



Animal Fats, Distillers Corn Oil & UCO: The Keys to the Low Carbon Kingdom



26 August 2021

Ryan Standard



Methodology



IOSCO reasonable assurance in August 2020

IOSCO audit scheduled for short term

Prices are based on trades, bids/offers and price indications

Fastmarkets analysts conduct daily survey of traders, buyers, sellers & brokers

Full methodology can be found at www.thejacobsen.com/methodology



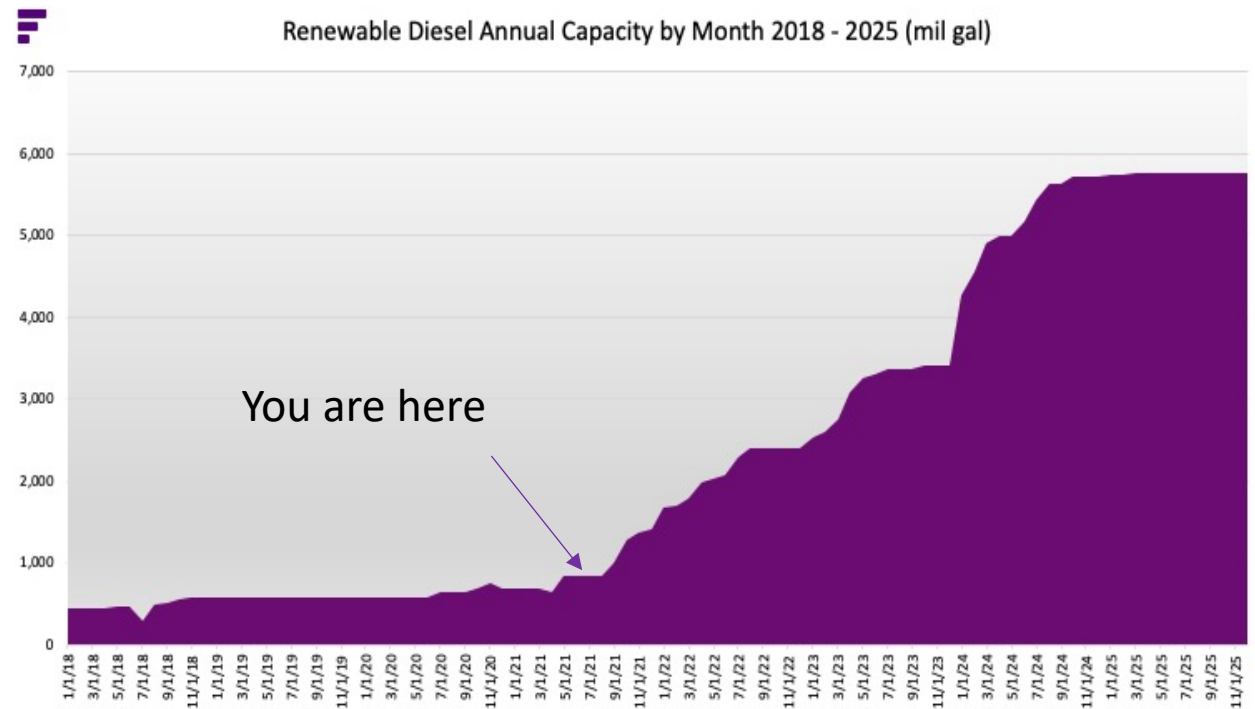
“Can you imagine what the market is going to look like when these plants start coming online?”

The Future Is Just Beginning



Planned capacity is set to grow from 800 million gallons per year at present to 2.4 billion gallons by Jan 2022, 5.6 billion by 2025

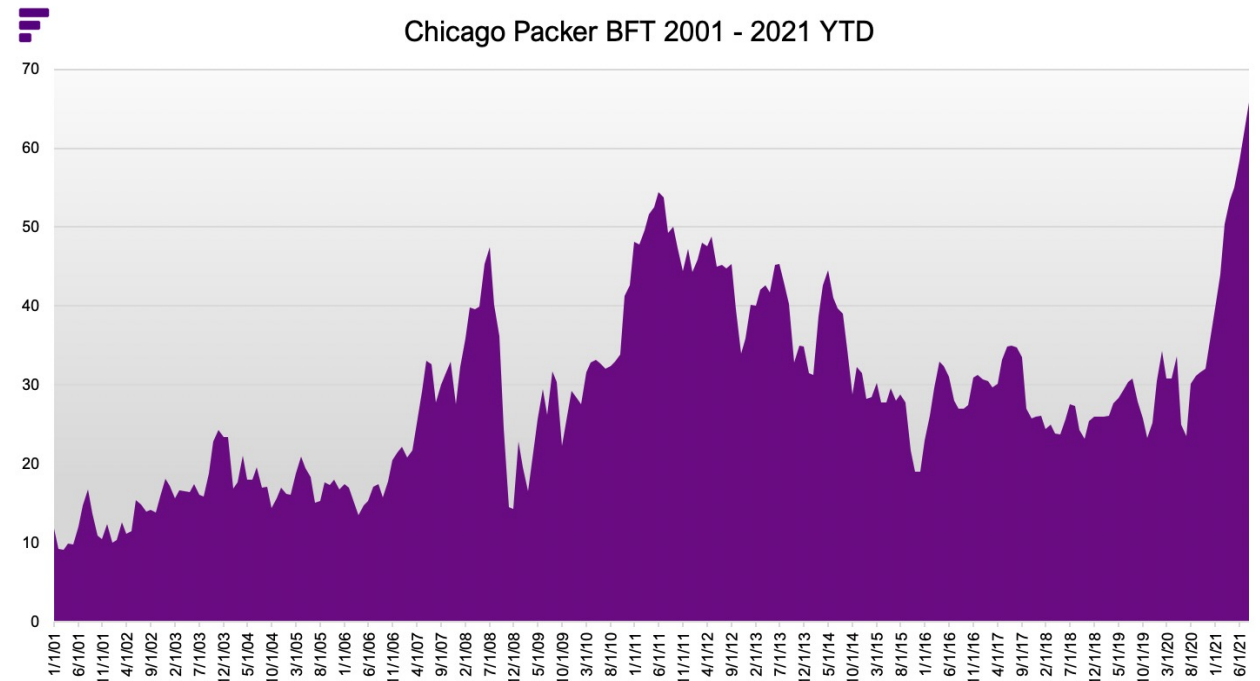
From now until Jan 2022 an additional 160,000 trucks of fat demand will come into the market



Prices Are Already at Record Highs - What's Different? How Did We Get Here?

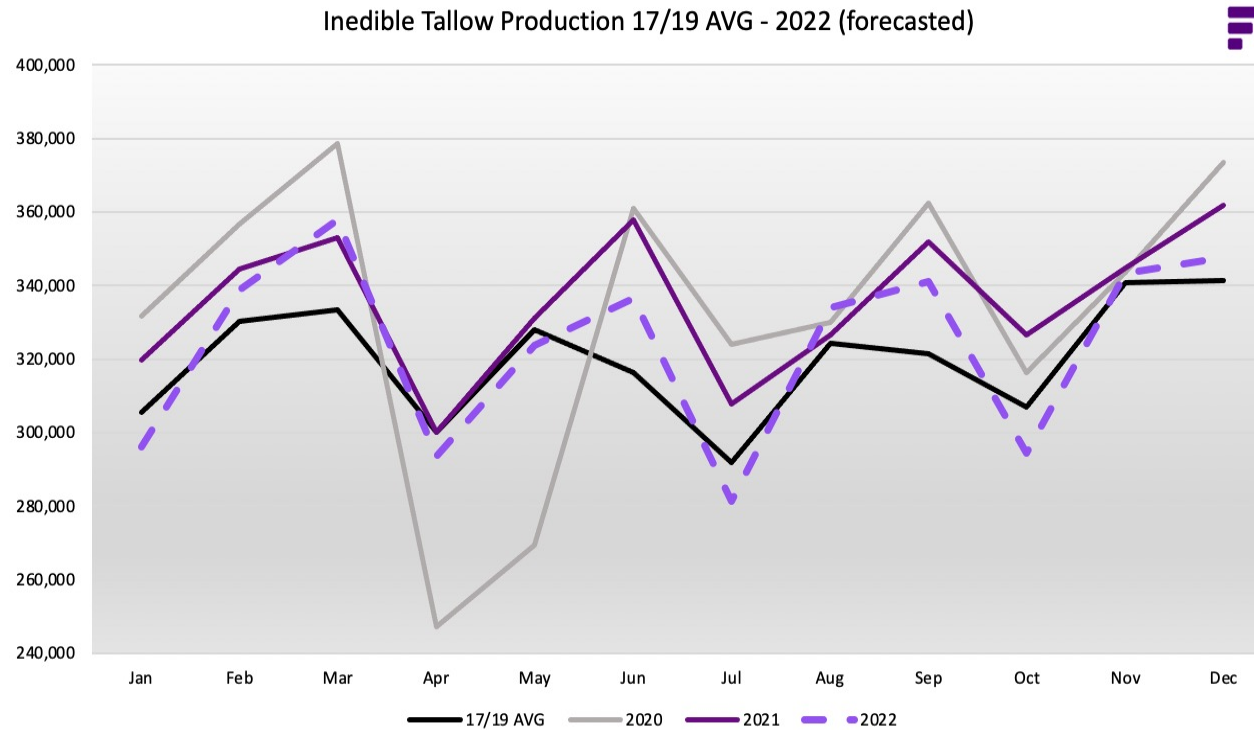


- Economic resurgence post COVID
- Tighter supplies
- Tight labor market
- Global traffic jam
- 2008? 2011?
- Food versus fuel



Source: Fastmarkets/The Jacobsen

What's Ahead? No Big Jumps in Supply



Source USDA & Fastmarkets/Jacobsen Data

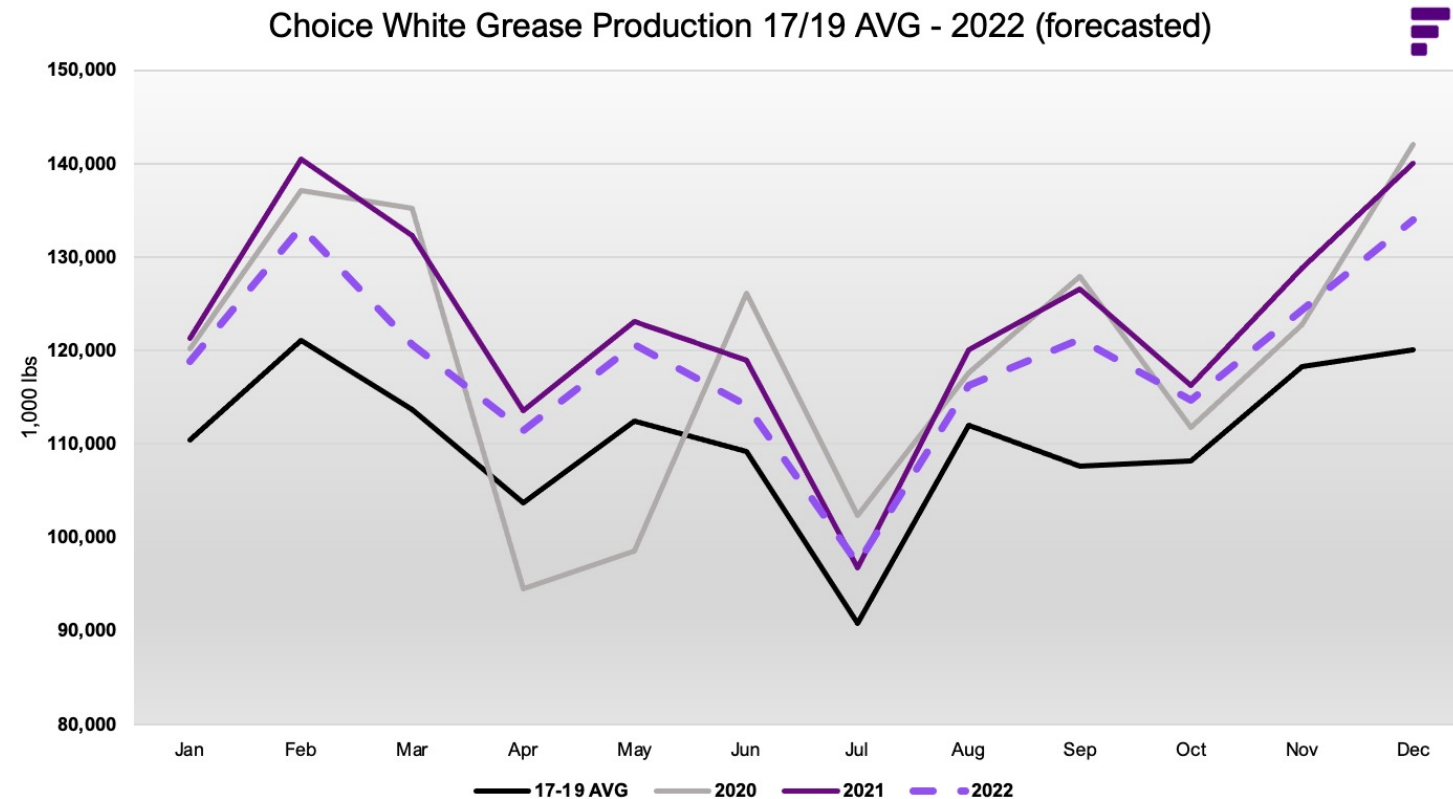
-3.4%

2022 Projected vs 2021 & Down 0.2 %
from 17-19 average

3.9BIL

Lowest production year since
2018

Choice White Grease Production Lower



Source: USDA & Fastmarkets/The Jacobsen

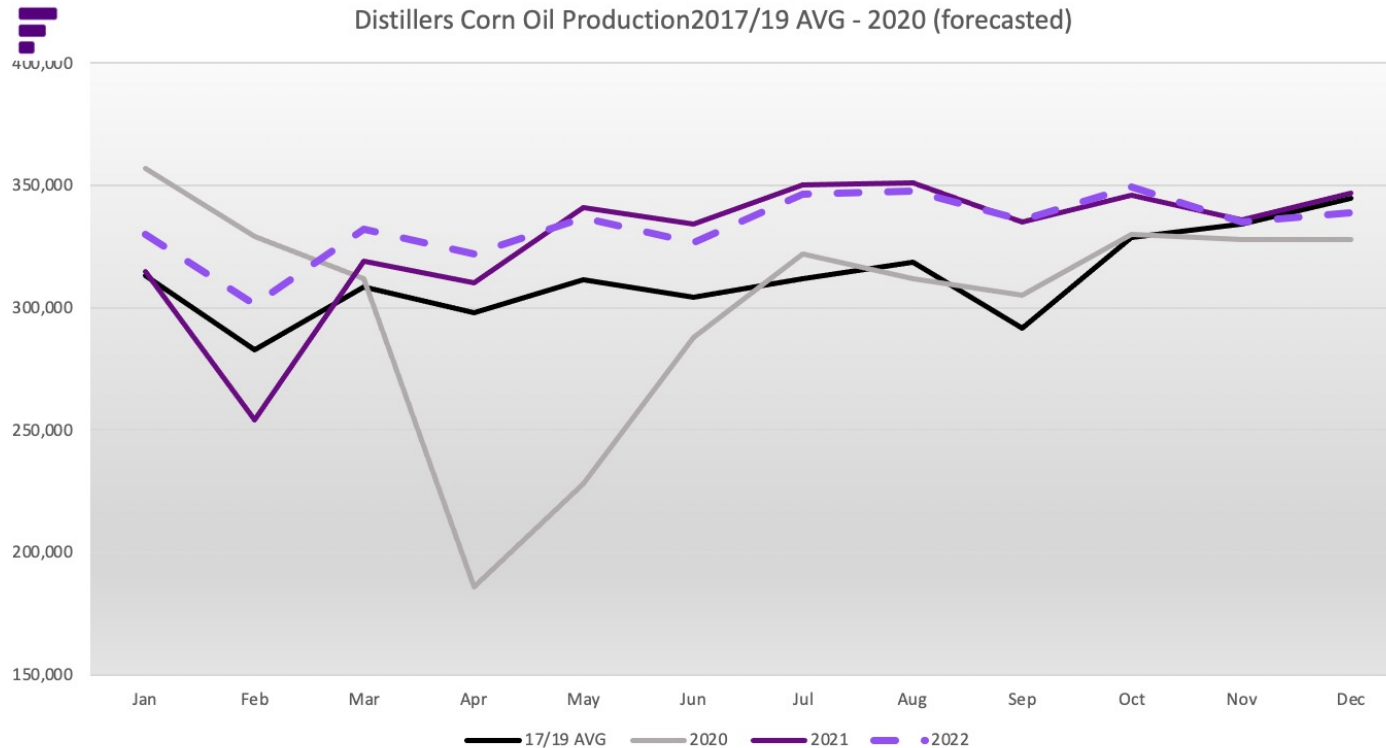
-3.5%

2022 Projected vs 2021 & Down 0.2 %
from 17-19 average

1.4BIL

Lowest production year since
2018

DCO Recovery In Place, But Lags Behind 17/19 AVG



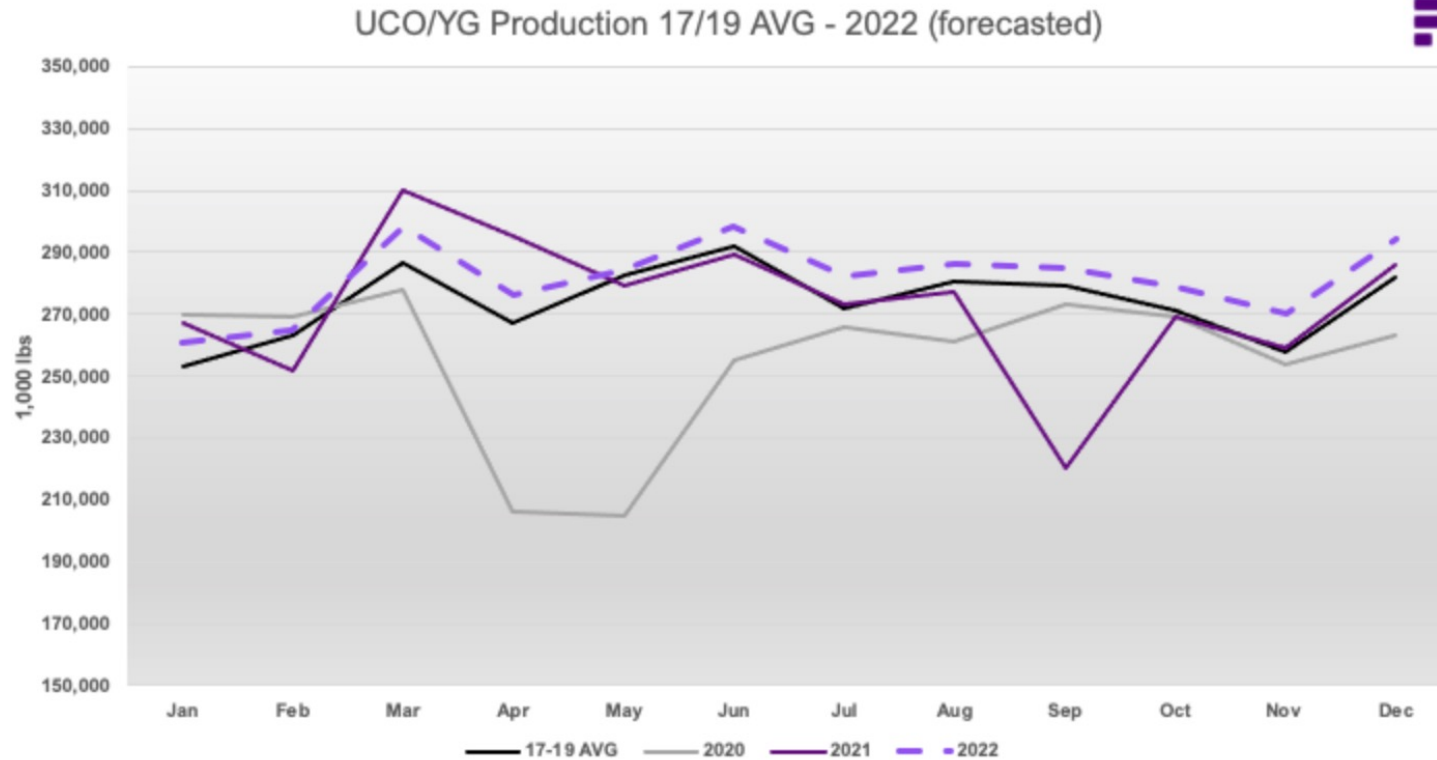
1.2%

2022 Projected vs 2021 & Down 0.2 %
from 17-19 average

3.4 BIL

Recovery Dependent

UCO/YG Output Higher



Source: Fastmarkets/The Jacobsen

3.1%

2022 Projected vs 2021

3.4 BIL

Recovery Dependent

Low CI Output Down – Where's the Supply Going to Come From?

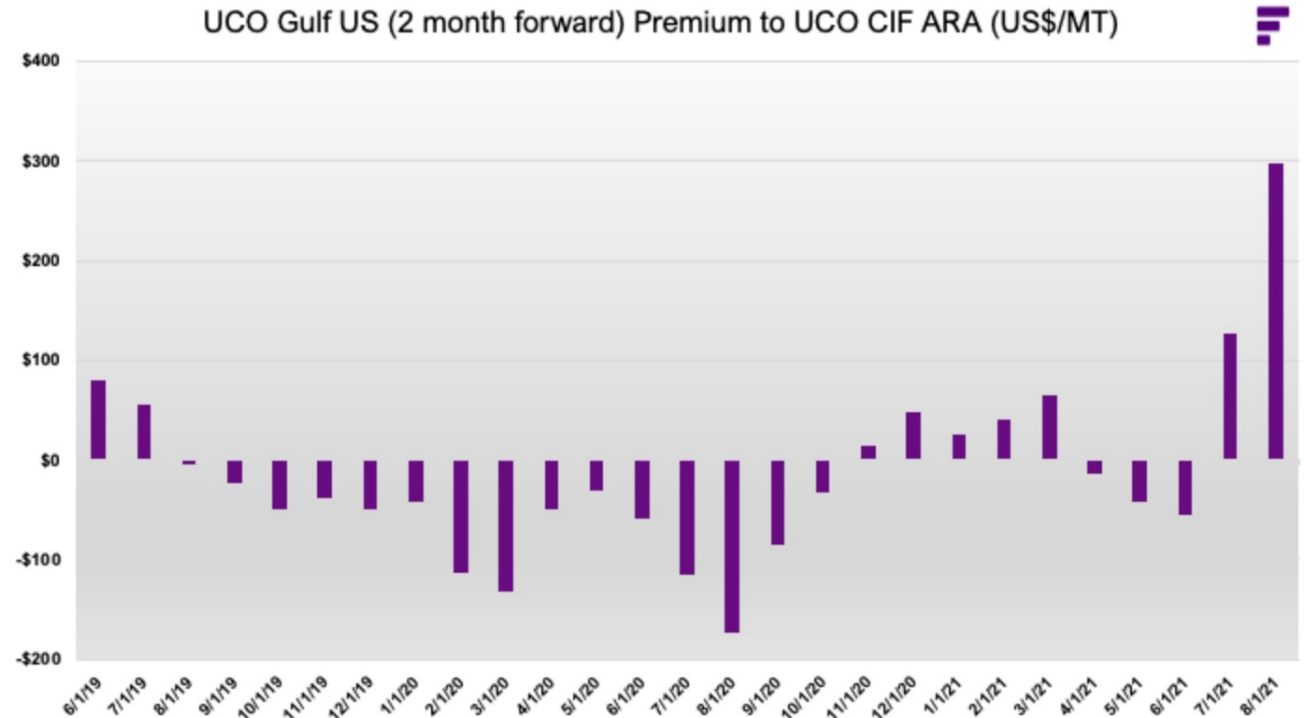


Australian cattle slaughter at 35 year low.

More demand in SAM for local tallow

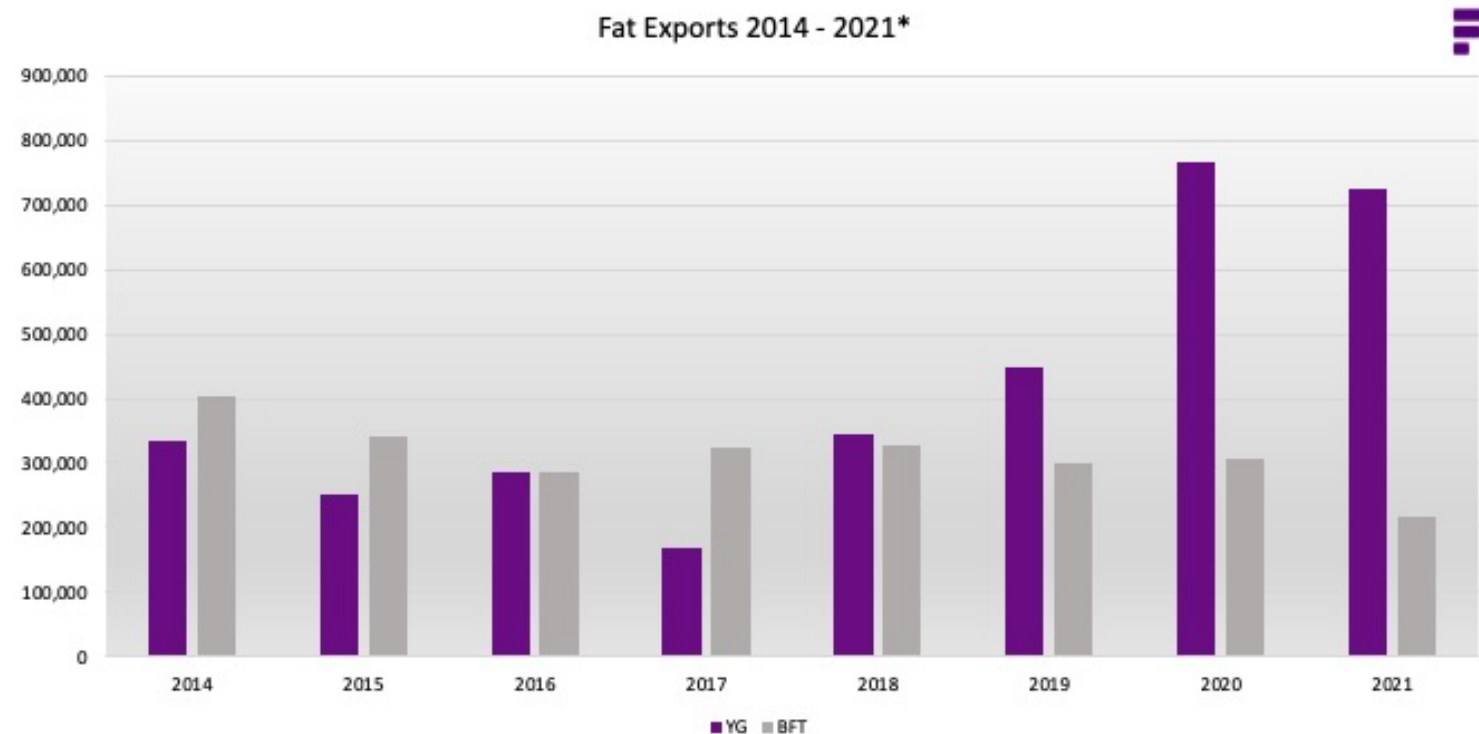
UCO – possibilities at higher prices

Decrease in usage from traditional demand sectors



Source: Fastmarkets/The Jacobsen

Less Exports and More Imports



Source: USDA FAS

3.1%

2022 Projected vs 2021 & Down 0.2 %
from 17-19 average

3.4 BIL

Recovery Dependent

Oleochemical & Feed

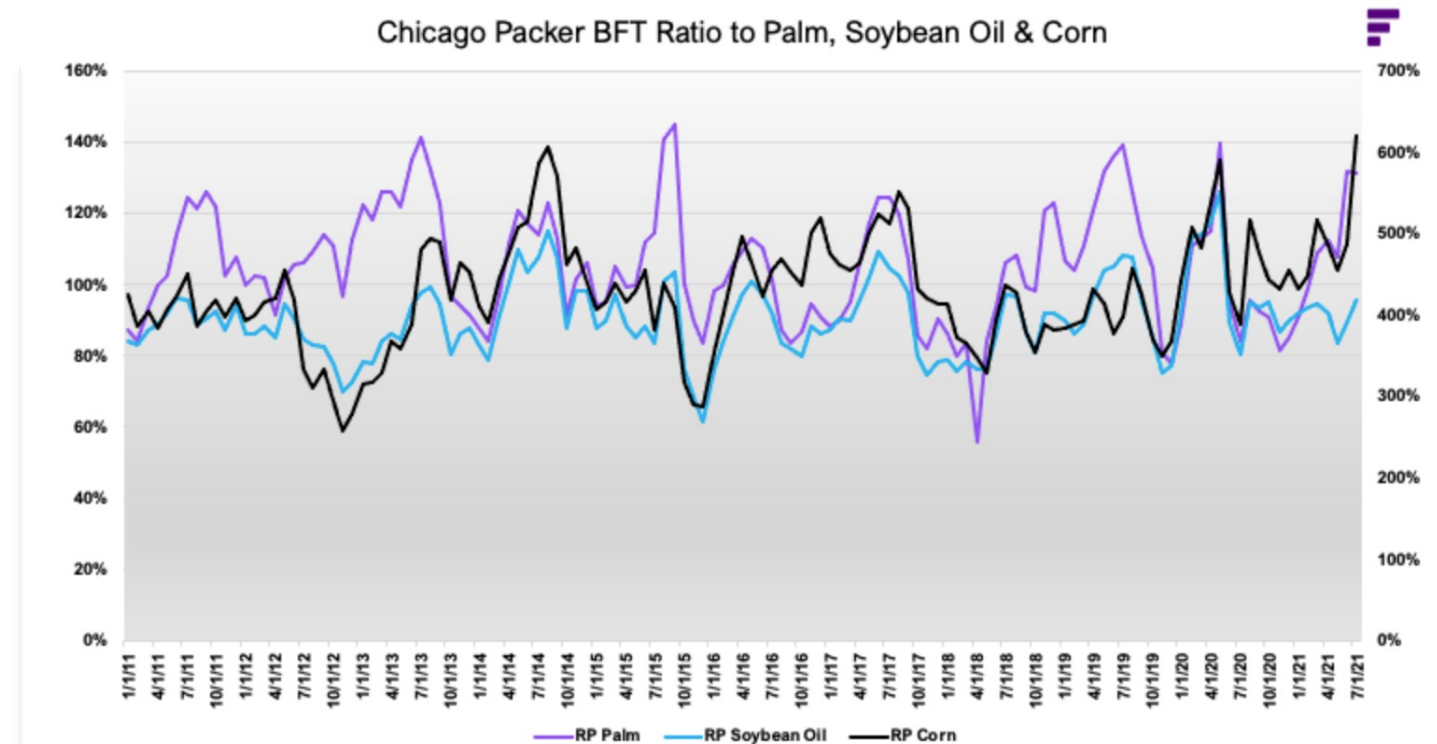
BFT to Palm spread is wide

BFT to Corn spread is wide

BFT to Soybean Oil is wide

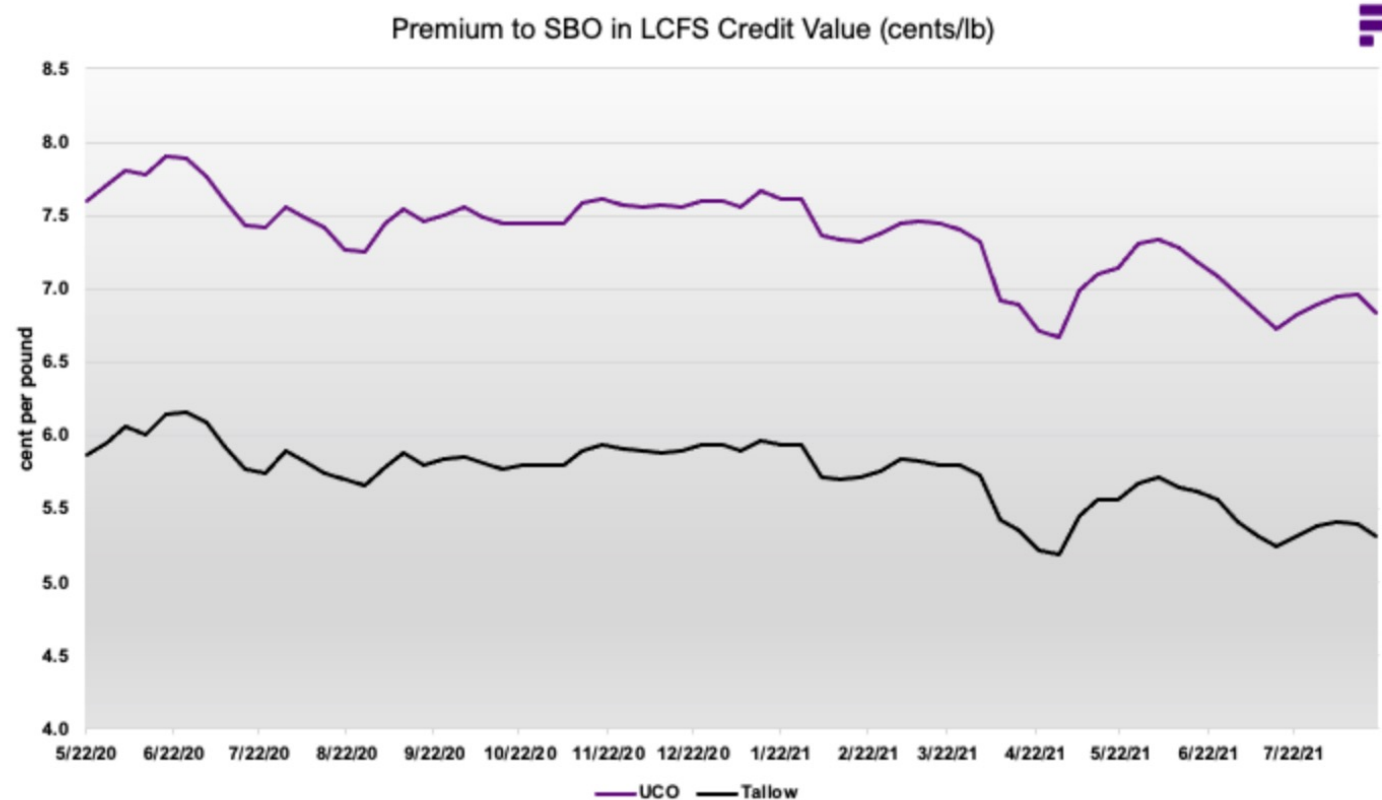
Kick it out?

Buy palm, sell grease



Source: Fastmarkets/The Jacobsen & CME Futures

Renewable Fuel Growth & Value of Carbon Credits



Source: Fastmarkets/The Jacobsen

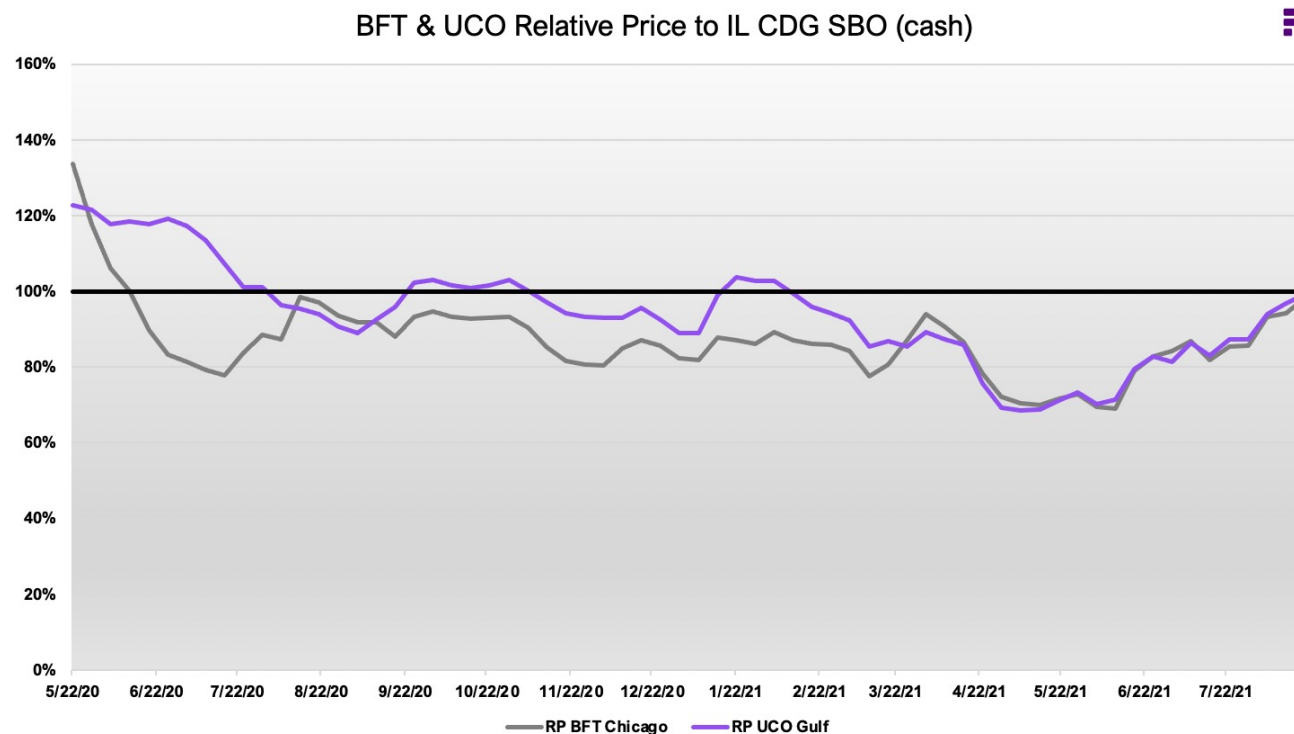
6.5-8 cts/lb

UCO

5-6 cts/lb

Tallow

Renewable Fuel Growth & Value of Carbon Credits



103% & 86%

UCO to SBO 2020 and 2021

91% & 83%

BFT to SBO 2020 and 2021

Long Term Trends

Feedstock diversification & pretreatment

Carbon, carbon, carbon – CI > FFA, MIU, R&B

Mid-stream partners in feedstock refinement (pending EPA approval)

On site assists – solar energy, RNG, etc

Technological advancements offer opportunity or increase feedstock supply

Increased DCO extraction

Fat extraction from animal proteins

Forestry, municipal waste, cover crops

Vertical integration and joint ventures



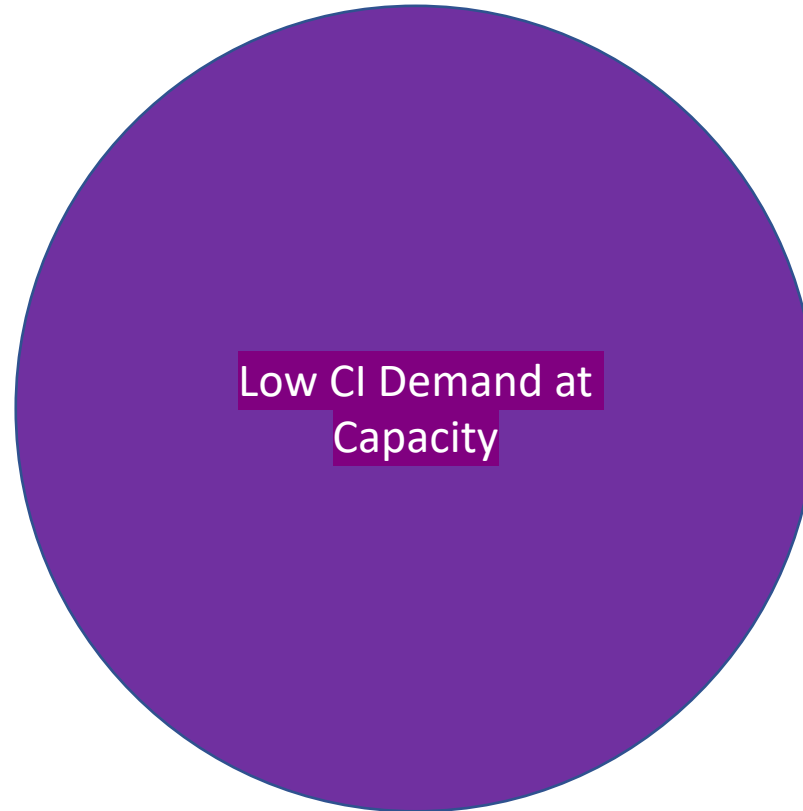
3.1%

2022 Projected vs 2021 & Down 0.2 %
from 17-19 average

3.4 BIL

Recovery Dependent

2022 Low CI Supply Vs Capacity



**17.4 Billion
lbs**

**20.9 Billion
lbs**



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