

Issue 23-36 | Thursday 23 February 2023

MARKETS AND NEWS

- California Carbon Allowances (CCAs) rose on Thursday following news that last week's auction clearing price was the highest since last May.
- Regional Greenhouse Gas Initiative (RGGI) CO₂ allowances were unchanged for the second consecutive day as market activity remained light.
- PJM Class I renewable energy certificates (RECs) extended their recent decline on Thursday.
- California Low Carbon Fuel Standard (LCFS) credits slipped back into a months-long trading band today after a week-long rally to the highest levels in five months.
- Cross-State Air Pollution Rule (CSAPR) allowances were unchanged on Thursday following recent dips in price for ozone season NO_x allowances.
- Low carbon fuel supplies could not keep pace with new Oregon Clean Fuels Program deficits during the third quarter of 2022, according to the latest data.

Global emissions pricing

	Price	±
Global compliance carbon index \$/t	80.24	+0.16
Global green power index \$/MWh	7.01	+0.26

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KEY MARKET PRICES

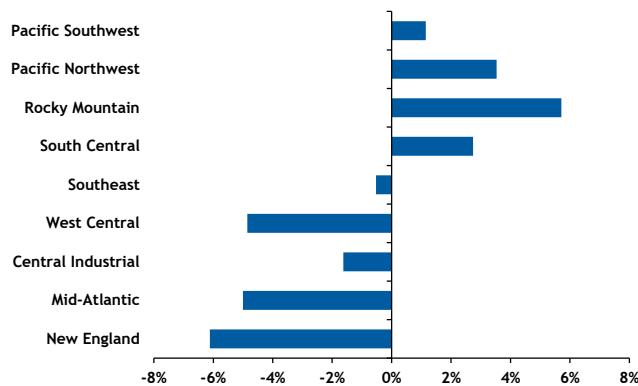
Carbon		\$/t			
	Vintage	Delivery	MTD	Price	±
CCA	2023	Dec 23		29.80	+0.45
CCA VWA	2021-23	Dec 23	29.60		
RGGI CO ₂ allowances	2021-22	Dec 23		13.25	nc
RGGI CO ₂ VWA	2021-22	Dec 23	13.34		
CCA/CCO 3				11.65	+0.45
CCA/CCO 8				11.85	+0.45
CCA/CCOG				11.00	+0.45
Renewable fuels		\$/RIN			
	Vintage	Delivery	Price	±	±2022
LCFS California \$/t		spot	69.00	-5.00	
LCFS Oregon \$/t		spot	122.50	0.00	
Renewable fuel (ethanol D6)	2023		162.25	-1.75	-0.75
Biomass-based diesel (D4)	2023		166.00	-1.50	-12.00
Cellulosic biofuel (D3)	2023		194.50	0.50	nc
Advanced biofuel (D5)	2023		165.00	-1.75	-12.00
RECs		\$/MWh			
	Vintage	Bid	Ask	Price	±
RECs					
Massachusetts Class I	2022	36.00	37.00	36.50	nc
Connecticut Class I	2022	36.00	37.00	36.50	nc
New Jersey Class I	2023	28.40	28.80	28.60	-0.15
Pennsylvania Tier I	2023	28.10	28.50	28.30	-0.20
Maryland Tier I	2022	28.40	28.80	28.60	-0.15
PJM tri-qualified Class I	2023	28.40	28.80	28.60	-0.15
SRECs					
New Jersey	2023	225.00	226.00	225.50	nc
Maryland	2022	59.00	60.40	59.70	nc
Washington DC	2022	400.00	420.00	410.00	nc
Green-e eligible RECs, 17 Feb					
National any	2023	3.00	3.30	3.15	-0.10
Texas wind	2023	3.10	3.30	3.20	-0.20
SO ₂ and NO _x allowances		\$/st			
Vintage	Vintage	Bid	Ask	Price	±
SO ₂ Cross-State Group 1	2022	2.00	4.00	3.00	nc
SO ₂ Cross-State Group 2	2022	1.00	3.00	2.00	nc
NO _x Cross-State annual	2022	2.00	4.00	3.00	nc
NO _x Cross-State Group 2 seasonal	2022	1,900.00	2,700.00	2,300.00	nc
NO _x Cross-State Group 3 seasonal	2022	12,500.00	16,500.00	14,500.00	nc

*Tables include hyperlinks to those values maintained in the Argus database.



MARKET MOVES

US generation change, week ended 18 Feb



Market movers

	Price	%±
Largest gains		
California CO2 year, 2024, Dec-24, \$/t	31.90	+1.66%
California CO2 year, 2023, Dec-23, \$/t	29.80	+1.53%
California CO2 Month 1, 2023, Feb-23, \$/t	28.22	+1.44%
Largest losses		
California LCFS credits prompt, 2023, 2023, \$/t	69.00	-6.76%
California LCFS credits 1Q23, 2023, 2023, \$/t	69.00	-6.76%
California LCFS credits 2Q23, 2023, 2023, \$/t	69.00	-6.76%

REGULATORY AND MARKET EVENTS CALENDAR

Date	Market	Event	More info
23 Feb	CCA	Western Climate Initiative quarterly allowance auction results	https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/auction-information
28 Feb	WCA	Washington state carbon allowance auction	https://ecology.wa.gov/Air-Climate/Climate-Commitment-Act/Cap-and-invest/
7 Mar	WCA	Washington state carbon allowance auction results	https://ecology.wa.gov/Air-Climate/Climate-Commitment-Act/Cap-and-invest/
8 Mar	RGGI	RGGI quarterly CO2 allowance auction	https://www.rggi.org/auctions/auction-materials
8 Mar	CCO	California Carbon Offsets issued	https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program
10 Mar	RGGI	RGGI quarterly CO2 allowance auction results	https://www.rggi.org/auctions/auction-results
14 Mar	LCFS	California LCFS monthly credit transfer report	https://ww2.arb.ca.gov/resources/documents/monthly-lcfs-credit-transfer-activity-reports
22 Mar	CCO	California Carbon Offsets issued	https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program
3 Apr	LCFS	California publishes new maximum LCFS credit price	https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard
3 Apr	LCFS	California LCFS 4Q 2022 reporting deadline	https://ww3.arb.ca.gov/fuels/lcfs/lrtqsummaries.htm
11 Apr	LCFS	California LCFS monthly credit transfer report	https://ww2.arb.ca.gov/resources/documents/monthly-lcfs-credit-transfer-activity-reports
28 Apr	LCFS	California LCFS 4Q 2022 data release	https://ww3.arb.ca.gov/fuels/lcfs/lrtqsummaries.htm
9 May	LCFS	California LCFS monthly credit transfer report	https://ww2.arb.ca.gov/resources/documents/monthly-lcfs-credit-transfer-activity-reports
13 Jun	LCFS	California LCFS monthly credit transfer report	https://ww2.arb.ca.gov/resources/documents/monthly-lcfs-credit-transfer-activity-reports
30 Jun	LCFS	California LCFS 1Q 2023 reporting deadline	https://ww3.arb.ca.gov/fuels/lcfs/lrtqsummaries.htm
31 Jul	LCFS	California LCFS 1Q 2023 data release	https://ww3.arb.ca.gov/fuels/lcfs/lrtqsummaries.htm

CARBON MARKETS

CANADA

Quebec carbon price for gasoline, diesel			CA¢/l	
Fuel	Price	±		
Gasoline	8.58	+0.13		
Diesel	10.67	+0.16		
<i>Represents the per-gallon cost of compliance for distributors</i>				
Alberta CO ₂ offsets, 17 Feb			C\$/t	
Vintage	Bid	Ask	Price	±
Renewable energy	2022	50.00	58.00	54.00
			nc	

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California issues more than 816,000 offsets	11

COMMENTARY

CCAs climb in wake of auction results

California Carbon Allowances (CCAs) rose on Thursday following news that last week's auction clearing price was the highest since last May.

December 2023 CCAs increased by 45¢ to \$29.80/metric tonne after trading 260 times for nearly 5.6mn t.

Prompt-month CCAs rose by 40¢ to \$28.22/t and traded nine times for 488,000t combined.

December 2024 CCAs increased by 52¢ to \$31.90/t. The contract did not trade today.

Washington Carbon Allowances (WCAs) for December 2023 held at \$43/t. The contract did not trade.

Today's gains came after California and Quebec released the results of last week's auction, the first one of 2023.

The 15 February auction sold all of the nearly 56.4mn current vintage allowances offered for \$27.85/t, which was \$1.05/t higher than the previous auction held in November 2022 and 85¢/t higher than the auction held in August.

The auction for vintage 2026 allowances sold all of the almost 7.6mn t offered for \$27.01/t, a \$1.01 bump from the previous auction.

The California Air Resources Board (CARB) issued about 816,500 California Carbon Offsets (CCOs) in its latest round of new credits to four projects.

CALIFORNIA

California carbon allowances (CCA)					\$/t	
Vintage	Delivery	Bid	Ask	Price	±	
2023	Feb 23	28.17	28.27	28.22	+0.40	
	Dec 23	29.75	29.85	29.80	+0.45	
2024	Dec 24	31.85	31.95	31.90	+0.52	
CCA volume-weighted averages					\$/t	
Vintage	Delivery	Low	High	VWA	MTD VWA	
2021-23	Dec 23	28.85	29.99	29.77	29.60	
Vintage	Delivery	Trades	MTD	Volume	MTD	
2021-23	Dec 23	260	987	5,584,000	24,516,000	
California carbon price for gasoline, diesel					¢/USG	
Fuel	Price	±	Price	±		
Carbob	Summer		Winter			
Regular	22.74	+0.32	22.68	+0.32		
Midgrade	22.69	+0.33	22.68	+0.32		
Premium	22.64	+0.32	22.70	+0.32		
Distillate			ULSD No. 2			
Ultra-low sulfur diesel			28.89	+0.41		
<i>Represents the per-gallon cost of compliance for distributors</i>						

California Carbon offsets (CCO), 17 Feb				\$/t	
	Bid	Ask	Price	±	
Seller-guaranteed (CCOG)	18.75	18.85	18.80	nc	
3-year validation (CCO 3)	18.10	18.20	18.15	nc	
8-year validation (CCO 8)	17.90	18.00	17.95	nc	
CCO-G DEBS	24.35	24.45	24.40	nc	
CCO-3 DEBS	23.70	23.80	23.75	nc	
CCO-8 DEBS	23.50	23.60	23.55	nc	
<i>DEBS represent offsets that provide direct environmental benefits in the state</i>					
California carbon spreads				\$/t	
	Price	±			
CCA/CCO 3		+11.65	+0.45		
CCA/CCO 8		+11.85	+0.45		
CCA/CCOG		+11.00	+0.45		
CCA Feb 23/CCA Dec 23		-1.58	-0.05		
CCA Dec 23/CCA Dec 24		-2.10	-0.07		

WASHINGTON

Washington carbon allowances (WCA)					\$/t	
Vintage	Delivery	Bid	Ask	Price	±	
2023	Dec 23	40.00	46.00	43.00	nc	

CARBON MARKETS

RGGI allowances flat

Regional Greenhouse Gas Initiative (RGGI) CO₂ allowances were unchanged for the second consecutive day on Thursday as market activity remained light.

December 2023 allowances held at \$13.25/short ton after trading five times for 108,000st.

Prompt-month allowances remained at \$12.64/st and did not trade.

December 2024 allowances were steady at \$14.00/st and did not trade.

Following a spike in activity in January in relation to unusually mild winter temperatures and low power demand, the RGGI market has been much less active this month. Price changes have been minimal, and most sessions have had few trades, which have been for mostly smaller volumes.

The first auction of the year is less than two weeks away on 8 March, when the RGGI states will offer 21.5mn allowances. The most recent auction in December cleared at \$12.99/st, a low for the year. Argus has assessed prompt-month allowances below that level for the last two weeks.

Pennsylvania, which would be the largest RGGI member in terms of emissions, will miss at least the upcoming auction because of pending legal challenges to its CO₂ trading regulation.

RGGI

RGGI CO ₂ allowances					\$/st
Vintage	Delivery	Bid	Ask	Price	±
2021-22	Feb 23	12.59	12.69	12.64	nc
	Dec 23	13.20	13.30	13.25	nc
	Dec 24	13.95	14.05	14.00	nc

RGGI CO ₂ volume-weighted averages					\$/st
Vintage	Delivery	Low	High	Daily	MTD
2021-22	Dec 23	13.23	13.28	13.24	13.34
	Feb 23	na	na	12.64	12.72

Weekly index, 17 Feb				\$/st
	Delivery	Vintage	Index	±
RGGI CO ₂ allowances	Dec 23	2021-22	13.32	-0.20

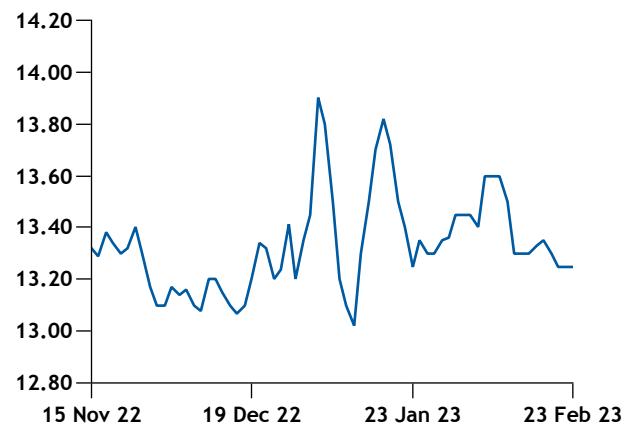
RGGI CO ₂ spreads				\$/t
		Price	±	
Feb 23/Dec 23		-0.61	nc	
Dec 23/Dec 24		-0.75	nc	

California Carbon allowances

\$/t

RGGI CO₂

\$/st



RENEWABLE FUEL MARKETS

NEWS INSIDE

Oregon draws down CFP credits 12

COMMENTARY

California LCFS credits sink

California Low Carbon Fuel Standard (LCFS) credits slipped back into a months-long trading band on Thursday after a week-long rally to the highest levels in five months.

Spot credits fell by \$5 to \$69/metric tonne. LCFS credits began the day offered \$76/t across multiple deliveries, but offers sank in the first half of the session with few bids. Fourth quarter credits traded at \$70/t late in the first half of the session, and prompt credits were heard traded at \$72/t and \$70/t.

Discussion thinned in the second half of the session as offers and to \$70/t. Some participants turned attention to California Carbon Allowance (CCA) auction results.

Intercontinental Exchange futures remained very active over the course of the day, including 44 contracts for December 2024.



Oregon LCFS market biogas value			\$/mmBtu
	Natural gas	Landfill Biogas	Dairy Biogas
PG&E Malin	13.28	36.66	50.28

Low-carbon fuel standard (LCFS) credits					\$/t
	Delivery	Bid	Ask	Price	±
California	spot	68.00	70.00	69.00	-5.00
	1Q23	68.00	70.00	69.00	-5.00
	2Q23	68.00	70.00	69.00	-5.00
	3Q23	68.00	71.00	69.50	-4.50
	4Q23	69.00	71.00	70.00	-4.00
Oregon	spot	121.00	124.00	122.50	nc

LCFS volume-weighted averages				\$/t
	Delivery	Trades	Volume	MTD VWA
California	Spot	6	42,500	63.76
	4Q23	12	70,000	67.14

LCFS premium per carbon intensity point		\$/t/USG
	Price	±
California		
Ethanol	0.56	-0.04
Biodiesel	0.87	-0.06
Alternative jet	0.87	-0.07
Renewable diesel	0.89	-0.07
Oregon		
Ethanol	1.00	nc
Biodiesel	1.55	nc
Alternative jet	1.55	nc
Renewable diesel	1.59	nc

Represents cost savings of using ethanol, biodiesel or alternative jet fuel.

LCFS cost for gasoline, diesel			\$/t/USG
Fuel	Vintage	Price	±
California			
Carbob (No CI ethanol)	2023	9.33	-0.68
	2024	10.25	-0.74
	2025	11.17	-0.81
Carbob (79.9 CI ethanol)	2023	8.86	-0.64
	2024	9.85	-0.71
	2025	10.84	-0.79
Ultra-low sulphur diesel	2023	10.48	-0.76
	2024	11.65	-0.85
	2025	12.81	-0.93
Crude CI deficit Carbob	2023	0.91	-0.06
Crude CI deficit diesel	2023	1.02	-0.07
Oregon			
E10 gasoline	2023	9.25	nc
B5 diesel	2023	10.54	nc

Represents per-gallon cost of compliance.

California LCFS market biogas value			\$/mmBtu
	Natural gas	Landfill Biogas	Dairy Biogas
SoCal Citygates	13.90	37.28	50.90
PG&E Citygates	15.22	38.60	52.22

RENEWABLE FUEL MARKETS

Credits ended the day in the upper end of the \$60-70/t trading range where the market has spent most of the past five months. Yesterday's session saw credits quickly rise to their highest levels since September before trading back down as a state workshop to discuss potential new program targets and other contemplated changes got underway.

Oregon Clean Fuels Program credits remained at \$122.50/t. Data released around 5pm ET showed that the program drew down its available, unused credits by 15pc in the third quarter to less than 600,000 t. New credit generation fell by 1.7pc from the previous quarter and new deficits increased by 13pc.

RINs decline

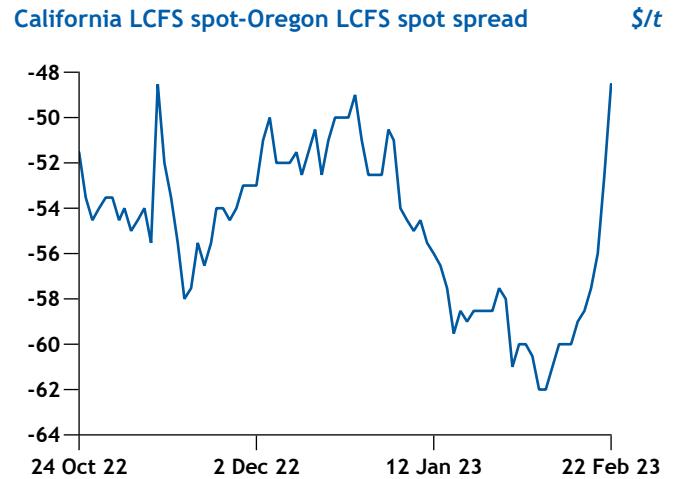
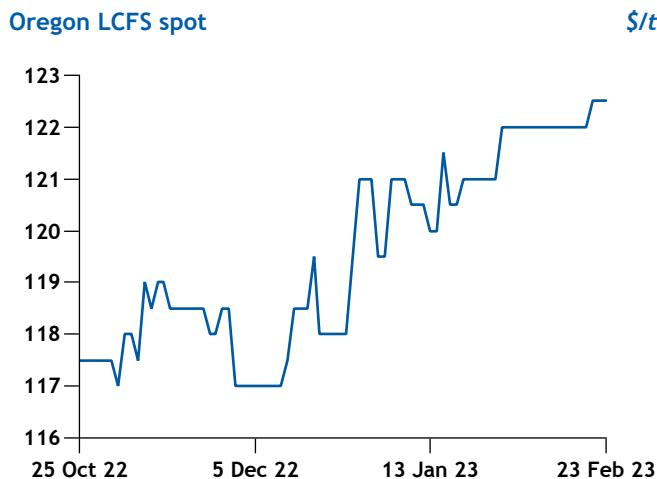
Federal renewable identification number (RIN) credit prices decreased on Thursday.

Vintage 2023 ethanol D6 RINs dropped by 1.75¢/RIN from Wednesday's session, with trades occurring between 161¢-163.5¢/RIN. Prior year credits exchanged hands between 162¢-164¢/RIN, down by 1¢/RIN from the previous session.

Biomass-based diesel D4 RIN credits from 2023 traded between 165¢-167¢/RIN, a 1.5¢/RIN drop from Wednesday.

The 2023 cellulosic biofuel D3 RINs were the lone riser on Thursday, gaining 0.5¢/RIN after sizable volume traded between 194¢-195¢/RIN. Credits from 2022 were valued flat to those from 2023.

Renewable identification numbers (RINs)	¢/RIN		
	Low	High	±
Renewable fuel (ethanol D6)			
2020	161.75	163.75	-1.25
2021	161.75	163.75	-1.25
Weighted average, 2023		162.49	
2022	162.00	164.00	-1.00
2023	161.00	163.50	-1.75
Biomass-based diesel (D4)			
2020	182.50	183.50	-0.75
2021	183.50	184.50	-0.75
2022	177.50	178.50	-0.75
2023	165.00	167.00	-1.50
Cellulosic biofuel (D3)			
2020	207.00	208.00	+0.50
2021	209.00	210.00	+0.50
2022	194.00	195.00	+0.50
2023	194.00	195.00	+0.50
Advanced biofuel (D5)			
2020	181.50	182.50	-0.75
2021	182.50	183.50	-0.75
2022	176.50	177.50	-0.75
2023	164.00	166.00	-1.75
Renewable fuel spreads			
	Price	±	
LCFS California spot/LCFS California 4Q23, \$/t		-1.00	-1.00
LCFS California spot/LCFS Oregon spot, \$/t		-53.50	-5.00
Advanced biofuel (D5) RIN 2022/2023 ¢/RIN		+12.00	+1.00



RENEWABLE ENERGY CERTIFICATE (REC) MARKETS

Weekly REC market prices, 17 Feb					\$/MWh	REC market prices					\$/MWh
	Vintage	Bid	Ask	Price	±		Vintage	Bid	Ask	Price	±
Connecticut											
Class III	2022	18.50	21.00	19.75	nc	Massachusetts					
	2023	25.50	26.50	26.00	nc	Class I	2022	36.00	37.00	36.50	nc
New Hampshire											
Class I	2022	35.50	37.00	36.25	nc		2023	37.00	38.50	37.75	nc
	2023	37.00	38.50	37.75	nc	SREC I	2022	336.00	341.00	338.50	nc
Rhode Island											
New	2022	35.50	37.00	36.25	nc	SREC II	2022	280.00	282.00	281.00	nc
	2023	37.00	38.50	37.75	nc	Connecticut					
New Jersey											
Class II	2023	22.00	23.00	22.50	nc	Class I	2022	36.00	37.00	36.50	nc
	2024	24.75	25.25	25.00	nc		2023	37.00	38.50	37.75	nc
New York											
Tier 1	2022	28.50	31.00	29.75	nc	Nepool dual class					
Virginia											
Compliance	2022	18.50	21.00	19.75	+4.75	Class I	2022	36.50	37.00	36.75	nc
California							2023	37.00	38.50	37.75	nc
Category 3	2022	5.00	5.50	5.25	+0.25	New Jersey					
Texas											
Compliance	2022	2.40	2.60	2.50	-0.05	Class I	2023	28.40	28.80	28.60	-0.15
Solar	2022	2.90	3.60	3.25	nc		2024	28.50	28.90	28.70	-0.20
	2023	3.75	4.15	3.95	-0.05	SREC	2023	225.00	226.00	225.50	nc
Weekly Green-e eligible REC market prices, 17 Feb					\$/MWh	2024					nc
	Vintage	Bid	Ask	Price	±	Pennsylvania					
National any	2023	3.00	3.30	3.15	-0.10	Tier I	2023	28.10	28.50	28.30	-0.20
	2024	3.60	4.00	3.80	-0.15	SREC	2023	46.50	48.00	47.25	nc
Texas wind	2023	3.10	3.30	3.20	-0.20	Maryland					
	2024	3.70	4.00	3.85	-0.15	SREC	2022	59.00	60.40	59.70	nc
NEWS INSIDE											
Vermont bill would mandate 100pc renewables					12	Tier I					-0.15
New Jersey solar starts 2023 slowly					13	PJM tri-qualified					
REC spreads					\$/MWh	Class I					
							Price	±			
PJM tri-qualified Class I 2023/2024									-0.10	+0.05	
Massachusetts Class I 2022/2023									-1.25	nc	
Connecticut Class I 2022/2023									-1.25	nc	
New Jersey Class I 2023/2024									-0.10	+0.05	
New Jersey SREC 2023/2024									+10.00	nc	

COMMENTARY

PJM RECs slip

PJM Class I renewable energy certificates (RECs) extended their recent decline on Thursday.

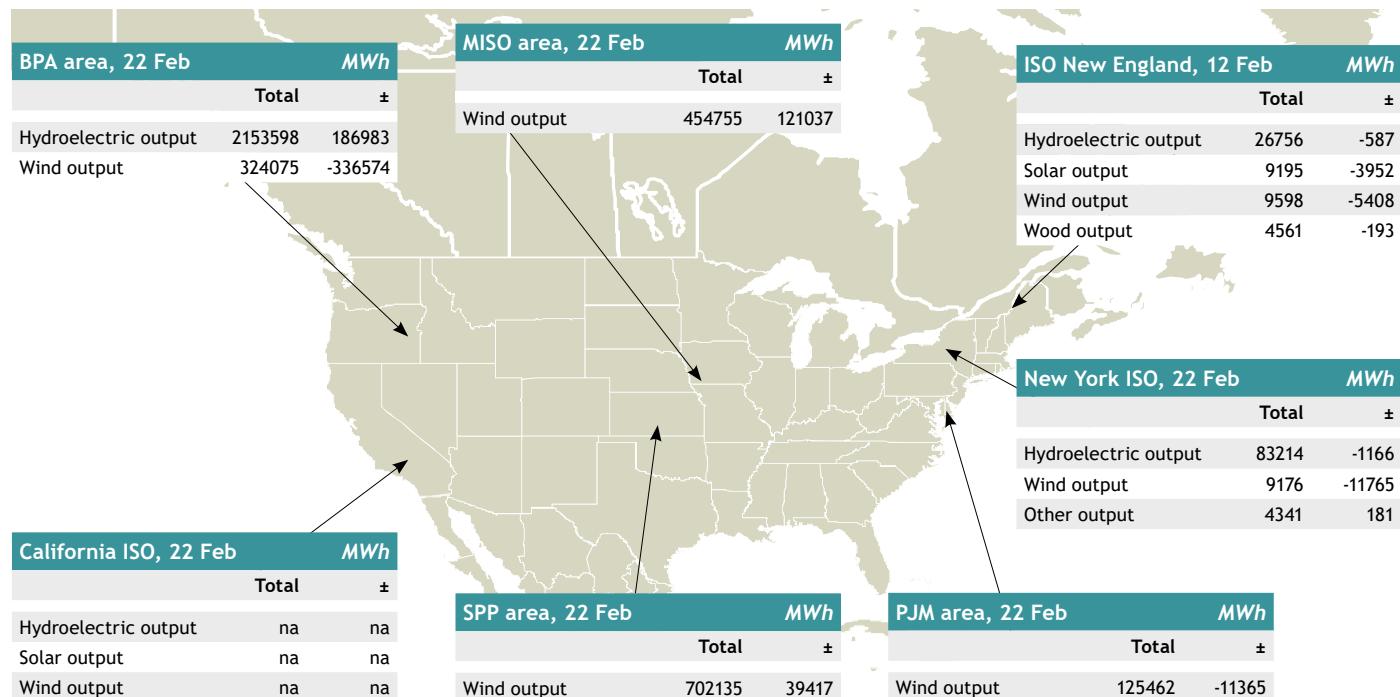
PJM credits for 2023 shed 15¢ on the day to finish at \$28.60/MWh. Their 2024 counterparts fell to \$28.70/MWh, a 20¢ drop.

Today was the third consecutive session of declines for both the 2023 and 2024 PJM RECs.

The drop-off comes in the wake of New Jersey's basic generation service auction, which ended on 6 February. The auctions can spark demand among compliance buyers, which must cover their obligations under renewable portfolio standard programs. That demand helped bring PJM credits to just above \$30/MWh immediately following the auction after they had slipped as low as \$29.90/MWh at the beginning of February.

But following that bump, the PJM market has reversed

RENEWABLE ENERGY CERTIFICATE (REC) MARKETS



course, with Class I RECs moving lower for the most part since.

Voluntary markets were active on the Nodal Exchange and over the counter. Front and back half 2023 Texas RECs from Green-e eligible facilities traded in a series of strips with a price range of \$3-\$3.10/MWh. Argus last assessed the calendar 2023 RECs at \$3.20/MWh on 17 February.

Front half 2023 US Green-e eligible wind RECs traded over the counter at \$2.60/MWh for 100,000MWh.

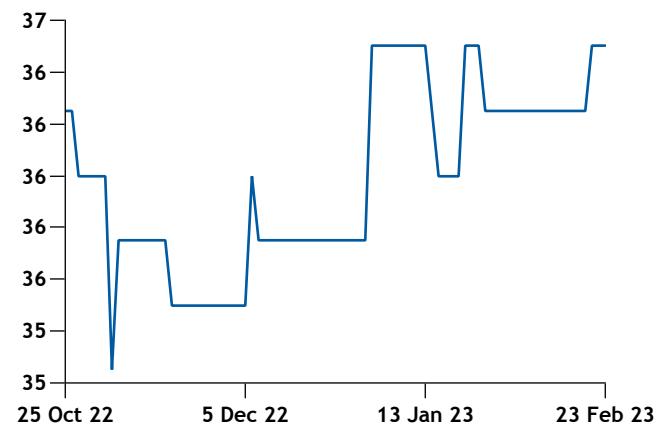
Texas Green-e eligible back half 2022 wind credits were heard traded over the counter at \$2.45/MWh for more than 300,000MWh. The front half 2023 vintage was heard traded at \$2.65/MWh for 200,000MWh.

PJM Class I current year



\$/MWh

Massachusetts Class I current year



\$/MWh

FEDERAL MARKETS

COMMENTARY

Cross-state allowances steady

Cross-State Air Pollution Rule (CSAPR) allowances were unchanged on Thursday following recent dips in price for ozone season NO_x allowances.

Group 3 seasonal NO_x allowances were steady at \$14,500/short ton, holding at its lowest price of the year to date, after falling by \$1,000 yesterday.

Group 2 seasonal NO_x allowances were flat at \$2,300/st.

Annual NO_x allowances held at \$3/st.

Group 1 SO₂ allowances were unchanged at \$3/st, while Group 2 SO₂ allowances remained at \$2/st.

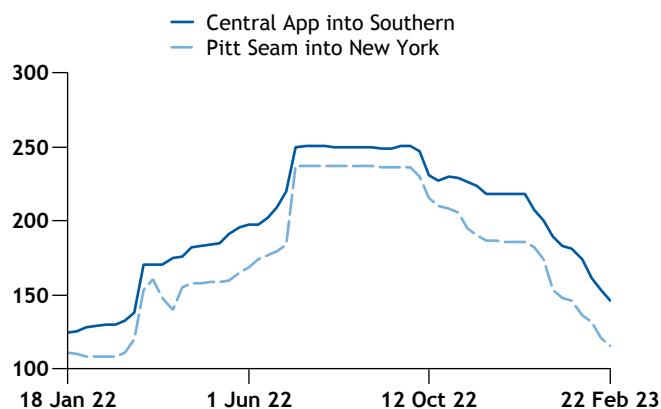
This week's decline for Group 3 seasonal NO_x allowances is the largest price change for the CSAPR market so far this year. Market activity has otherwise largely been limited, as expected updates to the program from the US Environmental Protection Agency (EPA) loom.

EPA's final rulemaking - which could involve adding more states to the Group 3 market, setting more stringent emissions caps, and regularly recalibrating the allowance bank - is expected by mid-March. The rule is currently undergoing a White House-led interagency review.

SO ₂ and NO _x allowances					
Vintage	Vintage	Bid	Ask	Price	±
SO ₂					
Acid Rain Program \$/allowance	2022	0.45	0.85	0.65	nc
Cross-State Group 1 \$/st	2022	2.00	4.00	3.00	nc
Cross-State Group 2 \$/st	2022	1.00	3.00	2.00	nc
Cross-State \$/st	Group avg			2.50	nc
NO _x \$/st					
Cross-State annual	2022	2.00	4.00	3.00	nc
Cross-State Group 2 seasonal	2022	1,900.00	2,700.00	2,300.00	nc
Cross-State Group 3 seasonal	2022	12,500.00	16,500.00	14,500.00	nc

Weekly index, 17 Feb	\$/allowance		
Vintage	Index	±	
SO ₂	2022	0.65	nc

Delivered SO₂-adjusted coal prices \$/st



Texas Emissions Reduction Credit (ERC) program					
Date	Seller	Buyer	Amount st	\$/st	
NOx trades					
30 Aug 22	Element Markets Emissions	Freeport LNG	7.7	115,000	
26 Aug 22	Fathom Energy	Freeport LNG	0.1	115,000	
26 Aug 22	Fathom Energy	Freeport LNG	0.8	115,000	
26 Aug 22	Fathom Energy	Freeport LNG	1.1	115,000	
26 Aug 22	Fathom Energy	Freeport LNG	0.5	115,000	
VOC trades					
11 Jan 23	Sandel Operating	Fathom Energy	1.3	115,000	
11 Jan 23	Sandel Operating	Fathom Energy	0.7	115,000	
11 Jan 23	Ponderosa Petroleum	Fathom Energy	0.9	115,000	
10 Jan 23	Elliott Oil	Fathom Energy	0.5	115,000	
10 Jan 23	Elliott Oil	Fathom Energy	1.4	115,000	

MONTHLY PRICE INDEXES

Carbon markets, January				Renewable fuel markets, January			
	Vintage	Index	±		Vintage	Index	±
CCA prompt \$/t	2023	28.30	+0.31	D5 RINs €/RIN	2023	168.43	-4.75
CCA Dec 23 \$/t	2023	29.93	+1.97	LCFS California \$/t		64.08	-2.78
CCA Dec 24 \$/t	2024	31.92	+2.02	LCFS California 4Q \$/t		64.28	-2.58
RGGI CO ₂ prompt \$/st	2021-22	12.74	-0.48	LCFS Oregon \$/t		120.70	+2.41
RGGI Dec 22 \$/t	2021-22	13.44	+0.24				
RGGI Dec 24 \$/t	2024	14.22	+0.20				
California regular Carbob €/USG	2023	22.80	+0.24	REC markets, January			
California midgrade Carbob €/USG	2023	22.75	+0.25		Vintage	Index	±
California premium Carbob €/USG	2023	22.71	+0.25	Massachusetts Class I	2022	36.35	+0.62
California distillate ULSD €/USG	2023	28.97	+0.31	2023	37.70	+0.18	
Quebec gasoline CA€/l	2023	8.52	-0.01	Massachusetts SREC I	2022	338.35	+1.85
Quebec diesel CA€/l	2023	10.60	-0.01	Massachusetts SREC II	2022	281.51	-0.35
				Connecticut Class I	2022	36.35	+0.62
				2023	37.70	+0.18	
				NEPOOL dual-qualified	2022	36.38	+0.40
				2023	37.70	+0.18	
				New Jersey Class I	2023	29.73	+1.33
				2024	29.81	+1.41	
				New Jersey SREC	2023	225.08	+0.06
				2024	214.80	-0.05	
				Pennsylvania Tier I	2023	29.38	+1.41
				Pennsylvania SREC	2023	47.18	+0.68
				Maryland Tier I	2022	29.34	+1.04
				Maryland SREC	2022	60.05	-0.44
				PJM tri-qualified	2023	29.73	+1.32
				2024	29.81	+1.41	
				District of Columbia SREC	2022	390.53	+14.10

Monthly indexes are calculated as the average daily price published for the named month.

Low-carbon Fuel Standard Program Proposals		
Region	Proposed carbon intensity reduction targets	State of Play
Canada	14pc from 2016 levels by 2030	Enforcement to begin in July 2023; registration for early credit generation underway
California	Tougher targets both pre- and post-2030	Awaiting start of rulemaking
Oregon	20pc by 2030	Amendments adopted with 20pc by 2030 target
Washington	20pc from 2017 levels by 2038	First credits issued 1 April 2023
New York	20pc by 2030	Legislation refiled in January 2023
New Mexico	20pc from 2018 levels by 2030	Legislation failed to pass in 2022 session.
Minnesota	Under study	State agencies discussing LCFS with stakeholders as directed by governor
Michigan	No firm proposal	Climate plan includes LCFS.
Pennsylvania	22pc by 2040	No rulemaking or established policy. Contemplated as part of 2021 Climate Action Plan

NEWS

CARBON

California carbon auction price rebounds

The clearing price at California and Quebec's latest carbon allowance auction rose, exceeding the price of the previous two auctions.

The Western Climate Initiative (WCI) market partners sold all of the nearly 56.4mn current vintage allowances offered at the 15 February auction for \$27.85/metric tonne.

The settlement price was \$1.05/t higher than the previous auction held in November and 85¢/t higher than the auction held in August. But this month's auction price was still \$3/t lower than the record-high set during the May auction last year.

The auction for vintage 2026 allowances sold all of the almost 7.6mn t offered for \$27.01/t, a \$1.01 bump from the previous auction.

Argus assessed prompt-month California Carbon Allowances (CCAs) yesterday at \$27.82/t, and the December 2023 CCAs at \$29.35/t.

December 2023 CCAs traded largely around \$29.30/t on the Intercontinental Exchange early in the day. Market activity surged after the release of the results, with December 2023 futures trading as high as \$29.99/t.

Parties covered by the California and Quebec cap-and-trade programs made up 87.1pc of the current vintage allowance buyers and 78.8pc of the forward allowance purchases, compared with 80.4pc and 83.3pc, respectively, at the November auction.

The California cap-and-trade program, which covers major sources of the state's greenhouse gas emissions, including power plants and transportation fuels, requires a 40pc cut in emissions from 1990 levels by 2030.

Quebec is aiming for a 37.5pc reduction from 1990 emissions by 2030.

By Tomas Russo

California issues more than 816,000 offsets

The California Air Resources Board (CARB) issued about 816,500 California Carbon Offsets (CCOs) in its latest round of new credits to four projects.

The CCOs went to two forestry projects, one mine methane capture project and one livestock project, according to data published yesterday.

The agency awarded more than 713,500 CCOs to the Holland M Ware Charitable Foundation for an improved forest management project in Georgia and Florida. The project has received nearly 4.9mn CCOs to date.

CARB issued more than 45,600 CCOs to Rowland Land Company for an improved forest management project near Beckly, West Virginia. The project has received almost 2.2mn CCOs to date.

The agency also awarded more than 41,600 CCOs to Keyrock Energy for a project that captures and destroys methane from an active coal mine in Crab Orchard, West Virginia. The project has received nearly 97,200 CCOs to date.

CARB issued over 15,700 CCOs to developer Maas Energy Works for a livestock project that captures biogas from manure and use it to generate electricity in Tipton, California. The project has received almost 26,300 CCOs to date and qualifies as providing direct environmental benefits to the state (DEBS).

Each CCO represents a metric tonne of greenhouse gas (GHG) emissions reduced from eligible sources outside of California's cap-and-trade program.

California allows offsets from six types of projects: US forestry, urban forestry, livestock methane capture, destruction of ozone depleting substances, mine methane capture and rice cultivation practices.

The cap-and-trade program has issued nearly 220.4mn CCOs to date, not including early action credits. Approximately 84pc of the total has gone to forestry projects.

The program – which covers major sources of California's



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GHG emissions, including power plants and transportation fuels – requires a 40pc reduction from 1990 emissions levels by the end of 2030.

Facilities covered by cap-and-trade can use CCOs for 4pc of their compliance obligation through 2025 and 6pc starting in 2026, with a requirement that at least half come from DEBS-eligible projects.

All of the new offsets initially carry eight-year invalidation time frames.

Argus last assessed non-DEBS CCOs that carry an eight-year invalidation at \$17.95/t and the DEBS-eligible CCOs at \$23.55/t on 17 February.

By Tomas Russo

RENEWABLE FUELS

Oregon draws down CFP credits

Low carbon fuel supplies could not keep pace with new Oregon Clean Fuels Program deficits during the third quarter of 2022, according to the latest state data.

The third consecutive quarterly draw on unused credits may mean participants will empty the low-carbon fuel standard's (LCFS) reserve of available credits faster than originally thought.

The implied number of credits available for compliance with the LCFS fell by 15pc from the previous quarter to less than 600,000 t, according to quarterly data released today by the Oregon Department of Environmental Quality (DEQ). New deficits increased by 13pc during the quarter, while new credits fell by 1.7pc.

Rising, though not record, consumption of renewable diesel and an uptick in high-ethanol blends of gasoline could not offset a sharp drop in biodiesel credits during the third quarter. Higher gasoline and diesel consumption meanwhile racked up deficits.

LCFS programs require yearly reductions to the carbon intensity of road transportation fuels. Higher-carbon, conventional fuels that exceed the annual limit incur deficits that suppliers must offset with credits generated from the distribution of approved, low-carbon alternatives.

Oregon last year approved a 20pc reduction target for 2030 and 37pc for 2035.

Prices in California's LCFS program fell to six-year lows last

fall as unused credits built to a record 13.4mn t. The much larger, neighboring program has seen a steady rise in renewable diesel and biogas supplies that have easily outpaced flagging demand for CARBOB and petroleum diesel. Regulators there continued discussions this week on new program targets and other changes to lift credit prices and LCFS stringency.

Oregon spot credits have remained \$115-125/t for most of the past three years.

By Elliott Blackburn

RENEWABLE ENERGY CERTIFICATES (RECS)

Vermont bill would mandate 100pc renewables

A Vermont lawmaker is calling for the state to rely solely on renewables for its electricity within 12 years.

State representative Caleb Elder (D) yesterday introduced a bill, H. 320, that would overhaul Vermont's renewable portfolio standard (RPS) and require utilities to only use resources like wind and solar by 2035.

At present, Vermont's RPS mandate peaks at 75pc by 2032, at least 10pc of which must come from in-state distributed energy systems smaller than 5MW that came on line after 30 June 2015. The rest of the annual obligations are met by qualifying renewables that can be delivered into the grid overseen by ISO-New England without any restrictions on when the projects began operating.

Elder's proposal would change the underlying rules in the program, separating renewables into two categories: new and existing. Existing generation would include all qualifying renewable energy projects that began operating on or before 1 January 2010, while the "new" designation would apply to any eligible system within the ISO-New England territory that has come on line since.

The bill would also disqualify unbundled renewable energy certificate (REC) purchases from counting toward the RPS if the generator resides outside of the New England grid.

The changes would help promote new clean generation "both in Vermont and regionally," Elder said.

If lawmakers approve the updates, utilities will have to procure new renewable generation for 1pc of their electricity supply in 2025. From there, the target would increase by 2.9pc/yr until leveling off at 30pc in 2035 and beyond.

The proposal would also increase the requirement for new

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in-state distributed generation, starting at 5.8pc in 2025 and rising by 2.84pc/yr until reaching 20pc in 2030. At that point, it would increase by 2pc/yr until leveling off at 30pc in 2035.

Electric suppliers could not count RECs from the distributed category toward the separate new generation targets, putting Vermont on course to use generation built after 2009 for 60pc of utility purchases by the middle of the next decade.

The legislation would maintain requirements for older generation as the state increases its sourcing from new projects. The utilities would be required to secure 57pc of their electric purchases in 2025 from existing renewable sources. That requirement would increase by 1.5pc/yr through 2030, when it would reach 64.5pc.

At that point, the mandate would reverse course, dropping by 4.9pc/yr until plateauing at 40pc in 2035. Utilities could use new generation to satisfy the existing resource mandate, provided that the RECs retired toward the target do not overlap with credits used to meet the other obligations.

The bill would also have the effect of disqualifying unbundled RECs stemming from large, out-of-region hydroelectricity facilities, according to clean energy trade group Renewable Energy Vermont. The organization said that tweak would fix the "fundamental flaw" in the law – an "overreliance on existing renewables that failed to reduce regional carbon pollution."

By Patrick Zemanek

New Jersey solar starts 2023 slowly

New Jersey solar growth lagged in January, with the state adding only slightly more capacity than it did during the same month last year.

The state added 10.7MW of new solar capacity last month, down from the 32.5MW initially reported for December 2022, and only a little higher than the 10.3MW initially reported during January 2022, according to data published yesterday by the New Jersey Clean Energy Program

The tally will likely rise in subsequent reports as a result of new information becoming available. The January 2022 figures eventually surpassed 22MW due to later revisions.

Most of last month's capacity, about 7.9MW, linked with the administratively determined incentive (ADI) portion of New Jersey's SREC-II solar incentive program. Compensation levels for the ADI vary according to project type.

Another 2.8MW fed into the state's transition initiative,

which awards transition renewable energy certificates (TRECs) at a base rate of \$152/MWh. New Jersey obligates the state's four electricity distributors to buy those credits for the first 15 years of a system's operation. About 54pc of the transition program's overall generation comes from net-metered, non-residential rooftop and canopy projects, with another 25pc stemming from net-metered, residential rooftop and canopy systems.

None of the new capacity fed into the legacy solar renewable energy certificate (SREC) program. While the state Board of Public Utilities closed the initiative to new applicants in 2020, projects have occasionally qualified as SREC generators since then. But only 0.005MW qualified for the SREC program in 2022, all of which came on line last January.

The state also revised upward its total for 2022 by almost 7.6MW to roughly 440MW. New Jersey's strongest year for solar to date remains 2019, when it added more than 453MW of new photovoltaic capacity.

New Jersey now has 4,312MW of solar capacity operating. Almost 81pc of the capacity comes from smaller, behind-the-meter projects. Another 18pc and 1pc, respectively, originate from grid-scale and community solar installations.

New Jersey is attempting to increase generation from utility-scale projects through the second part of its SREC-II initiative, the competitive solar incentive program.

Through this competitive incentive, New Jersey is aiming to procure at least 300MW/yr through 2026. BPU is targeting up to 3,750MW of new photovoltaic capacity altogether.

The first solicitation, for which bids are due by 31 March, is targeting 140MW from basic grid-scale projects as typified by "greenfield" systems and most floating solar; 80MW from grid-scale projects on "built environments," locations built for purposes other than solar development; 40MW from grid-scale projects on "contaminated sites" or landfills and 40MW from non-residential, net-metered installations larger than 5MW.

By Patrick Zemanek

OTHER NEWS

Session end looms for Virginia utility proposals

Virginia lawmakers must hash out differences between two competing pieces of legislation that would change how the state regulates electric utilities, with just days until the end of this year's legislative session.

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The [two proposals](#) contain many similar provisions, including new requirements for the State Corporation Commission (SCC) to more regularly review rates set by Dominion Energy, the state's main investor-owned utility. But the version in the House of Delegates, backed by Republicans, would also set new requirements to be met before Dominion and utility Appalachian Power could retire power plants, which environmentalists say would undermine the state's greenhouse gas (GHG) emissions goals.

The House and the Senate today each requested to form a conference committee to resolve differences between the two proposals. This year's legislative session is scheduled to end on Saturday, giving lawmakers little time to work out an agreement.

"We are working to try to come up with something that everybody can agree with," Senate majority leader Dick Saslaw (D), who is spearheading the bill without any plant retirement language, said yesterday.

Under the proposal backed by House majority leader Terry Kilgore (R), no power plant owned by Dominion or Appalachian Power could retire unless specifically requested by its utility owner and approved by the SCC following an analysis of potential impacts on grid reliability. That would change existing law, which allows those utilities to petition the SCC to delay legally mandated retirements but otherwise says that they must retire coal-fired plants by 2024, biomass-fired facilities that do not co-fire with coal by 2028, and other fossil fuel-fired units by 2045.

A [bipartisan bill](#) headed to governor Glenn Youngkin's (R) desk would soften those requirements for biomass-fired facilities, suggesting that Democrats are open to some revisions to the mandates set by the state's Clean Economy Act. But they have opposed [larger changes](#) to the 2020 law, which paved the way for Virginia's entry into the Regional Greenhouse Gas Initiative power plant emissions cap-and-trade program and set a goal for the state to achieve zero-emissions in the electric sector by 2050.

Youngkin's office declined to comment on the competing utility regulation proposals today, but members of his administration have spoken out in favor of the Republican-backed plan and argued that giving the SCC more authority over plant retirements is necessary for grid reliability.

By Cole Martin

US pushes for World Bank climate finance focus

The White House is hoping that a change of guard at the World Bank later this year will push the global development institution to take a more active role in financing the energy transition and climate change mitigation and adaptation.

President Joe Biden today nominated financial industry executive Ajay Banga to replace David Malpass after he steps down from the World Bank presidency on 30 June. Biden praised Banga's experience in "mobilizing public-private resources to tackle the most urgent challenges of our time, including climate change."

Presidential climate envoy John Kerry said that Banga's experience in managing private companies can "help deploy the large sums of money necessary to reduce global emissions and help developing and vulnerable countries adapt, build resilience, and mitigate the impact of greenhouse gases."

Banga's nomination has also garnered unexpected praise from Biden's Republican critics, even though they criticized the White House for pushing the World Bank to undertake a greater role in climate change policies.

"Ajay Banga is well qualified to lead the World Bank," House of Representatives Financial Services Committee chairman Pat McHenry (R-North Carolina) said.

The World Bank, the IMF and other global financial institutions have made strides in incorporating climate change in their priorities, but for many governments and advocacy groups the World Bank has moved too slow on climate lending. And support for Malpass' continued tenure was undermined in September 2022 when he declined to say, during a public event, whether he agreed that burning fossil fuels was a critical contributor to climate change.

Banga currently serves as vice chairman at global growth equity group General Atlantic and chairman at financial holding firm Exor, following an earlier tenure as chief executive at financial services company Mastercard. General Atlantic's portfolio includes an investment in [Argus](#).

The US, as the leading contributor of funds for the bank, typically makes the final decision in selecting the World Bank president, even though the nomination process includes consultations with other major shareholders in the bank. Biden in his statement today praised Banga, a dual national of the US and India, for his perspective on the opportunities and challenges facing developing countries.

By Haik Gugarats

MARKET TRADES AND DEALS

Carbon daily deals summary					
Market	Vintage	Delivery	Trades	Total tons	Range \$/t
CCA*	2023	Future (Feb 23)	9	488,000	27.72 - 28.35
CCA*	2023	Future (Mar 23)	6	547,000	27.86 - 28.44
CCA*	2023	Future (Dec 23)	260	5,584,000	28.85 - 29.99
CCA*	2023	ACP Current Future (May 23)	1	200,000	0.12 - 0.12
CCA*	2023	40.00 call (Dec 23)	1	200,000	0.50 - 0.50
CCA*	2023	35.00 call (Dec 23)	3	500,000	1.00 - 1.20
CCA*	2023	Spread (Mar 23/Dec 23)	38	2,156,000	-1.47 - -1.40
CCA*	2023	Spread (Feb 23/Mar 23)	15	2,577,000	-0.14 - -0.10
CCA*	2023	Spread (Feb 23/Dec 23)	11	109,000	-1.59 - -1.50
CCA*	2022/2023	Spread (Dec 23)	2	4,000	0.00 - 0.00
CCA*	2023/2024	Spread (Dec 23/Dec 24)	8	1,225,000	-2.10 - -2.04
RGGI*	2023	Future (Dec 23)	5	108,000	13.23 - 13.28
RGGI*	2023	Spread (Feb 23/Dec 23)	2	175,000	-0.61 - -0.61
RGGI*	2023	Spread (Sep 23/Dec 23)	2	100,000	-0.17 - -0.17
RECs daily deals summary					
Market	Vintage	Delivery	Trades	Total MWh	Range \$/MWh
MD Tier I*	2022	Futures (Feb 23)	8	55,000	28.52 - 28.60
MD Tier I*	2023	Futures (Feb 24)	9	60,000	28.55 - 28.57
MD Tier I*	2024	Futures (Feb 25)	1	2,500	26.50 - 26.50
MD Tier I*	2026	Futures (Feb 27)	1	2,500	20.70 - 20.70
PA Tier I*	2024	Futures (Jul 24)	2	10,000	28.25 - 28.25
PA Tier I*	2023/2024	Spread (Jul 23/Jul 24)	1	2,500	0.00 - 0.00
PJM Class I*	2023	Futures (Jul 23)	2	75,000	28.55 - 28.65
PJM Class I*	2024	Futures (Jul 24)	6	30,000	28.60 - 28.70
PJM Class I*	2025	Futures (Jul 25)	3	12,000	28.50 - 28.60
PJM Class I*	2026	Futures (Jul 26)	1	2,000	26.60 - 26.60
MD Tier II (CBL)	2021	Trade	1	138	11.78 - 11.78
PJM Class I/MD Tier I*	2023	Spread (Jul 23/Feb 24)	4	12,500	0.00 - 0.00
PJM Class I/MD Tier I*	2023/2022	Spread (Jul 23/Feb 23)	5	20,800	0.00 - 0.00
PJM Class I/PA Tier I*	2023	Spread (Jul 23)	1	2,500	0.30 - 0.30
PJM Class I (Nodal)	2023	Futures (Jul 23)	1	2,500	28.60 - 28.60
TX compliance, CRS (Nodal)	BH2023	Futures (Mar 24)	3	150,000	3.10 - 3.10
TX compliance, CRS (Nodal)	FH2023	Futures (Sep 23)	4	250,000	2.55 - 2.80
TX compliance, CRS (Nodal)	FH2023-BH2023	2-vintage strip (Sep 23-Mar 24)	4	175,000/vintage	3.00 - 3.10
TX solar, CRS (Nodal)	FH2023-BH2023	2-vintage strip (Sep 23-Mar 24)	1	50,000/vintage	3.25 - 3.25
ME Class IA (Nodal)	2022	Futures (May 23)	1	1,900	34.50 - 34.50
US Green-e wind	FH2023	Trade	1	100,000	2.60 - 2.60
VA Solar (CBL)	2022	Trade	1	1,297	20.50 - 20.50

*Represents deals executed and/or cleared on ICE

MARKET TRADES AND DEALS

Renewable fuels daily deals summary					
Market	Vintage	Delivery	Trades	Volume	Range
LCFS		Forward (4Q 23)	1	10,000	70.00 - 70.00
LCFS*		Spread (May 23/Jun 23)	1	300	0.00 - 0.00
LCFS*		Spread (Mar 23/Dec 23)	2	10,300	-2.50 - -1.25
LCFS*		Spread (Mar 23/Apr 23)	1	300	0.00 - 0.00
LCFS*		Spread (Jun 23/Dec 23)	4	3,200	-2.00 - -2.00
LCFS*		Spread (Apr 23/May 23)	1	300	0.00 - 0.00
LCFS*		Futures (Dec 23)	6	11,500	70.75 - 71.25
LCFS*		Futures (Dec 24)	44	50,800	73.50 - 76.50
LCFS*		Spread (Dec 23/Dec 24)	17	13,000	-3.00 - -3.00
LCFS*		Spread (Dec 23/Dec 25)	17	14,500	-5.50 - -5.00
LCFS*		Spread (Dec 24/Dec 25)	2	1,500	-2.00 - -2.00
D6	2022		2	2,000	162.00 - 162.50
D6	2023		18	16,825	161.00 - 163.50
D4	2023		2	3,000	165.00 - 167.00
D3	2022		1	550	194.00 - 194.00
D3	2023		3	1,850	194.00 - 196.00

Trade volumes and values are shown in metric tonnes and \$/t for LCFS or total RINs and €/RIN

*Represents deals executed and/or cleared on ICE

SO ₂ allowance transfers, 22 Feb				
Transferor	Transferee	Vintage	Volume	Type
Evolution Markets	Sandy Creek Energy Station	2021	570	ARP
Minnesota Power (Allelu)	Minnkota Power Coop	2022	2337	ARP
Annual NO _x allowance transfers, 22 Feb				
Transferor	Transferee	Vintage	Volume	Type
Dominion				
Seasonal NO _x allowance transfers, 22 Feb				
Transferor	Transferee	Vintage	Volume	Type
Duke Energy	Aegis Hedging Solutions	2022	3	Group 3
CenterPoint Energy	Alcoa	2021	99	Group 3
CenterPoint Energy	Alcoa	2022	172	Group 3

ANNOUNCEMENTS

Proposal to discontinue 2020 RINs

Argus is proposing to discontinue its 2020 vintage RIN assessments.

Under this proposal, Argus would terminate its RIN assessments for advanced biofuel (PA0027922), biomass-based diesel (PA0027921), cellulosic biofuel (PA0027923), and renewable fuel (ethanol) (PA0027920) on 3 April.

Argus is proposing this change because under the current Renewable Fuel Standard (RFS), the 2021 compliance period ends on 31 March.

For a complete list of affected pricing database (PA) codes, please contact datashelp@argusmedia.com.

Argus will accept comments on this proposal until 10 March 2023. To discuss comments on this proposal, please contact Jacqueline Reigle at jacqueline.reigle@argusmedia.com or +1 713 968 0062.

Formal comments should be marked as such and may be submitted by email to jacqueline.reigle@argusmedia.com by 10 March 2023. Please note, formal comments will be published after the consultation period unless confidentiality is specifically requested.

RENEWABLE GENERATION

Adjusted heat rates and carbon cost

Marginal unit	NP15		SP15	
	Heat rate mmBtu/ MWh	Carbon cost \$/MWh	Heat rate mmBtu/ MWh	Carbon cost \$/MWh
Gas-implied	9.55	15.13	11.15	17.67
Carbon-adjusted	8.65	13.70	9.90	15.69
Western grid electric exports				12.75
Bonneville Power Administration exports				0.52
Powerex electric exports				na

Adjusted spark spreads

Heat rate	7	8	10	12
NP15				
Gas-implied	38.67	23.51	-6.81	-37.13
Carbon-adjusted	27.58	10.84	-22.65	-56.14
Carbon cost	11.09	12.67	15.84	19.01
SP15				
Gas-implied	52.17	39.60	14.46	-10.68
Carbon-adjusted	41.08	26.93	-1.38	-29.69
Carbon cost	11.09	12.67	15.84	19.01

Associated day-ahead power and natural gas markets

	Mid	±
Power NP15 peak price \$/MWh	144.79	+46.80
Power NP15 off-peak price \$/MWh	132.74	+48.23
Power SP15 peak price \$/MWh	140.16	+45.27
Power SP15 off-peak price \$/MWh	134.48	+49.77
Natural gas PG&E Citygates index \$/mmBtu	15.16	+6.71
Natural gas SoCal Gas Co index \$/mmBtu	12.57	+5.17



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