Speed Dating Renewable Fuel Economics and Policy with the Chief Economist

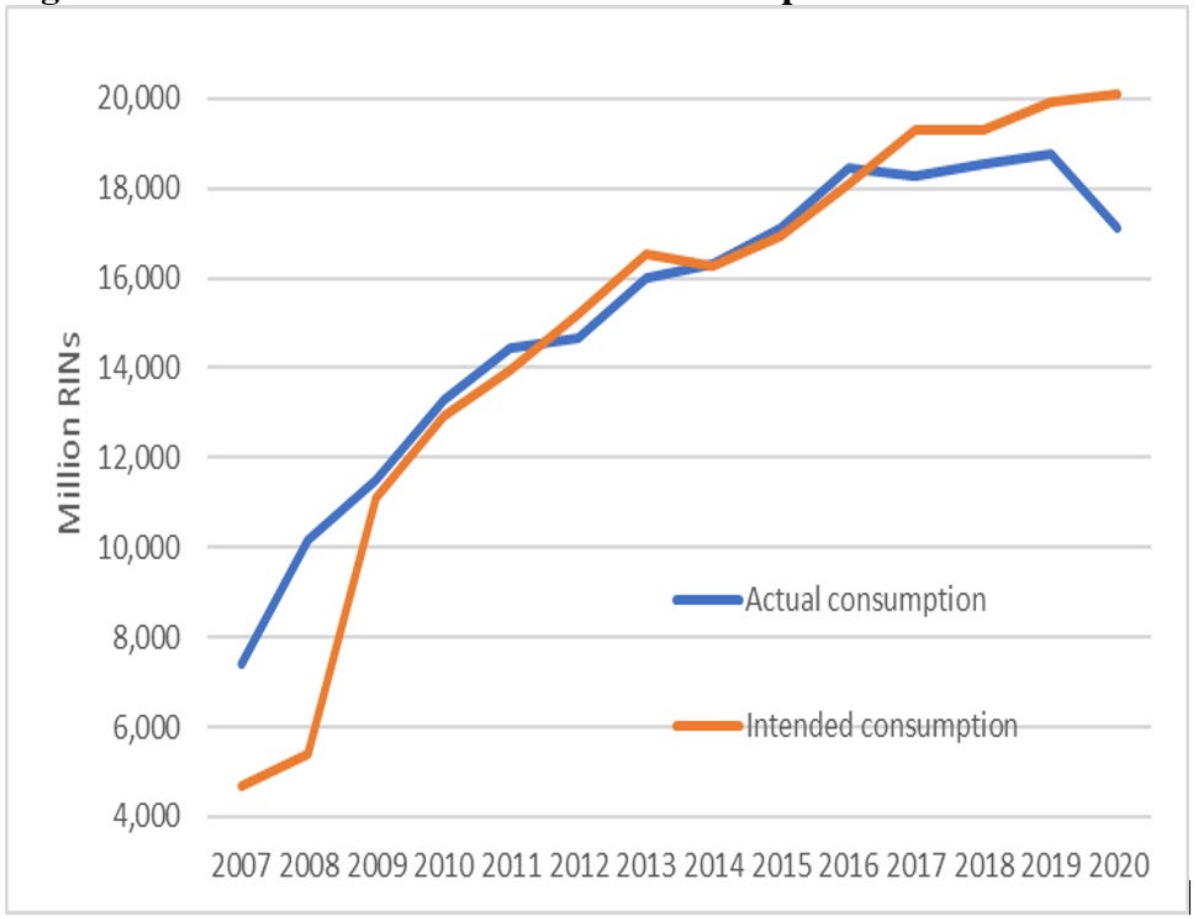
Office of the Chief Economist (OCE)

1-25-2022

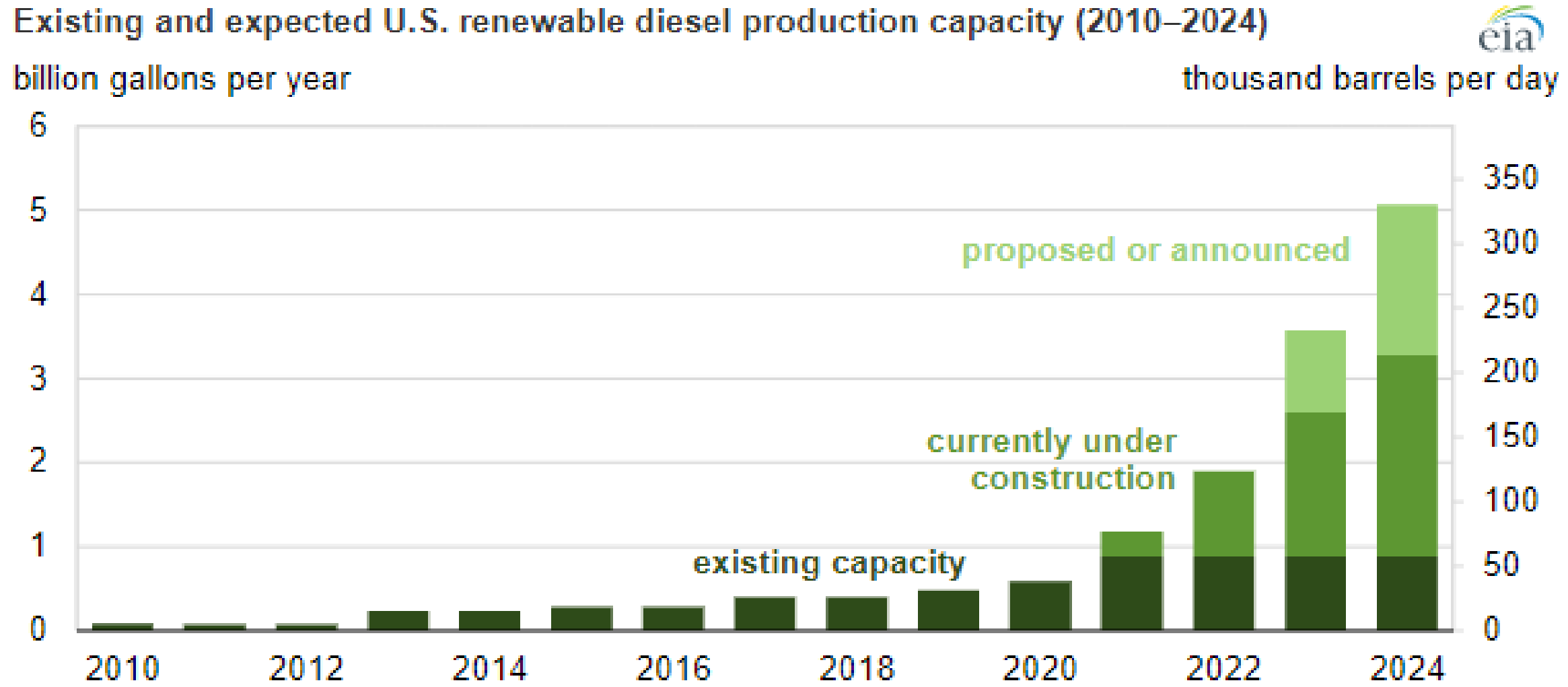
Renewable Fuel Standard

Category	Cellulosic Biofuel	Biomass-Based Diesel[b]	Advanced Biofuel	Total RFS	implied conventional (corn ethanol)	Supp. Standard
2017	0.311	2	4.28	19.28	15.00	n/a
2018	0.288	2.1	4.29	19.29	15.00	n/a
2019	0.418	2.1	4.92	19.92	15.00	n/a
2020 (P)	0.51	2.43[c]	4.63	17.13	12.50	n/a
2021 (P)	0.62	2.43[d]	5.2	18.52	13.32	n/a
2022 (P)	0.77	2.76	5.77	20.77	15.00	0.25

Figure 1.2-4: Intended Versus Actual Consumption of Total Renewable Fuel



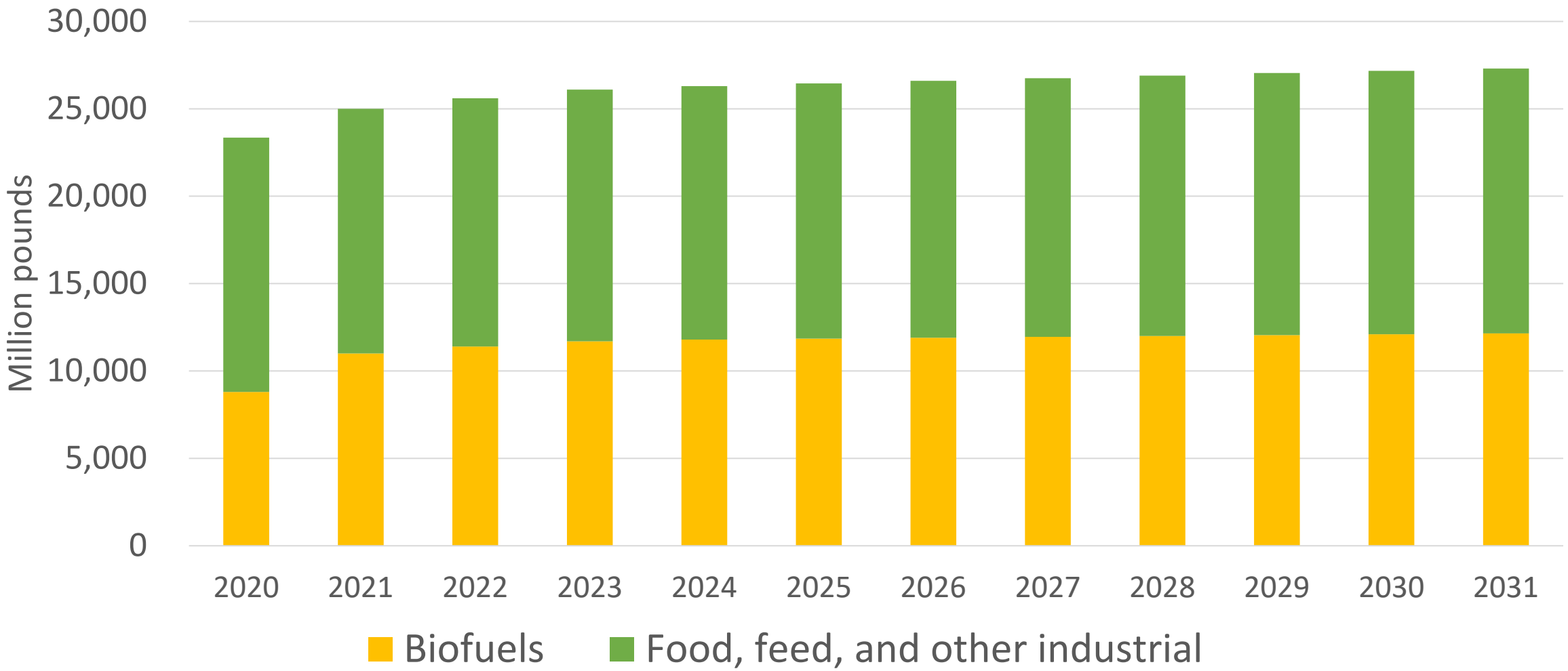
Renewable diesel capacity



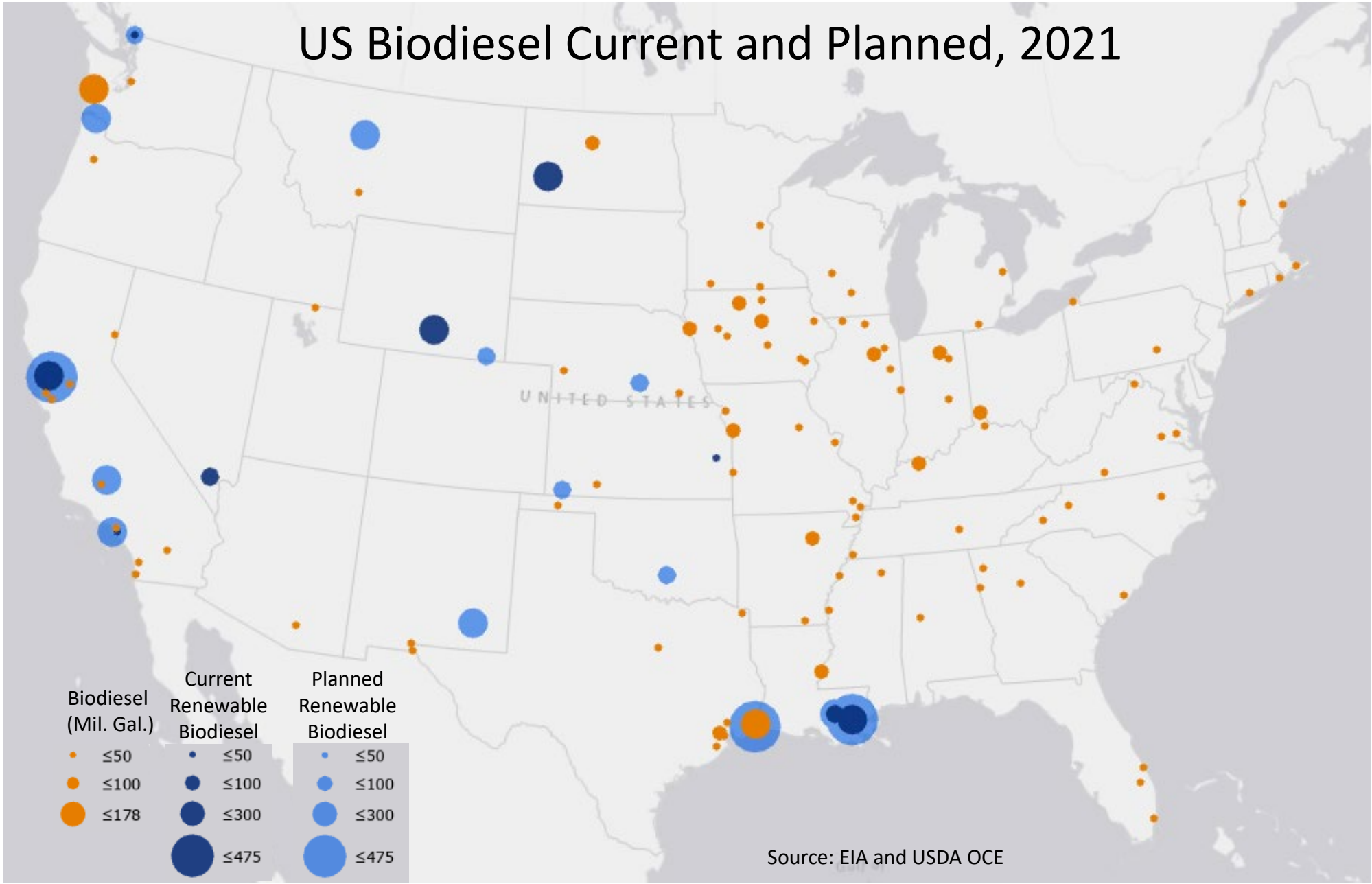
Source: Graph by the U.S. Energy Information Administration (EIA), based on data from company announcements in trade press

Soyoil: Domestic disappearance

Definition change & expansion of biofuel demand

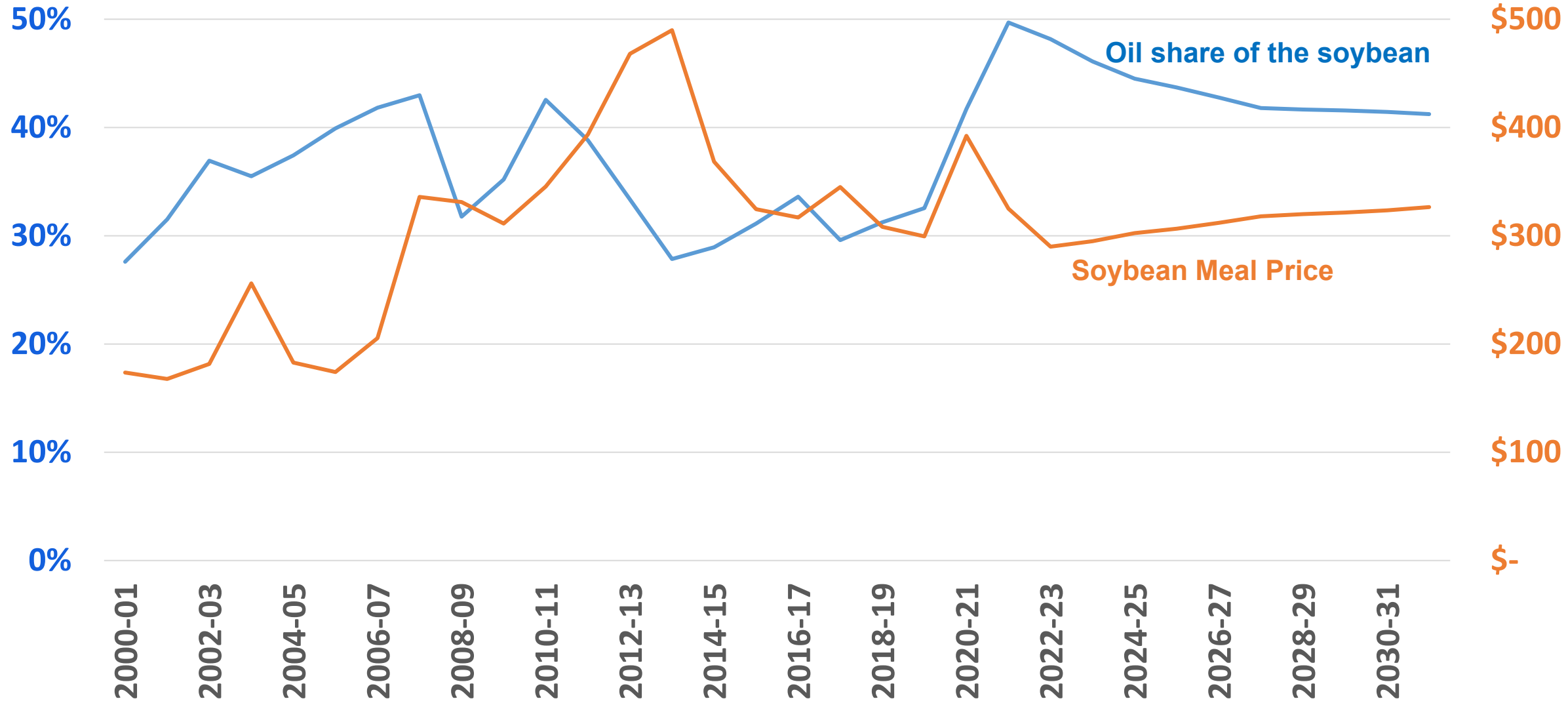


US Biodiesel Current and Planned, 2021

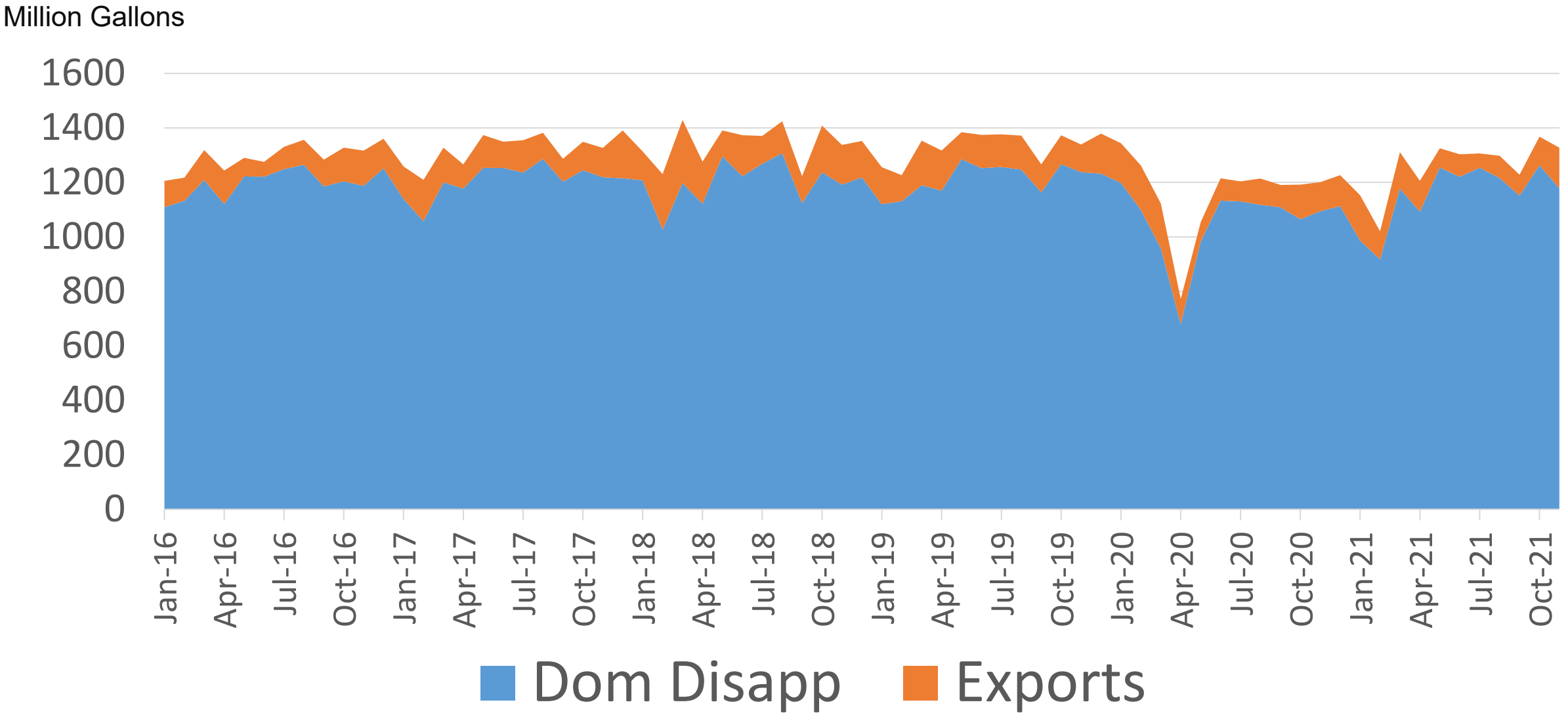


Soybean oil a greater share of the bean

but with some moderation going forward

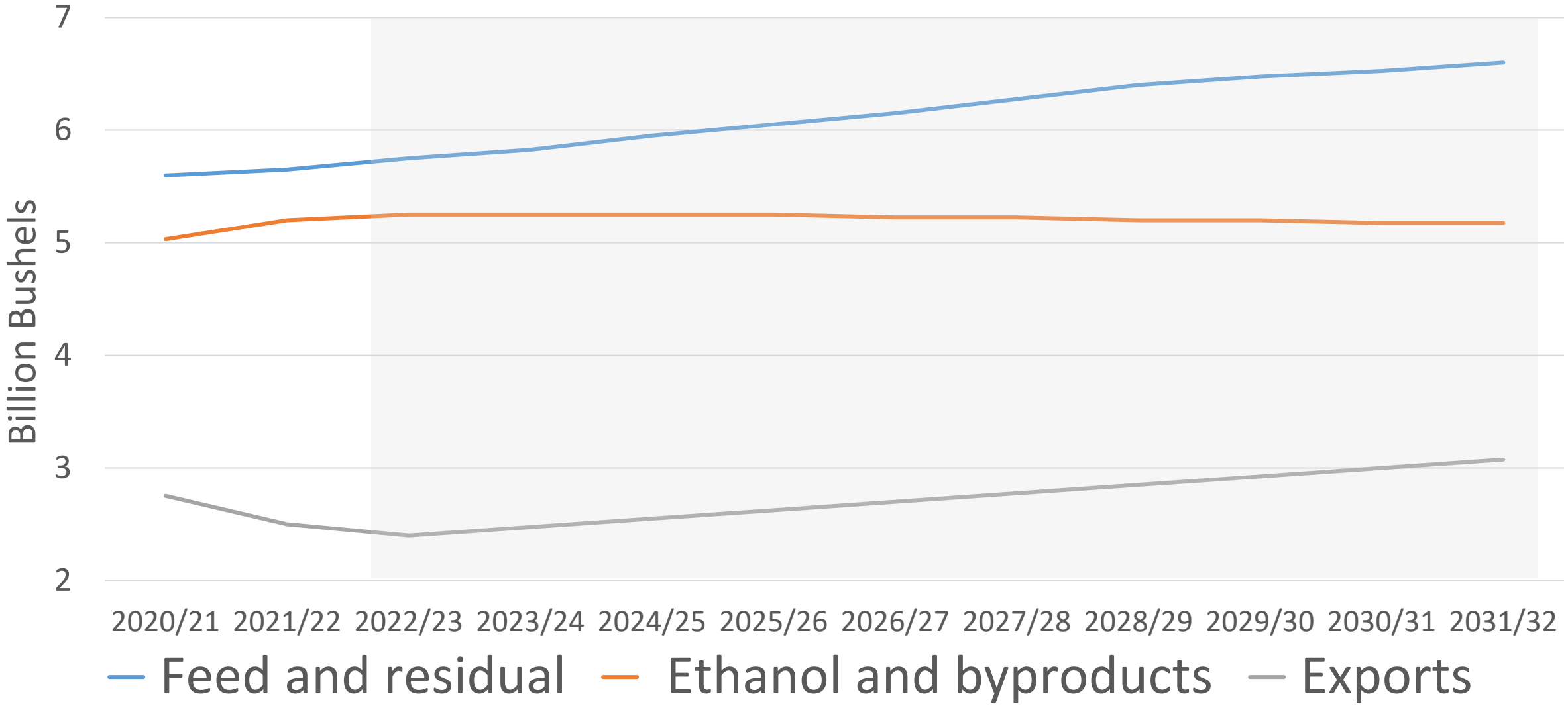


Ethanol Domestic consumption and Exports



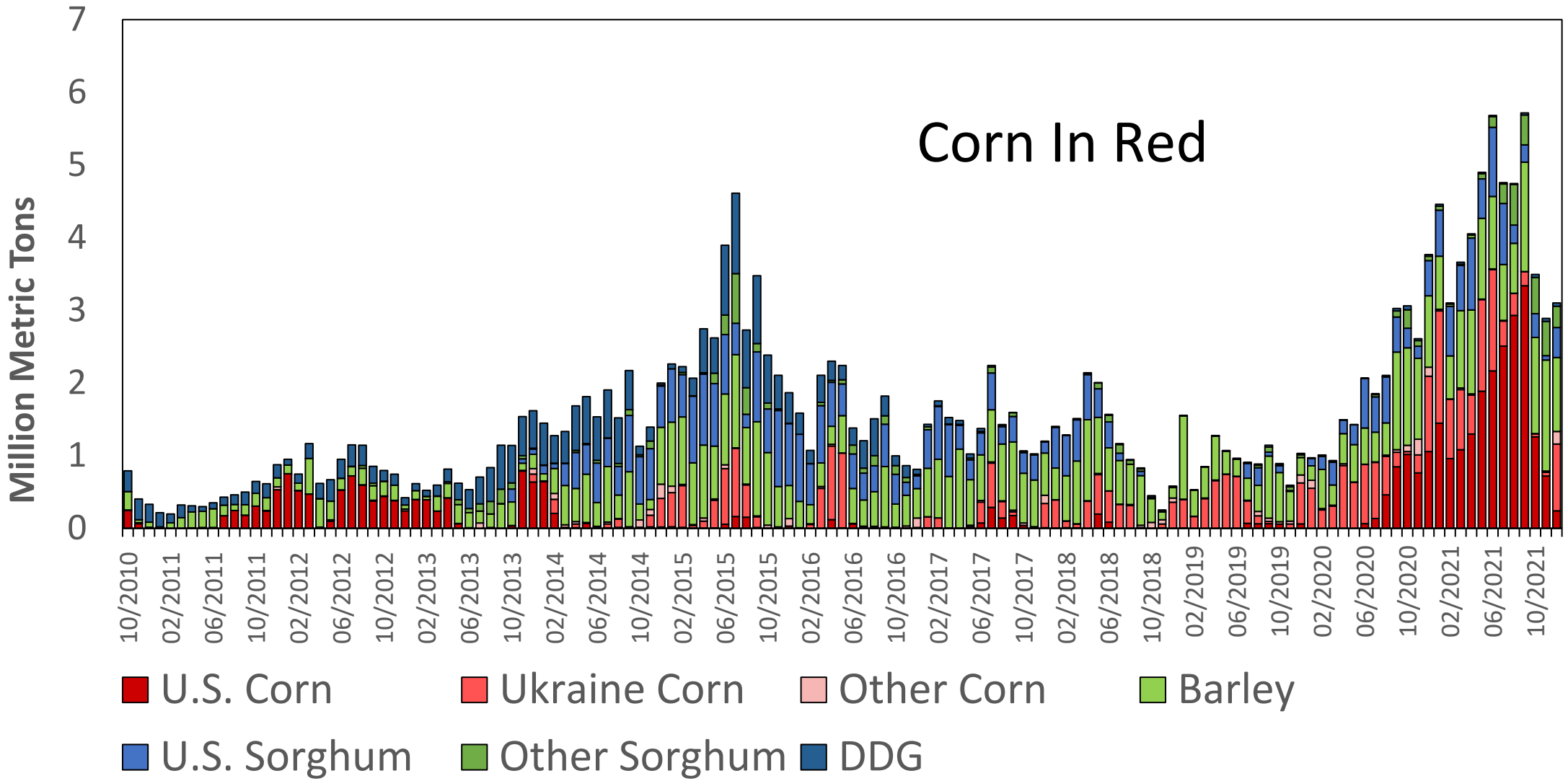
Domestic feed use and trade to absorb yield growth

Exports and domestic crush demand shown



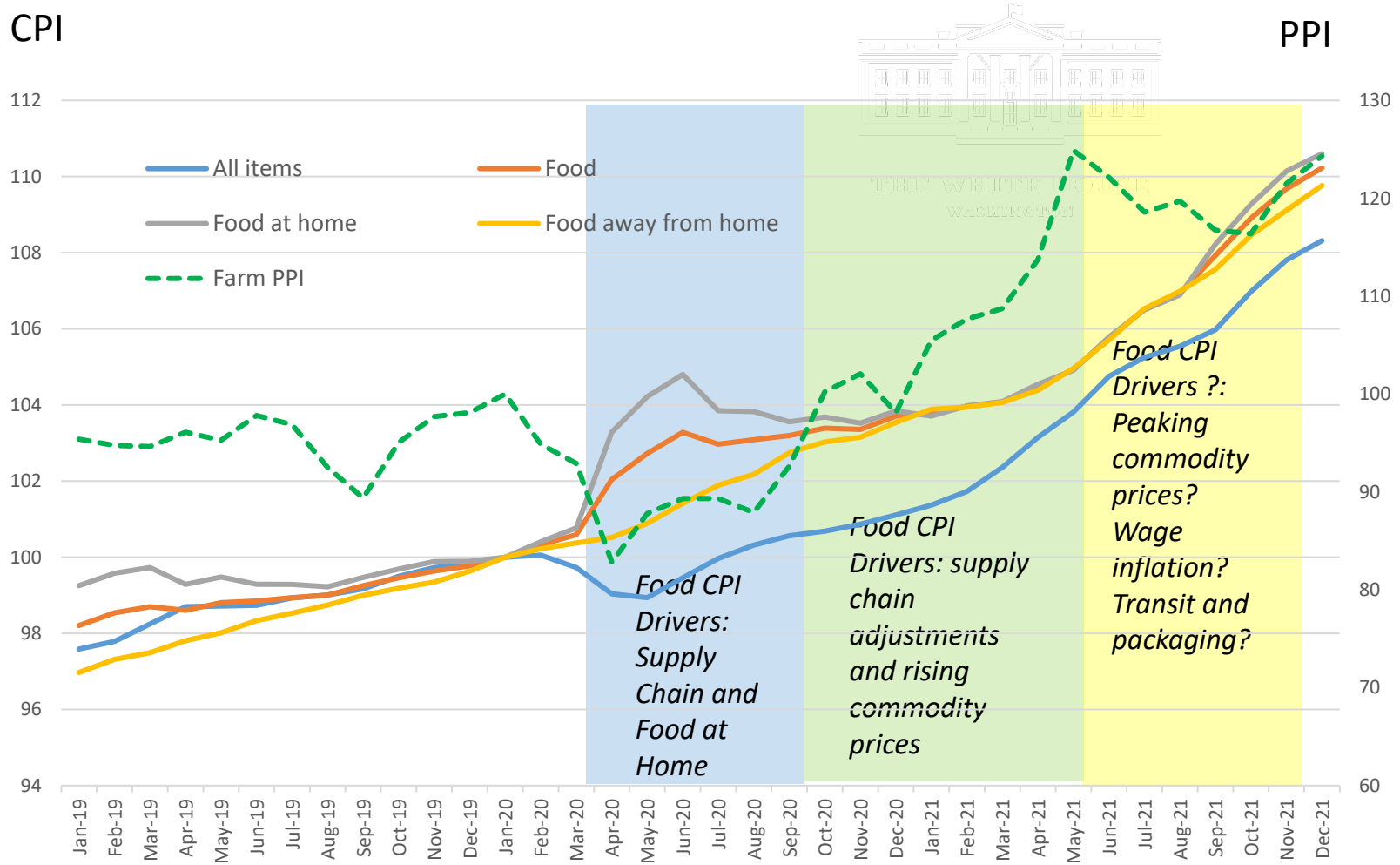
Source: USDA long-term agricultural projections to 2031. From data available through October 2021 WASDE

Monthly Chinese Corn/Sorghum/Barley Imports By Origin



Source: TDM

Supply chain disruptions, rising PPI and CPI



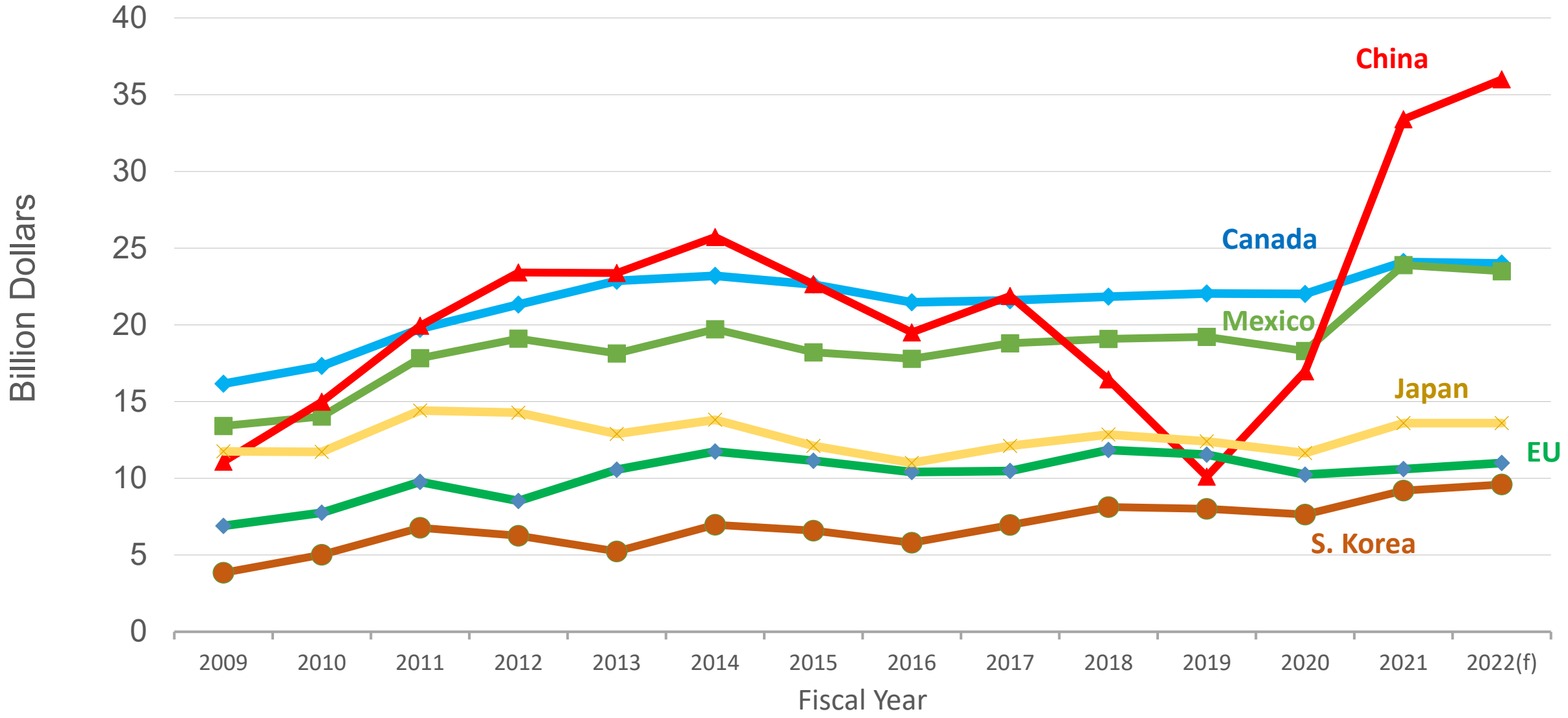
- Early in the pandemic, significant supply chain disruptions pushed down ag commodity prices and pushed up food prices
- As those disruptions moderated commodity prices began to rise through a combination of smaller supplies and robust domestic and international demand, holding up food prices.
- Commodity prices are expected to moderate but a return to food away from home, and associated labor and transport costs may have unknown future impacts on food price inflation.

Sample Corn and Soybean Returns, Central Illinois, High-Productivity Farmland.

	Corn				Soybeans			
	2020	2021P	2022P		2020	2021P	2022P	
Yield per acre	214	235	220		72	73	68	
Price per bu	$4.33	$5.25	$5.00	**$4.60**	$11.22	$13.00	$12.00	**$11.25**
Crop revenue	$927	$1,234	$1,100		$808	$949	$816	
ARC/PLC, Ad Hoc, Crop Insc.	$77	$0	$0		$49	$10	$0	
Gross revenue	**$1,004**	**$1,234**	**$1,100**	**$1,012**	**$857**	**$959**	**$816**	**$765**
Fertilizers	143	153	223		42	45	102	
Pesticides	78	61	66		47	50	54	
Seed	112	115	124		71	74	80	
Other (drying, storage, CI)	58	61	63		19	21	23	
Total direct costs	**$391**	**$390**	**$476**		**$179**	**$190**	**$259**	
Machine hire/lease	16	17	19		14	14	16	
Machine repair	28	30	33		24	21	23	
Fuel and oil	15	18	20		13	12	13	
Othe (inc. Mach. depr.)	72	75	79		62	61	65	
Total power costs	**$131**	**$140**	**$151**		**$113**	**$108**	**$117**	
Hired labor	20	21	23		20	21	22	
Other (bld repair & depr, Insc, inter)	57	56	58		52	51	53	
Total overhead costs	**$77**	**$77**	**$81**		**$72**	**$72**	**$75**	
Total non-land costs	**$599**	**$607**	**$708**	**$708**	**$364**	**$370**	**$451**	**$451**
Operator and land return	**$405**	**$627**	**$392**	**$304**	**$493**	**$589**	**$365**	**$314**
Land costs	279	284	305	305	279	284	305	305
Farmer return	**$126**	**$343**	**$87**	**-$1**	**$214**	**$305**	**$60**	**$9**

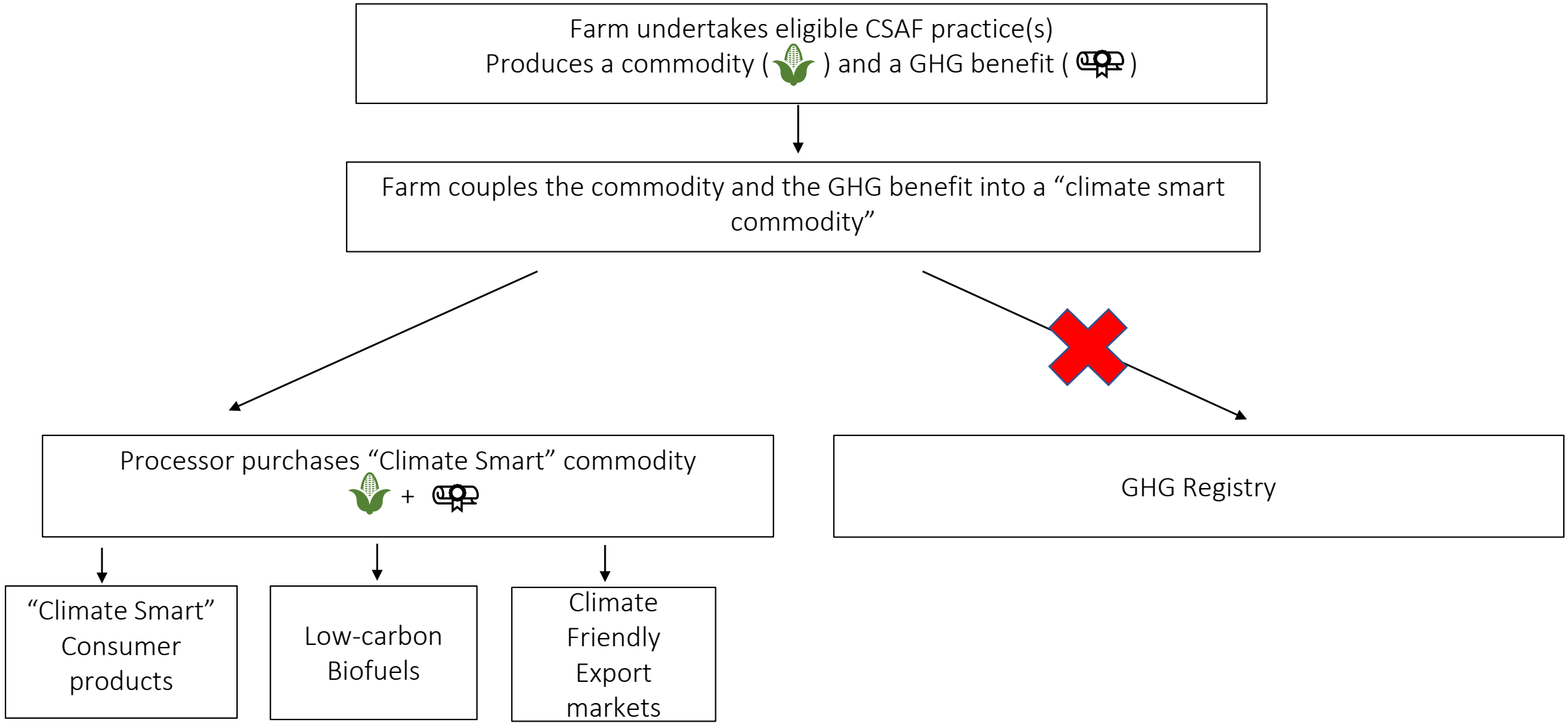
*base budget courtesy of Gary Schnitkey U of IL

Top U.S. Ag Markets



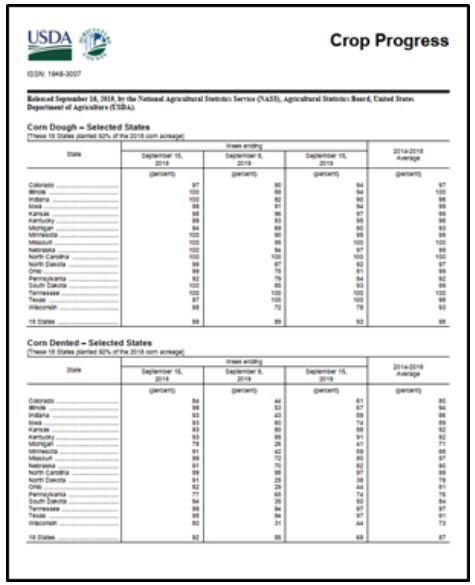
Climate Smart Ag pilot programs

Climate-Smart Market Valuation Pathways



Visit the OCE website for the latest USDA commodity reports and Agriculture Outlook Forum information @ www.usda.gov/oce

Questions? Seth.Meyer@usda.gov


USDA
Crop Progress

ISSN: 1948-3007

Released September 16, 2019, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, United States Department of Agriculture (USDA).

Corn Dough – Selected States

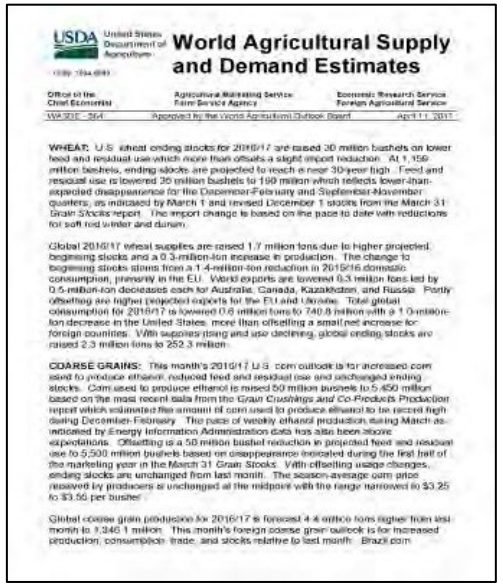
[These 18 States planted 92% of the 2019 corn acreage]

State	Week ending September 15, 2019	Week ending September 8, 2019	Week ending September 15, 2018	2014-2018 Average
	(percent)	(percent)	(percent)	(percent)
Colorado	97	90	94	97
Illinois	100	98	94	100
Indiana	100	82	90	99
Iowa	99	91	94	99
Kansas	98	86	97	99
Kentucky	99	83	95	99
Michigan	94	69	93	99
Minnesota	100	90	95	99
Missouri	100	98	100	100
Nebraska	100	94	97	99
North Carolina	100	100	100	100
North Dakota	99	87	93	97
Ohio	99	76	91	99
Pennsylvania	92	79	84	93
South Dakota	100	88	100	99
Tennessee	100	100	100	100
Texas	97	100	100	99
Wisconsin	96	72	79	93
18 States	99	89	93	98

Corn Dented – Selected States

[These 18 States planted 92% of the 2019 corn acreage]

State	Week ending September 15, 2019	Week ending September 8, 2019	Week ending September 15, 2018	2014-2018 Average
	(percent)	(percent)	(percent)	(percent)
Colorado	84	64	61	80
Illinois	99	93	97	94
Indiana	93	63	59	86
Iowa	93	80	74	92
Kansas	93	65	61	82
Kentucky	73	28	41	71
Michigan	91	72	80	97
Minnesota	99	72	80	97
Missouri	91	75	82	96
Nebraska	99	95	97	99
North Carolina	91	25	54	76
North Dakota	82	29	44	81
Ohio	77	44	71	94
Pennsylvania	84	55	65	84
South Dakota	99	84	97	97
Tennessee	95	94	97	91
Texas	80	31	44	73
Wisconsin	92	55	68	87


USDA United States Department of Agriculture

World Agricultural Supply and Demand Estimates

Office of the Chief Economist | Agricultural Marketing Service; Farm Service Agency | Economic Research Service; Foreign Agricultural Service

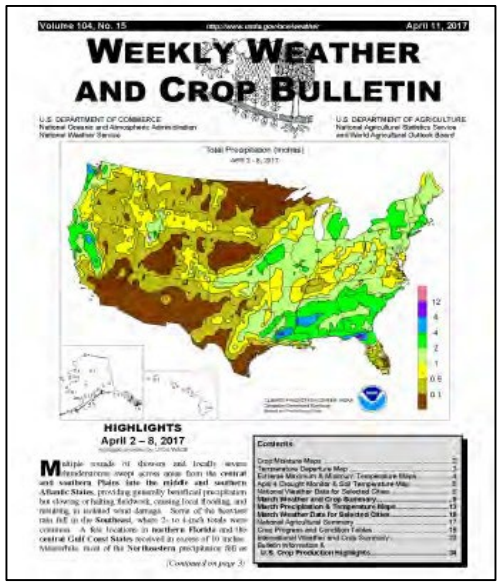
WASDE - 594 | Approved by the World Agricultural Outlook Board | April 11, 2017

WHEAT: U.S. wheat ending stocks for 2016/17 are raised 30 million bushels on lower feed and residual use which more than offsets a slight import reduction. At 1,159 million bushels, ending stocks are projected to reach a near 30-year high. Feed and residual use is lowered 35 million bushels to 190 million which reflects lower-than-expected disappearance for the December-February and September-November quarters, as indicated by March 1 and revised December 1 stocks from the March 31 Grain Stocks report. The import change is based on the pace to date with reductions for soft red winter and durum.

Global 2016/17 wheat supplies are raised 1.7 million tons due to higher projected beginning stocks and a 0.3-million-ton increase in production. The change to beginning stocks stems from a 1.4-million-ton reduction in 2015/16 domestic consumption, primarily in the EU. World exports are lowered 0.3 million tons led by 0.5-million-ton decreases each for Australia, Canada, Kazakhstan, and Russia. Partly offsetting are higher projected exports for the EU and Ukraine. Total global consumption for 2016/17 is lowered 0.6 million tons to 740.8 million with a 1.0-million-ton decrease in the United States, more than offsetting a small net increase for foreign countries. With supplies rising and use declining, global ending stocks are raised 2.3 million tons to 252.3 million.

COARSE GRAINS: This month's 2016/17 U.S. corn outlook is for increased corn used to produce ethanol, reduced feed and residual use and unchanged ending stocks. Corn used to produce ethanol is raised 50 million bushels to 5,450 million based on the most recent data from the *Grain Crushings and Co-Products Production* report which estimated the amount of corn used to produce ethanol to be record high during December-February. The pace of weekly ethanol production during March as indicated by Energy Information Administration data has also been above expectations. Offsetting is a 50 million bushel reduction in projected feed and residual use to 5,500 million bushels based on disappearance indicated during the first half of the marketing year in the March 31 Grain Stocks. With offsetting usage changes, ending stocks are unchanged from last month. The season-average corn price received by producers is unchanged at the midpoint with the range narrowed to $3.25 to $3.55 per bushel.

Global coarse grain production for 2016/17 is forecast 4.4 million tons higher than last month to 1,346.1 million. This month's foreign coarse grain outlook is for increased production, consumption, trade, and stocks relative to last month. Brazil corn


Volume 104, No. 15 — April 11, 2017

WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE — National Oceanic and Atmospheric Administration — National Weather Service

U.S. DEPARTMENT OF AGRICULTURE — National Agricultural Statistics Service and World Agricultural Outlook Board

Total Precipitation (inches)

HIGHLIGHTS
April 2 – 8, 2017

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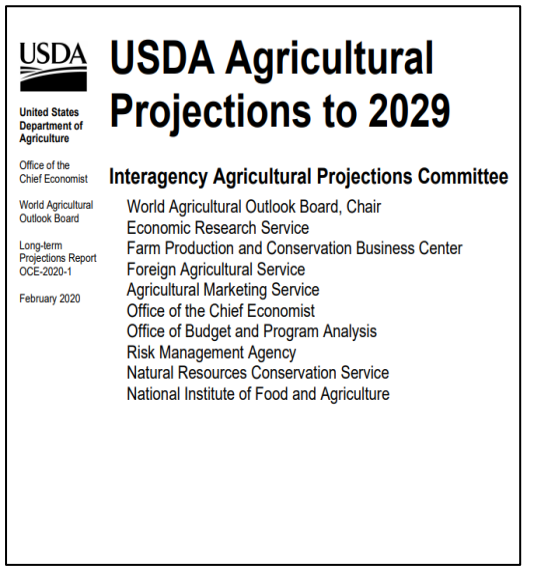
USDA

United States Department of Agriculture

Office of the Chief Economist

World Agricultural Outlook Board

Long-term Projections Report OCE-2020-1

February 2020

USDA Agricultural Projections to 2029

Interagency Agricultural Projections Committee

World Agricultural Outlook Board, Chair
Economic Research Service
Farm Production and Conservation Business Center
Foreign Agricultural Service
Agricultural Marketing Service
Office of the Chief Economist
Office of Budget and Program Analysis
Risk Management Agency
Natural Resources Conservation Service
National Institute of Food and Agriculture