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Argus White Paper:
EPA's carbon rules for power plants

A closer look at emissions trading

The Environmental Protection Agency has announced its most ambitious climate plan yet as it prepares to regulate greenhouse gas emissions from power plants. EPA expects that the Clean Power Plan will lead to a 30pc cut in CO_2 from 2005 emissions by 2030, a step that challenges coal-fired power.

The move appears likely to reshape the US electricity sector where generators' choices will partly be shaped by the states in which they operate as EPA's plan assigns a maximum CO_2 emissions rate to each state and compels them to develop their own strategies to meet the targets.

In addition, EPA is encouraging multi-state efforts such as cap-and-trade programs, one of the cheaper and more flexible routes to compliance, as well as renewables, in addition to efficiency measures and fuel switching. Argus Air Daily already provides carbon assessments in cap-and-trade programs in the eastern and western US, and in regions that encourage trading to meet renewable portfolio standards. The Argus assessments can be used as a reference tool, as a basis for contracts and for gauging the likely expense of their compliance strategies. They include:

- **Regional Greenhouse Gas Initiative (RGGI) carbon allowance trading**
- **California Carbon Allowances (CCAs) trading**
- **Renewable energy certificate (REC) trading**

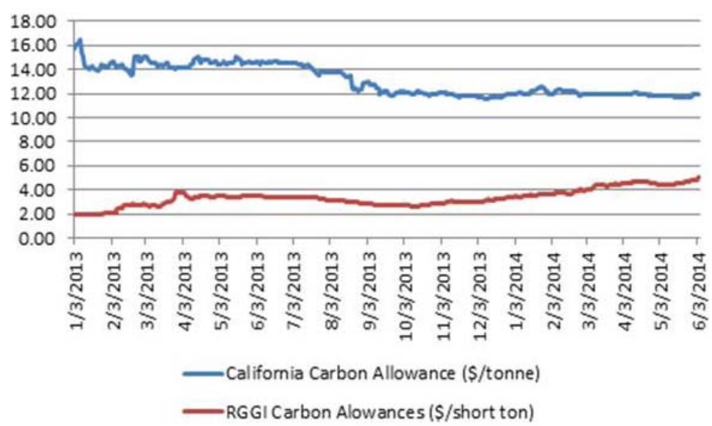
Over to the states

States will have until June 2016 to submit their plans to EPA, although the agency will allow extensions. States that want to join or create multi-state efforts to reduce emissions could get up until 2018 to finish their plans. But there is likely to be increased interest in the existing Regional Greenhouse Gas Initiative (RGGI) cap-and-trade program, which covers nine states in the US northeast, and the Western Climate Initiative, where California and Quebec have linked their carbon allowance markets.

Argus has covered RGGI trading since just before the market formally launched in 2009 and California's since the fall of 2011. The RGGI program's coverage of only the power sector most closely approximates EPA's proposed new rules for existing power plants. California's cap-and-trade program is a more ambitious economy-wide program, but may prove attractive to states which believe they are geographically or politically more aligned with California

Some states may also emphasize renewable energy production and trading of the associated REC certificates as a route to reducing emissions. Twenty-nine states already have renewable energy mandates in place, and many others have non-binding goals. Renewable energy production entitles developers to RECs, which represent 1MWh of renewable power and can be used by emitters to comply with states' renewable portfolio standards.

US CARBON TRADING: CCAS VS RGGI PRICES



Argus solutions

Argus has developed its methodology for carbon allowance assessments, and a range of other carbon-related assessments, in consultation with the industry. Companies that use published carbon prices in their contracts want index prices that represent the way the market trades and capture trades that occur over the entire day. They want independently generated index prices that are based on as much liquidity as possible and bring transparency to the market. Argus provides index prices that meet these criteria, backed up by a published methodology, strong editorial procedure, and a robust corporate compliance program.

RGGI carbon markets

Argus assesses prices for CO_2 allowances traded in the nine RGGI states, which are Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont. RGGI was quick to welcome EPA's announcement of carbon regulation in early June, saying its member states are well prepared given participation in its cap-and-trade program. The program's allowances also ended the week on 6 June 2014 at a high of around $5/short ton after the EPA announcement.

Argus assesses spot and December-delivery RGGI CO_2 prices for the current compliance period. It also calculates a daily and monthly volume-weighted average price of transactions of the December-delivery contract, as well as publishing weekly and monthly indexes that represent the arithmetic average of the daily price for current vintage allowances.

Demand for RGGI allowances has been picking up since the organization drew up stricter emissions limits that took effect this year. The 4 June 2014 auction sold all allowances offered, just over 18mn. Over half the allowances offered were bought by compliance entities, up from 45pc at the March auction.

Pennsylvania and New Jersey are considered viable candidates for linking up with the RGGI program, although Pennsylvania may be the leading contender. Pennsylvania was an observer when the RGGI program started in 2008 and had the third highest level of emissions from the power sector in 2012 with 105.8mn metric tonnes, according to EPA data. The state may also elect a new governor this year. Businessman Tom Wolf, the Democratic nominee, supports joining RGGI and holds up to a 25 percentage point lead in recent public opinion polls. New Jersey was a founding member state in RGGI but withdrew under governor Chris Christie (R) in 2011. While he has shown no signs of reversing course, the EPA proposal is likely to spur new efforts in the state legislature to force Christie to rejoin the program.

California Carbon Allowances (CCAs)

Argus publishes daily price assessments for forward trade agreements and futures for CCAs to be delivered in December of the current vintage year and following year. Argus also publishes a prompt-month CCA assessment for current vintage year allowances. Each CCA is worth one metric tonne of CO_2 equivalent.

Argus publishes monthly indexes for the prompt month and the current vintage year December-delivery CCA assessment. These indexes represent the arithmetic average of the daily price published for current vintage allowances. It also publishes a volume-weighted average of current compliance period December delivery trades reported and confirmed each day, along with a monthly cumulative volume-weighted average.

More states are expected to join the California-led Western Climate Initiative. California's Air Resources Board said recently it is looking forward to working with Oregon and Washington in a regionally linked approach to cutting carbon emissions. The three states signed an agreement last year with British Columbia to coordinate climate policies. Washington governor Jay Inslee (D) has said he plans to pursue cap-and-trade legislation next year. Oregon governor John Kitzhaber (D) has not put forward a specific proposal but has said the three states should align markets as-much as possible.

Emissions rate cuts for top coal generation states

State	2012 Emission Rate (lbs/MWh)	Required pc Cut by 2030	State's Coal Share of Generation 2013
West Virginia	2,019	19.8%	95%
Kentucky	2,158	18.3%	93%
Wyoming	2,115	18.9%	89%
Indiana	1,923	20.4%	84%
Missouri	1,963	21.1%	83%
Utah	1,813	27.1%	80%
North Dakota	1,994	10.6%	79%
Nebraska	2,009	26.4%	72%
Ohio	1,850	27.7%	70%
New Mexico	1,586	33.9%	67%

Source: EPA

Arizona and New Mexico were also founding members of the Western Climate Initiative in 2007, but pulled out of the program in 2010 and 2011 when they elected Republican governors. Montana, Nevada, Utah and Wyoming were also observers in the WCI program at the time of its launch. Some of these states may feel compelled to consider the WCI option again in the future.

RECs

Argus publishes daily markets for compliance markets in Massachusetts, Connecticut, New Jersey, Pennsylvania, Maryland, Ohio, Texas and California. Trade in tri-qualified RECs, meaning states that qualify in three PJM states — New Jersey, Pennsylvania and Maryland — has been particularly active recently as they give the bearer additional flexibility.

Argus also assesses the market for voluntary RECs from wind projects registered under the National Green-e Standard and verifiable through Green-e attestation processes or tracked through the Western Renewable Energy Generation Information System (WREGIS). WREGIS registers RECs generated in the Western Electricity Coordinating Council area. For the current vintage of each REC assessment, Argus publishes monthly indexes.

Background

The Argus services are part of a suite of environmental market prices it publishes, including SO2/NOx emissions trading assessments and calendar year California carbon-adjusted spark spreads. These spark spreads illustrate the carbon cost per MWh of running power plants at the SP-15 and NP-15 power zones in California during peak times. Argus also publishes the carbon costs of importing power into the state from the Western Electric Coordinating Council balancing area.

Last month Argus launched price assessments of two types of California Carbon Offsets, which reflect reductions in emissions elsewhere and can be used for up to 8% of annual compliance under California's cap and trade. EPA has not yet indicated whether states will be able to use carbon offsets to meet compliance with its new GHG rules, but these are expected to be under discussion during the 120-day comment period on the agency's proposals.

See methodology for all Argus environmental assessments:
https://www.argusmedia.com/methodology

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