

MARTINSON AG

RISK MANAGEMENT



Past, Present, Future 2023

Hype or Reality

- Last few years a lot of talk of biofuel demand
 - Especially renewable diesel fuel
 - Sustainable aviation fuel
- Is it just talk, or will it be reality?
- If reality, future for veg oil production looks strong, which will help support other grains

What is it?

Renewable diesel is a biofuel made by hydrotreating bio-based oil, fats, and grease.

This is the same method/technology used by petroleum refineries and is complex and expensive/capital intense.

Renewable diesel meets the diesel spec/is a drop-in fuel.

What is it not.

It is NOT biodiesel.

Biodiesel is a biofuel made by transesterification of vegetable oil, animal fat, or grease.

Biodiesel is not a drop-in fuel.

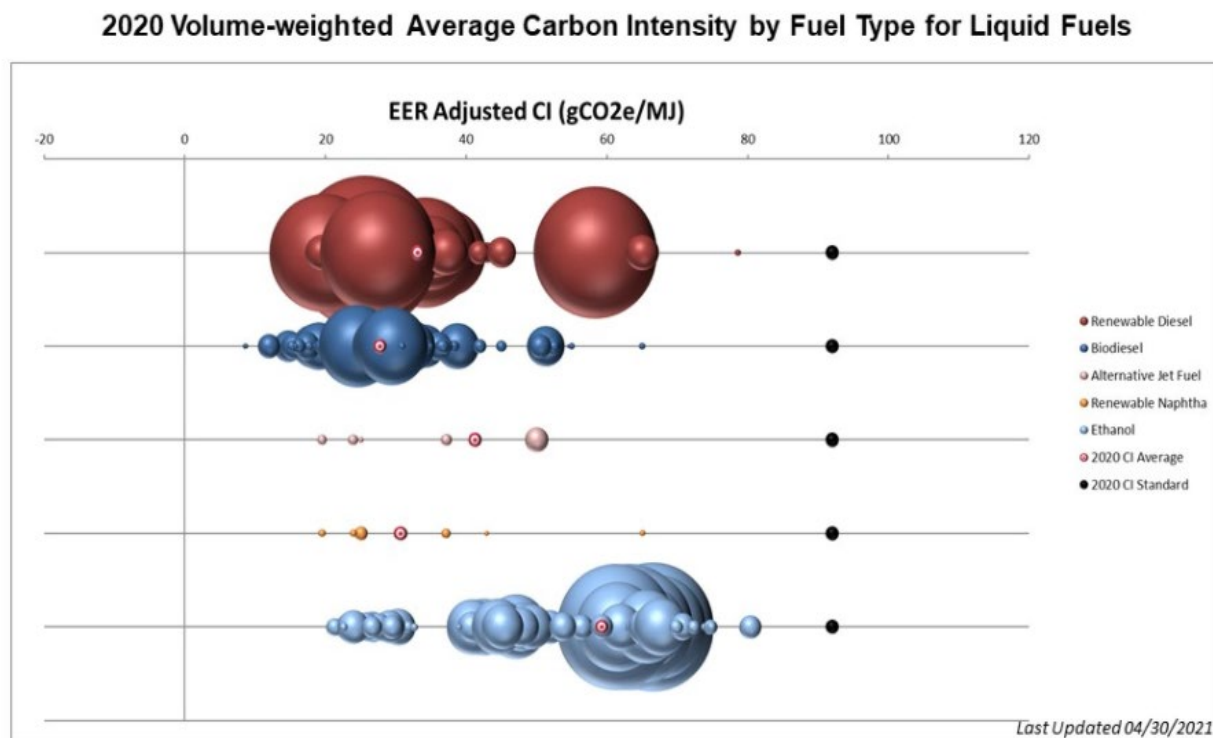
Why is there a market for Renewable Diesel?

California's low-carbon fuel standard, which incentivizes low-carbon fuels, has created a market with significant premiums for renewable diesel.

Other States with Biofuel Mandates or Incentives:
MO/FL/CT/OR/MS/AR/NE/MT/TN/NM/IA/IL/MN

Why is there a market for Renewable Diesel?

Renewable Diesel has an extremely small carbon footprint, as little as one-fifth that as petroleum-based diesel.



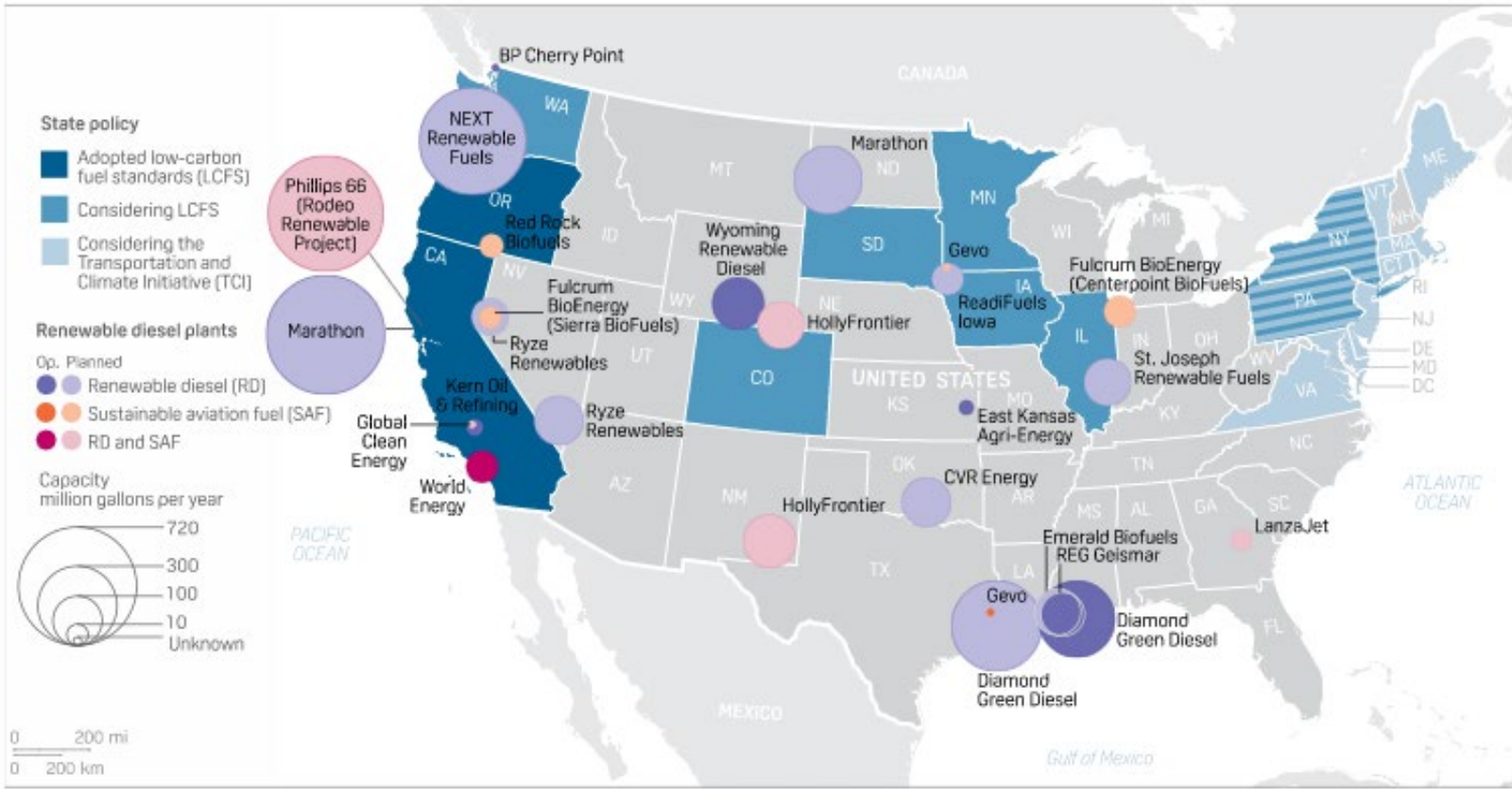
Source: California Air Resources Board

Why

- US biofuels well positioned to play major role in reducing greenhouse gas (ethanol, renewable diesel, sustainable aviation fuel)
- Renewable Diesel Fuel:
 - Less carbon intensive:
 - Crude: 100
 - Diesel: 90
 - Gas: 90
 - Jet Fuel: 89
 - LP: 83
 - Renewable: 41
 - Biodiesel: 38

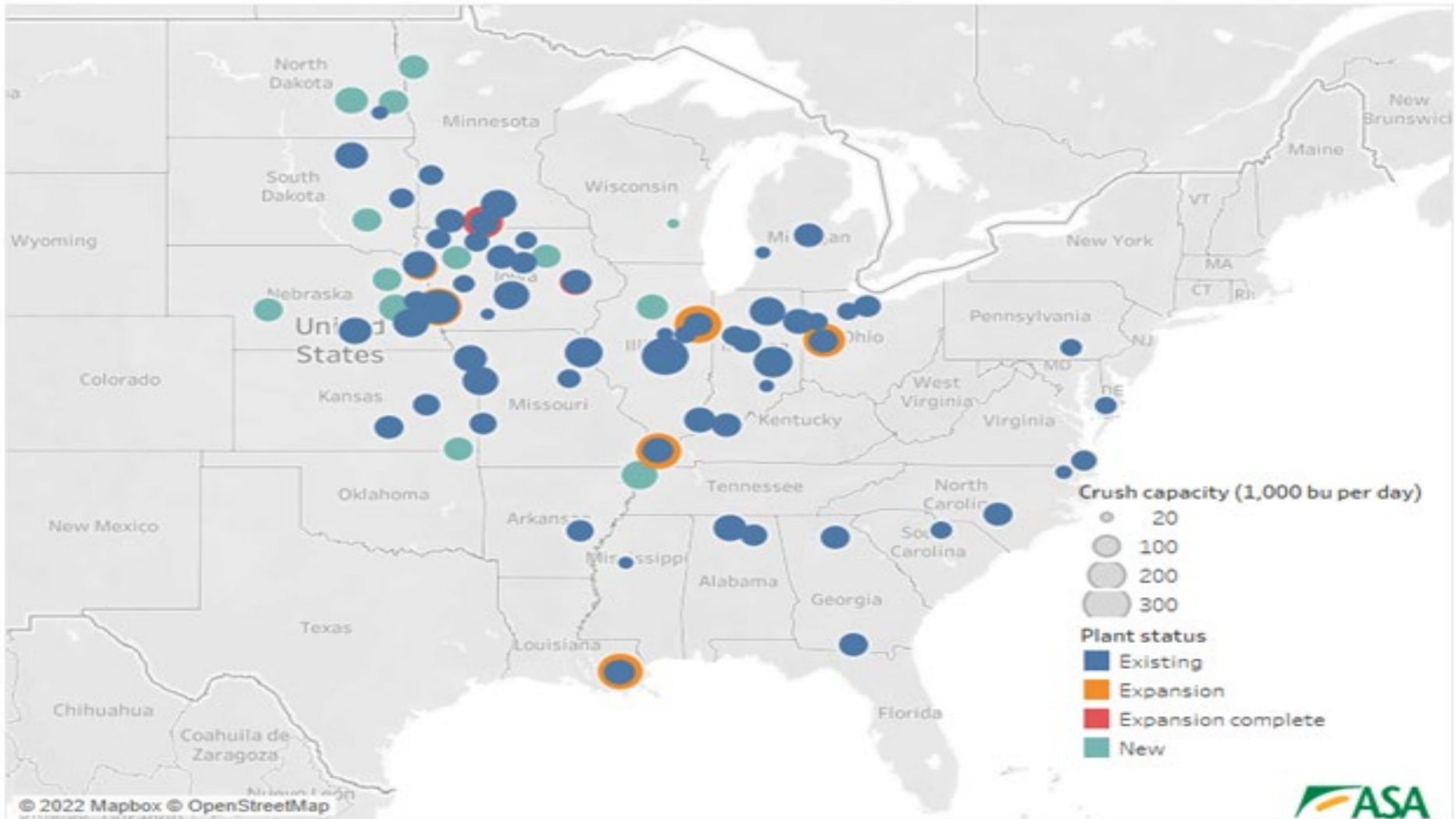
Renewable Diesel Expansion

US REFINERS JUMP ON THE RENEWABLE FUEL BANDWAGON



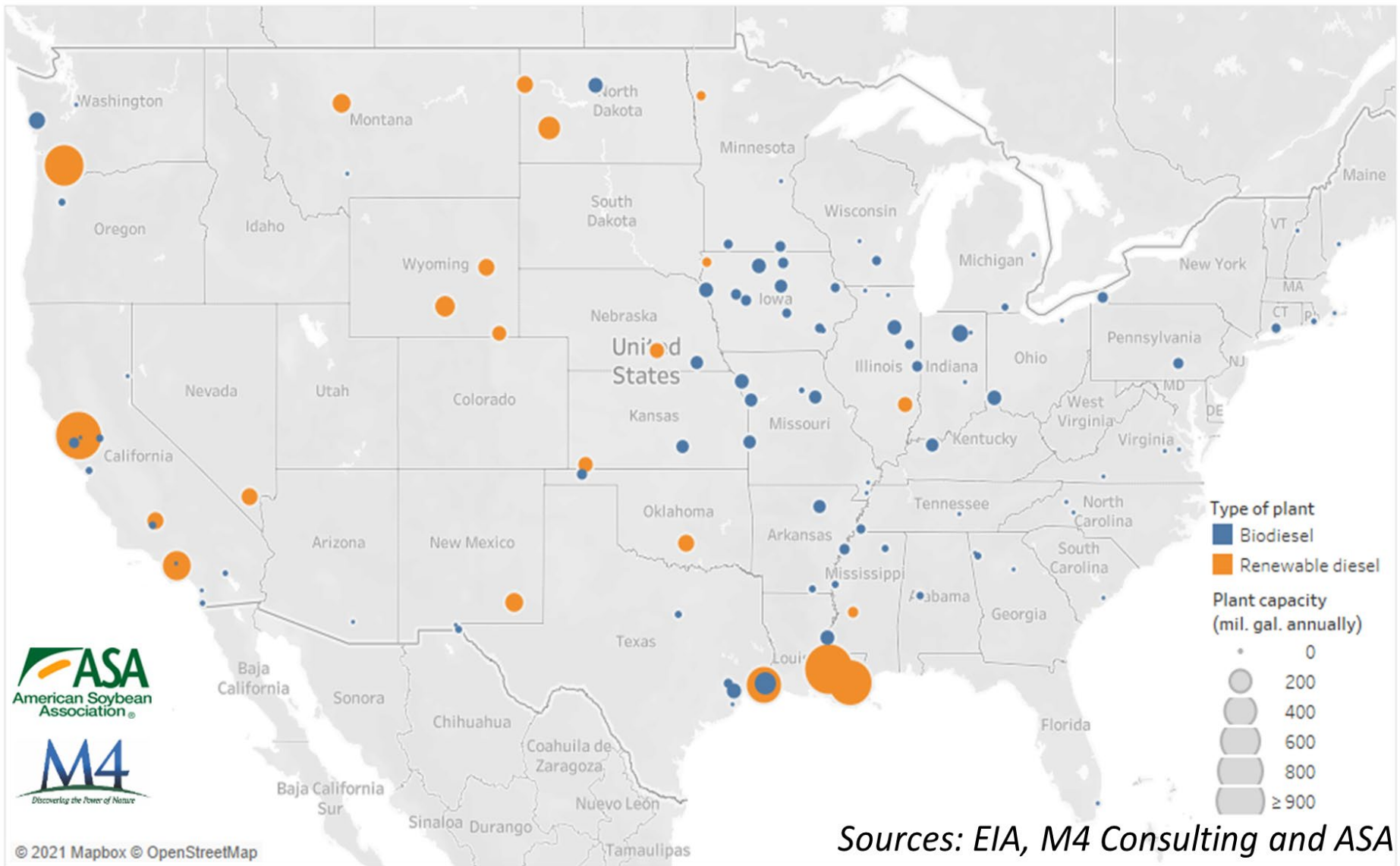
Source: S&P Global Platts; EIA

U.S. Soybean Crush Plants



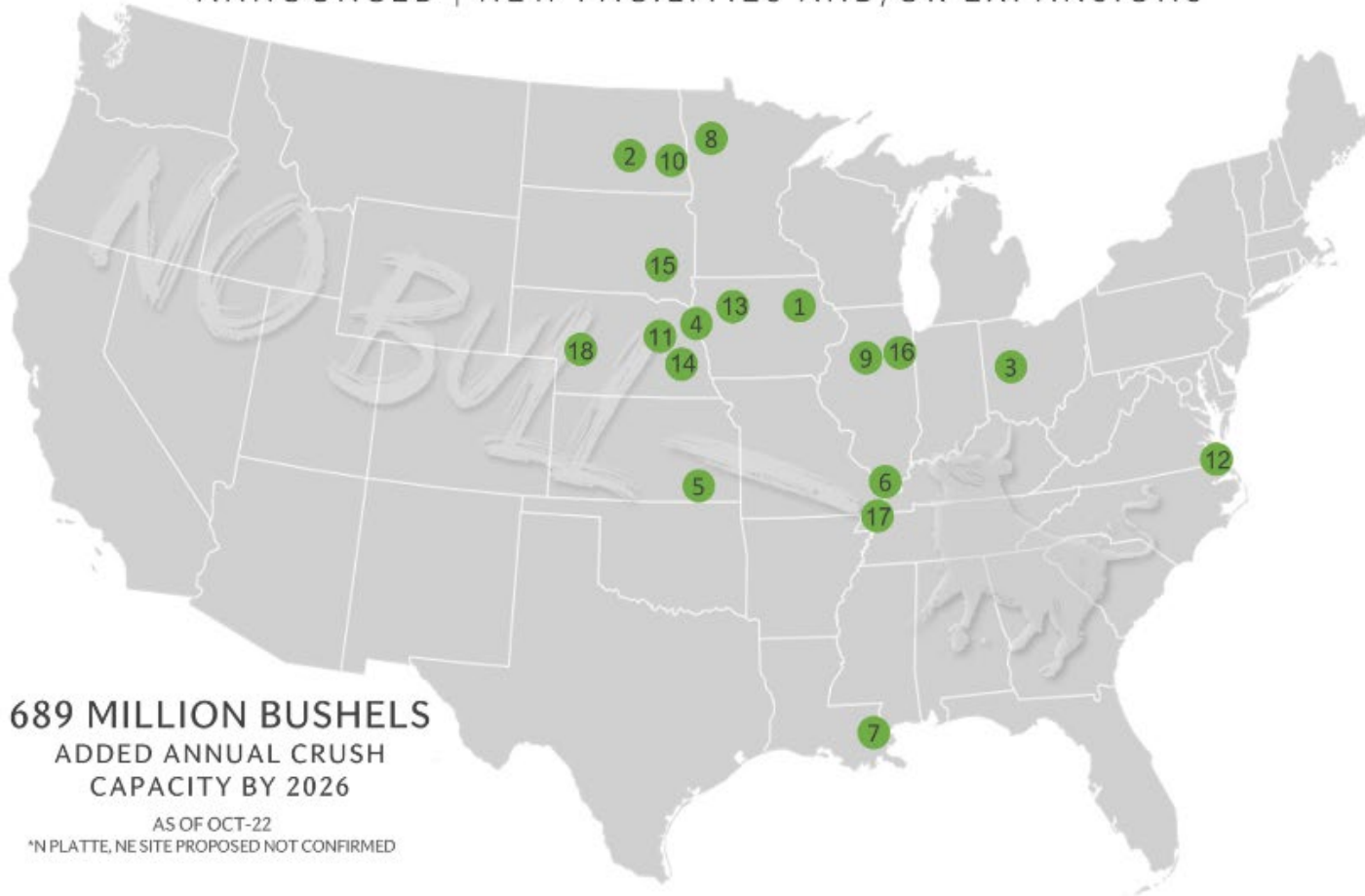
Source: Gordon Denny and American Soybean Association





U.S. SOYBEAN CRUSH CAPACITY EXPANSION

ANNOUNCED | NEW FACILITIES AND/OR EXPANSIONS



689 MILLION BUSHELS
 ADDED ANNUAL CRUSH
 CAPACITY BY 2026

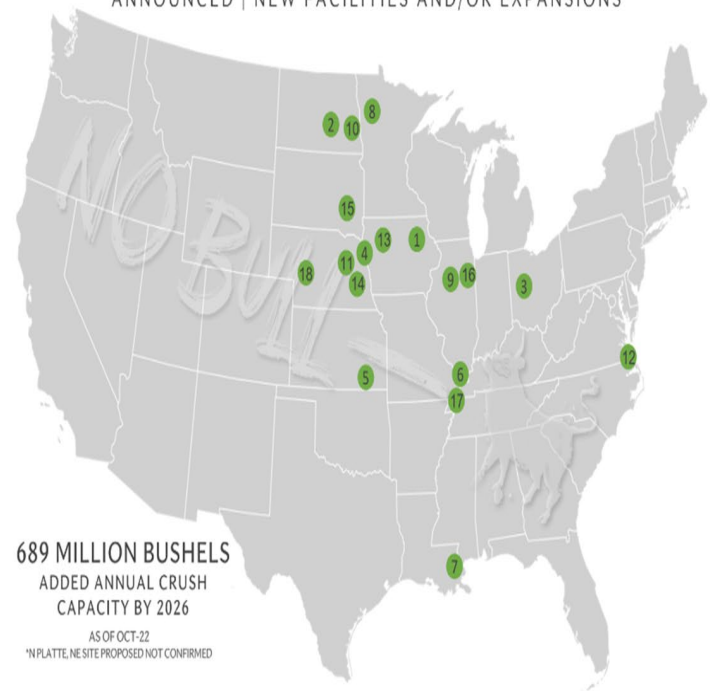
AS OF OCT-22

*N PLATTE, NE SITE PROPOSED NOT CONFIRMED

- 1 SHELL ROCK
- 2 ADM
- 3 Cargill
- 4 AGP
- 5 BARTLETT
- 6 BUNGE
- 7 BUNGE
- 8 Epitome Energy
- 9 MARQUIS
- 10 NDSP
- 11 Norfolk Crush LLC
- 12 AgriBusiness
- 13 PURCELL
- 14 AGP
- 15 SOYBEAN
- 16 BIOSCIENCE
- 17 Cargill
- 18 TBD*

- 1. Shellrock, IA: buying
- 2. Spiritwood ND: processing
- 3. OH: completed, buying
- 4. NE: completed, buying
- 5. KS: planning, 45 MB capacity, Q1 2024
- 6. IL: end of 2024
- 7. LA: end of 2024
- 8. Grand Forks
- 9. IL: permits, 2025
- 10. Casselton
- 11. NE: 38.5 MB, 2024
- 12. WV:
- 13. IA:
- 14. NE: 2025
- 15. Mitchell SD
- 16. IL: broke ground, 2030 expansion complete
- 17. TN: 2026
- 18. NE:

U.S. SOYBEAN CRUSH CAPACITY EXPANSION ANNOUNCED | NEW FACILITIES AND/OR EXPANSIONS



- 1 SHELL ROCK
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Crush Plants

- Green Bison – Spiritwood ND
 - Receiving soybeans since mid Sept
 - Official Grand Opening mid Nov
 - Not at full capacity yet, 150,000 bus per day
 - ADM/Marathon
- Casselton ND
 - \$400 million
 - Capacity of 42.5 MB
 - MSP and CGB
- High Plains Processing - Mitchell SD
 - Broke ground
 - \$500 million
 - BP

Crush Plants

- Epitome Energy – Grand Forks
 - \$418 million
 - Delayed, still expected to break ground spring of 2024
- SB Associates/CHS – WI
 - 16 MB
- Louis Dreyfus – OH
 - 55 MB
 - Start early 2024, complete 2026
- Early 2023
 - Currently have 60 crush plants in US crushing 2.3 BB
 - 23 plants – 10 expansion, 13 new
 - Capacity of 750 MB
 - Equates to needing 14 million more acres of soybeans

ND's Two New Plants Will

Crush 270,000 bushel per day or 95.5 MB per year

ND Soybean Production:

5.7 million acres planted

5.65 million acres harvested

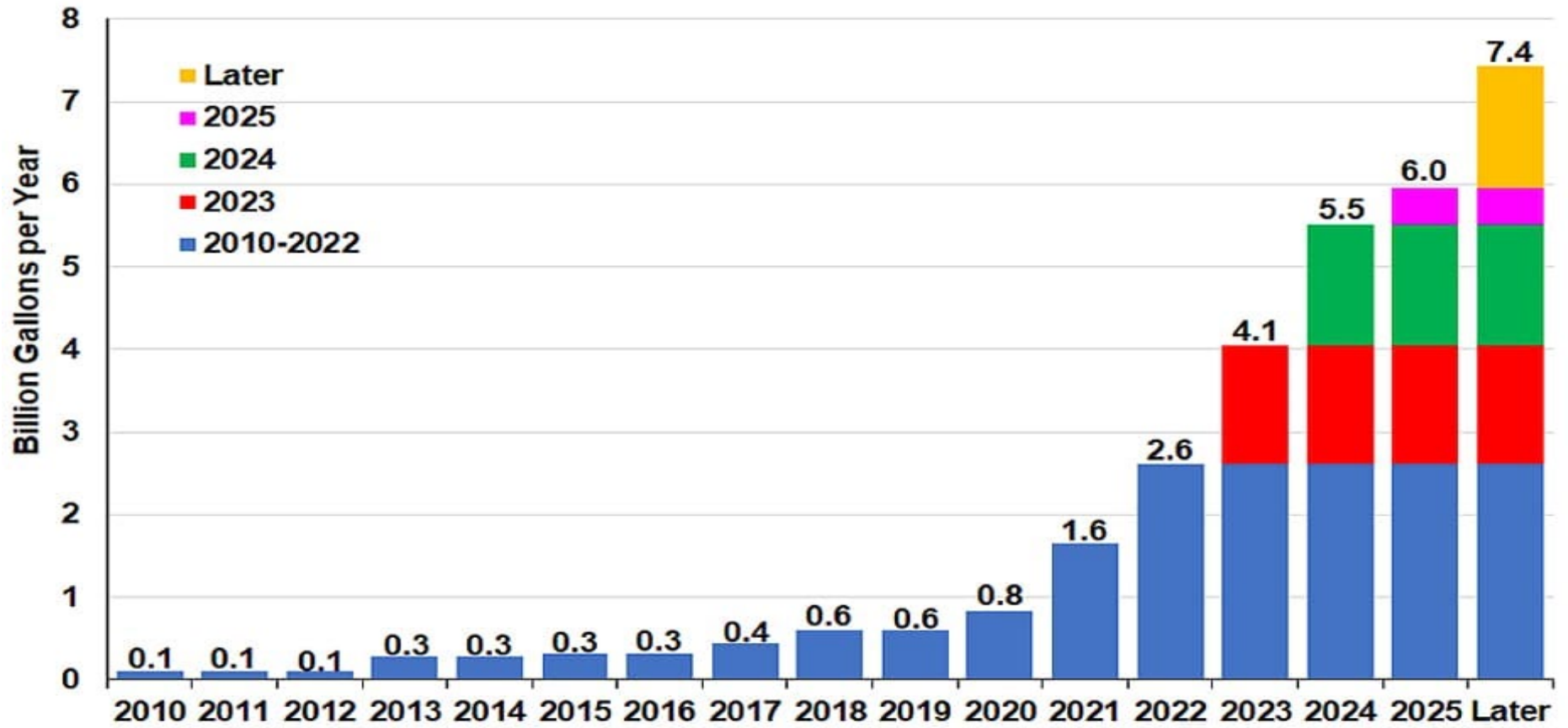
36.0 bus per acre

203 MB

Canada Too

- Announced Week of Thanksgiving
- Calgary, Alberta company proposed \$600 million aviation fuel project
- Main source of feedstuff: canola oil
- Proposed by Reconciliation Energy Transition
- Decision expected by August 2023

Renewable Diesel Nameplate Production Capacity, Projected 2023-2025



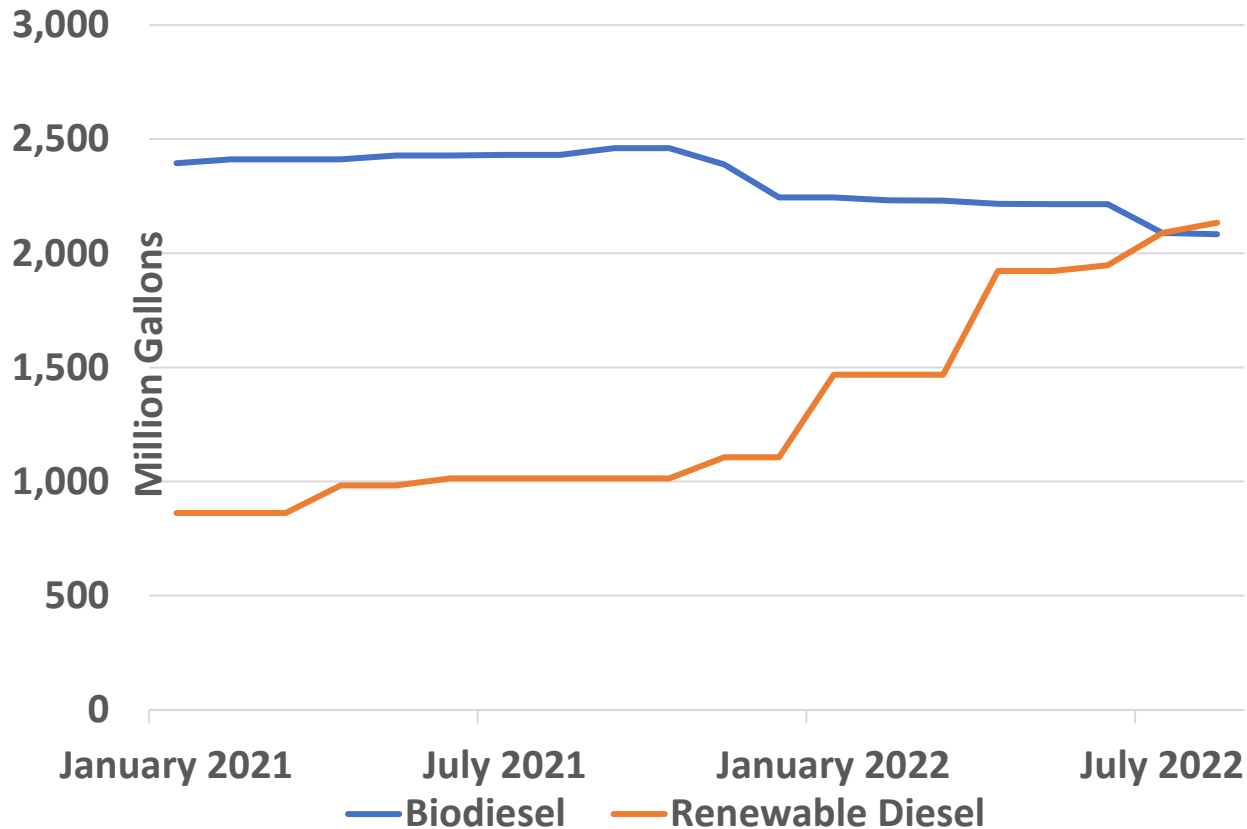
Sources: EIA, *Renderand Biodiesel* Magazines, and Other Industry Sources

Year

farmdocDAILY

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US production capacity



Source: Energy Information Administration

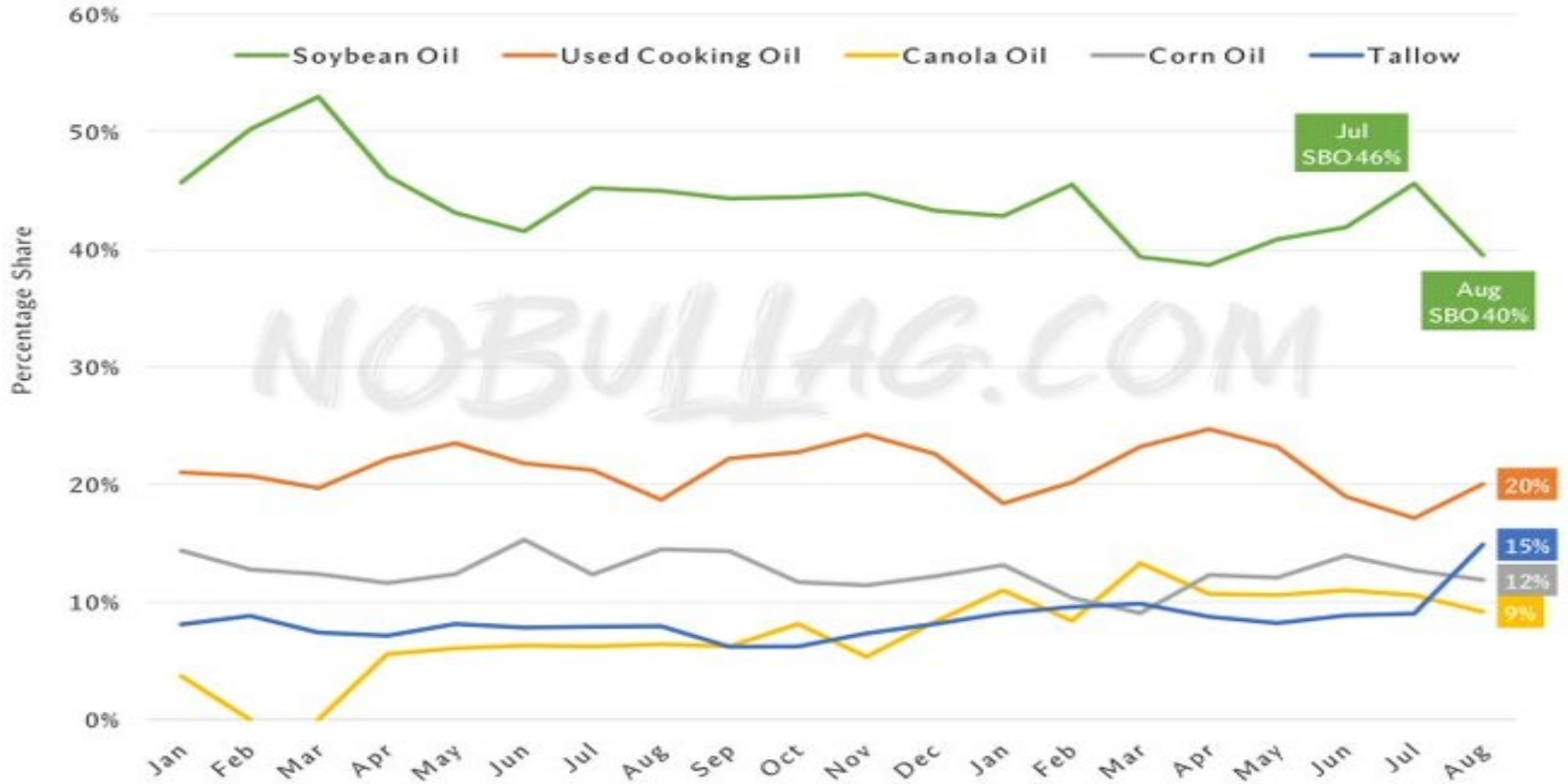


Biomass-based Diesel Production

Feedstock use by % share* | 2022-23

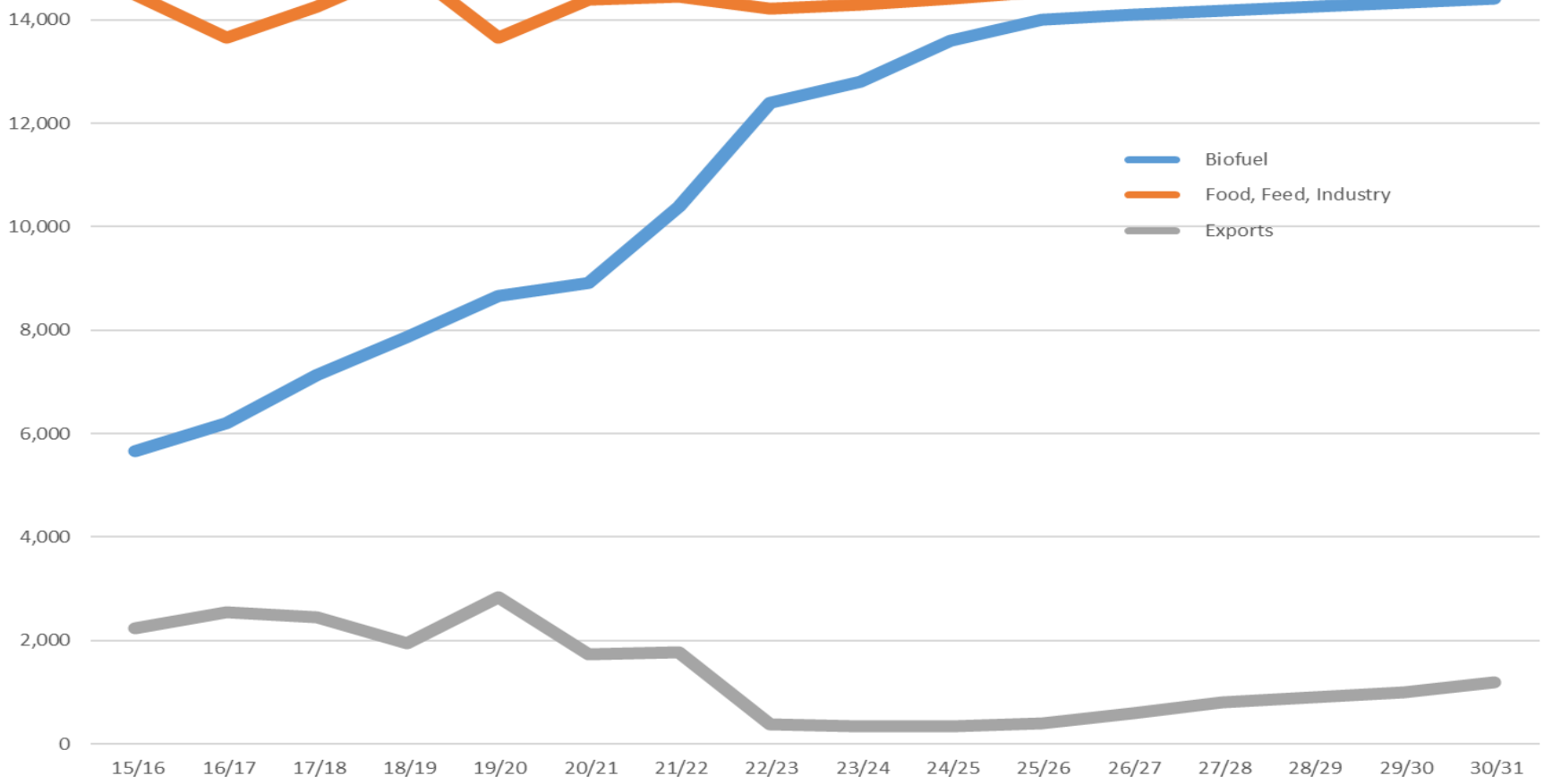


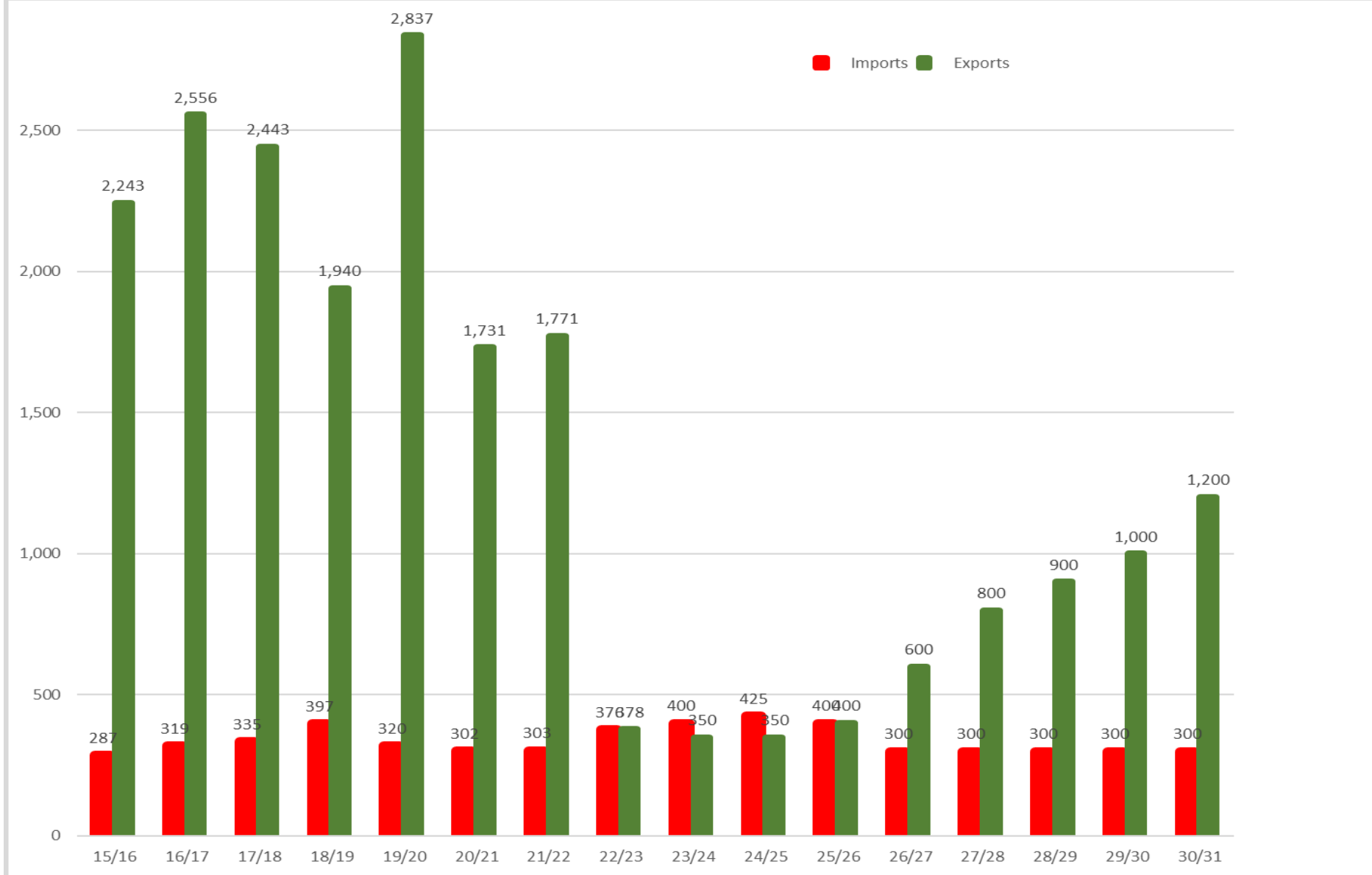
@SusanNOBULL



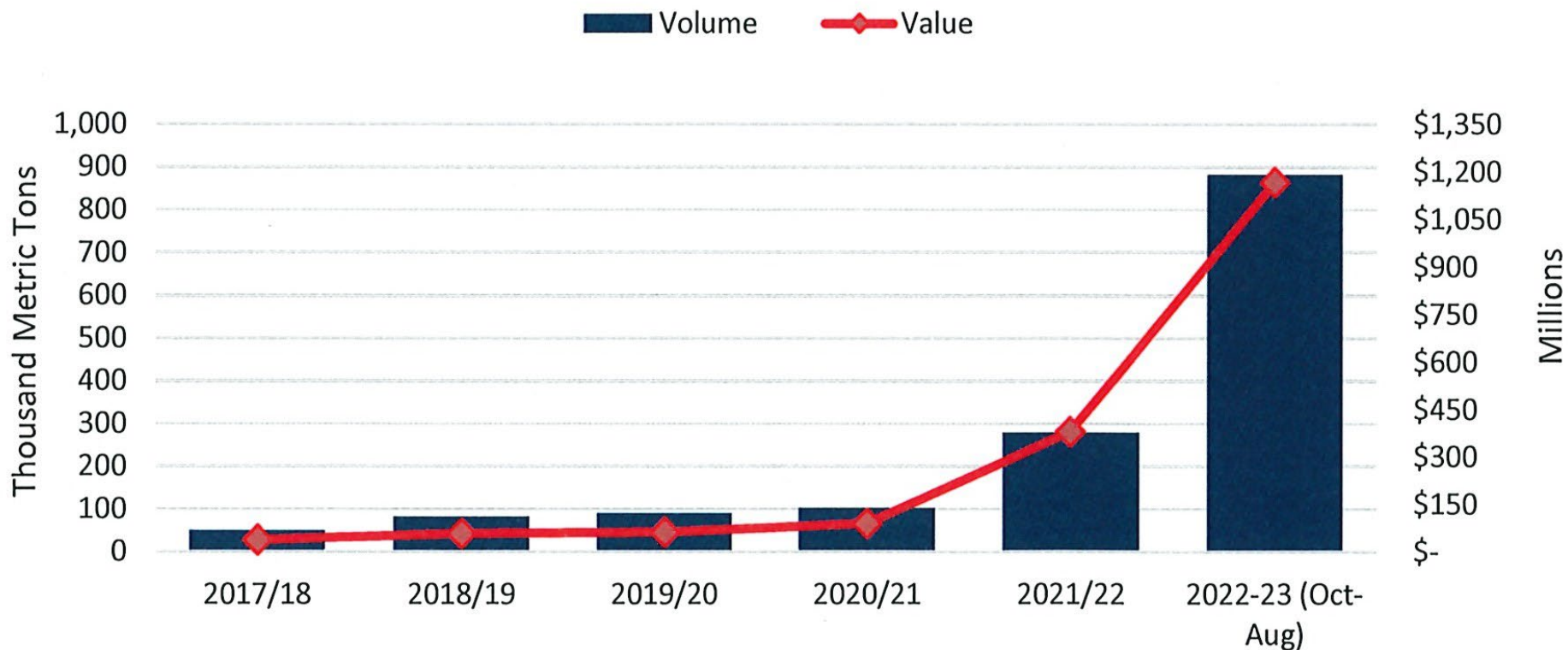
*Excludes Poultry Fat, White Grease & Other

SBO USE



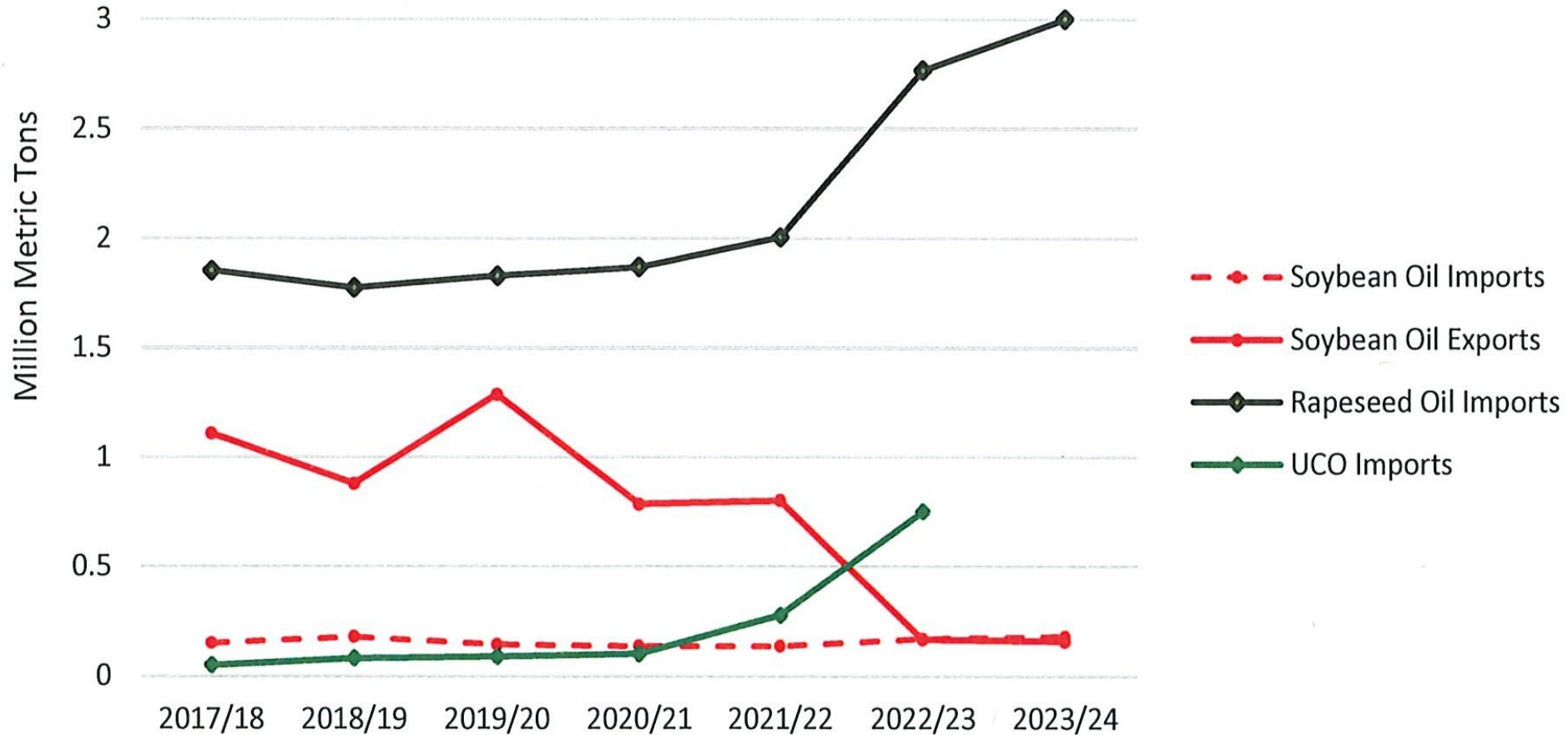


U.S. Imports of Animal and Vegetable Fats and Oils (Includes Used Cooking Oils - HS 151800)



Source: GATS, FAS USDA

U.S. Soybean, Canola and Used Cooking Oil Trade

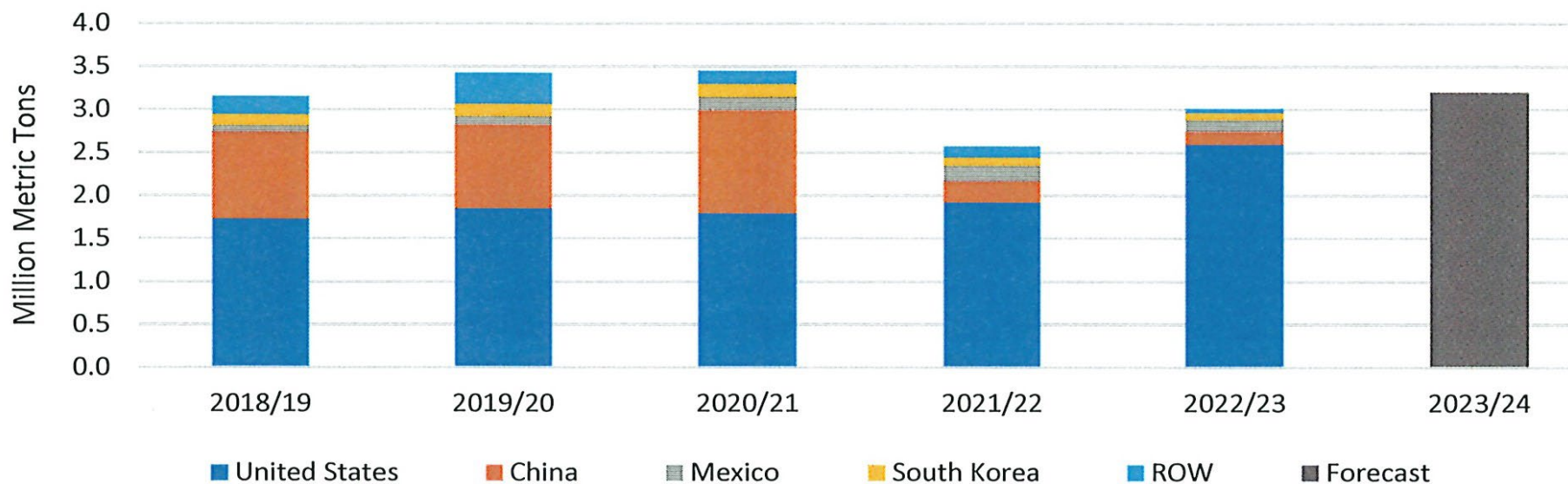


Source: PSD and GATS, FAS USDA

2022/23 Canada Rapeseed Oil Exports Hit Record to United States

Canada exported 3.0 million metric tons of rapeseed oil in MY 2022/23 (Aug-Jul) with a record volume of 2.6 million to the United States. After the December 2022 decision by the U.S. Environmental Protection Agency to approve rapeseed oil for the Renewable Fuel Standard program, rapeseed oil used for industrial purposes more than doubled in 2022/23.

Canada Rapeseed Oil Exports by Destination



Source: Trade Data Monitor, LLC

Sustainable Aviation Fuel

There is growing interest in sustainable aviation fuel (bio-based jet fuel) as part of larger efforts to decarbonize the economy.

This is coming from airlines themselves and from customers, including corporate and environmentally conscious customers.

There are a few different pathways to produce sustainable aviation fuel.

Long-term use of bio-based feedstocks (vegetable oil and sugar).

Sustainable Aviation

- United Airlines used 4 billions of jet fuel in 2023, equivalent to 40 million tons of carbon
- SAF has few players as cost is double regular fuel
 - Currently only .1% of world supply of jet fuel
- United has promised to use 10% SAF by 2030
 - As of 2022, at .08%
- Other Airlines:
 - American: .07%
 - Delta: .05%
 - DHL: 9.1 million gallons in 2022, 1.27% SAF

There isn't enough vegetable oil to do this

California makes up 10% of the US transportation fuel market.

25 billion pounds of soybean oil (ave annual prod)
~ 3 billion gallons of bio-based diesel

US diesel market is about 45 billion gallons per year

Each bushel of soybeans produces 11 pounds of bean oil which in turn produces .12 gallons of diesel

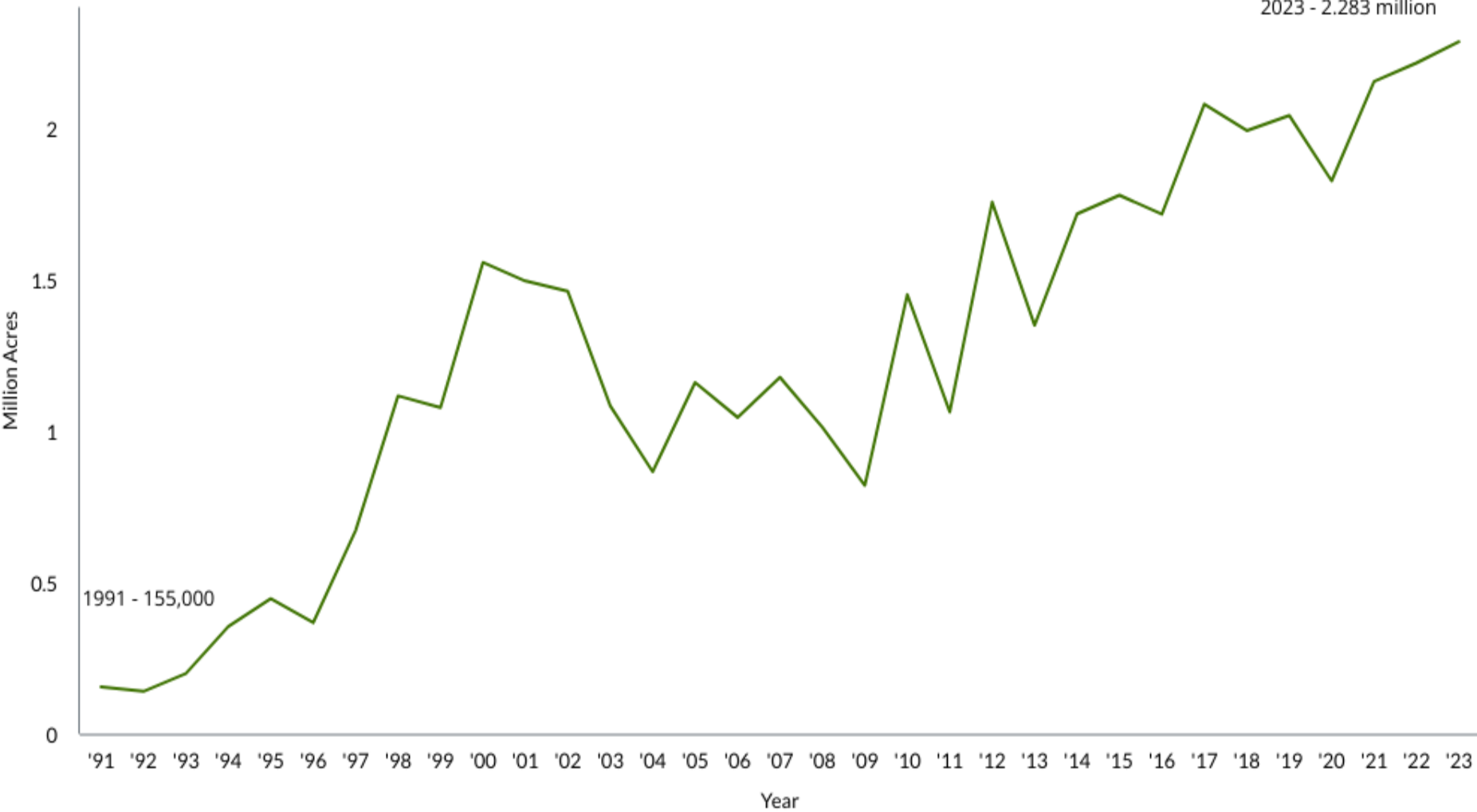
Added Bonus

- Renewable Diesel facilities would be able to repurpose bad canola or sunflower oil or potential production errors
- Will be dumping spot of substandard production
- Will result in less soybean oil going into human consumption market, allowing for canola oil to claim larger market share
- Unlikely canola share of biodiesel market will change from 10%

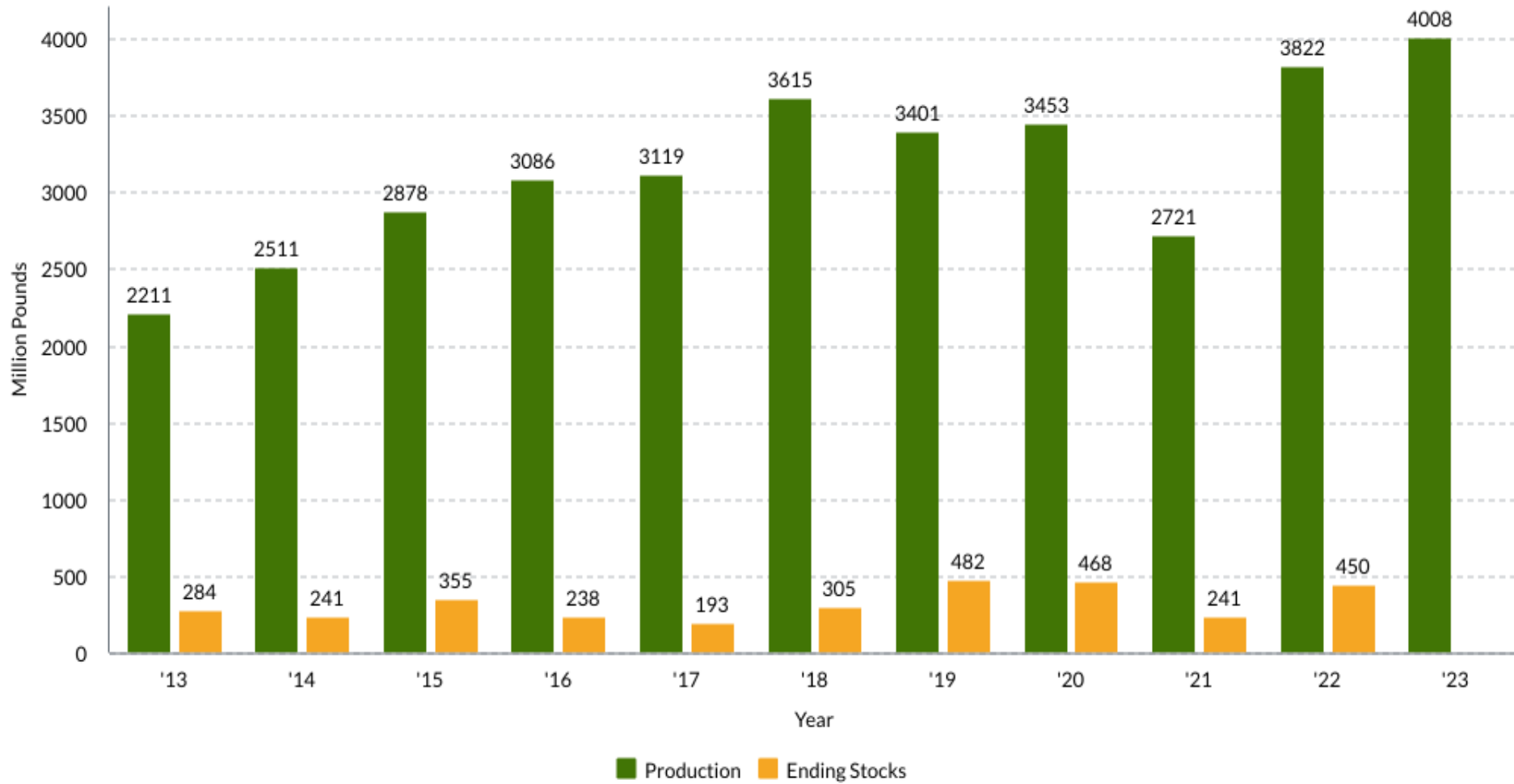
How many more soybean
crush plants are we going to
build in the Northern Plains?

How many more acres of
oilseeds are we going to grow
in coming years?

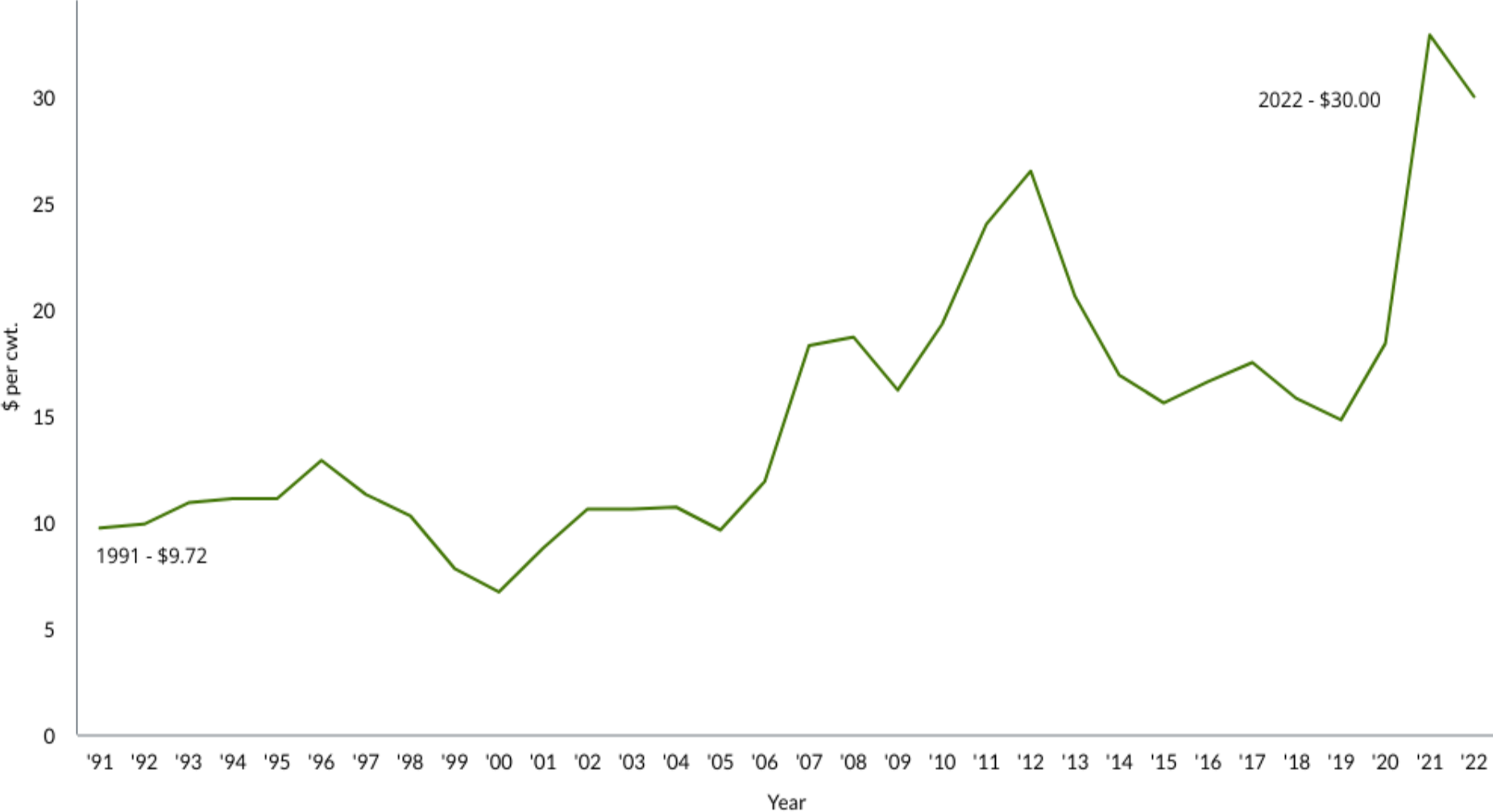
US Canola Planted Acres



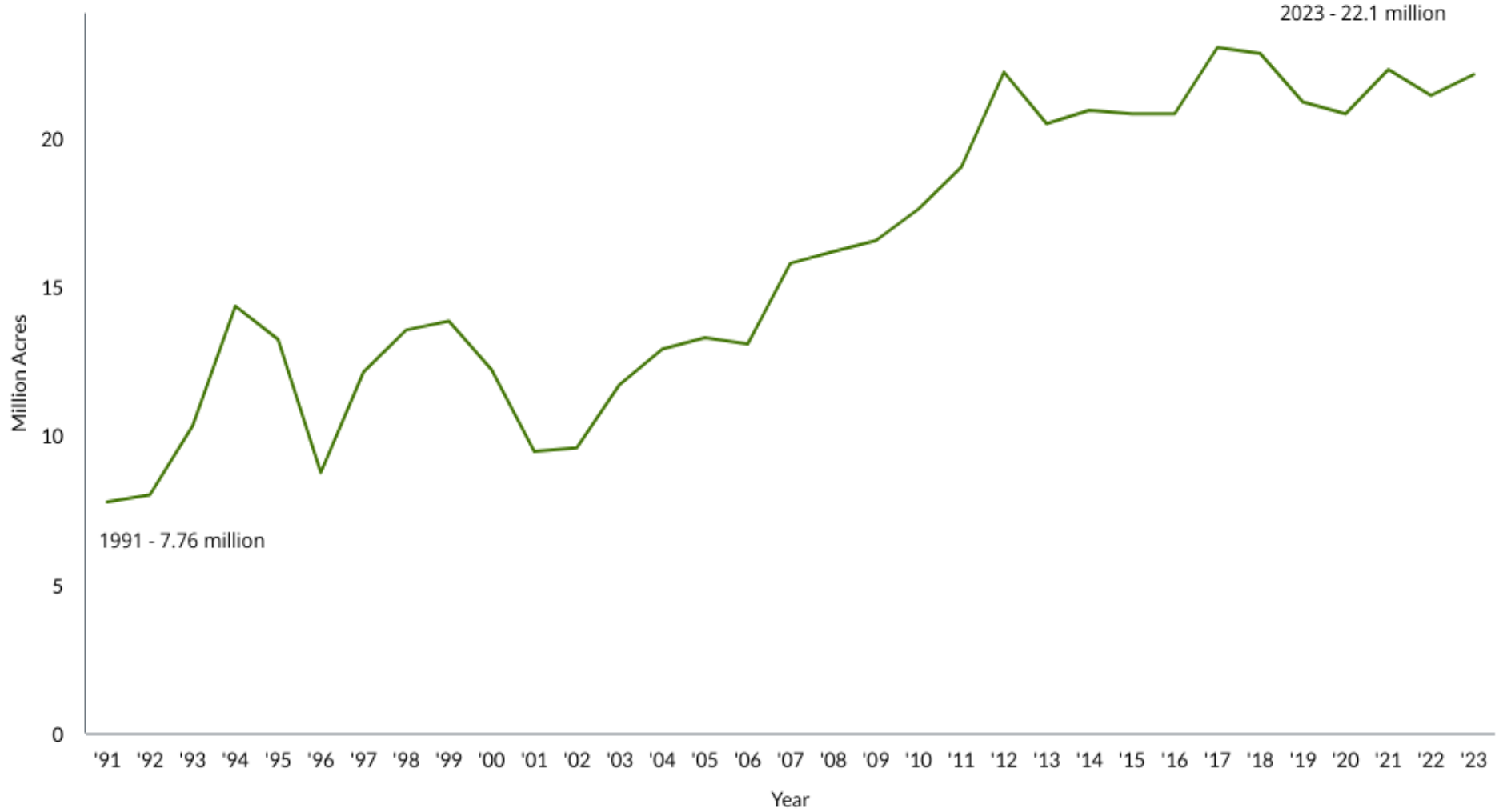
US Canola Production



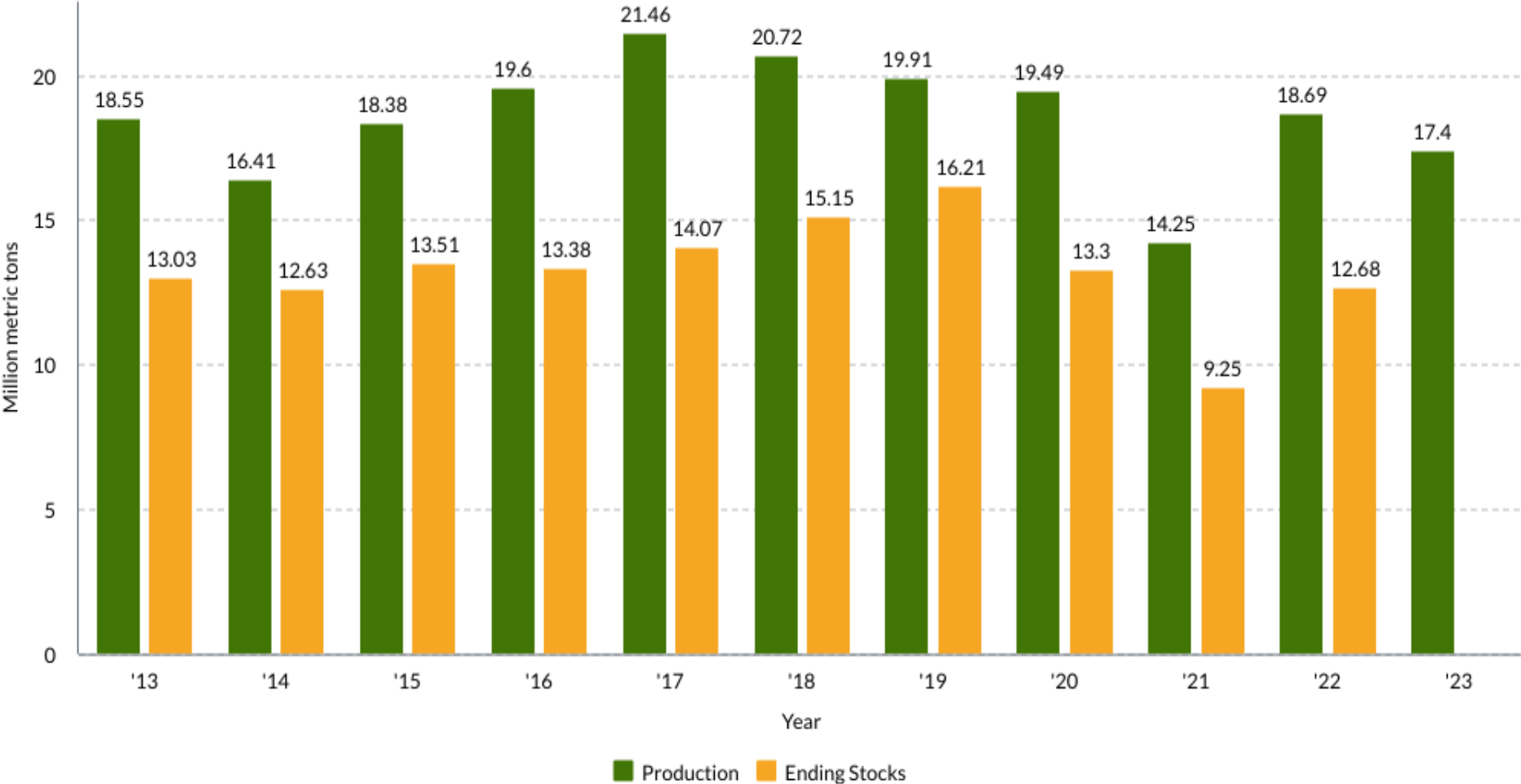
US Canola Average Price Received by Farmers



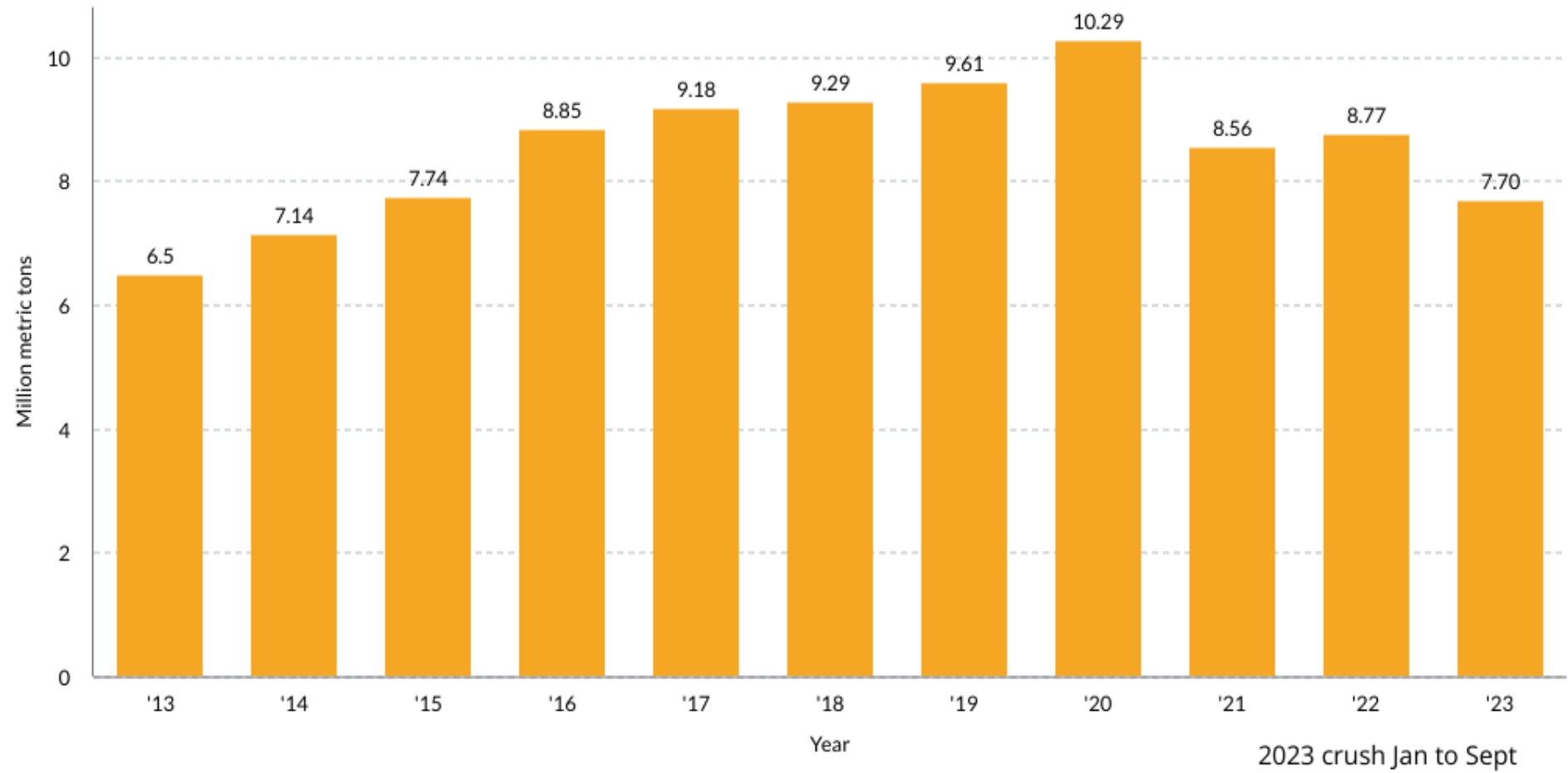
Canada Canola Planted Acres



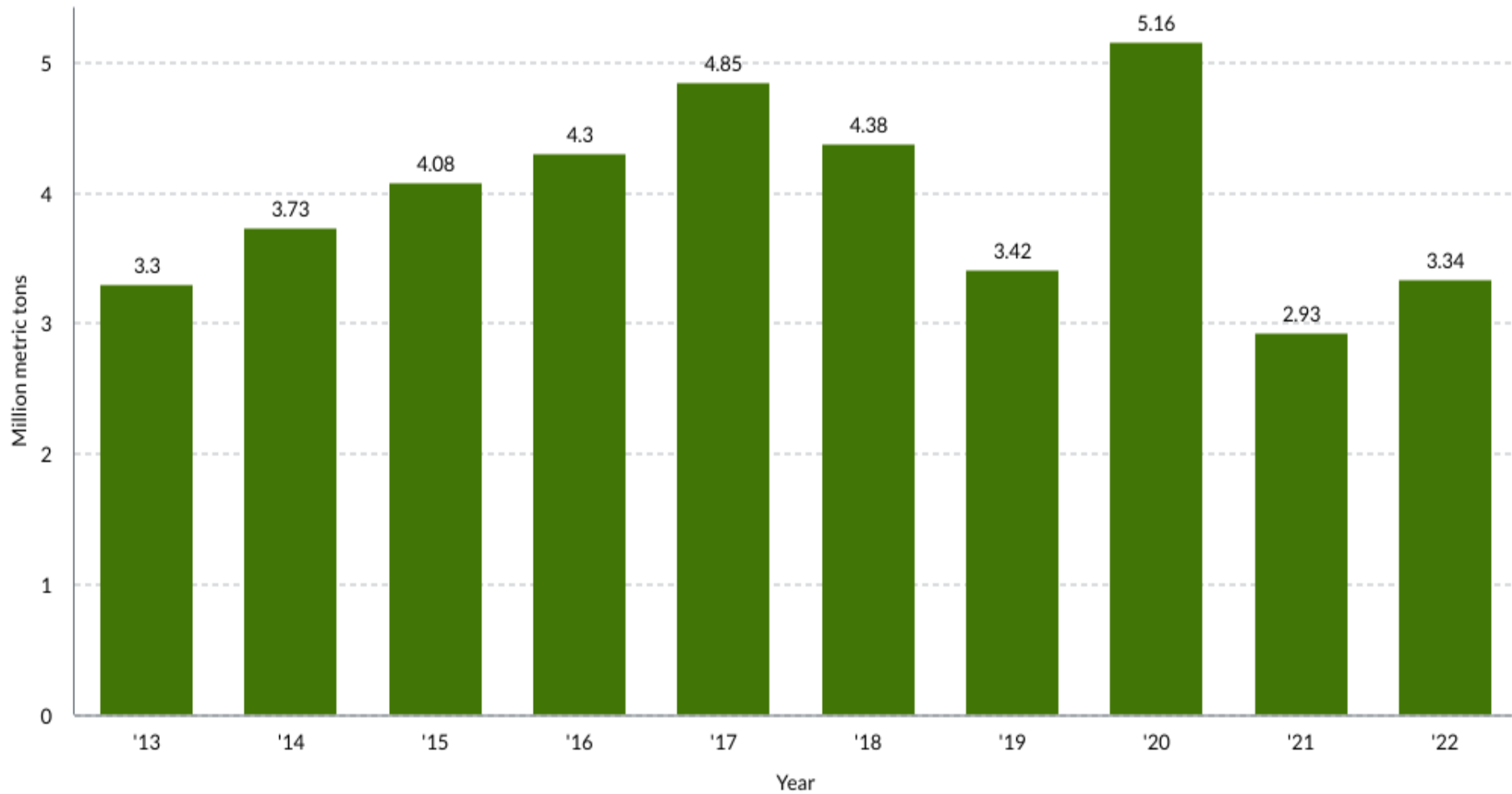
Canada Canola Production



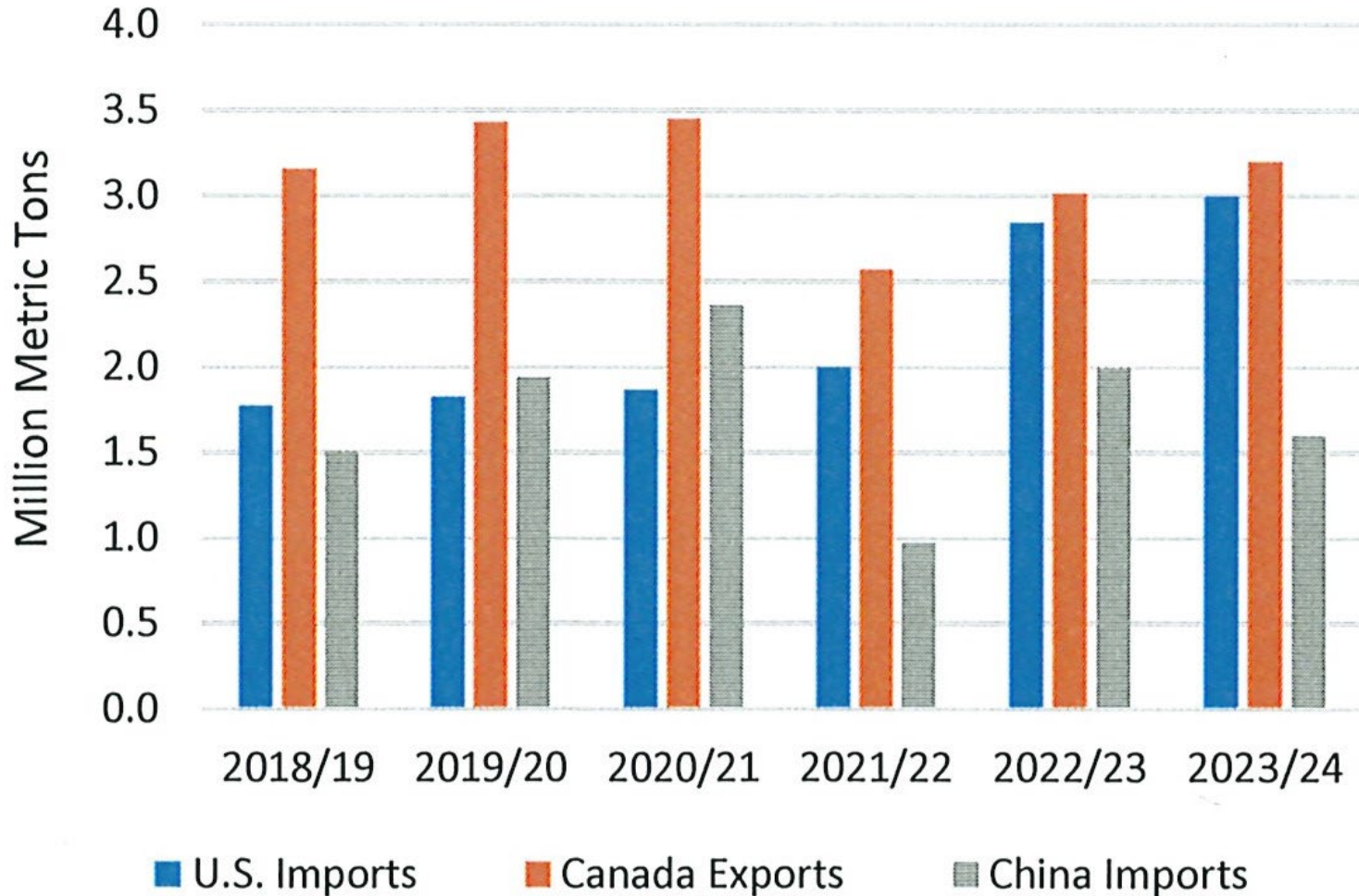
Canada Canola Used for Crush



Canada Canola Exports



Rapeseed Oil Trade



Any Questions?

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