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High court ruling on CSAPR is a victory for EPA

GENERATION

The US Supreme Court on Tuesday upheld the Cross State Air Pollution Rule in a decision that represents a win for the Environmental Protection Agency and another blow to the coal industry and coal-burning power producers.

CSAPR represents the EPA's effort to remedy legal flaws in the provisions of the Clean Air Interstate Rule, the 2005 rule aimed at addressing pollution that drifts from one state to another.

CAIR covered 27 eastern states and the District of Columbia and used a cap-and-trade system to reduce sulfur dioxide and nitrogen oxide emissions by 70%.

The US Court of Appeals for the District of Columbia vacated CAIR in 2008 citing, among other things, EPA's use of allowance trading on a regional level without measuring the impacts on

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Retirements may give gas plants more run time

ANALYSIS

The amount of gas-fired generation needed to replace the wave of coal plant retirements that is expected in about a year could be delayed or mitigated by the ability of existing gas generators to ramp up production.

Estimates of coal plant retirements run high. Some see 40 GW starting in 2015. Others, such as Black & Veatch in its 2014 Energy Market Perspective, forecast up to 60 GW of retirements by 2020 with an additional 86.2 GW retiring by 2038.

Another consulting firm, Pace Global, a unit of Siemens, sees 63 GW of coal plants retiring by 2030 in addition to the 39 GW of retirements already announced. Pace sees 35% of those retirements occurring in the Midcontinent ISO.

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MISO mulls scarcity pricing changes

MARKETS

Midcontinent Independent System Operator is preparing to change how it prices demand-response and energy under scarcity conditions to limit any price decrease resulting from reduced load, stakeholders learned Tuesday.

MISO expects demand-response to be deployed regularly during emergency conditions in coming years, said Dhiman Chatterjee, MISO senior manager of market design and delivery, at Tuesday's MISO Market Subcommittee meeting. For example, MISO forecasts a 71.5% chance of deploying demand-response this summer, given the system's existing reserve margin.

The proposal would add an amount "to ensure that prices reflect dependency on emergency capacity" and to "improve

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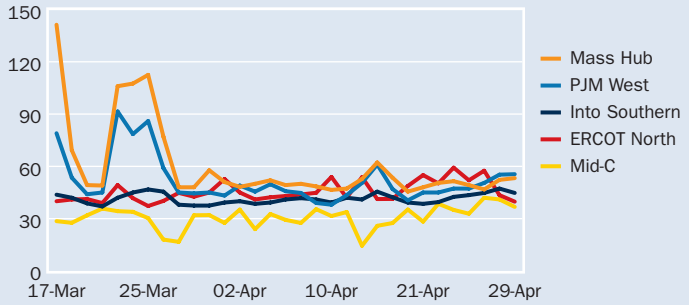
Price trends at key trading points ($/MWh)



Source: Platts

Low and high average day-ahead LMP for Apr 30 ($/MWh)

	On-peak low	On-peak high	Off-peak low	Off-peak high
ISONE	51.36	53.21	34.69	36.18
NYISO	39.74	63.03	27.71	34.58
PJM	57.51	65.90	31.16	36.63
MISO	27.59	53.84	9.88	44.27
ERCOT	37.86	48.68	28.06	29.71
SPP	32.75	41.22	19.83	28.21
CAISO	52.88	58.13	40.85	42.17

Note: Lows and highs for each ISO are for various hubs and zones. A full listing of average LMPs are availible for the hubs and zones inside this issue.

Day-ahead bilateral indexes and spark spreads for Apr 30

	Index	Marginal heat rate	Spark spreads @7k	@8k	@10k	@12k	@15k
Northeast							
Mass Hub	53.25	10957	19.23	14.37	4.65	-5.07	-19.65
N.Y. Zone-A	47.75	10611	16.25	11.75	2.75	-6.25	-19.75
PJM/MISO							
PJM West	55.50	12628	24.74	20.34	11.55	2.76	-10.43
Indiana Hub	47.75	9927	14.08	9.27	-0.35	-9.97	-24.40
Southeast & Central							
Southern, Into	44.75	9352	11.26	6.47	-3.10	-12.67	-27.03
ERCOT, North	39.75	8512	7.06	2.39	-6.95	-16.29	-30.30
West							
Mid-C	36.75	8037	4.74	0.17	-8.98	-18.12	-31.84
SP15	56.50	11698	22.69	17.86	8.20	-1.46	-15.95

Note: All indexes are on-peak. Spark spreads are reported in ($) and Marginal heat rates in (Btu/kWh). A full listing of bilateral indexes and marginal heat rates are inside this issue.

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auction for May 2013 CRRs was about $15,914/MW.

The largest negative clearing price in this month's auction — about negative $6,072/MW — was for off-peak CRRs between the Pacific Gas & Electric default load aggregation point (DLAP_PGAE-APND) and the Malin substation. Direct Energy was the only company to purchase this type of CRR, clearing about 2 MW. The largest negative clearing price in last month's auction was about negative $4,020/MW while the largest negative clearing price in last year's auction was about negative $16,458/MW.

— Juliana Brint

Northwest water outlook higher, terms mixed

The Pacific Northwest water supply outlook climbed again this week, but forward power markets reacted with mixed signals.

Columbia River flows from April through September 2014 at The Dalles Dam on the Washington-Oregon border likely will be 109% of normal, the US Northwest River Forecast Center said in its most recent Ensemble Streamflow Prediction report.

The Dalles projection is three percentage points higher compared with the NWRFC's projection issued last week.

The NWRFC is a unit of the National Oceanic and Atmospheric Administration.

Flows at Grand Coulee Dam during the same period are predicted to be 111% of normal, two percentage points higher than the prior week's outlook, the NWRFC said.

ESP forecasts compare historical and current data and run the information through model scenarios to project what water supplies could look like.

Power and natural gas market participants closely watch the reports as an indication of upcoming water supplies for Pacific Northwest hydro generation.

Even with the uptick in water supplies, forward power prices were giving mixed signals compared with last week as forward natural gas prices remained strong.

Mid-Columbia on-peak May was at about $28.65/MWh, down 35 cents compared with last week, while off-peak May was 85 cents higher at about $7.60/MWh.

Mid-C on-peak June was down 15 cents compared with last week at about $29.35/MWh, and off-peak June was 95 cents lower at just below $7/MWh.

Mid-Columbia on-peak third quarter gained 85 cents to about $48.25/MWh, and off-peak Q3 was unchanged at about $30.90/MWh.

The full-value May forward natural gas price at the Northwest Pipeline, Sumas added 15 cents over the past week to about $4.52/MMBtu before rolling off the curve on Monday.

The full-value June packages was up about 11.9 cents compared with last week to about $4.479/MMBtu, and the full-value summer added about 9 cents since last week to about $4.593/MMBtu.

— Eric Wieser

High court ruling on CSAPR is a victory ...from page 1

downwind states.

EPA began drafting a replacement rule, but the court left CAIR's emissions controls in effect until the replacement, CSAPR, was promulgated in 2012.

Soon after EPA brought out CSAPR, it was challenged by nearly 70 energy companies, cooperatives, trade associations, mining concerns and labor groups and was taken up by the US Court of Appeals for the District of Columbia in EPA v. EME Homer City Generation LP.

The petitioners argued that EPA was not in compliance with the Clean Air Act because it had overreached its authority under the CAA by dictating how a state should implement the rule.

The appeals court ruled in favor of the petitioners, saying that the EPA did not give states enough time to implement their own implementation plan before serving them with a federal implementation plan. By doing so, the petitioners said EPA had upset the Clean Air Act's division of responsibility between states and the federal government.

But the Supreme Court has now reversed that ruling. In its 6-2 decision, the court said "the CAA's plain text supports the Agency" and EPA has a "statutory duty to issue a FIP 'at any time' within two years" after it finds a SIP inadequate.

While some observers see the Supreme Court's decision as a sign that the balance of power is shifting away from states, the effect of CSAPR on coal plants may not be that great. Coal plants are already under pressure from other rules calling for tighter emissions and from low priced natural gas that makes coal plants uneconomic in competitive markets.

Much of the impact of CSAPR has been "blunted due to the combination of recent coal retirements, as well as EPA's implementation of the [Mercury and Air Toxic Standards] rules, slated for April 2015," Julien Dumoulin-Smith, an analyst with UBS wrote in a report. "Altogether, there is no immediate impact."

"All the experts have done estimates of coal shut-downs, ranging from 50 GW to 70 GW, and that hasn't changed no matter what regulations have come out," Gail Suchman, special counsel at Stroock & Stroock & Lavan, said.

"A lot of coal plants are already bleeding, but there could be some incremental retirements" as a result of the ruling, Metin Celebi, a principal with The Brattle Group, said. But MATS is the big driver of coal retirements, he said. In part that is because MATS calls for unit-specific reductions of pollutants instead of compliance by allowance trading.

CSAPR emission standards will be somewhat stricter than CAIR standards. CSAPR targets SO2 and NOx, but many generators have already installed equipment to comply with the upcoming MATS and that equipment also controls for SO2. However there is no co-benefit reduction of NOx from that same equipment. Generators that have yet to reduce their NOx emissions may face the highest costs associated with CSAPR. Many of those plants are in the Southeast and the Ohio Valley, Jennifer Macedonia, a senior advisor to the Bipartisan Policy Center, said.

"In terms of one of the CSAPR pollutants, sulfur dioxide, it is

really a bit anti-climactic; a lot of the problems have already been taken care of because of CAIR or low gas prices or will be as a result of the upcoming MATS regulation," Macedonia said.

Both coal and gas plants produce NOx, though gas plants at a lesser level.

Arguably the largest effect could be in Texas, which did not come under the jurisdiction of CAIR, but does fall under CSAPR. In addition to Texas other areas, such as Baltimore and the St. Louis metro areas, could be disproportionately affected because they have yet to meet the 1997 standards.

It also remains to be seen when EPA will put CSAPR into effect. Originally the rule would have been put in place in two phases, in 2012 and 2014. That timing now will have to be reconfigured.

At the earliest, Dumoulin-Smith sees a two year delay in implementation, but under stricter standards. He believes EPA will opt to put in place more stringent standards, using 2008 emission standards rather than the 1997 standards that would have applied the original CSAPR implementation schedule.

The wider effect of the Supreme decision may come from the mandate it gives the EPA. The Supreme Court's decision is going to give "the broadest deference for the EPA to determine what is necessary to control cross-border pollution," Richard Faulk, a partner with Hollingsworth, said. He argued that the decision "flies in the face" of the cooperative federalism granted under the Clean Air Act.

That could become an issue for the next item on EPA's agenda. In June the agency is slated to issue its New Source Performance Standards, which will include the first-ever restrictions on greenhouse gases for new power plants.

When it announced its preliminary NSPS last year, the EPA said it was aiming to create parameters within which states would have leeway to fashion their own compliance plans.

I wouldn't say the Supreme Court decision has poisoned the well," Faulk said, but "the EPA's professed allegiance to cooperative federalism is already strained. I suspect we'll have another fight on our hands."

Uncertainty reigns in emissions market

Despite Tuesday's Supreme Court ruling the next step for emissions traders is unclear, said a broker.

"Lots of things could happen," said Paul Tesoriero, the director of environmental markets for White Plains, New York-based Evolution Markets.

"People are not really sure what the next step is."

Tesoriero said that even if the case is not challenged further, it would still take time for the EPA to roll out a new scheme for allowances.

"Most people don't think it will happen this year, the earliest being 2015 or 2016," said Tesoriero. "There is a lot to it."

Tom Hewson, a principal with Arlington, Virginia-based consultancy Energy Ventures Analysis, agreed that the court's decision to validate the transport rule aspect of CSAPR but remand other issues back to an appeals court makes it unlikely it would have an immediate impact on allowance trading.

In addition, Hewson noted that while the issue further works its way through the court system, ongoing coal-fired plant closures due to the Mercury and Air Toxics Standards rule might make emissions trading moot, given that many of the goals to reduce particulate emissions would likely have been met by the MATS closures.

In the Clean Air Interstate Rule (CAIR) market, which CSAPR was meant to replace, there was not an uptick in allowance trading Tuesday, according to a survey of emissions brokers.

"I don't think it does anything immediately because most people feel this thing is going another year or two, so it doesn't affect the CAIR market short term," said Tesoriero. "But long term, if the EPA rolls out a CSAPR-like program to take place of CAIR, then long run the CAIR market should go to zero because those allowances expire, but that doesn't mean it will happen today."

CSAPR 2012 allowances are listed at their last assessed price, with Group 1 SO2 at $20/st, Group 2 SO2 at $50/st, and both annual and seasonal NOx allowances at $55/st.

— Peter Maloney

Retirements may give plants more run time ...from page 1

Those retirements represent a huge opportunity for developers to build gas-fired plants to replace those retiring, and it will likely mark a shift in the composition of the nation's generation mix. However, there is not going to be a one-to-one correspondence between retirements and replacements because many combined-cycle plants have a lot of headroom in terms of capacity factors, Rob Patrylak, managing director in B&V's management consulting division, said.

Patrylak cautioned, however, that such a broad statement needs to be tempered by market circumstances since regions and wholesale markets vary widely.

The most pressing needs, the regions where new capacity will be needed soonest, or is already being built, are the PJM Interconnection, the Electric Reliability Council of Texas, and the Southeast, according to B&V's 2014 energy market perspective report.

In ERCOT, B&V sees about 3,000 MW of new combustion turbines entering the market in 2015 and more than 5,000 MW of combustion turbines and combined-cycle plants coming online in 2016. In B&V's scenario the average capacity factor of existing combined-cycle units would hover around 40% but fall if gas prices rise – though newer combined-cycle units would obtain higher capacity factors – while the capacity factors of coal plants would rise with higher gas prices. The turning point for coal and gas capacity factors, in B&V's view, would be gas prices rising north of $6/MMBtu.

The situation looks similar in the Southeast where B&V sees new combustion turbines entering the market next year followed by a growing number of CTs and combined-cycle units from 2016 on. In B&V's scenario, capacity factors for coal plants decline from a peak of 70% in 2019 as gas-fired capacity factors sink from about 60% into the low 40% in 2019 as gas prices rise

above $5/MMBtu. From there both coal and gas capacity factors stay around the 50% level until about 2031 when B&V sees gas prices rising above $6/MMBtu.

In PJM, new capacity, mostly F class combustion turbines and combined-cycle plants with lower heat rates, begin to enter the market in 2016, and from 2018 forward combined-cycle units with low heat rates in the neighborhood of 6,500 Btu/kWh begin to enter the market.

Despite the high efficiency of the new plants, B&V sees coal plants enjoying a robust spread above coal capacity factors of about 20 percentage points in 2019, narrowing to about 10 percentage points until about 2030 when gas prices start to rise above $5.50/MMBtu. From there, the spread gets significantly wider, falling to about 30% for gas and rising to about 80% for coal as gas prices rise above $8/MMBtu.

B&V's trend lines for coal and gas capacity factors look similar in MISO, but the company does not see new gas plants entering the MISO market until 2021.

That analysis coincides with Pace Global's expectations. Pace sees MISO as the "key market to watch." There is very little gas capacity under construction in MISO where Pace sees coal ranging from 35 GW to 45 GW by 2035, resulting in combined-cycle replacements from 26 GW to 34 GW by 2035.

In New England, B&V does not see new generation coming into the market until 2019. Gas capacity factors also remain above coal capacity factors until then when B&V sees gas prices rising above $5/MMBtu. With gas around $5.50/MMBtu B&V sees gas capacity factors above coal's until about 2032 when gas begins to break through $6/MMBtu.

The only region where B&V sees gas capacity factors remaining far above coal is New York, where B&V forecasts gas plants running at 70% capacity factors and not dipping below 60% until about 2036 when gas begins to rise above $7.50/MMBtu. That could be a boon for existing gas plants, as well as new gas plants that B&V sees entering the market from 2019 on.

From B&V's analysis it is clear that the loss of coal capacity alone does not create a commensurate need for new capacity from other resources such as natural gas. It is also is clear that the loss of coal capacity by itself does not result in capacity factor expansion for gas plants.

The loss of coal plants will affect the composition of the dispatch stack, but there are other factors at work. "Retirements essentially raise the generation of all remaining assets that can fill the gaps left behind," Patrylak said.

Among the factors affecting the dispatch of those remaining units are the price of natural gas relative to coal prices and the heat rates of the remaining plants.

And, as Steve Schleimer, senior vice president of government and regulatory affairs at Calpine, points out, there are two sides to replacing lost generation. The hours, that is, the actual output, has to be replaced, but the capacity of the lost plants also has to be replaced and, he noted, both elements are market driven.

Schleimer cited PJM where the 21% reserve margin is 5% to 6% above what is needed and where there are already as much as 12 GW of new gas plants planned, as well as 3 GW to 4 GW of new demand response resources coming into the market.

Those factors could put downward pressure on capacity prices, Schleimer said, but that leaves room for existing generators to expand their capacity factors.

Schleimer noted that the capacity factor for the nation's 220-GW fleet of combined-cycle gas turbines, including cogeneration plants, is about 47%. With 50 GW of coal retiring that could leave plenty of room for capacity factor expansion.

But, as Schleimer noted, there are a lot of moving parts in the equation, among them the outlook for customer load, the price of natural gas, and the existence of other resources – such as DR and renewables – and their marginal costs.

And, as Patrylak noted, capacity prices should improve as coal plants retire, but as new, more efficient plants are added, capacity prices will drop and the generation stack will shift.

In fact, the stack is never static. In its State of the Market report, Monitoring Analytics, PJM's market monitor, noted that in 2013 nuclear plants in the region had a capacity factor of 93.8%, compared with 92.4% in 2012. Combined-cycle plants ran less often, decreasing from a capacity factor of 60.4% in 2012 to 51.6% in 2013. And the capacity factors for steam units, which are primarily coal fired, increased from 45.5% in 2012 to 49.5% in 2013.

One of the major drivers of falling gas capacity factors and rising capacity factors for coal plants from 2012 to 2013 was the price of gas, which was lower in 2012 than in 2013.

That was also a factor for Calpine, which had an average capacity factor, excluding peakers, of 48.7% in 2013, down from 53.7% in 2012.

In short, gas plants across the board have a lot of room to improve capacity factors and retiring coal plants will increase their ability to do so. But as retirements leave more efficient coal plants standing and as more efficient gas plants enter the market, competition for market share in the dispatch stack could increase.

— Peter Maloney

MISO mulls scarcity pricing changes

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efficiency of prices," Chatterjee said.

Electricity demand is highly inelastic, so when demand decreases near the top of the supply curve, prices fall by a disproportionately larger percentage.

In the proposal, the amount added to a demand-response resource's price would involve the average of a relevant generator's nodal prices in the 12 time intervals immediately before a maximum generation event is declared, Chatterjee said.

For a generator, a similar adder would be applied to its own energy offer, only the formula would involve the average of its own nodal prices for the 12 time intervals before a maximum generation event.

MISO is working to incorporate stakeholder feedback in this process and to finalize a proposal to present to the MISO Market Subcommittee in June, Chatterjee said, adding that he expects implementation no sooner than late 2015.

In other business, Todd Ramey, MISO vice president of system