

Darling Ingredients (NYSE: DAR) | Final Pitch

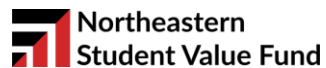
Northeastern University Student Value Fund

Recommendation: **BUY**

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Fall 2022

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Business Overview

1. General Business Overview
2. Geographic Spread
3. Management Team
4. Management and Financial History

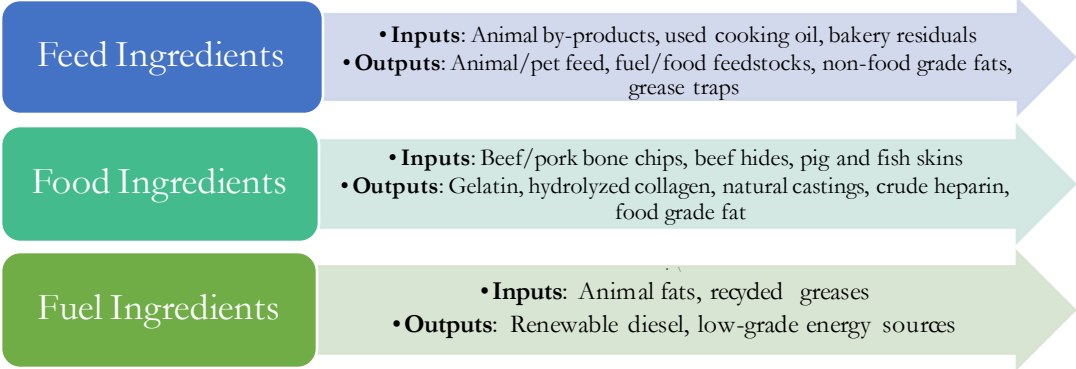
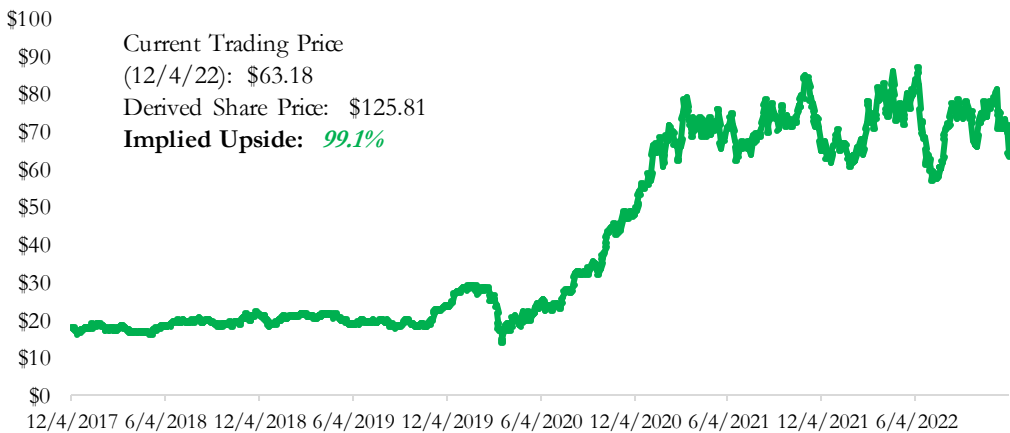


Darling's Operations

- Texas-based Darling Ingredients (DAR) is the largest publicly traded rendering operation in the United States. Darling collects and recycles animal by-products into usable specialty ingredients.
- Responsible for processing **15% of the world's slaughtered animal** byproducts into sustainable ingredients and decarbonization solutions, consisting of 270 facilities throughout 22 countries on 5 continents.

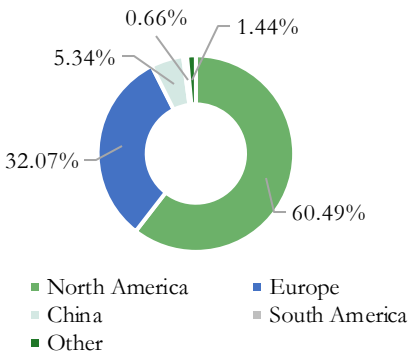


Historical Price Action

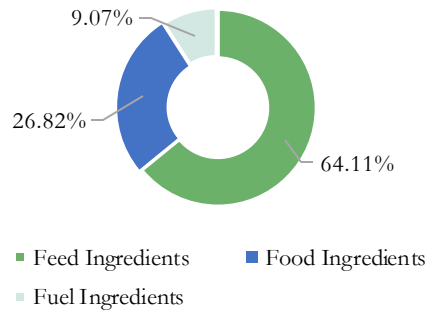


Revenue Breakdown

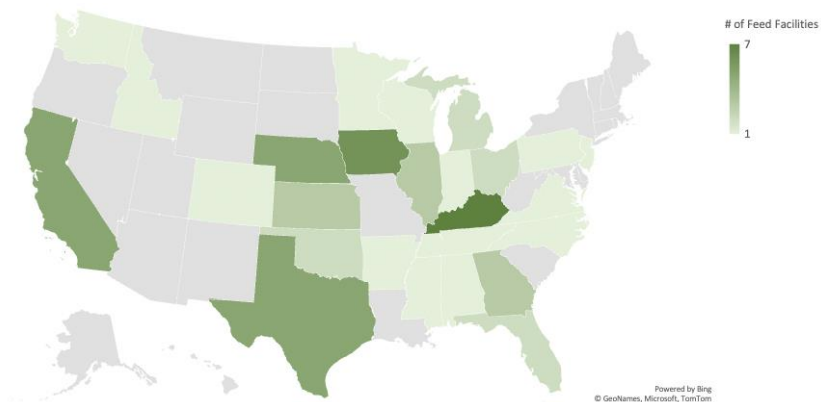
Geographic Segmentation, FY2021



Revenue Segmentation, FY2021



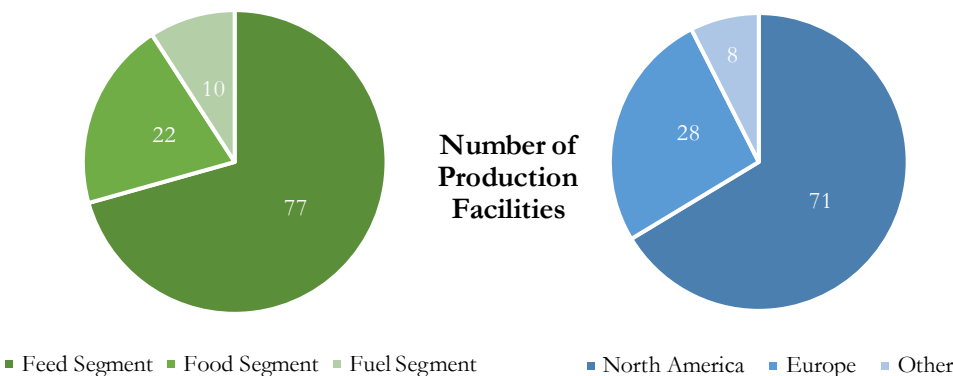
Feed Segment Facilities



Food Segment Facilities



Darling Production Facilities Breakdown



DGD (Fuel Segment) Facilities



Current Executive Team



Randall Stuewe

Chief Executive Officer

- CEO since **2003**
- Over **25 years of experience** in agricultural processing
- Former executive @ ConAgra Foods.



Brad Phillips

Chief Financial Officer

- CFO since **2018**
- Over **34 years** with Darling in various roles (Treasurer, Assistant Controller).
- Former Accounting Manager @ Republic Health



John Bullock

Chief Strategy Officer

- CSO since **2014**
- **9 years** of experience with Darling in various roles (Senior VP, BD).
- Worked **15 years in M&A** for ConAgra Foods.



Sandra Dudley

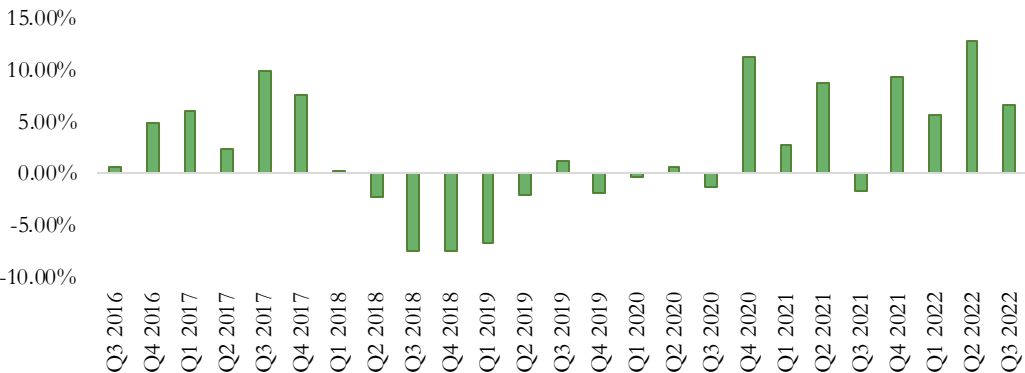
Executive VP of Renewables

- Executive VP since **2021**.
- Held various roles in oil / agricultural space (consulting, strategy).
- Oversees the **DGD joint venture**.

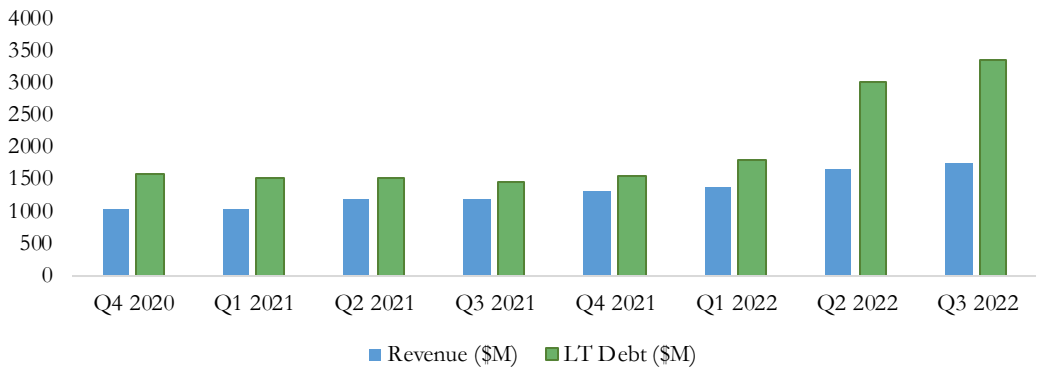
Management and Financial History

Management consistently met guidance and delivered strong financial performance

Management Earnings vs Consensus Expectations History



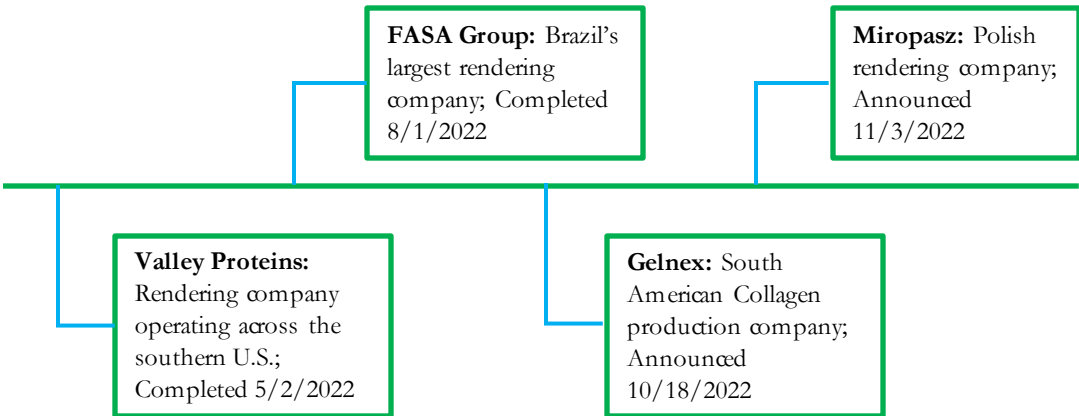
YoY Revenue vs Debt



Segment EBITDA Margins



Major Recent Acquisition Timeline



Thesis 1: Fuel Segment Growth

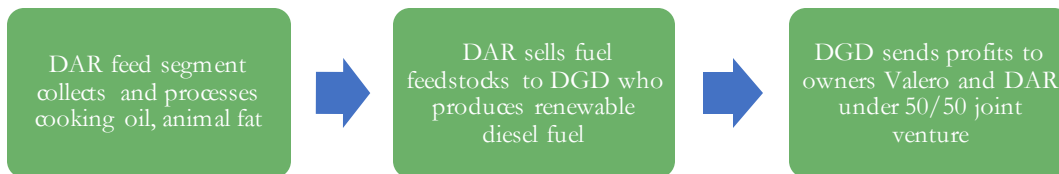
1. Diamond Green Diesel (DGD)
2. DGD Value Proposition
3. DGD Expansion
4. Long-Term Industry Legislative Tailwinds



Thesis 1 | Fuel Segment Growth

Diamond Green Diesel (DGD) Venture provides unique value proposition in renewable diesel industry

Diamond Green Diesel Joint Venture



- Diamond Green Diesel (DGD) Venture provides Darling with ownership of the arbitrage between animal fat and renewable diesel
- Lessens impact of volatile feedstock prices, provides steady high-margin revenue stream—makes up **39.7%** of FY'21 operating income, despite being **<7.4%** of revenue

DGD Value Proposition



Production facilities strategically placed around key rail centers to provide cheap rail transportation across North America



Oceanfront and riverfront plants allow national and international fuel transportation with ease

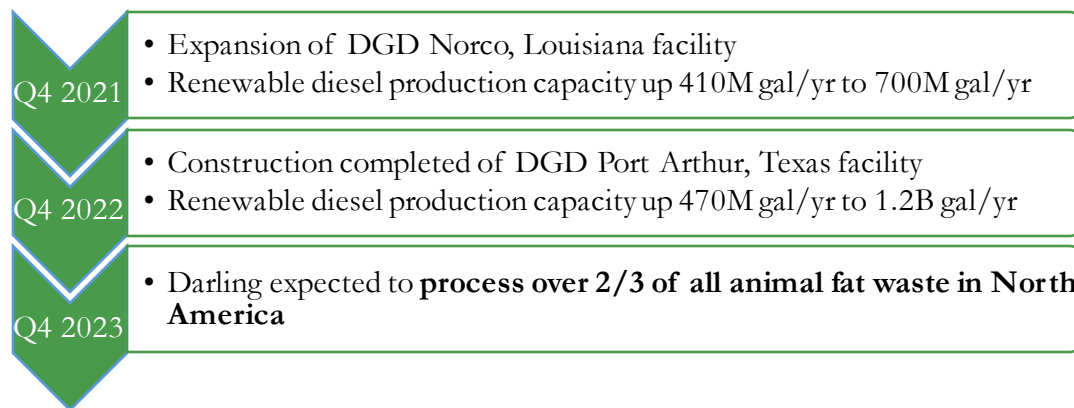


Renewable diesels reduce greenhouse gas emissions up to 85% compared to petroleum diesel

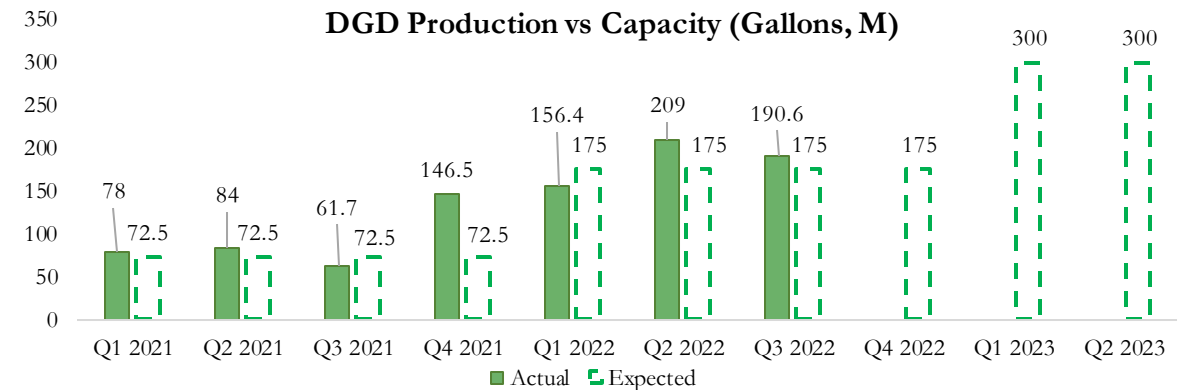


Largest animal fat-to-renewable diesel facility in North America, converting over 2.3 billion lbs. (~15%) of recycled animal fats, oils to renewable diesel

Expansion in Production to Satisfy New Demand



DGD Production vs Capacity (Gallons, M)



Thesis 1 | Fuel Segment Growth

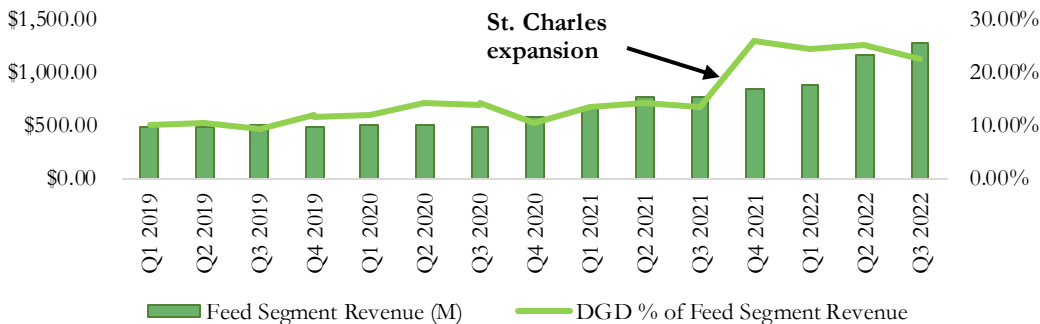
DGD to provide Darling with sticky, recurring revenues as well as protections against volatile input prices

Specifics of the Darling-Valero DGD Joint Venture

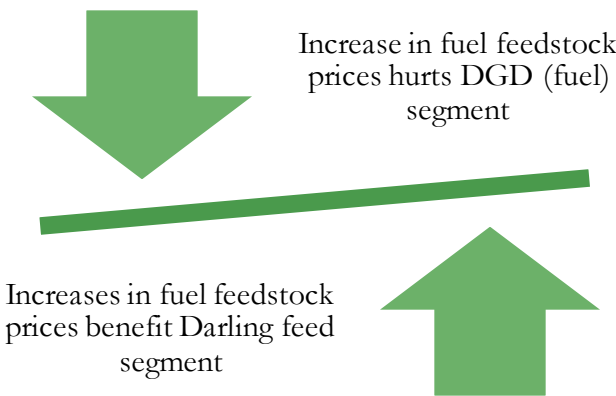
- DGD joint venture is a 50/50 profit and cost split between Darling Ingredients and Valero Energy
- Darling sells to DGD at market prices; DGD is not required to buy from Darling, but often does
- DGD operates with a \$50M revolver funded half from Darling, half from Valero
- DGD operates as its own venture with independent capex, costs, etc; at the end of each year, the venture's profits are split 50/50 between Darling, Valero

DGD Guarantees Darling Feed Segment Revenues

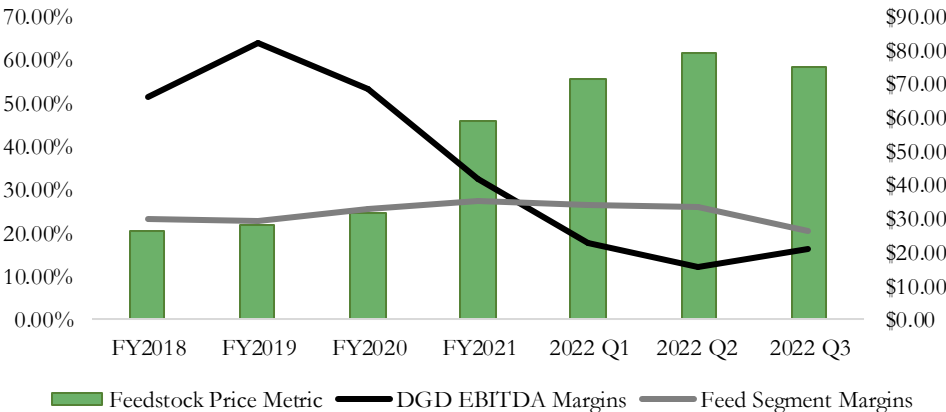
- Amid continual DGD expansion, DGD feed segment demand provides Darling an increasing source of sticky, recurring revenue



Feedstock Price Volatility Offset by Protective Nature of Venture



- While Darling is still susceptible to input cost volatility, it effectively owns the arbitrage between fuel and feed in the DGD joint venture
- As DGD margins fall amid higher feedstock prices (input costs for DGD), Darling's feed segment (whose end product is feedstock), sees margin expansions as elevated feedstock prices boost revenue



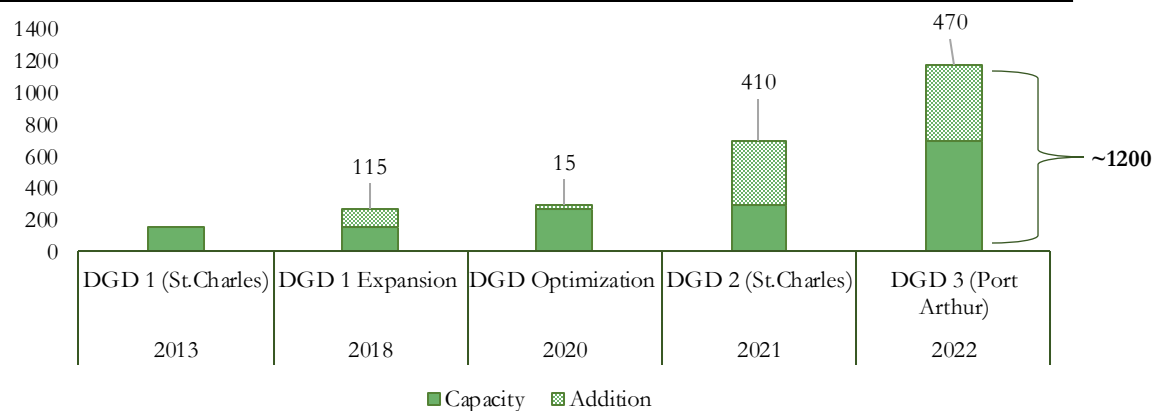
Thesis 1 | Fuel Segment Growth

DGD expansion, sustainably higher margins support dominant Darling positioning in renewable diesel

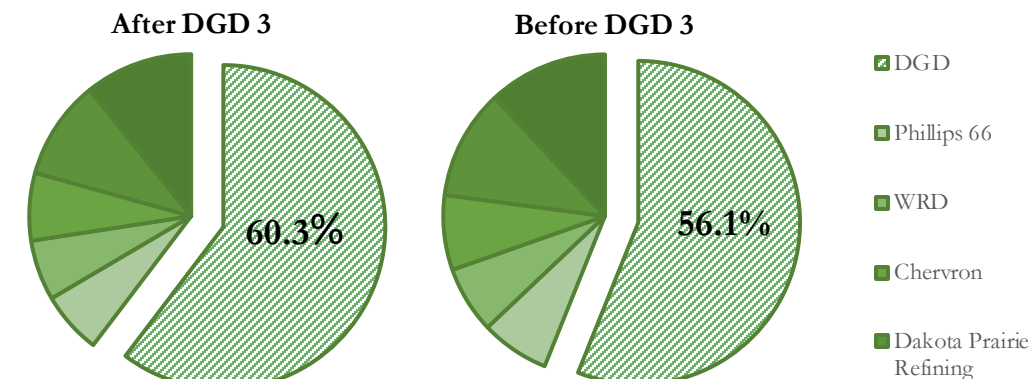
DGD Expansion and Short-Term Margin Compression

- Management has stated that Port Arthur facility will come online in November, and can expect to see benefits in Q4 ~800m gallons FY2022
- Management has stated that they will need to buy an additional **4 billion pounds** of waste, fats, and greases to supply Port Arthur with substantial inputs
- DGD will then be able to operate 50/50 renewable diesel – SAF capability
- 2022 saw DGD margin compression amid skyrocketing feedstock prices; however, management expects prices to abate in the coming months

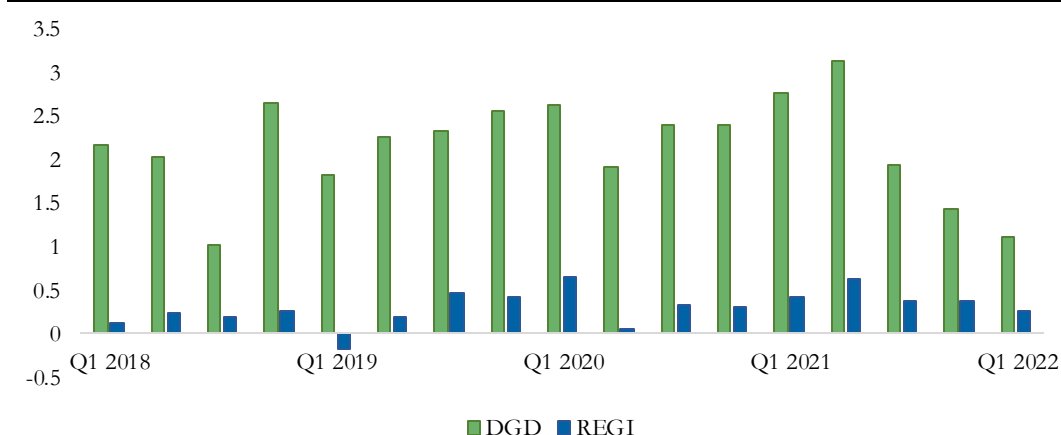
DGD Expansion



Darling Market Share in Renewable Diesel



EBITDA Margins Per Gallon

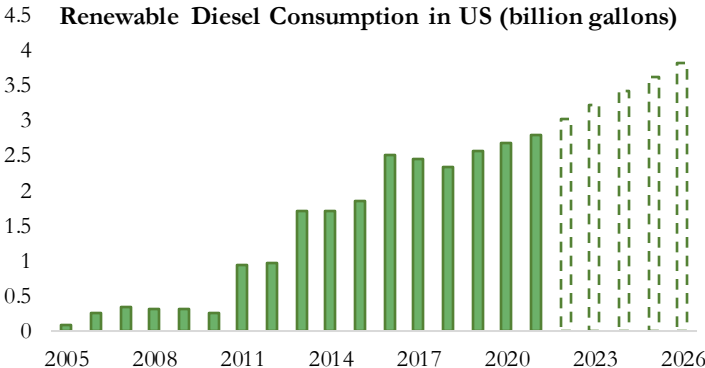


Thesis 1 | Fuel Segment Growth

Legislative tailwinds and booming renewable diesel market to provide DGD with huge growth runway

Booming Demand for Renewable Diesel Fuel

- Renewable, clean-burning renewable diesel substitute to replace traditional fossil fuels in power generation, automotive fuel
- Huge supply-demand gap due to insufficient production

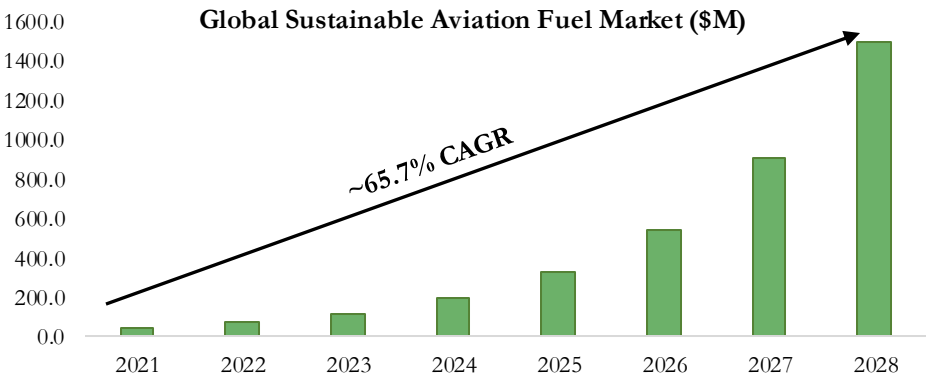


Legislative Tailwinds

- Washington, Oregon:** Clean energy bills passed this year in both states mandate increased use of renewable fuel sources like biofuels
- California:** Existing CA legislation executes a LCFS (Low Carbon Fuel Standard) mandating clean-fuel standards through trade-based credits
- Canada Clean Fuel Standards:** Rules passed this year require cleaner and affordable fuel sources to be available to Canadian consumers
- Legislation currently introduced in Europe, several other U.S. states popularizing low-carbon fuel sources

Aviation-Fuel Long-Term Growth Runway

- Legislative tailwinds mean sustainable aviation fuel will be affordable and competitive within the next three to five years
 - Inflation Reduction Act:** Codifies \$1.25-1.75/gallon sustainable aviation fuel credit for renewable aviation fuel sources starting in 2025 – making biofuel aviation fuel a cost-effective possibility
 - Q2 Earnings Call:** “We look forward to supplying them [airlines] with SAF [Sustainable Aviation Fuel].” – Darling CEO, Randall Stuewe
- With unparalleled production capacity, Darling boasts a first mover advantage in a completely unpenetrated industry with an expected market size of almost **\$1.5 billion** by 2028



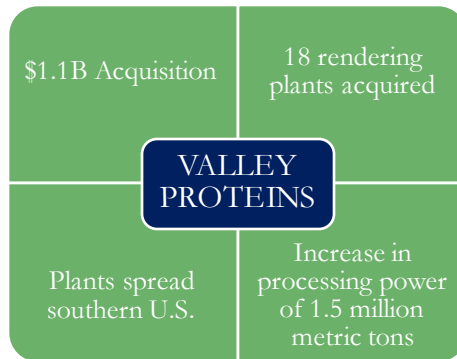
Thesis 2: Supply Chain Vertical Integration

1. Feed Segment Acquisitions

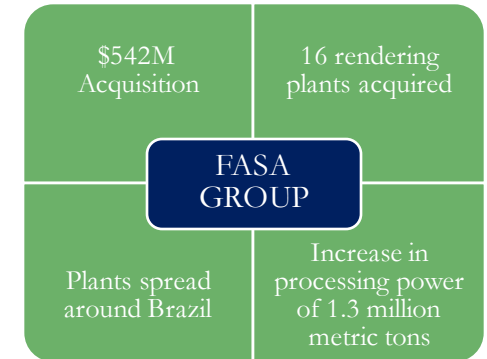
Thesis 2 | Supply Chain Vertical Integration

Acquisition of Valley Proteins, FASA to drive margin expansion amid cost synergies, increased fixed capital

Feed Segment Acquisitions Establish Vertically Integrated Renewable Diesel Supply Chain

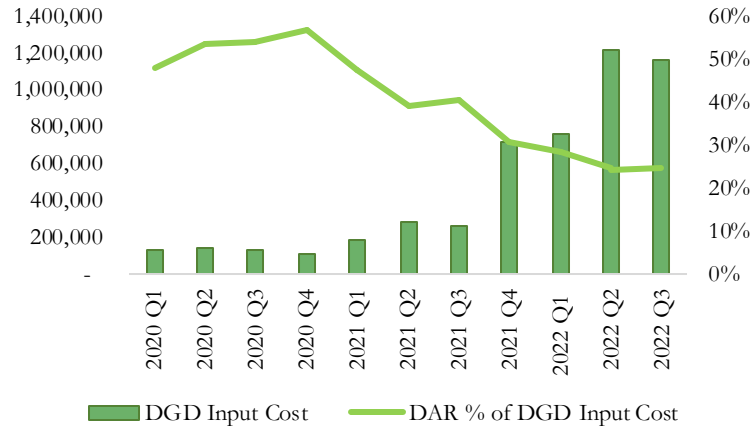


- Having acquired both Valley Proteins (May 2022) and FASA Group (August 2022), Darling boasts a **vertically integrated supply chain that runs from farm to fuel**
- Feed segment has experienced tremendous growth driven from both volume and price increases. These two new acquisitions will serve to satiate and serve longer-term macro tailwinds
- With vastly expanded rendering capabilities, Darling can now provide low carbon intensity feedstocks to fuel the growing demand for renewable diesel and even sustainable aviation fuel (SAV)
 - Acquisitions effectively pivot Darling towards an **enormous, untouched, and extremely fast-growing market**



Acquisitions Address Booming Feedstock Demand

- Completion of plant turnaround of Valley Proteins' rendering plants by Q1 2023 should bring DGD demand from Darling back to roughly 50-60% of feedstock inputs



Stable Balance Sheet Despite Acquisitions

- Darling is highly acquisitive with three acquisitions in 2022 (**totaling over \$2.8B**), largely funded by significant leverage, with its long-term debt now totaling **over \$2.8B**, twice the amount this same time last year.
- Factoring in recent acquisitions, Darling's LT Debt/EBITDA ratio is over 3x; however, management has emphasized restoring the multiple to ~2.5x in 2023
- No long-term debt maturity until 2026; strong FCF growth projected over the coming years from Valley Proteins, FASA Group, and Gelnex acquisitions.

Thesis 3: Food Segment Growth

1. Gelnex Acquisition and Collagen Market Tailwinds
2. South American Expansion



Thesis 3 | Food Segment Expansion

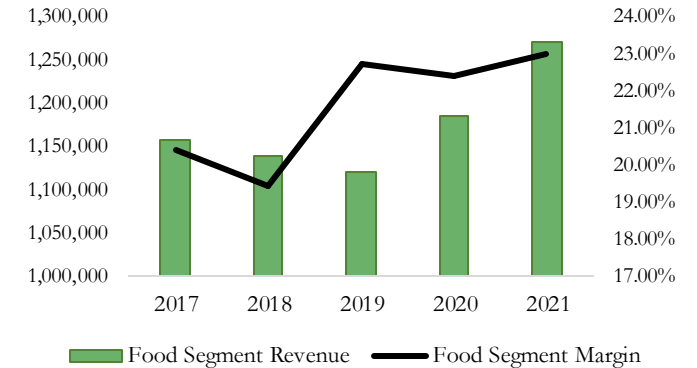
Widely expands production in fast-growing, high-margin, market with significant tailwinds

Collagen & Market Growth

- Collagen is increasingly becoming a micro-ingredient and input into various end-products having been proven effective at improving hair growth, nail quality, skin, joint, bone and muscle behavior.
 - Projected industry **CAGR of 7.0%** from 2022-2028; industry to reach **\$10B in terminal forecast year**.
 - Key markets in North America, Europe, South America, and the APAC region.
- End Markets:
 - Beauty products
 - Food & beverages
 - Biomedicine
 - Wound treatments
 - Cosmetics & surgeries

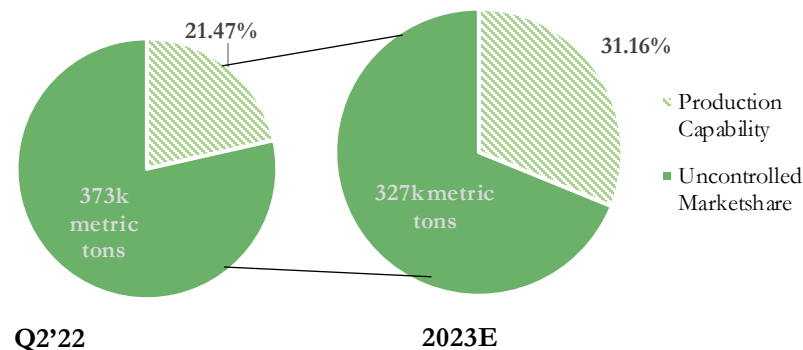
Growth in Expanding & Increasing Margin Segment

- Food segment makes up 28.62% of total revenue, 76% of which is collagen
- Acquisition & expansion will continue to uplift bottom-line from higher-margin nature of collagen peptide products



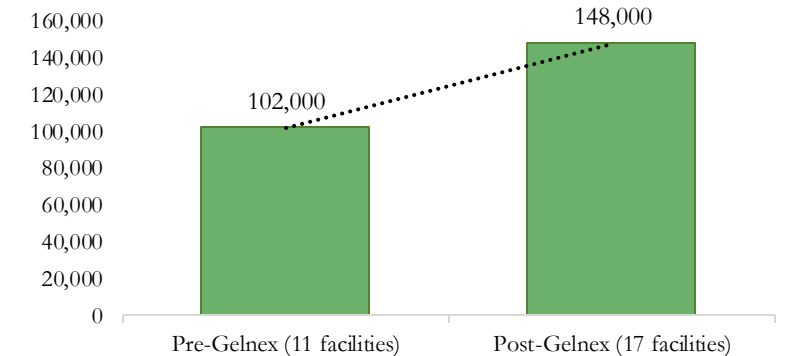
Investment into Cheaper, Agrarian, South American Economies

(Estimated) DAR Collagen Market Share



- Management is to expand their collagen production facilities from 11 to 17 upon completion of Gelnex acquisition
- South American economies (namely Brazil) have ample land, animals, and investment in agricultural sector.
- Management is seeking to capitalize on lower-cost countries with existing and growing production capabilities.

DAR Collagen Production Capacity (metric tons)



Thesis 3 | Food Segment Expansion

International consolidation & supplemental industry performance during recessions

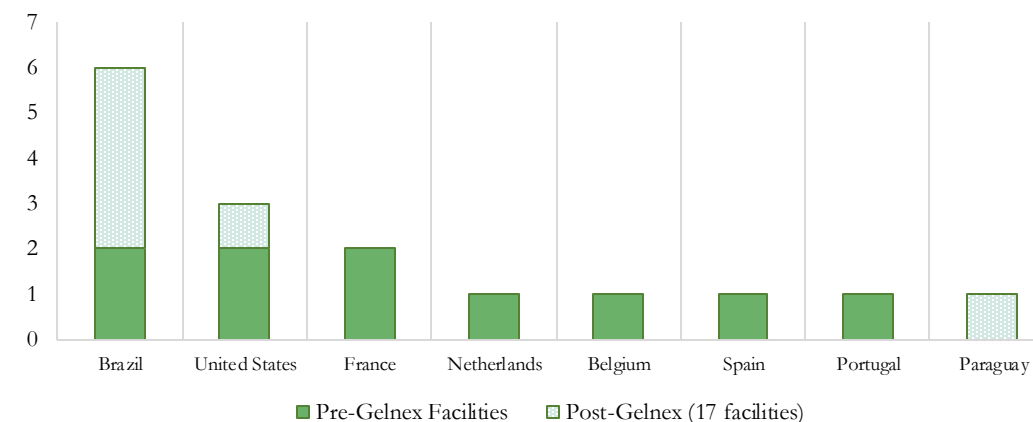
Locations & Economics of Additional Factories

- Of Darling's 11 collagen production facilities, **seven** are located in Europe and **two** are located in South America.
- The acquisition of Gelnex will add one facility in North America and five facilities in South America (Brazil & Paraguay).
- The energy cost savings will immediately be realized in early 2023 once the acquisition is completed.
- Gelnex circumvents lofty capital expenditures and provides Darling with immediate and established production capabilities upon deal consummation.

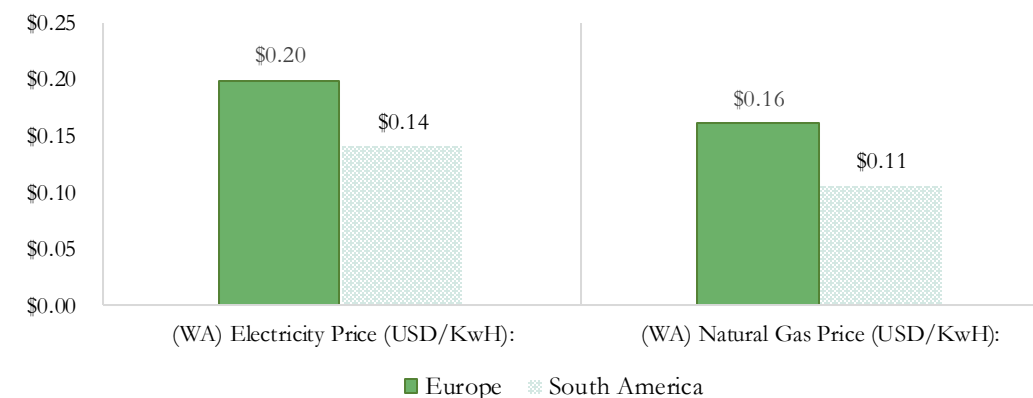
Comparison of Energy Prices Among Darling's Facilities

- European Kwh energy costs are nearly **45%** higher than their South American counterparts, given the persistent energy crisis in Europe
- The “Food” segment's expansion into the Brazilian geography is complemented by the recent acquisitions in Darling's “Feed” segment in the same region (FASA Group Acquisition, 2022).
- Savings on **production costs** and the segment expansion of **higher-margin products** will continue to uplift **Darling's bottom-line**.

European / South American Production Facilities



Weighted Avg. Energy Prices for Current Darling Facilities (est).



This graph displays the energy costs on a weighted-average basis for existing Darling facilities in Europe (Spain, France, Belgium, Netherlands) and South America (Brazil and Paraguay). The costs are been adjusted to reflect the weights of DAR's existing and novel facilities as well as their respective USD/Kwh cost.

Thesis Risks and Mitigants

1. Low Carbon Fuel Standards (LCFS) Credits and Climate Regulatory Environment
2. Renewable Fuel Standard (RFS) and Cost/Price Volatility



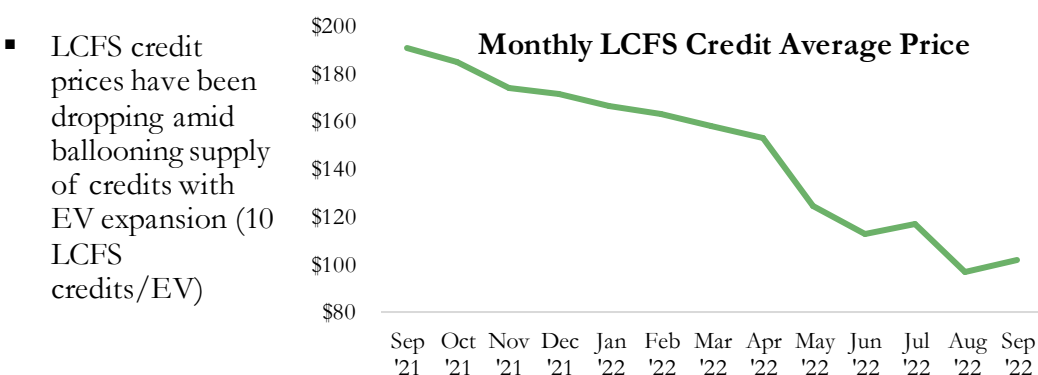
Thesis Risks and Mitigants

Regulatory Environment and Input Cost Risks

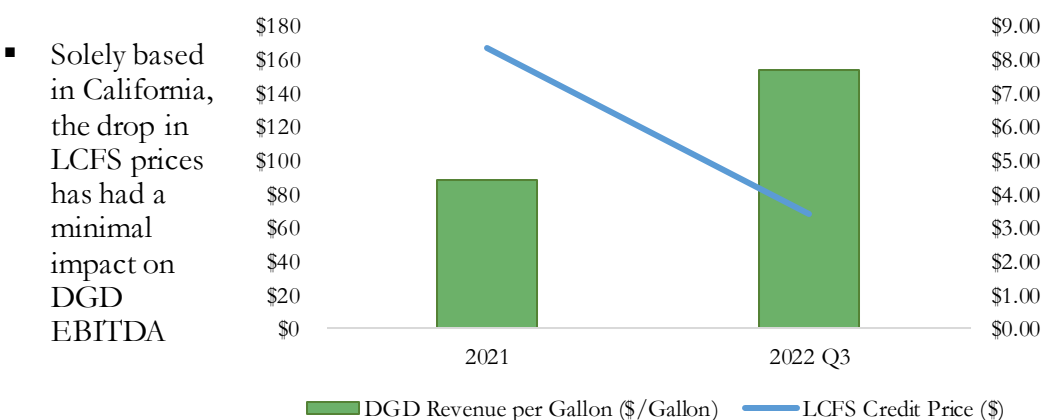
Low Carbon Fuel Standard (LCFS) Credits

- Run by the California state government, one LCFS (Low Carbon Fuel Standard) credit represents one metric ton of carbon dioxide reduced
- Credits are generated as transportation fuel with a low Carbon Intensity (CI) score is consumed—DAR earns credits in renewable diesel production
- Fuels with a high CI score generate deficits, which need to be offset by purchasing or generating LCFS credits (from a company like Darling)
 - Ex) Oil refineries suffer deficits through sale of traditional fossil fuels, while DAR receives credits for sale of renewable diesel

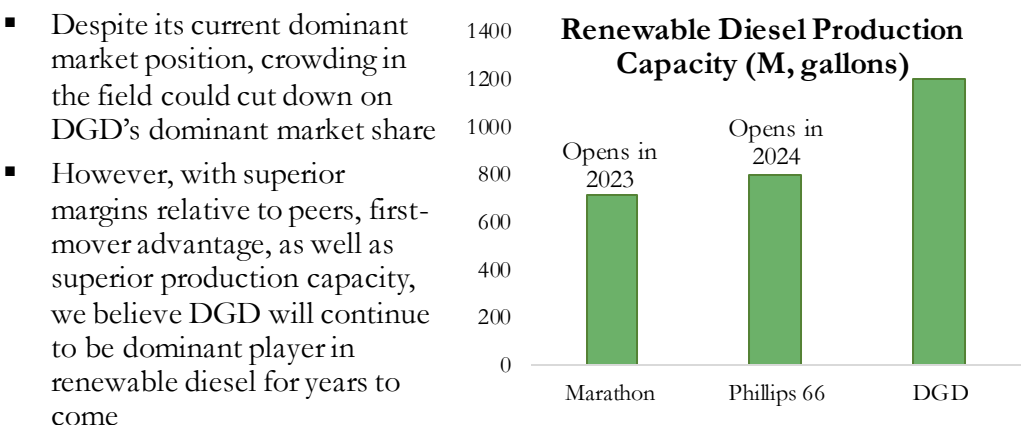
Declining LCFS Credit Prices



Minimal Impact of LCFS Prices on DGD Revenue



Increasing Renewable Diesel Competition



Thesis Risks and Mitigants

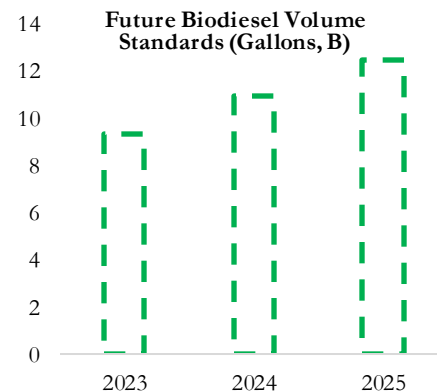
Regulatory Environment and Input Cost Risks

Renewable Fuel Standards (RFS)

- The EPA uses Renewable Identification Numbers (RINs) to track renewable transportation fuels and monitor compliance with the Renewable Fuel Standard (RFS), a federal program that requires transportation fuels sold in the U.S. to contain a minimum volume of renewables
- Refiners or gas/diesel importers are each assigned a Renewable Volume Obligation (RVO) based on the national RFS standard set
- RFS volume standards are applied **nationwide, with every refinery receiving an RVO**, making these standards hugely impactful on renewable diesel demand and thus, DGD revenue

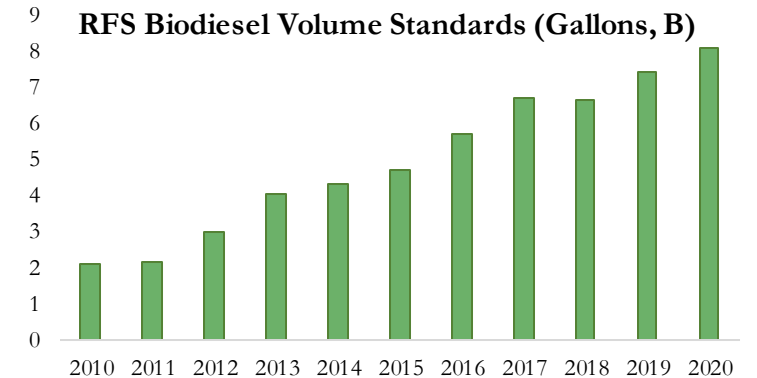
Recent RFS News and DAR Price Action

- **12/1/22:** EPA released guidance for biodiesel volume standards until 2025, instilling a 5-yr growth of >50%
- Expectations under Biden had been for more aggressive biodiesel growth, leading to a ~10% drop in Darling's stock price on 12/1
- This serious overreaction discounts the fact that standards and the industry as a whole continue to grow rapidly



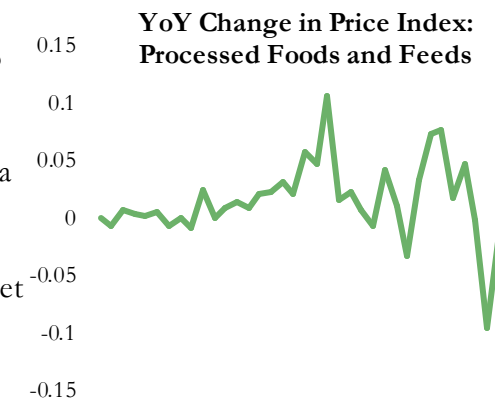
Continually Rising RFS Volume Standards

- Renewable Volume Obligation standards (set by the EPA) have been increasing for the past decade, with no expectations for the trend to stop



Input Cost, End Product Price Volatility

- **Russia/Ukraine War:** Further agribusiness disruption in Ukraine to increase livestock, agricultural prices
- 88% of raw materials obtained on a quarterly-updated cost-based formula
- However, owning the arbitrage between fuel and feed, DAR is relatively protected against end market price and input cost volatility



Valuation and Philosophy

1. Model Assumption
2. Valuation
3. SVF Philosophy

Model Assumptions

Key Model Inputs

- Food segment revenue driven by worldwide collagen demand
 - Slight margin expansion as a result of shift to higher margin product
- Feed growth revenue attributable to higher demand from DGD venture
 - Margin expansion due to improved network of facilities
- DGD step-up to accommodate for opening of DGD3 facility with EBITDA/GAL in line with guidance
 - 1,200,000 gallons assumed to be sold next year, and straight-lined for remaining periods
- Unable to project out Gelnex acquisition, which is the reason debt was issued
 - Updates can be made once more information is disclosed
- Forecasted repayment of revolving credit in 2023 to attain desired leverage multiple guided by management
- Incorporated share buyback program over the next three years
- Cost of debt equivalent to most recent issuing this past summer
- Difficult to find comparable companies to develop a relative valuation
 - No other operating in all three segments
 - Most renewable fuel companies have no/low profitability
- Price target of \$125.81 based on mix of perpetuity and EBITDA multiple

Valuation

Significant Upside with Either Valuation Method






Perpetuity Method		
Terminal Year ULFCF	\$	1,404,850
WACC		8.43%
TGR		2.50%
Terminal Value	\$	24,294,142
Present Value of Terminal Value	\$	17,462,944
Implied Enterprise Value	\$	22,426,890
Net Debt	\$	3,074,171
Implied Equity Value	\$	19,352,719
Diluted Shares Outstanding		162236
Implied Share Price	\$	119.29

Terminal EBITDA Method		
Exit Year EBITDA	\$	2,269,925
Multiple		12
Terminal Value	\$	27,239,101
WACC / Discount rate		8.43%
Discount period		4.08
Net Present Terminal Value	\$	19,579,817
Present value of ULFCF	\$	4,963,947
Implied Enterprise value	\$	24,543,764
Net debt	\$	3,074,171
Implied Equity Value	\$	21,469,593
Diluted Shares Outstanding		162236
Implied share price	\$	132.34

Sensitivity Analysis Perpetuity Growth Method (ULFCF)						
\$	119.29	7.43%	7.93%	8.43%	8.93%	9.43%
1.50%	\$ 118.24	\$ 109.95	\$ 102.85	\$ 96.71	\$ 91.35	
2.00%	\$ 128.63	\$ 118.76	\$ 110.43	\$ 103.30	\$ 97.13	
2.50%	\$ 141.13	\$ 129.20	\$ 119.29	\$ 110.91	\$ 103.75	
3.00%	\$ 156.46	\$ 141.76	\$ 129.78	\$ 119.81	\$ 111.40	
3.50%	\$ 175.69	\$ 157.16	\$ 142.40	\$ 130.35	\$ 120.34	

Sensitivity Analysis EV/EBITDA Method						
\$	132.34	7.43%	7.93%	8.43%	8.93%	9.43%
9	\$ 105.65	\$ 103.89	\$ 102.16	\$ 100.48	\$ 98.84	
10.5	\$ 121.32	\$ 119.26	\$ 117.25	\$ 115.29	\$ 113.37	
12	\$ 136.99	\$ 134.63	\$ 132.34	\$ 130.09	\$ 127.90	
13.5	\$ 152.65	\$ 150.01	\$ 147.42	\$ 144.90	\$ 142.43	
15	\$ 168.32	\$ 165.38	\$ 162.51	\$ 159.70	\$ 156.96	

Recommendation: BUY

Value Investing Principles		Our View
	Is the company forecastable ?	The product pricing is incredibly volatile given macro conditions; however, volume has remained consistent
	Is the company profitable ?	Proven history of profitability, with its vertically integrated supply chain providing superior margins relative to competitors
	Is the company mispriced ?	Yes, using a conservative multiple yields significant upside. The market isn't accurately pricing in recent acquisitions and growth prospects.
	Is the thesis high probability ?	The company can very likely follow recent tailwinds and capitalize on prior growth. The larger play of SAF is also in the not-so-distant future
	Is the company high quality ?	The company appears to be effectively managed. Operates in a strong market with significant macro-tailwinds