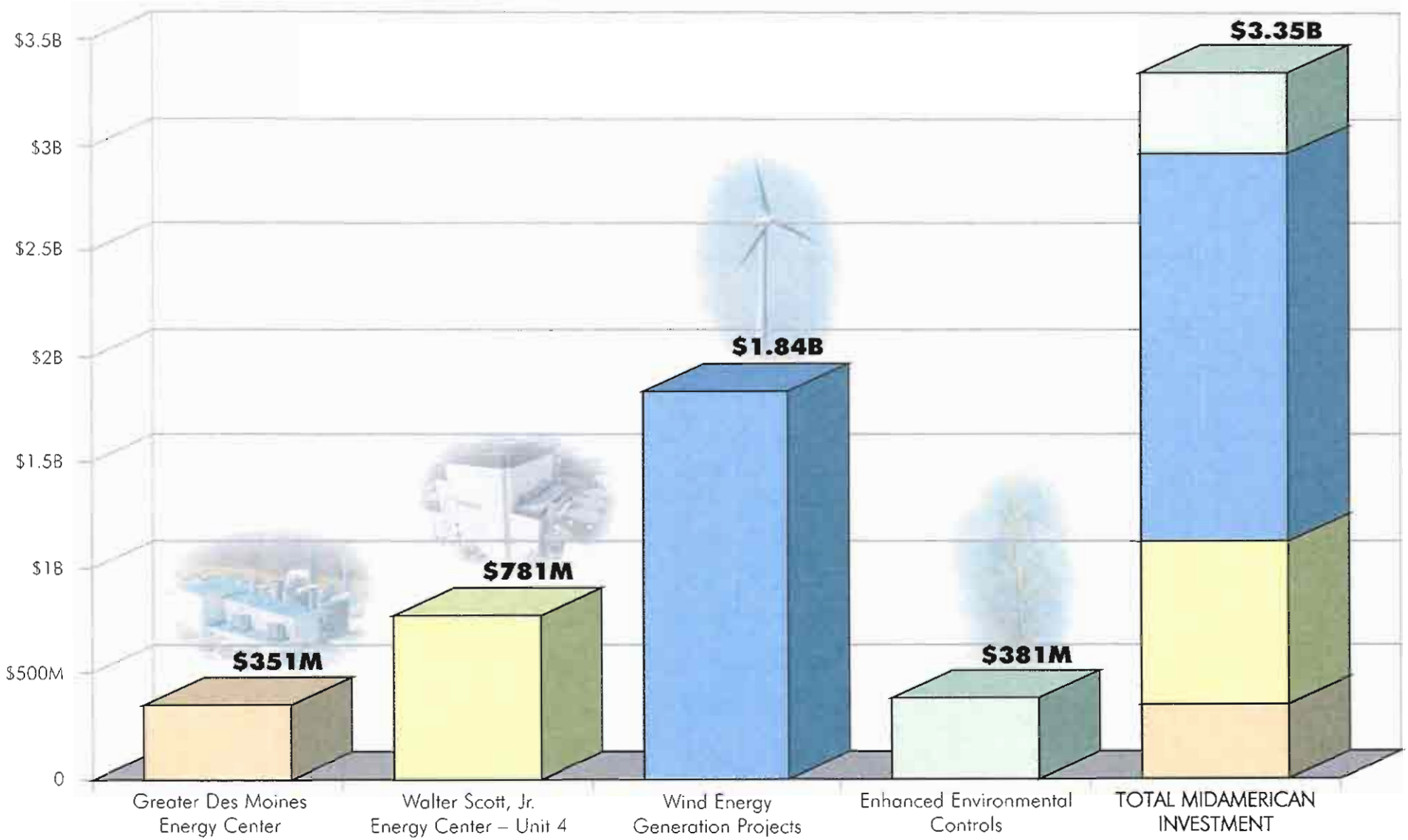
While taking responsible action to encourage customers to use electricity wisely, MidAmerican Energy also is taking responsibility for reducing emissions at its power plants. In the next two years, the company will complete an approximate $400 million investment in environmental upgrades at its coal-fueled power plants, which will reduce nitrogen oxides emissions by 44 percent, sulfur dioxide emissions by 35 percent and mercury emissions by 23 percent.

In addition to MidAmerican Energy's strong track record of following through on its commitment to provide customers with reliable energy in a manner that's respectful of the environment, the company also has a strong track record of keeping electric rates stable. The last electric rate increase MidAmerican Energy customers experienced was in 1995, and the company's has committed to keep electric rates stable until at least 2014 in Iowa. MidAmerican Energy's customers in Illinois and South Dakota will be pleased to know that the company does not have any plans for electric rate increases in those areas either.

MidAmerican Energy's investments – good for the environment, good for the economy and good for the company's customers.

MIDAMERICAN ENERGY COMPANY

MAJOR ECONOMIC DEVELOPMENT PROJECTS IN IOWA



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JUST THE **FACTS**

MidAmerican Energy Iowa Wind Power and Electric Generation

MidAmerican Energy Company is No. 1 in the nation in ownership of wind-powered electric generation among traditional regulated utilities, and the company has plans to further solidify its wind energy leadership by adding up to another 540 megawatts of wind energy in Iowa.

Avoided emissions from the new wind energy initiative combined with the company's current wind projects are equivalent to removing more than 682,000, or 43 percent, of Iowa's registered automobiles from the road.

MidAmerican has 696 megawatts of wind energy facilities in operation, under construction and under contract in Iowa.

- 460 megawatts – owned and operated by MidAmerican Energy
- 123 megawatts – scheduled for 2007 completion
- 113 megawatts – power purchase agreement

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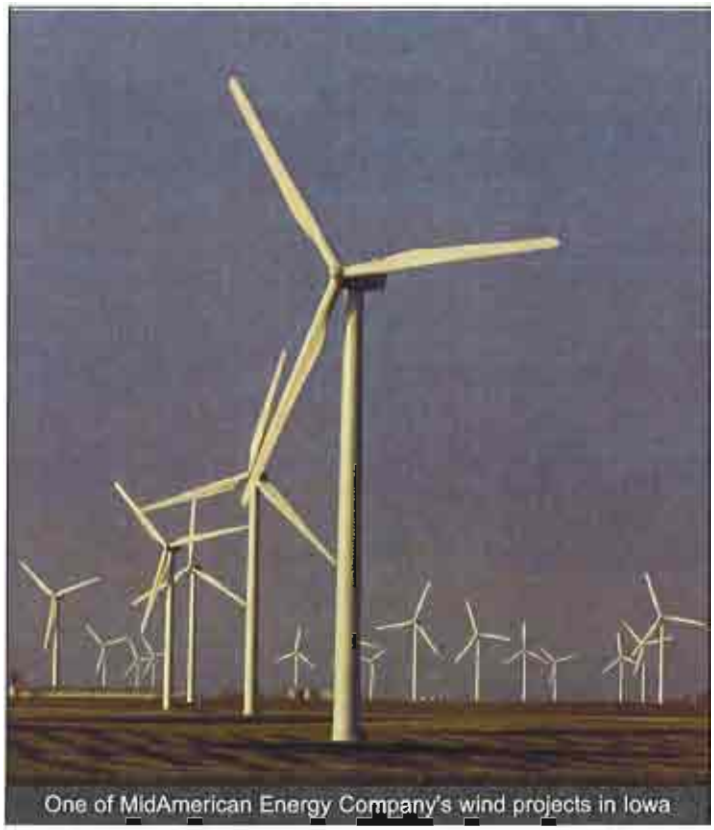
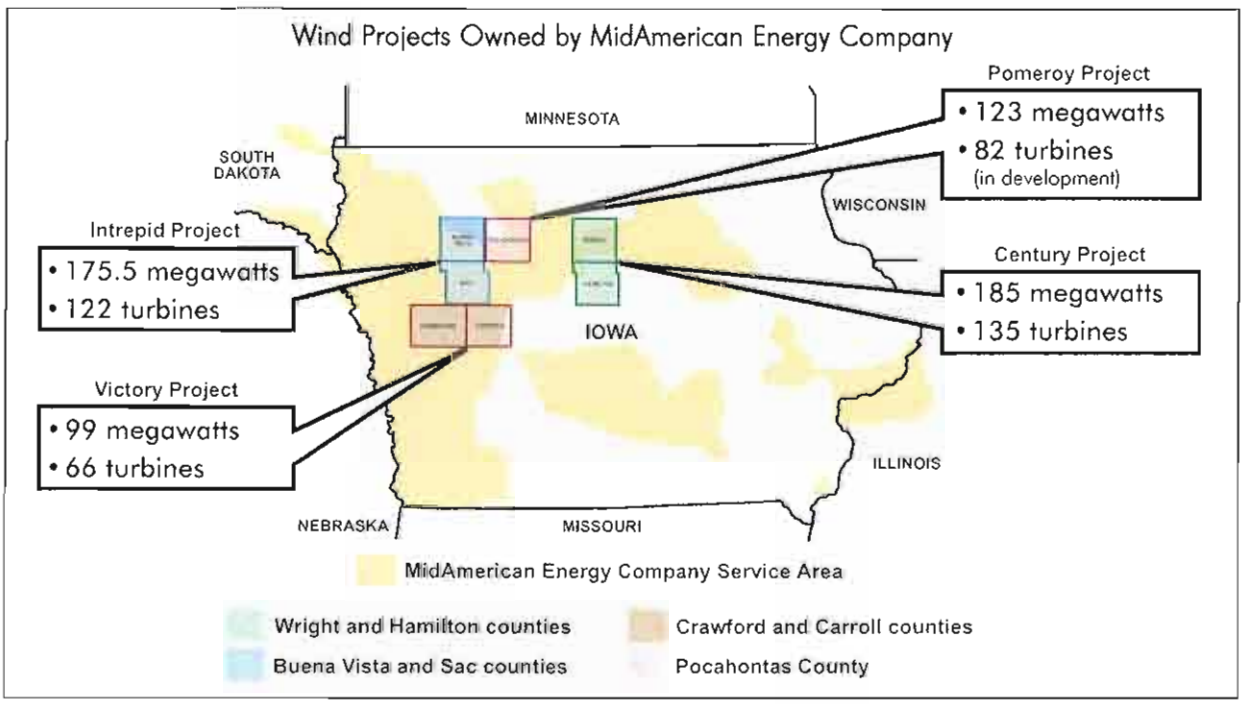


One of MidAmerican Energy Company's wind projects in Iowa



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The existing 460 megawatts of owned wind energy facilities are located at four sites in northwest, north central, west central Iowa and the Iowa State Fair wind turbine. The Intrepid Project in Sac and Buena Vista counties in northwest Iowa, the Century Project in Wright and Hamilton counties in north central Iowa and the Victory Project in Carroll and Crawford counties in west central Iowa have the capacity to produce enough electricity to power 144,000 homes.

An additional 123 megawatts of wind energy in Pocahontas County are scheduled to be completed by the end of 2007.

With this key addition of wind resources, MidAmerican Energy is proposing that customers will continue to have electric rate stability until 2014. The last rate increase MidAmerican Energy customers experienced was in 1995.

Approximately 10 percent of MidAmerican's existing electric generation capability comes from renewable resources, and by the end of 2008 approximately 18 percent of MidAmerican's electric generation capability will come from renewable resources based on current plans.

Go to www.midamericanenergy.com to take a guided virtual tour through a wind facility and experience how wind is used to generate electricity for homes and businesses.

JUST THE **FACTS**

Greater Des Moines Energy Center

The Greater Des Moines Energy Center is a natural gas-fueled, combined-cycle generation plant owned by MidAmerican Energy Company, a subsidiary of MidAmerican Energy Holdings Company. The $357 million plant was placed into service in December 2004.

Construction on the plant began in early 2002. The project required approximately:

- 14,000 cubic yards of concrete,
- 1,700 tons of structural steel,
- 10 miles of piping,
- 180 miles of electric cable and
- 250 construction jobs.

Greater Des Moines Energy Center

At full load, the plant produces approximately 540 megawatts of electricity, consuming approximately 159 million therms of natural gas per year. The plant employs a staff of 24 operations employees and provides $560,000 in annual taxes.

Major Equipment Components

Major equipment used by the plant includes:

- Two natural gas-fueled combustion turbine generators,
- Two heat-recovery steam generators to produce steam from waste heat generated from the combustion turbine exhaust,
- One steam turbine generator to produce electricity from the steam produced by the heat-recovery steam generators,
- A selective catalytic reduction system for reducing emission of nitrogen oxides,
- Emissions-monitoring equipment,
- Substation facilities to connect the plant to the electric power grid,
- Evaporative cooling equipment for cooling the plant's equipment and for condensing steam to reuse in the steam turbine generator,
- Support equipment for plant operations and
- Support facilities, such as offices, a storeroom and maintenance shop.

The Environment

MidAmerican minimizes the environmental impact of a large-scale electric generation facility by using clean-burning natural gas, state-of-the-art emission controls and a high-efficiency heat-recovery system that captures waste heat to produce additional electricity. Plant cooling is provided by closed-loop cooling systems.

This facility is designed to meet all existing standards for emissions and employs best available control technology.

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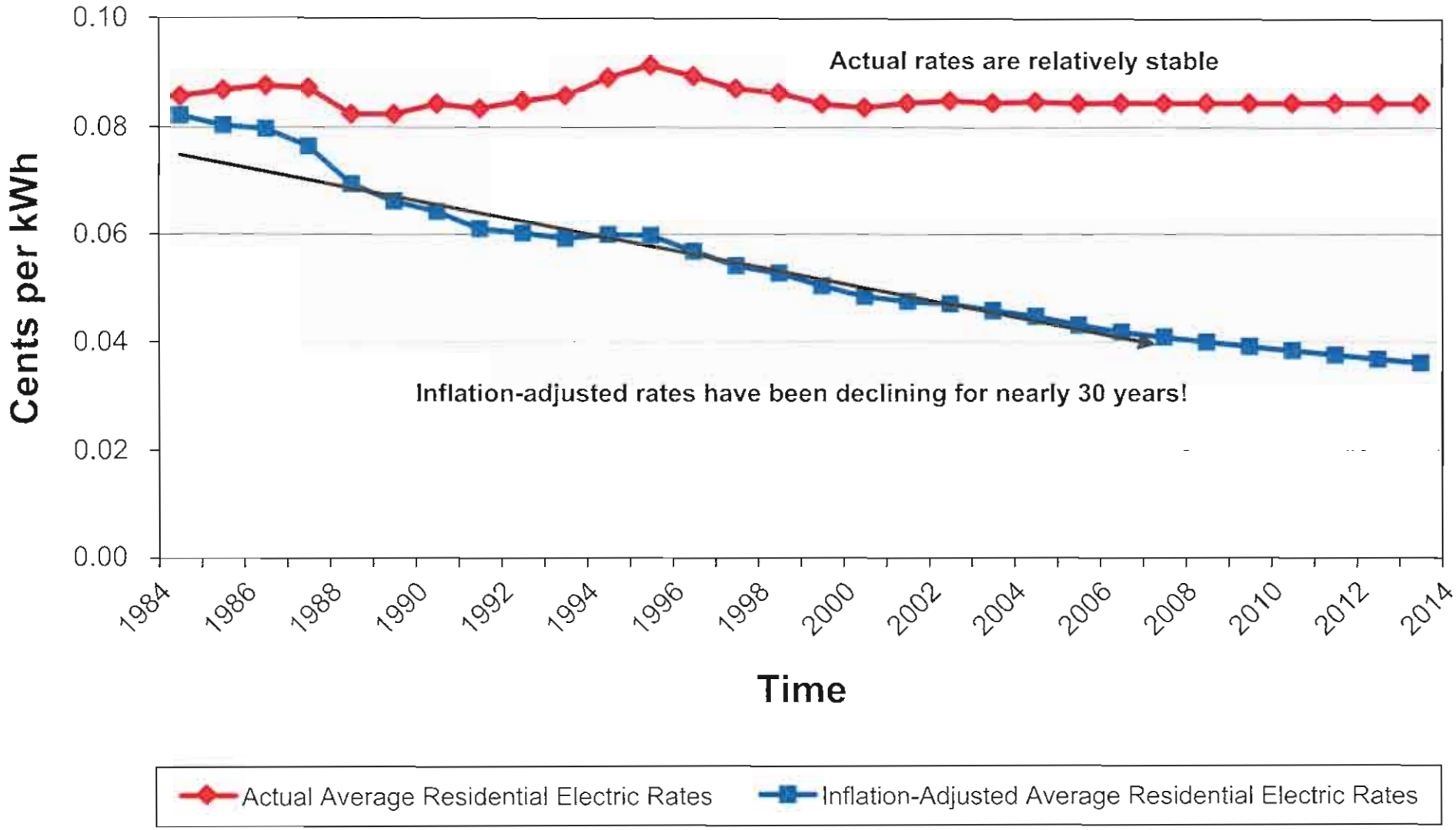
MIDAMERICAN ENERGY COMPANY

IOWA RESIDENTIAL ELECTRIC RATES



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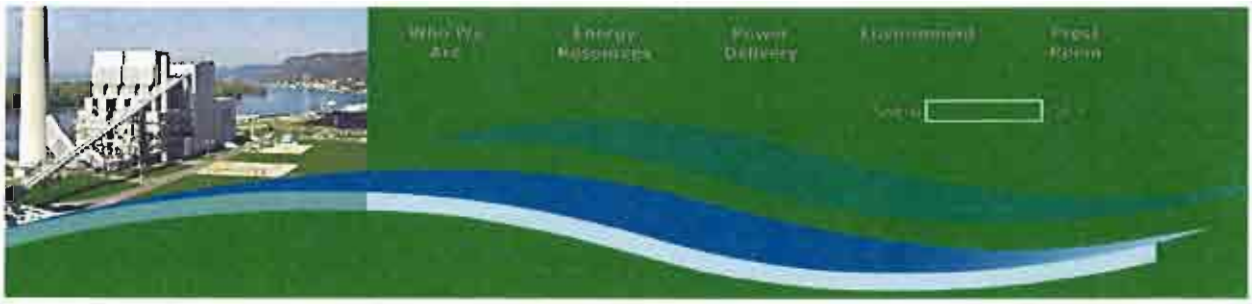

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DAIRYLAND POWER COOPERATIVE

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Weston #4 Coal-Fired Power Plant

The Weston 4 power plant, of which Dairyland Power Cooperative has a 30 percent ownership interest, achieved commercial operation on June 30, 2008.

The newly constructed 525 MW (nominal rating) power plant uses clean coal technology, a high efficiency boiler, low sulfur coal as fuel and features sophisticated emission controls to minimize environmental impacts. Wisconsin Public Service Corp., the majority owner, constructed and operates the plant which is located near Wausau, Wis.

Weston 4's state-of-the-art design led it to be designated as Power Magazine's 2008 Plant of the Year. "We are proud to be a partner in Weston 4, which is supplying our members with the clean, reliable electricity they need," said Bill Berg, Dairyland President and CEO.

Construction on the $774 million project began in October 2004. The massive project required nearly 1,000 construction workers, who built the plant safely and on-schedule.

Visit Wisconsin Public Service's Weston #4 site

Printer-Friendly Page | © Dairyland Power Cooperative

A Touchstone Energy® Cooperative

Plant Comparison Data and Analysis

The following analysis is based on analysis by Walter Drabinski. It reflects input and data from Mr. Ken Roberts direct and rebuttal testimony from his Kansas Iatan 2 testimony. Much of the following address issues that Drabinski and Roberts either agreed with or disagreed on.

Type of Plant in Comparison

Design - Supercritical over 600 MW - Roberts and Drabinski agree on size criteria and that Integrated Gasification Combined Cycle Plants (IGCC) and Fluidized Bed plants do not belong in the analysis.

Time Frame - Roberts and Drabinski agree. Two years before until two years after. Includes plants that went in service from 2007 to plants currently scheduled for service by 2012.

Labor - Roberts removes all Open Shop projects. Drabinski adjusts by 6% as described below.

Common Costs - Roberts assigns all of Oak Grove to Unit 1 and then excludes Unit 2. Then excludes the Unit for being open shop. Drabinski assigns 50% of costs to each of the Oak Grove Units. Roberts simply excludes Trimble County 2 for being open shop and having Common provided as part of Unit 1. Drabinski adjusts labor and analyzes common costs to make an adjustment.

Open Shop

Roberts refers to any project that is not 100% union labor as **non-union**. In fact these are "Open Shop" projects which permit bidding by both union and non-union contractors. Evidence shows that union contractors often win major contracts in open shop projects. This is because many of the skilled construction workers such as boiler makers, steel workers, and electricians are only found in Union Halls due to training and ease of procuring personnel.

Mr. Roberts does make a good point that the labor cost of an open shop project is likely to be less. This is not just a wage difference, but also due to work rules. While the work rule issues are mitigated by the National Labor Maintenance Agreement used on projects such as Iatan, there are still some differences.

Vantage used the Iatan labor consultant studies by Schumacher and other sources to normalize these costs. Schumacher indicates that labor is typically 30% of a project (B&McD estimated 35% in PDR). Labor statistics are not readily available for power plant construction crafts, but we can make some assumptions based on Handy-Whitman data and conservatively assume that labor costs are about 24% higher for union versus open shop project. This provides a result of 8.0% in cost normalization increase for open shop projects.

However, Iatan project used National Maintenance Agreement which mitigates some costs and reduces comparison. Based on this, we add 6% to the cost of all open shop projects in our comparison to allow for Open shop versus Union.

There are three documents that support this. First, Dr. Dr. Coomes testimony in Kentucky Trimble County 2 addresses a B&McD labor study during its PDR development . The union rate of $51 per hours inclusive agrees with B&McD February 2006 input of $53/hr to KCP&L (This is a fully loaded rate and includes fringe benefits). Non-union makes 17-30% less per hour. Results in $36 to $88 Mil. Dr. Coomes assumption of $8.78/hour rate in benefits is incorrect per B&McD data from Nebraska City. He then goes on to estimate $57 mil to $101 Mil for benefits. Roberts in KCC testimony takes the top of both ranges ($88 +$101 = $189 Mil). Nielson in KCC testimony rounds up to $200 mil and Meyer claims that is conservative. In reality the range that Dr. Coomes was able to support is $36Mil to $88 Mil.

Second, on 2/10/ 2005, Grimwade received e-mail from B&McD (Rottinghaus) regarding comparison of costs between Iatan 2 and Nebraska City 2. B&McD indicated projects are within 1% of each other. Another e-mail on 2/17/05 discusses difference in labor rates and suggests labor rate delta is $92 Mil.

Third, a SH report of 4/17/10 page 7, under Subcontract Labor Adjustments – Statement suggests that prior to February 2006, subcontractors would be allowed to bring in non-union subcontractors. First, this is incorrect, all previous B&McD estimates assumed 100% union. More importantly, SH indicates the cost of this is $55 Mil.

Conclusion: While there is a difference between union and open shop, it is not as high as KCP&L witnesses claim. Further, there is no basis for removing from comparison or even normalizing when KCP&L made decision to go union without a legal or regulatory requirement to do so.

Common Plant costs

Mr. Roberts suggests that common cost differences can influence comparisons as well. We know that Iatan 2 is built as a second unit and has some advantages as far as site location and infrastructure. This is why the 2nd phase of the PDR selected Iatan. We have very little information on most of the other units in the comparison, but since it is a general comparison, this normalization does not have a major impact. Simply eliminating a plant because there is a question about common costs is unwarranted.

Trimble County Normalization

Mr. Roberts make an issue over analysis of Trimble county 2. He correctly points out that Trimble County 2 was part of a two unit configuration and some common facilities were installed during the construction of Unit 1. He therefore goes through a convoluted adjustment

to normalize TC2 by subtracting the $269 million in Common costs attributed to it. This gross adjustment is inaccurate. TC1 was designed in the late 1980s and went into service in 1990. Regulations regarding mercury, zero level discharge, and other major common systems were different than today. More importantly TC1 was a 550MW unit and that was assumed for TC2 when common facilities were installed. In fact TC2 is 760MW and many common systems were not sized appropriately, including the cooling tower and chimney. To adjust appropriately, after reviews of public data, discussions with LG&E management and based on Mr. Drabinski's own experience auditing TC1, the following table was developed. The table below lists, in column 2, all of the common costs included in Iatan 2 which total $269 Mil. In column 3, we identify the costs that were saved by virtue of using existing TC1 facilities. This totals $96.3 Mil.

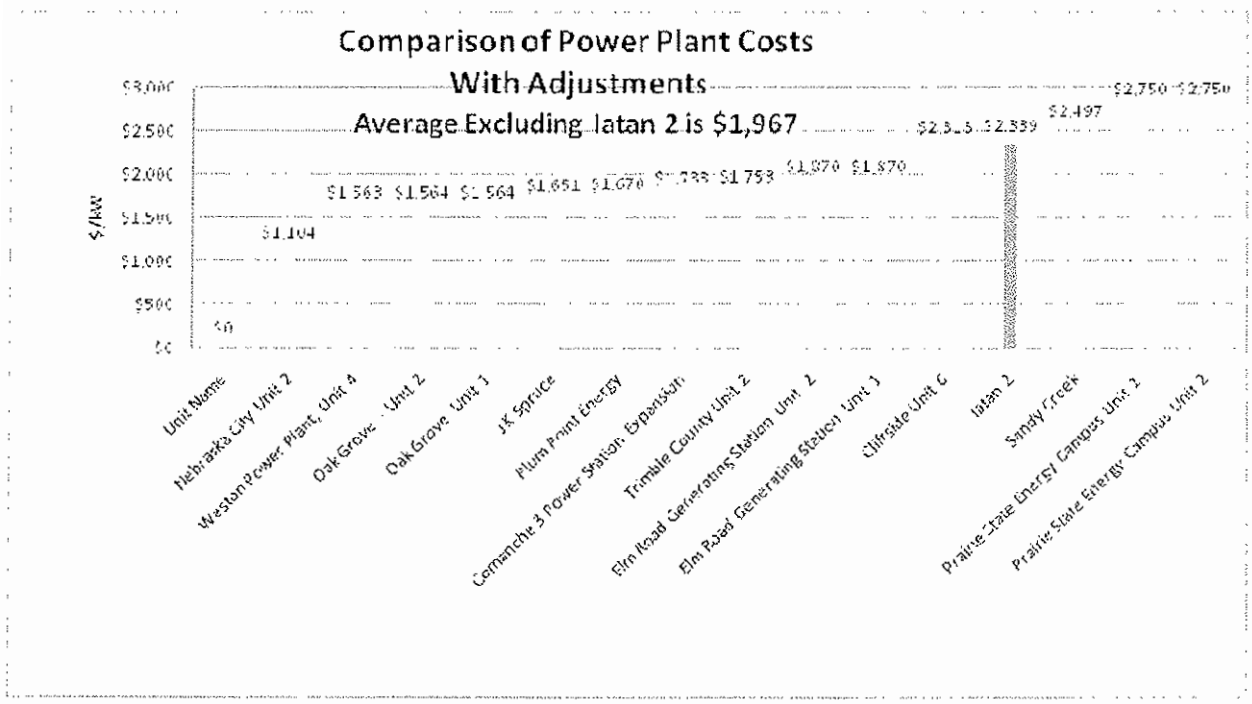
Conclusion - The adjustment for common costs installed on Trimble County 1 is significantly less that Roberts suggests.

Analysis of Common Costs Between I2 and TC2

Common Cost Component	Iatan Unit 2 Cost (x 1000)	Previous TC Unit 2 Costs (x 1000)	Rational for Exclusions
Zero Liquid Discharge (ZLD)	$10,050	$4,422	Assumes that Trimble County would upgrade its waste water system as part of the new project.
Water Treatment Facility	$16,700	$7,348	Assumes that Trimble County would upgrade its water treatment system to support the new unit.
Ammonia Storage	$3,650	$1,606	Assumes that Trimble County would upgrade its ammonia storage system to support the new unit.
Limestone Handling System	$31,050	$13,662	Assumes that Trimble County would upgrade its limestone handling system to support the new unit.
Gypsum Dewatering	$18,700	$8,228	Assumes that Trimble County would upgrade its gypsum dewatering system to support the new unit.
Vacuum Compressor Facility	$4,200	$0	The vacuum compressor facility is not required, therefore the associated $4.2 \M can be excluded.
Coal Handling Facility	$41,800	$18,392	system and made upgrades to support the new unit, which are included in the construction cost.
Transformers	$3,100	$0	the existing unit and included the cost of associated transformers in the overall costs.
Chimney	$33,720	$23,720	adding an additional flue liner. Assumed cost of $10M. The $23M differential could be excluded from the Iatan Unit 2 cost.
Landfill	$7,930	$0	project, which cost $7.9M. These costs were not included in the unit costs, therefore the associated $7.93M can be excluded.
Site Prep.	$13,060	$0	construction. It is assumed that Trimble County would have incurred a similar expense.
Digital Control System	$1,670	$0	of new unit construction.
Pre Fab Buildings	$1,660	$0	construction.
Fabrication Shop	$615	$0	construction.
Oil Storage Facility	$600	$0	construction.
Storage Tanks	$12,035	$0	Storage tanks are typically part of new unit construction.
Fly Ash Silo	$2,220	$0	A new fly ash was included in the project and is included in the new unit construction costs..
Batch Plant	$255	$0	A batch plant is typically included in new unit construction.
Fire Protection	$7,100	$0	Fire protection system modifications are typically provided to support new unit construction.
Flue Gas Desulfurization	$33,220	$0	Trimble County did install a new FGD, which is included in the overall cost of the new unit.
Rail Road Mods.	$3,725	$0	Trimble County utilized the existing barge unloading system for central app. Coal and the upgraded rail system for PRB coal. Associated cost of rail modifications are included in unit costs.
Security Building	$390	$0	Security building modifications are typically provided to support new unit construction.
Indirect Costs	$21,550	$18,964	Indirect costs are typically included in new unit construction costs..
Total Adjustment	**$269,000**	**$96,342**	

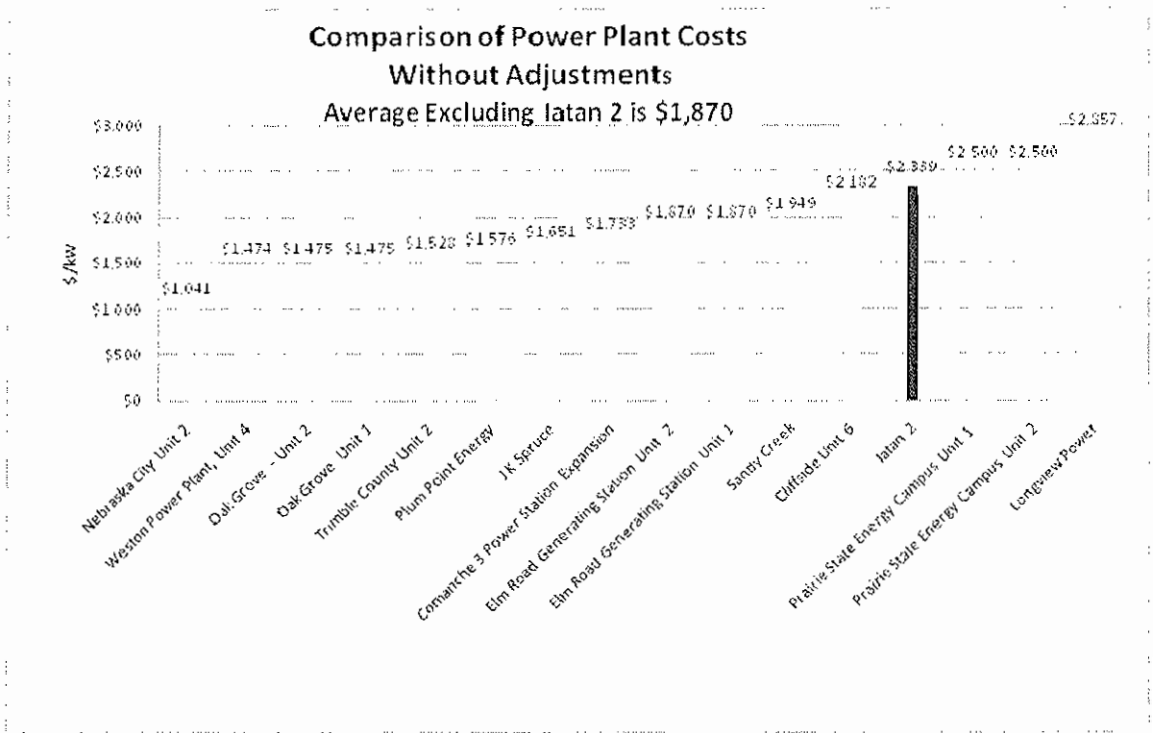
Adjusted Plant Costs

Unit Name	$/kW
Nebraska City Unit 2	$1,104
Weston Power Plant, Unit 4	$1,563
Oak Grove - Unit 2	$1,564
Oak Grove Unit 1	$1,564
J K Spruce	$1,651
Plum Point Energy	$1,670
Comanche 3 Power Station Expansion	$1,733
Trimble County Unit 2	$1,753
Elm Road Generating Station Unit 2	$1,870
Elm Road Generating Station Unit 1	$1,870
Cliffside Unit 6	$2,313
Iatan 2	**$2,339**
Sandy Creek	$2,497
Prairie State Energy Campus Unit 1	$2,750
Prairie State Energy Campus Unit 2	$2,750
Longview Power	$2,857
Average of all but Iatan 2 ($/kW)	$1,967
Iatan 2 ($/kW)	$2,339
Differential ($/kW)	$372
Capital Cost Differential ($ million)	$316



Unadjusted Plant Costs

Unit Name	$/kW
Nebraska City Unit 2	$1,041
Weston Power Plant, Unit 4	$1,474
Oak Grove - Unit 2	$1,475
Oak Grove Unit 1	$1,475
Trimble County Unit 2	$1,528
Plum Point Energy	$1,576
J K Spruce	$1,651
Comanche 3 Power Station Expansion	$1,733
Elm Road Generating Station Unit 2	$1,870
Elm Road Generating Station Unit 1	$1,870
Sandy Creek	$1,949
Cliffside Unit 6	$2,182
Iatan 2	$2,339
Prairie State Energy Campus Unit 1	$2,500
Prairie State Energy Campus Unit 2	$2,500
Longview Power	$2,857
Average of all but Iatan 2 ($/kW)	$1,845
Iatan 2 ($/kW)	$2,339
Differential ($/kW)	$493
Capital Cost Differental ($ million)	$419



Summary and Graph of Plants Using Adjusted Costs

Comparison of Iatan 2 to fifteen other similar plants shows range of average difference of $316 mil when adjusted and $ 393when unadjusted.

Conclusion – Regardless of how costs are considered, Trimble County was significantly more expensive. It is $419 Million more when using adjusted numbers and $698 Million more when unadjusted.

Project	Iatan 2	Trimble County Unit 2
Developer	KCP&L	EON, IMEA, IMPA
Location	Weston, MO on Missouri river	Trimble County, KY on Ohio River
State	MO	KY
Fuel	Coal	Coal
Technology	PC Supercritical	PC Supercritical
Construction Start	Dec-05	Jul-06
Construction Finish	Late 2010	Mid-2010
Construction Method	Hybrid EPC/Multi-prime	EPC Bechtel
Size (MW)	850	760
Actual Cost	$1,988	$1,161
Unadjusted Cost per KW	$2,339	$1,528
Adjustment for Common Costs Installed with Unit 1		$96
Open Shop Adjustment (6%)		$75
Cost Basis ($000, 000) TC2	$1,988	$1,333
Adjusted Cost per KW	$2,339	$1,754
Source of Cost	March 2010 Reforecast	2010 Rate Case
Cost/kW difference with Adjustment	$585	
Cost/kW difference without Adjustment	$811	
Projected Price Differential when adjusted for size, Open Shop and common	$497,387,971	
Projected Price Differential when no adjustments are made.	$689,513,158	
Project Definition Report	B&M since 1990's. Prepared Project Definition Report in 2003-04	B&M did preliminary estimate in 2002
Owner Engineer	B&M selected in Nov. 2005 as Owner	Cummins and Barnard Engineering from Michigan
Commission Approval	Jul-05	Nov-05
Bid for Services	Issued RFP for Owner Engineer in October 2005, Decided on Multi-Prime Construction Management in November 2005.	Issued bid in early 2005 for EPC. Three months for initial bids. Detailed negotiations on scope, schedule, price and other commercial terms then proceed through remainder of 2005. Limited notice to proceed in early 2006 timeframe.
Major Equipment Types	Alstom Boiler and AQCS, Toshiba Turbine Generator	Duscon-Babcock Boiler, Hitachi Turbine Generator, Siemens AQCS
Commercial Operation:	Late 2010	Scheduled for commercial operation in June 2010.

From Drabinski Exhibit WPD-8 Reference Testimony of Paul Thompson, LGE, Case No. 2009-00548 on January 2010; John Voyles, December 2004) and Roberts KCC Exhibit page 164)

RS Means Labor Comparison

Activity Description	Open Shop Estimate	Standard Union Estimate	Differential
Concrete			
Concrete Foundations (CY)	$103	$133	23%
Steel			
Structural Steel (W12-120)	$1.56	$2.35	34%
Floor Grading	$1.06	$1.41	25%
Electrical			
Rigid Steel Conduit 2" (per foot)	$0.80	$1.00	20%
Cable Tray 30" (per foot)	$8.25	$10.35	20%
Switchgear (13.8kV)	$1,800	$2,275	21%
Lighting (1000 watt HID)	$117	$146	20%
Mechanical			
Piping 2" (per foot)	$9.80	$13.25	26%
Pipe Insulation 2" (per foot)	$5.55	$7.05	21%
HVAC Cooling Tower (1000 ton)	$4.64	$6.75	31%
		Average Differential	24%

Note: Referencing typical activities from the RS Means Estimator indicates that the premium for standard union labor versus open shop labor is 24%.

Mr. Mark David Goss
Chairman
Kentucky State Board on Electric Generation and
Transmission Siting
211 Sower Boulevard
Frankfort, KY 40602

November 16, 2007

Re: ***Joint Application of the Illinois Municipal Electric Agency and the Indiana Municipal Power Agency for Approval to be a 25% Partner in the Construction of a 750 Megawatt Addition to the Existing Trimble County Generating Facility in Trimble County, Kentucky***
Siting Board Case No. 2005-00152

Dear Chairman Goss:

We are writing to provide the second annual report by the Illinois Municipal Electric Agency and the Indiana Municipal Power Agency (collectively "Joint Applicants") regarding the construction of the Trimble County 2 ("TC2") generating unit. This report is made in compliance with the November 16, 2005 Order of the Kentucky State Board on Electric Generation and Transmission Siting (the "Board") in the above-referenced proceeding. Please accept this original and ten (10) copies for filing with the Board. An electronic copy of this report has been posted to the Commission's Electronic Filing Center and is a true representation of the original document that has been filed with the Board. This filing is made with the assistance and involvement of Intervenors Louisville Gas and Electric Company and Kentucky Utilities Company (together, the "Companies"), who hold a 75 percent ownership share of the TC2 generating facility.

Overview

The Companies selected Bechtel Power Corporation ("BPC") as the Engineering, Procurement and Construction contractor for TC2 in August 2005 and reached an agreement on all outstanding contract issues on June 9, 2006. BPC mobilized on the site the week of July 3, 2006. Since the last annual report, work has continued on the construction of the new cooling tower with the tie-in to Trimble County 1 ("TC1") currently being performed during the TC1 planned Fall 2007 outage. Significant progress has been made on the foundations with the boiler foundation being essentially completed along with the supporting foundation for the steam turbine generator. The foundations of the air quality control system and erection of the boiler structural steel is progressing to plan. Major procurement activities associated with the major equipment has been completed through the award/design stage and a significant amount of equipment has begun to be delivered to the site. Overall, the project is tracking to plan and is approximately 20 percent complete.

CONFIDENTIAL

Implementation of Site Development Plan

The Companies' project management team along with the Trimble County Generating Station management team, BPC, the Companies' security department and Moore Security LLC, continues to utilize the access control plan. The specific gate access information, BPC's expected workforce hiring plan, and access plans relative to hauling, deliveries and road usage were provided to the Trimble County Sheriff's Office and no changes have been made since the last annual report. Communication with the Sheriff's Office is considered routine and will remain so throughout the duration of the project. In addition, updates are provided to the Trimble County Emergency Response staff to inform them of the project and to coordinate communication protocols.

To date there have been no substantive changes to the proposed buildings, transmission lines or other structures, or to the access ways or other access to the site, from that set forth in the original plan submitted to the Board.

Local Hiring and Procurement

The contract executed with BPC is consistent with the commitments made by the Joint Applicants and the Companies regarding efforts to utilize local workers and vendors, including MBEs and WBEs. BPC has established a local hiring office at the site and in Carrollton, Kentucky, has been in communication with local vocational schools and labor departments of the Commonwealth of Kentucky, and has held meetings with officials of Trimble County, Carroll County and Henry County. There have been nearly 300 craft workers hired. Approximately 50 percent of these workers are local with residence in the Commonwealth of Kentucky and the three Metropolitan Statistical Areas of Louisville, Kentucky; Cincinnati, Ohio; Evansville, Indiana. Approximately 30 percent of the craft workers reside in the immediate local region (e.g. 50-mile radius of the plant site). In addition, these efforts have resulted in a significant portion of the subcontracts let to date being awarded to local contractors, including union, MBE and WBE vendors, as shown in the table below. The opportunities to obtain contracts or purchase orders for these businesses have been significant.

MBE/WBE/Local/Union Participation - Project Inception to Date through October 2007

	MBE BID	MBE AWARD	WBE BID	WBE AWARD	LOCAL BID*	LOCAL AWARD*	UNION BID	UNION AWARD
PURCHASE ORDERS	70	23	66	48	1,748	930	52	30
PURCHASES CUMULATIVE VALUE		$10,748,288		$ 55,536		$ 4,682,857		$ 29,655,060
SUB CONTRACTS	9	3	8	2	58	27	42	20
VALUE: SUB CONTRACTS		$ 353,956		$ 44,074		$ 5,590,628		$ 8,374,644

(Some Bids/Awards are represented in multiple categories)

* *Local includes the Commonwealth of Kentucky, MSAs of Louisville, Kentucky; Cincinnati, Ohio; Evansville, Indiana*

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Public Comments and Responses

Neither the Joint Applicants nor the Companies have received any material comments or complaints from members of the general public since the date of the hearing in this matter. The plant manager meets often with the Trimble County Judge-Executive and periodically sees the Trimble County Sheriff and other community leaders. In fact, many positive comments have been made about the project, how it is being managed and the positive impact it is having on the local area. The only negative comments about the TC2 project have pertained to poor driving habits exhibited by some workers traveling to and from the job site. The plant manager and BPC contacted state and local law enforcement and requested that patrols be increased in the area. They also reminded workers of the need to comply with traffic laws.

The Companies are routinely contacted by local subcontractors, suppliers and service providers, both open shop and union, relative to opportunities to participate in the project. All of these communications are cordial with most inquirers being referred to the BPC Site Manager. Since construction has begun, there have been no complaints received by the project management team relative to opportunities to participate on this project.

Specific Mitigation Conditions

The Joint Applicants and the Companies continue to work to ensure compliance with each of the specific mitigation conditions imposed by the Board. As set forth above, an access control plan is in place and coordination and information-sharing continues with the local Sheriff's office. Per the original plan, the Companies and Joint Applicants will use the existing stack shell for exhaust of both the existing TC1 unit and TC2, and will utilize colors and lighting consistent with the existing features of TC1.

It remains the plan to utilize silencers to dampen noise as a result of steam blows. A telephone notification plan to warn nearby residents, in addition to other notification methods, will be evaluated and, if feasible, utilized. However, steam blows are not scheduled to occur until the latter half of 2009.

In an effort to minimize the impact on the local community, BPC and subcontractors continue to direct construction traffic to Highway 754 and attempt to avoid commuting peaks and minimize additional traffic during school bus transit periods. And, as noted above, efforts to hire local workers, who are more familiar with local roads, continue.

The Companies continue to monitor construction related traffic and have regular discussions with BPC relative to the timing and plans related to material deliveries, subcontractor traffic, compliance with local traffic laws and construction equipment deliveries. BPC has contractual obligations to not interfere with local traffic, including avoiding times of school traffic. As craft counts rise, the Companies will continue to monitor construction related traffic. To date, communication with the local officials has been good.

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The Companies continue to notify local officials regarding the timing and routes for ammonia truck deliveries and to ensure all necessary safety precautions in that regard continue to be followed.

If you have any questions about this second annual report, please let us know.

Sincerely,

Ronald D. Earl
General Manager & CEO
Illinois Municipal Electric Agency
919 South Spring Street
Springfield, IL 62704
217-789-4632

Raj G. Rao
President
Indiana Municipal Power Agency
11610 North College Avenue
Carmel, IN 46032
317-573-9955

cc: Parties of Record in Case No. 2005-00152

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August 27, 2008

Mary Turner, Regulatory
Kansas City Power & Light
P O Box 418679
1201 Walnut - 13th Floor
Kansas City, MO 64141-9679

Dear Mary:

Vantage is beginning the balance of our audit of the Iatan Project and would like to request some additional detail and set up some high level interviews. The outline below identifies areas we would like to address in the near future and are listed by priority.

Interviews and Analysis of Decision to retain Burns and McDonald

Vantage has been asked to develop a greater understanding of how and when B&McD were retained. To do so we would like the following data and interviews.

- All analysis prepared in evaluating the decision to hire Burns &McDonald versus Black and Veetch or other engineering firms.
- Related BOD minutes and copies of all presentation to the Board of Directors or senior management on the above decision.
- Copy of the contract with B&McD as well as any addendums.
- Any correspondence between project management and senior management regarding ability of B&McD to provide adequate engineering personnel, management and a functional organization early in the project.
- Interviews with Senior Management who had a direct involvement in the selection of B&McD. If these individuals are no longer with KCP&L, please provide any current information on their whereabouts.
- Interviews with senior B&McD management who had responsibility for oversight during the project.
- Interviews with President, CEO or other senior management of KCP&L who had direct involvement in decision to hire B&McD.
- On a similar topic, names, titles and duration of tenure of all KCP&L management personnel who had responsibility for managing the Iatan project. A short summary of their background with KCP&L would also be useful.

Please note we would like to collect this information and conduct interviews as soon as possible. I will call you later this week to discuss potential dates for visits.

Detailed analysis of every Risk and Opportunity (R/O) item currently listed to determine appropriate classification as to justification

We would like to schedule time for our team of consultants and KCC Staff Auditors to review every R&O packet. During this review we would like access to all support documentation for the packages as well as the subject matter experts or authors to fully understand all inputs and analysis. We would envisions starting this activity in September, with most of the analysis in October.

Review of the twelve schedule packages to determine whether risk of slippage for either or both Unit 1 and Unit 2 are likely

We would like to spend some time reviewing each of the twelve schedule packages to better understand the current status.

Review the major contracts with Alstom, Kiewit and other major fixed price and non-fixed price bidders to evaluate terms and conditions associated with changes

This analysis will be done in conjunction with KCC Legal personnel. We would like to also review any commercial issues that have arisen with any sub-contractors.

Follow-up reports or update on Tiger Team approach for both units 1 & 2

Any updates or implementation plans on the approximately 10 KCP&L action items and 10 Contractor action items.

COMMONWEALTH OF KENTUCKY

BEFORE THE KENTUCKY STATE BOARD
ON ELECTRIC GENERATION AND TRANSMISSION SITING

In the Matter of:

JOINT APPLICATION OF THE ILLINOIS MUNICIPAL ELECTRIC AGENCY AND THE INDIANA MUNICIPAL POWER AGENCY FOR APPROVAL TO BE A 25% PARTNER IN THE CONSTRUCTION OF A 750 MEGA WATT ADDITION TO THE EXISTING TRIMBLE COUNTY GENERATING FACILITY IN TRIMBLE COUNTY, KENTUCKY	Case No. 2005-00152

RESPONSES OF THE ILLINOIS MUNICIPAL ELECTRIC AGENCY AND THE INDIANA MUNICIPAL POWER AGENCY TO IBEW/BUILDING TRADES

The Illinois Municipal Electric Agency and the Indiana Municipal Power Agency, by counsel, provide the following responses to the data request of the IBEW/Building Trades of August 26, 2005.

1. On page 2 of his report, *Estimate of Regional Economic and Fiscal Impacts of the Proposed Trimble County Plant,* Dr. Coomes assumes a full labor cost of $51.00 per hour. The Burns & McDonald study, commissioned by LG&E, contains a *Labor Assessment* in its review of contracting strategies. As a part of that assessment, a wage rate comparison was included. (Attached) This table states labor rates for non-union workers. If the contractor selected by LG&E builds the Trimble County 2 project according to the Burns & McDonald recommendation: "...The project should be approached on a merit shop basis," (Burns & McDonald, p. 4-22, (attached) and the contractor pays non-union rates,

what impact would this have on the economic projection of total construction payroll costs?

Witness: Coomes

Response: Since I only have an estimate of the *average* full labor cost of $51 per hour, I can make only a crude estimate of the impact on construction labor costs, using the data in the three-page "Contracting Strategy, 4.5 Labor Assessment" attachment from Burns and McDonnell. Looking over the twelve crafts, and considering those for which there is evidence of both union and non-union labor supply, I see that non-union workers are estimated to earn between 17 and 30 percent less per hour than union workers, depending on the craft. Applying this range to the estimated construction hours projected leads to a reduction in labor costs of between $36 million and $88 million.

2. Dr. Coomes assumes $8.78 per hour for benefits. (Report, p. 2) The Burns & McDonald comparison chart (attached) indicates zero dollars in fringe benefits for non-union workers. If the contractor selected by LG&E follows the Burns & McDonald recommendation to build the plant on a merit basis, and selects a contractor that does not pay fringe benefits, what impact would that have on the total projected construction payroll?

Witness: Coomes

Response: The fringe benefits reported for union workers, as a percentage of hourly wages, vary dramatically by craft, from 25 percent (carpenters) to 53 percent (boilermakers). Or put another way, these fringes make up between 20 and 35 percent of the total wage rate reported by Burns and McDonnell. Using the range indicated as a crude measure of the possible impacts of eliminating fringe benefits on construction payroll leads to a reduction in labor costs of between $57 million and $101 million.

3. Does Dr. Coomes consider the term "benefits" to mean primarily health insurance and pension contributions? In Dr. Coomes' opinion, is the economic benefit of the projected construction payroll reduced significantly by the selection of a contractor that utilizes construction labor which excludes payment of fringe benefits of medical insurance and pension contributions?

Witness: Coomes

Response: Again, fringe benefits vary by occupation, and I only have an average labor cost across all occupations. The U.S. Bureau of Labor Statistics provides estimates for construction and other occupations (see www.bls.gov/news.release/ecec.t11.htm). Employer-provided health insurance benefits and pension plan contributions are typically the two biggest components of a benefit package (after FICA). Presumably, most workers hired by a contractor that excludes these fringe benefits would purchase health insurance and make pension contributions out of their household incomes. Nevertheless, construction labor costs for the Trimble project would certainly be lower if health and pension benefits were omitted.

4. The BBC Research and Consulting Report, *Review and Evaluation of Trimble County Unit 2 Site Assessment Report of April, 2005*, states, under *Supplemental Investigations* and *Interviews* (p. 30, 31):

> LG&E indicated that construction workers during past construction projects at the site commuted from Louisville, LaGrange, Carrollton and Madison, Indiana. The study team learned more about the historical construction workers experience at the Trimble County site during its interview with LG&E officials on March 28. The most similar construction experience occurred during the 2000 to 2002 period when the SCR was built at the same time that a number of the combustion turbines were also under construction. A total of 900 construction workers were on-site at peak during that time. Workers performed 10 hour shifts, 6 days a week; approximately 30 % of the workers were existing residents of the Louisville- Cincinnati region. An estimated 70 % moved into the region for the duration of their activity at the project.

Dr. Coomes assumes that "Workers live and shop in the region in the same proportion as the average of all workers in the region." (Report, p. 2) If LG&E selects a contractor which employs 70% of its workforce from outside the region, what impact would this have on Dr. Coomes' calculations of total economic benefit related to the 97.8 million in construction payroll? Please provide alternate calculations of economic benefit based upon 70 % of payroll going to workers outside the region.

Witness: Coomes

Response: My estimates from May implicitly assume that the residential distribution of workers for construction is the same as for the Louisville economic region as a whole. The latest personal income data from the U.S. Bureau of Economic Analysis indicates that on net only 0.5 percent of labor and proprietor earnings in the Louisville Economic Area are paid to those living outside the Area. Similarly, commuting patterns data suggest that nearly all workers needed in the 25-county Louisville Economic Area reside in the area. These patterns may not be true, however, for highly skilled construction workers who move around the Midwest on major projects as they emerge.

There is no simple way in my methodology to modify the assumption of place of residence of construction workers. The economic multipliers used to estimate the spin-off activity are built on historical relationships between industries in the region. These naturally reflect averages. So, for example, a construction project with a certain number of jobs and payroll is predicted to

create spin-off jobs and payroll in the region, partly because of purchases from regional vendors to the construction project, but partly because a percentage of construction workers pay gets spent in the local economy on retail goods and services. It is this last portion that is of interest here. If most of the workers actually resided outside of the Louisville region, then we would expect them to spend more of their pay in their home communities. This would lower the true value of the economic multipliers for the construction job. However, given that the multipliers provided by the US Bureau of Economic Analysis are based on proprietary industry data available to the federal government (but not to me), I have no empirical basis for deciding how much to lower the multipliers.

Certainly, if 70 percent of the construction workforce resides outside the region, the regional economic impacts would be lower than if the entire workforce was local. Most nonresident construction workers would effectively send a portion of their wages and benefits to their home economy, where they are used to pay for a household. But they will also spend a portion of their construction earnings in the Louisville area economy, as they purchase temporary housing, food, gasoline, recreation, and other retail items. An investigation into the spending patterns of nonresident construction workers would be necessary to quantify the amount captured locally versus that captured in their home economies.

5. If 100% of the workers on the construction phase of the project were Kentucky residents, what would Dr. Coomes professional opinion be about whether the

positive economic benefits to the state would be significantly enhanced, as opposed to the assumption upon which his present calculations are founded?

Witness: Coomes

Response: My estimates from May implicitly assume that 14 percent of construction wages and salaries are paid to Indiana residents and 86 percent are paid to Kentucky residents (see the table on page 8 of my report). However, because most of the retail establishments in the Louisville Economic Area are located on the Kentucky side of the market, much of the income earned by Indiana workers ends up being captured in Kentucky. Thus, relative to my May analysis, requiring Kentucky residency for construction workers would increase the economic benefits to Kentucky by less than 14 percent. The effect would obviously be much greater if in fact the number of workers from outside the Louisville Economic Area and outside of Kentucky was large, as suggested by question #4. Currently though I have no empirical basis on which to construct an estimate of that scenario.

6. Is it the Applicants' position that it has no obligation to insure, through the contracting process, that the EPC contractor maximizes the use of workers from the local area, and minimizes the use of workers outside the local area in order to realize the economic benefits projected by Dr. Coomes?

Witness: Mayo

Response: The Applicants object to this request to the extent that it attempts to characterize what is or is not required of them by KRS Chapter 278. Without waiver of that objection, the Applicants state that they are not primarily responsible for contracting for the construction labor of Trimble County Unit 2. The Participation Agreement, executed by the Applicants and LG&E and KU gives LG&E and KU the authority to manage the construction of the project. See section 5.5, page 19 of the Participation Agreement, Exhibit A of the Application. Therefore, the Applicants cannot through the contracting process "insure" the use of labor from any particular area, local or non-local, or the realization of any potential economic benefits.

However, the Applicants understand from LG&E and KU that the RFP to the EPC contractors specifically provides that LG&E and KU want, wherever practical and appropriate, to promote the use of local services and employment of local labor during the construction process. The Applicants also understand from LG&E and KU that both of the short-listed EPC bidders for Trimble County Unit 2 have stated they would agree to contractual provisions that give priority to Trimble County residents for consideration of direct hire craft jobs for the construction of the facility. The Applicants further defer to the data responses filed in this matter by LG&E and KU regarding labor issues

7. In response to the IBEW Trades Council data request No.3, in the PSC case No. 2004- 00507, the Company stated:

Q-3 With reference to the Burns & McDonald report, Trimble County Unit 2 Project Approach, explain why the labor market analysis performed under Section 4.5 did not include review of labor and craft employee available from the Paducah, Owensboro, and Lexington, Kentucky areas?

***

A-3 The bidders are being asked to assume the labor risk of the project through liquidated damages relative to performance, cost and schedule. The companies would not release any information of this nature to the bidders in order to protect the companies and their rate payers from assuming any of the labor risks associated with performance, cost and schedule listed in the RFP.

Based upon the position stated by LG&E in the above response, do the Applicants adopt and ratify the same position, before the Siting Board, that all issues involving construction labor utilization are to be left entirely to the contractor?

Witness: Mayo

Response: As stated above, the Applicants have contractually agreed that LG&E and KU are to administer the construction contracts. The Applicants reject the assertion (set forth in Intervenors' Question 7) that LG&E's "position" is that "all issues involving construction labor utilization are to be left entirely to the contractor." See the Response to Question No. 6 above.

8. With regard to question No.6, would the Applicants' response be the same if LG&E selects a contractor that utilizes 70% of the workforce from outside the local area?

Witness: Mayo

Response: The impact of that assumption is reflected in Response 4.

9. Will the Applicants include a requirement that the EPC for TC2 will utilize Kentucky employees exclusively unless it can certify that efforts to recruit and retain a sufficient labor force, including skilled crafts, have failed to staff the project according to the manpower needs and timetables specified? If the Applicants do oppose the imposition of such a criteria on the EPC, identify issues other than employee availability that form the basis for the Company's position.

Witness: Mayo

Response: The Applicants object to this request to the extent that it attempts to characterize what is or is not required by KRS Chapter 278. Without waiver of that objection, and as stated above, the Applicants cannot make a commitment on labor issues based on their Participation Agreement with LG&E and Kentucky Utilities Company. However, the Applicants will cooperate with those companies' efforts to utilize local labor and services. See the Response to Question No. 6 above.

10. Will the Applicants agree to impose a condition on the contractor of entering into a project labor agreement for the purpose of insuring that qualified Kentucky construction craft employees have first priority at construction jobs for TC2? If not, state the grounds for the Applicants' objection to entering into a PLA.

Witness: Mayo

Response: The Applicants object to this request to the extent that it attempts to characterize what is or is not required by KRS Chapter 278. Without waiver of that objection, and as stated above, the Applicants do not have the authority to make a commitment regarding labor force. However, they will cooperate with their co-participants, LG&E and KU, in their efforts to utilize local labor and services. See the Response to Question No. 6 above.

Submitted by:

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Attorney for IMEA and IMPA

Certification:

A copy of this response has been filed electronically as required by Board regulations.

John N. Hughes