

OPIS Carbon Market Report



Daily Pricing, News, and Analysis on Emissions and Clean Air Initiatives

August 07, 2020

SENATE BILL WOULD DIRECT EPA TO USE UPDATED GHG MODELS FOR BIOFUELS

Four Midwest U.S. senators last week introduced legislation that would require the Environmental Protection Agency to update its greenhouse gas (GHG) emission models for ethanol and biodiesel, a move they say would more accurately capture the carbon-reduction benefits of U.S.-produced ethanol and biodiesel.

The bill, led by South Dakota Sen. John Thune, would require the agency to use either the U.S. Department of Energy's Argonne National Laboratory Greenhouse Gas and Regulated Emissions and Energy Use in Transportation (GREET) model or a methodology issued last year by the USDA when determining the GHG emissions from ethanol.

For biodiesel, the bill would require the EPA to use the GREET model.

The bill was co-sponsored by Sens. Mike Rounds of South Dakota and Chuck Grassley and Joni Ernst of Iowa.

The measure also would require the EPA to update its modeling every five years or explain to Congress why it believes no updates are needed.

"Analysis by USDA has found that greenhouse gas emissions from corn-based ethanol are about 43 percent lower than those from conventional gasoline," Thune said in a statement. "But despite strong bipartisan support for updating its

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California Carbon Allowance Assessments (\$/mt)

Product	Vintage	Timing	Low	High	Mean	Change	Wt. Avg.
Previous Yr.	V19	Pmt Aug 20	16.82	16.84	16.830	0.000	----
Previous Yr.	V19	Fwd Dec 20	16.94	16.96	16.950	-0.020	----
Current Yr.	V20	Pmt Aug 20	16.82	16.84	16.830	-0.005	16.830
Current Yr.	V20	Pmt +1 Sep 20	16.85	16.87	16.860	0.000	----
Current Yr.	V20	Pmt +2 Oct 20	16.89	16.91	16.900	0.000	----
Current Yr.	V20	Fwd Dec 20	16.95	16.97	16.960	-0.010	16.966
Next Yr.	V21	Pmt Aug 20	16.81	16.83	16.820	0.000	----
Next Yr.	V21	Fwd Dec 20	16.94	16.96	16.950	-0.010	----
Forward Yr.	V22	Pmt Aug 20	16.80	16.82	16.810	0.000	----
Forward Yr.	V22	Fwd Dec 20	16.93	16.95	16.940	-0.010	----
Advanced Yr.	V23	Pmt Aug 20	16.80	16.82	16.810	0.000	----
Advanced Yr.	V23	Fwd Dec 20	16.92	16.94	16.930	-0.020	----

modeling, the EPA still insists on using greenhouse gas reduction data on ethanol from a decade ago, which substantially understates the degree to which current corn-based ethanol reduces emissions."

"By adopting contemporary greenhouse gas modeling, the EPA would formally recognize the greenhouse gas reductions driven by American biofuels. This would make American biofuels even more attractive to countries implementing clean fuel standards and other programs to lower their emissions. And needless to say, increasing our exports of biofuels would be a shot in the arm to American corn farmers and ethanol producers whose operations are in jeopardy from the pandemic."

Emily Skor, CEO of ethanol industry group Growth Energy, in a statement said biofuel plants "continue to innovate, and the science on biofuels has dramatically improved. Troves of data show that ethanol significantly reduces greenhouse gases compared to gasoline, and it's long overdue that EPA modernize its modeling to capture the full air quality benefits of cleaner biofuel blends."

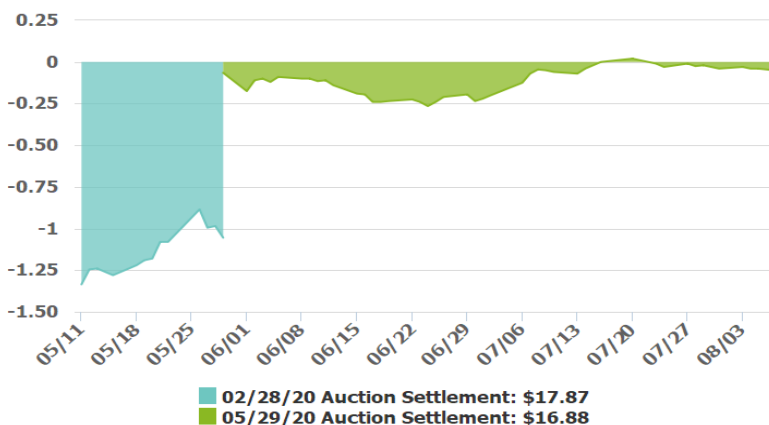
Brian Jennings, CEO of the American Coalition for Ethanol (ACE) said his organization "has long called for adoption of the newest lifecycle science to quantify ethanol's contributions to reducing greenhouse gas emissions and we have worked collaboratively with Department of Energy scientists to improve the assumptions used in their GREET model."

"Current data from the GREET model indicate that corn ethanol's carbon intensity is approximately 50 percent less than petroleum gasoline providing significantly more greenhouse gas reduction benefits than when the RFS was enacted over a decade ago."

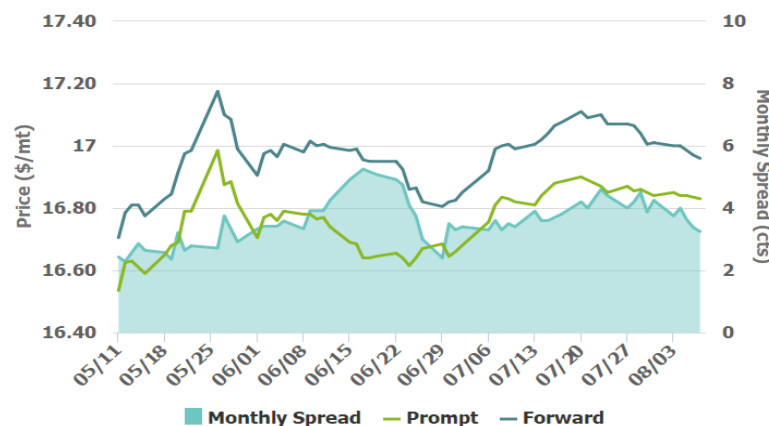
Jennings added that updating the EPA's "antiquated modeling would be a step in the right direction to underpin the scientific and economic opportunity for ethanol use to increase via low carbon fuel markets."

Geoff Cooper, president and CEO of the Renewable Fuels Association (RFA), in a statement said the "GREET model has been recognized for decades as the gold standard for analyzing the lifecycle GHG

Current Yr. Prompt CCA vs Auction Settlement Spread (\$/mt)



Current Yr. CCA Prompt vs Forward (\$/mt) & Monthly Price Spread (cts)



California Carbon Offset Assessments (\$/mt)

Product	Timing	Low	High	Mean	Change
Golden CCO	2020	13.30	13.40	13.350	0.000
CCO(3)	2020	12.90	13.00	12.950	0.000
CCO(8)	2020	12.80	12.90	12.850	0.000
Zero CCO	Dec 2020	14.05	14.15	14.100	0.000
Zero CCO	Dec 2021	14.90	15.00	14.950	0.000
Zero CCO	Dec 2022	15.80	15.90	15.850	0.000

Prompt California Static Carbon Emissions Prices (cts/gal)

Product	Price	Wk. Avg.	30-Day Avg.
Refinery	0.72	0.724	0.725

Prompt California Cap-at-the-Rack Prices (cts/gal)

Product	Price	Wk. Avg.	30-Day Avg.
CARB No. 2	17.23	17.240	17.256
B5 Biodiesel	16.37	16.380	16.395
Summer CARB RFG-R	13.56	13.570	13.583
Summer CARB RFG-M	13.53	13.540	13.552
Summer CARB RFG-P	13.52	13.526	13.537
LPG	9.80	9.802	9.810
LNG (cts/DGE)	12.32	12.326	12.337

Prompt Quebec Cap-at-the-Rack Prices

Product	Price (US cts/gal)	Price (CAN cts/lit)	Wk. Avg. (US cts/gal)	30-Day Avg. (US cts/gal)
Conv. 87 Unl	15.05	5.28	15.052	15.066
Conv. 89 Mid	15.05	5.28	15.052	15.066
Conv. 91 Pre	15.05	5.28	15.052	15.066
HS No. 2 Diesel	19.15	6.73	19.162	19.180
ULSD No. 2	19.15	6.73	19.162	19.180
ULSD No. 2 Winter	19.15	6.73	19.162	19.180
ULSD No. 1	19.15	6.73	19.162	19.180
Furn. Fuel Oil HS No. 2	17.42	6.13	17.428	17.444
Stove Oil LS No. 1	17.42	6.13	17.428	17.444
ULSD Furnace Oil	17.42	6.13	17.428	17.444
B5 Biodiesel	18.19	6.40	18.207	18.221
Conv. 87 Unl 10% Ethol.	13.54	4.75	13.550	13.561
Conv. 89 Mid 10% Ethol.	13.54	4.75	13.550	13.561
Conv. 91 Pre 10% Ethol.	13.54	4.75	13.550	13.561
Conv. 89 Mid 5% Ethol.	14.29	5.02	14.300	14.314

OPIS California Low Carbon Fuel Standard

Product	Low	High	Mean	Change	Wk. Avg.
Carbon Credit (\$/MT)	193.000	196.000	194.5000	0.0000	195.5000
Carbon Intensity Pts Ethanol (\$/CI)	0.01573	0.01598	0.015855	0.000000	0.015936
Carbon Intensity Pts Biodiesel (\$/CI)	0.02434	0.02472	0.024530	0.000000	0.024658
Carbon CPG Diesel (cts/gal)	19.54	19.85	19.695	0.000	19.796
Carbon CPG Diesel 95% (cts/gal)	18.57	18.85	18.710	0.000	18.808
Carbon CPG Gasoline (cts/gal)	20.39	20.71	20.550	0.000	20.656
Carbon CPG Gasoline 90% (cts/gal)	18.35	18.64	18.495	0.000	18.590
Carbon CPG Gasoline Crude CI Deficit (cts/gal)	0.531	0.539	0.5350	0.0000	0.5374
Carbon CPG Gasoline Crude CI Deficit 90% (cts/gal)	0.478	0.485	0.4815	0.0000	0.4836
Carbon CPG Diesel Crude CI Deficit (cts/gal)	0.597	0.606	0.6015	0.0000	0.6046
Carbon CPG Diesel Crude CI Deficit 95% (cts/gal)	0.567	0.576	0.5715	0.0000	0.5744
Carbon CPG Gasoline Combined LCFS/Crude CI Deficit (cts/gal)	20.921	21.249	21.0850	0.0000	21.1934
Carbon CPG Gasoline Combined LCFS/Crude CI Deficit 90%	18.829	19.124	18.9765	0.0000	19.0740
Carbon CPG Diesel Combined LCFS/Crude CI Deficit (cts/gal)	20.137	20.456	20.2965	0.0000	20.4006
Carbon CPG Diesel Combined LCFS/Crude CI Deficit 95%	19.130	19.433	19.2815	0.0000	19.3806

OPIS Oregon Clean Fuels Program

Product	Low	High	Mean	Change	Wk. Avg.
Carbon Credit (\$/MT)	115.000	127.500	121.2500	0.0000	123.7500
Carbon Intensity Pts Ethanol (\$/CI)	0.00937	0.01039	0.009880	0.000000	0.010085
Carbon Intensity Pts Biodiesel (\$/CI)	0.01450	0.01608	0.015290	0.000000	0.015606
Carbon CPG Diesel (cts/gal)	6.91	7.66	7.285	0.000	7.435
Carbon CPG Diesel 95% (cts/gal)	6.57	7.28	6.925	0.000	7.068
Carbon CPG Gasoline (cts/gal)	6.38	7.07	6.725	0.000	6.864
Carbon CPG Gasoline 90% (cts/gal)	5.74	6.37	6.055	0.000	6.179

Regional Greenhouse Gas Initiative Assessments (\$/st)

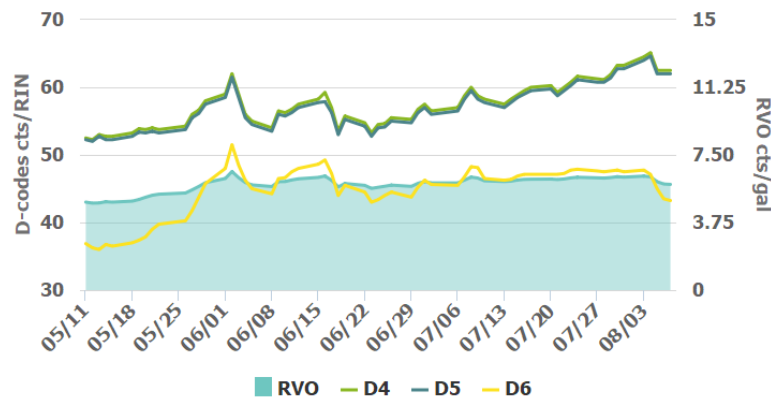
Product	Vintage	Timing	Low	High	Mean	Change	Wt. Avg.
RGGI	V19-V20	Pmt Aug 20	6.59	6.61	6.600	0.050	6.600
RGGI	V19-V20	Fwd Dec 20	6.63	6.65	6.640	0.030	6.640

OPIS U.S. RIN Values (cts/RIN)

Product	Year	Low	High	Mean	Change	MTD. Avg.
D6	2019	40.00	41.00	40.500	0.000	42.900
D6	2020	43.00	43.50	43.250	-0.250	45.325
D3	2019	150.00	153.00	151.500	0.000	153.700
D3	2020	150.00	153.00	151.500	0.000	153.700
D4	2019	61.50	63.00	62.250	0.000	63.300
D4	2020	62.00	63.00	62.500	0.000	63.425
D5	2019	60.50	63.00	61.750	0.000	62.800
D5	2020	61.00	63.00	62.000	0.000	62.925
RVO (cts/gal)	2020	----	----	5.864	-0.021	6.074

*D6: Corn Ethanol RIN, D3: Cellulosic RIN, D4: Biodiesel RIN, D5: Advanced Biofuel RIN, RVO: Renewable Volume Obligation.

OPIS U.S. RIN Prices – 90 Day Trend (cts/RIN)



European Carbon Futures

ICE Carbon Futures (/mt)	Price €	Change	Price \$	Clean Spread
CER Dec 2020	0.27	0.00	0.31	0.99
EUA Dec 2020	26.42	0.03	30.68	96.63

IHS Markit Global Carbon Index

Symbol	Total Return	Change	Wt. Avg. Carbon \$	Change
GLCARB	289.92	-3.42	19.91	-.23

*Previous business day closing price

impacts of renewable fuels like ethanol, and the model is regularly updated to reflect efficiency improvements and technological advancements in the ethanol production process. By requiring EPA to throw out its flawed and outdated analysis and replace it with the GREET model, Senator Thune's bill would help restore scientific integrity and accuracy to EPA regulatory actions on renewable fuels."

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REPSOL PRODUCES SPAIN'S FIRST VOLUMES OF SAF

Spain's Repsol this week said its Puertollano refinery produced the Spanish market's first batch of 7,000 tons of sustainable aviation fuel (SAF).

In a Monday statement, the oil major said the fuel was made from biomass and has a renewable fuel content under 5%. The 7,000 tons of SAF would be enough to fuel 100 Madrid-to-Los Angeles flights, the company added.

Use of the fuel will prevent 440 tons of carbon emissions, or the equivalent of 40 flights from Madrid to Barcelona. The company did not say who will purchase the fuel.

Repsol has five refineries in Spain and said it plans to expand SAF production to those facilities.

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CARBON MARKET ANALYSIS

North America: RGGI prices increased Friday, while CCA prices dropped slightly again. The V19 December 2020 and V20 December 2020 RGGI contracts both traded at \$6.64/st, 3cts/st stronger than the OPIS assessed V19/V20 forward mean on Thursday of \$6.61/st. With today's uptick, the RGGI V19/V20 forward mean assessment is ending the week flat to last Friday where it was assessed at \$6.64/st.

The RGGI V20 August 2020 prompt contract did not see any trades, but was assessed at \$6.60/st. A week ago, OPIS assessed the RGGI V19/V20 prompt mean at \$6.59/st.

On the West Coast, CCA prices were set to end the week slightly weaker. V20 August 2020 traded once at \$16.83/mt, half a penny weaker than Thursday's assessment of \$16.835/mt. OPIS assessed it at \$16.84/mt last Friday.

The V20 December 2020 forward contract traded four times this morning starting at \$16.97/mt before falling to \$16.95/mt, down from Thursday's assessment of \$16.97/mt, and compared to a mean assessment of \$17.01/mt last Friday. Trading tends to slow down in the weeks prior to an upcoming California/Quebec cap-and-trade quarterly auction, which is a key indicator of values in the secondary market. The 2020 Q3 auction will be held August 18.

EUA: European carbon prices were little changed by the settle, but the EEX auction price slipped lower again. The ICE December 2020 EUA closed at 26.42 euro/metric ton, up a few cents from yesterday. But the benchmark contract hit a low of 25.95 euro/mt earlier. Trade was thin with just 12,100 lots changing hands in December contract. Today's EEX auction for 1.18 million EUAs was concluded at 26.16 euro/mt, down from 26.95 euro/mt yesterday.

LCFS: OPIS on Friday heard very little discussion around California LCFS credits, which were assessed at \$194.5/credit, unchanged from Thursday. The assessment dropped \$4.50 on the week. Sources reported no confirmed trading for Oregon CFP credits, which OPIS assessed at \$121.25/credit, unchanged since midweek. The Oregon assessment lost \$6.75cts from last Friday.

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Deal Log

California

Product	Timing	Cash Price (\$/mt)	Reference	Volume (K)	Trade Qty	Notes
CCA Current Year	AUG 20	16.83		20	1	
CCA Current Year	DEC 20	16.97		250	1	
CCA Current Year	DEC 20	16.96		25	1	
CCA Current Year	DEC 20	16.95		25	1	
CCA Current Year	DEC 20	16.95		25	1	

East Coast

Product	Timing	Cash Price (\$/st)	Reference	Volume (K)	Trade Qty	Notes
RGGI Previous Year	DEC 20	6.64		15	1	
RGGI Previous Year	DEC 20	6.64		15	1	
RGGI Previous Year	DEC 20	6.64		25	1	
RGGI Previous Year	DEC 20	6.64		25	1	
RGGI Previous Year	DEC 20	6.64		25	1	
RGGI Previous Year	DEC 20	6.64		250	1	
RGGI Previous Year	DEC 20	0.00	RGGI Current Year Forward DEC 2020	100	1	V19/V20 Dec20
RGGI Previous Year	DEC 20	0.00	RGGI Current Year Forward DEC 2020	100	1	V19/V20 Dec20
RGGI Current Year	DEC 20	6.64		250	1	