



Basics of Renewable Diesel

March 2020



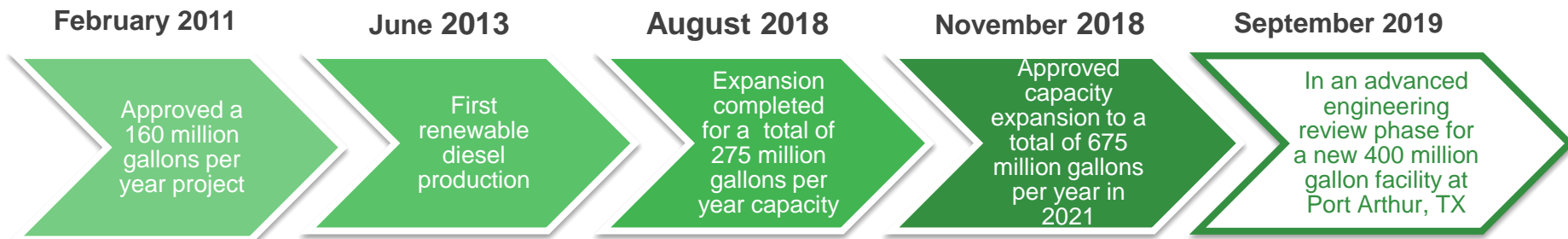
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- Darling (NYSE: DAR) collects and transforms all aspects of animal by-product streams into useable and specialty ingredients
- Darling processes ~10% of the world's animal by-products
- Operations in over 200 locations on five continents



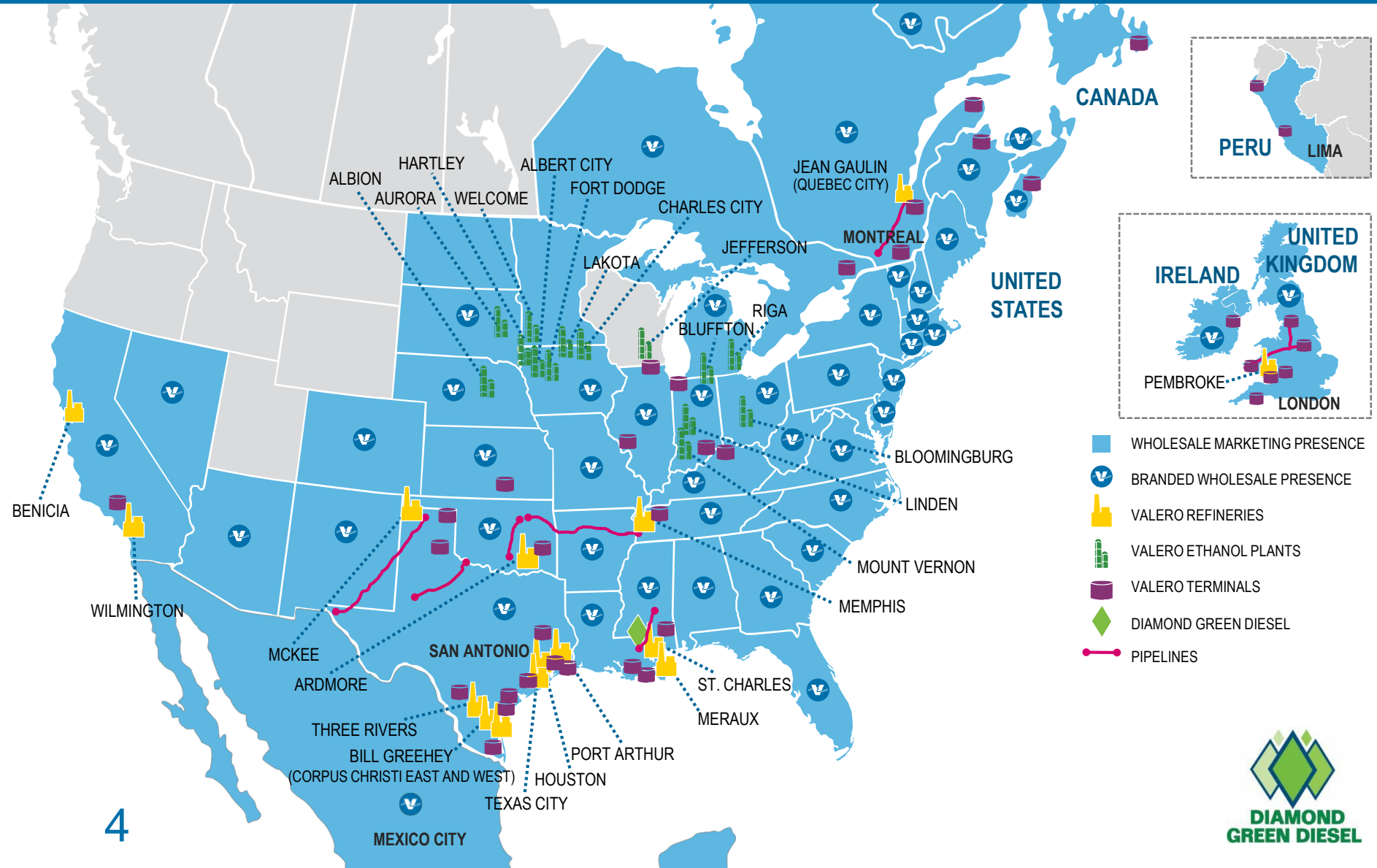
- Valero (NYSE: VLO) is an international manufacturer and marketer of transportation fuels and petrochemical products
- 15 refineries with a combined throughput capacity of ~3.2 million barrels per day
- 14 ethanol plants with a combined production capacity of 1.73 billion gallons per year

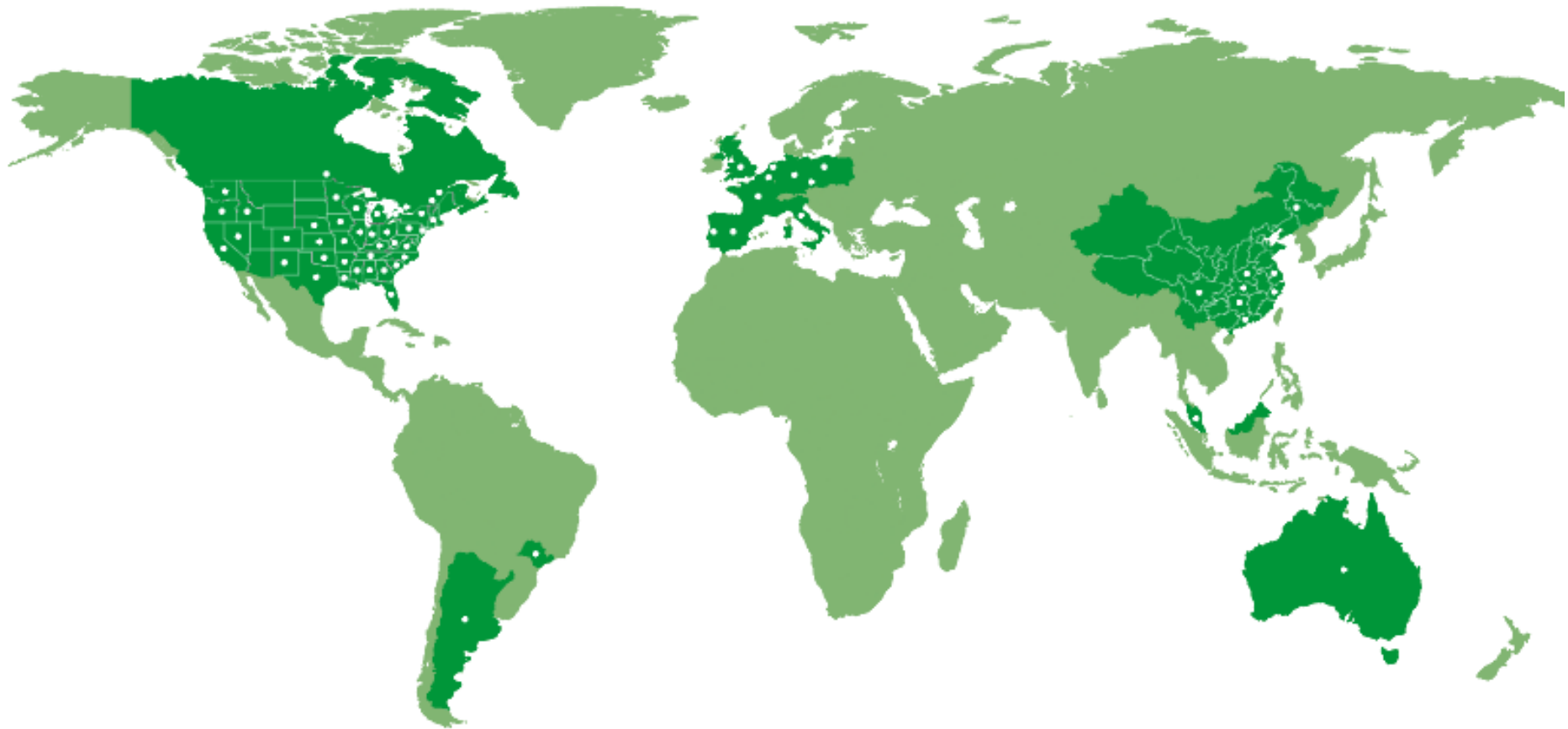


Diamond Green Diesel is North America's largest renewable diesel plant, located adjacent to Valero's St. Charles, LA refinery.



Valero is the Largest Renewables Fuels Producer in North America





135+ years in the business
200+ locations across 15 countries in 5 continents

Used Cooking Oil

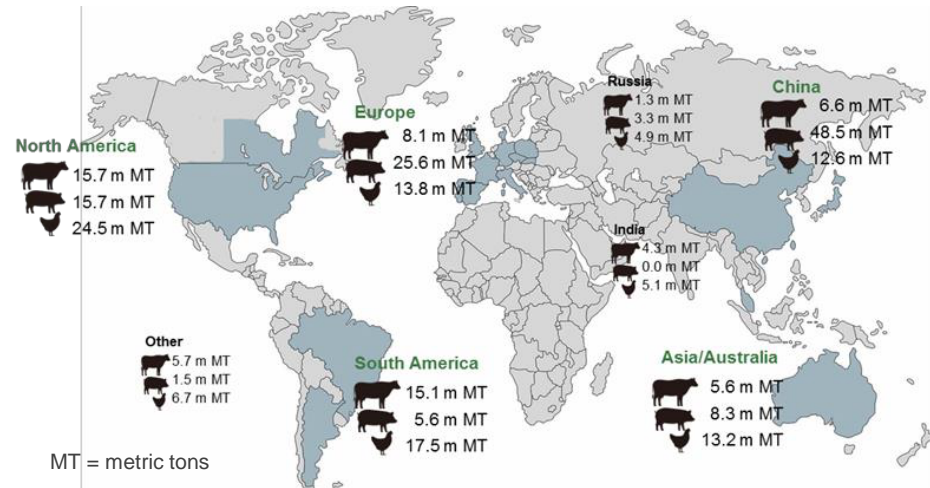


- 2.3 billion pounds of used cooking oil (UCO) is generated in the U.S.

~93% of Darling's UCO goes to biofuel

Sources: LMC International 2019, National Renderers Association and USDA

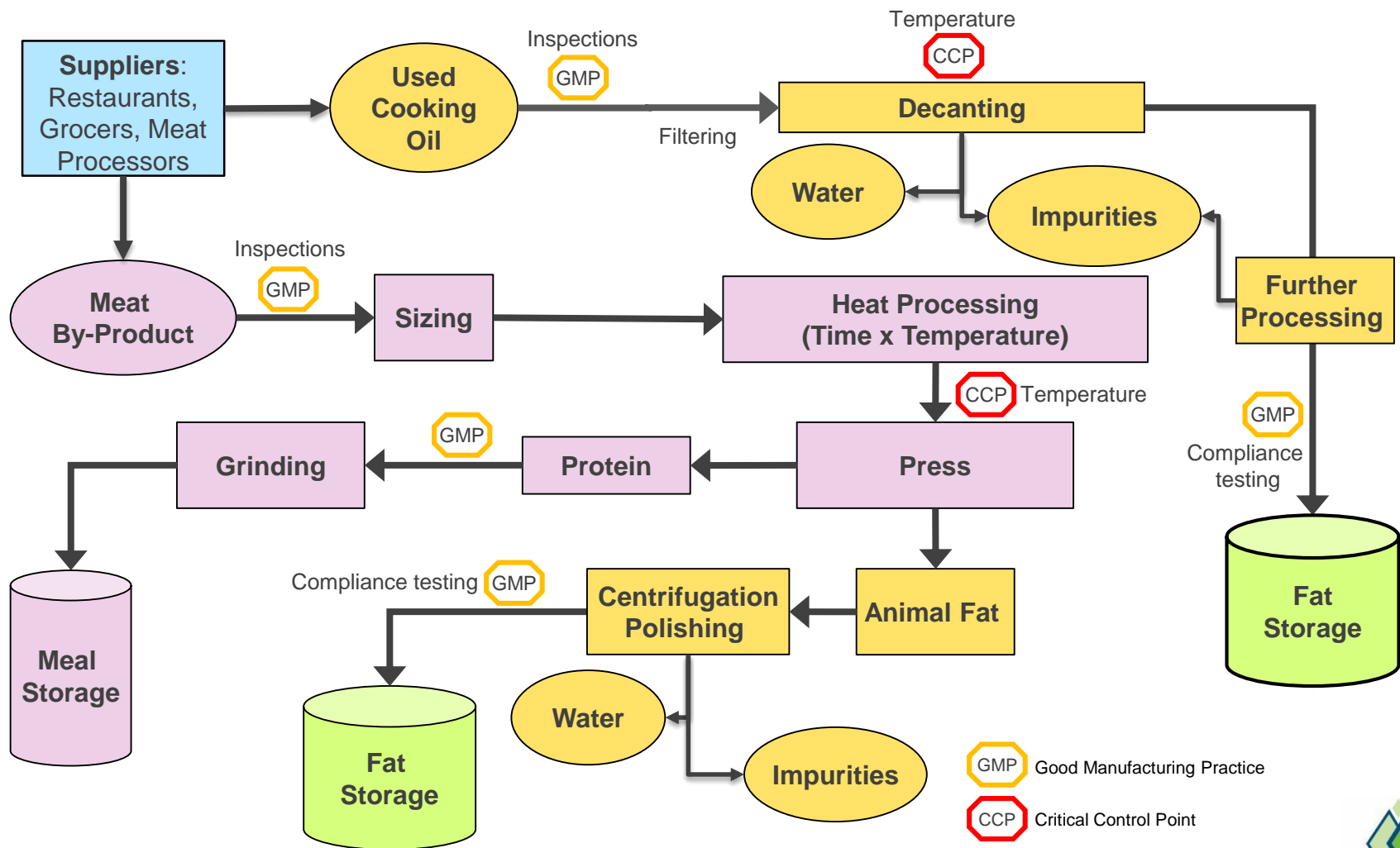
Recycled Animal Fats



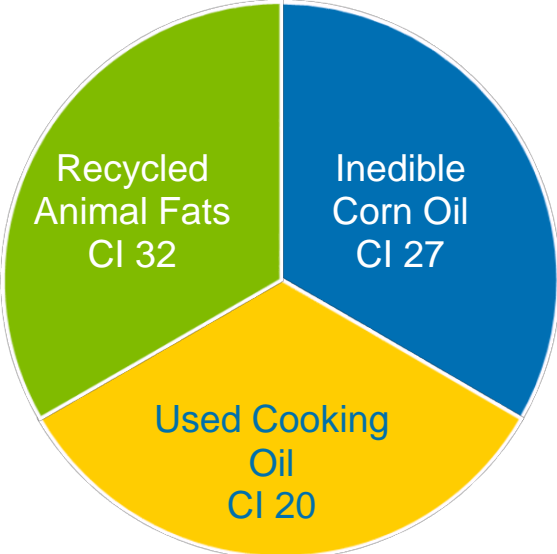
Countries where Darling has processing facilities

- Darling processes ~10% of the world's animal by-products

~49% of Darling's animal fats go to biofuel



Feedstock Composition and Carbon Intensity (CI)



Darling Ingredients provides feedstocks for DGD

- Darling is a global leader in by-product processing
- Darling brings expertise of the overall market for the feedstocks and the technical pretreatment of the feedstocks



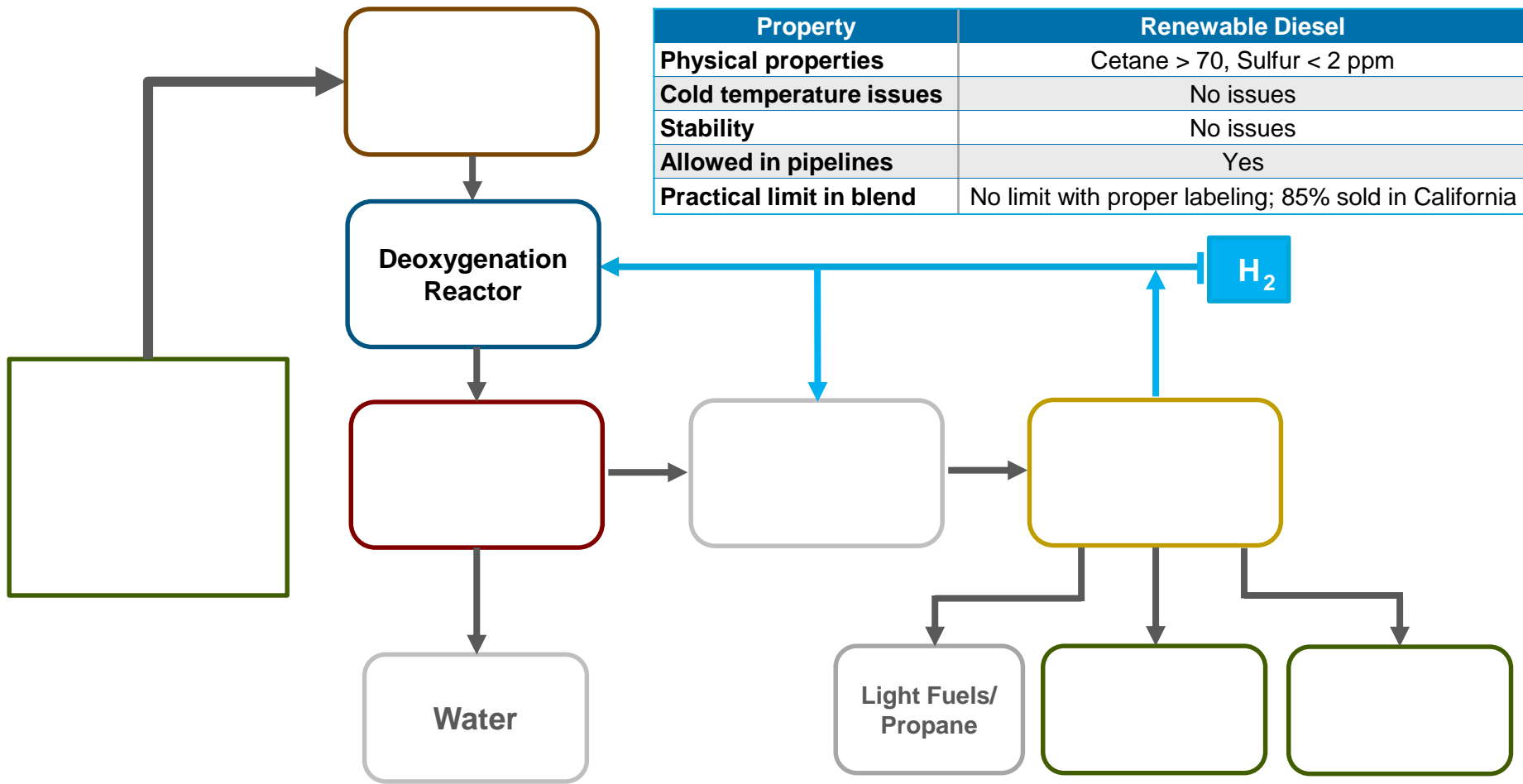
Carbon Intensity of Common Fuels

Product	Carbon Intensity
Gasoline	101
Diesel	100
California grid electricity	100
Vegetable oils for biomass-based diesel	55
Waste oils for biomass-based diesel	10-30



- California and Canadian programs are based on CI, which is measured in CO₂ equivalent emissions per unit of energy over the life-cycle of the fuel
- EU's program has life-cycle analysis, but sets up single credits, double credits, etc. to value feedstocks versus a formulaic value that is dependent on CI
- At \$200 per ton carbon price, the carbon value of a 25 CI renewable diesel fuel in California is \$1.76 per gallon

Energy sources with a low CI have significant value in programs like California's Low Carbon Fuel Standard (LCFS)



Property	Renewable Diesel
Physical properties	Cetane > 70, Sulfur < 2 ppm
Cold temperature issues	No issues
Stability	No issues
Allowed in pipelines	Yes
Practical limit in blend	No limit with proper labeling; 85% sold in California

No compatibility issues with existing infrastructure and engines





Diamond Green Diesel Expansion

- \$1.1 billion project cost expected to be funded from cash generated by DGD's operations
- Independent parallel renewable diesel plant and renewable naphtha finishing facility adjacent to existing plant expected to be completed in 2021
 - Increases annual renewable diesel production capacity by 400 million gallons per year and enables recovery of renewable naphtha
 - Combined total production capacity will be 675 million gallons per year after successful completion
- Margins are expected to be supported by increasing renewable fuel mandates and carbon pricing
- Estimated annual EBITDA contribution is approximately \$500 million at \$1.26 per gallon historical average EBITDA⁽¹⁾
- DGD is also in an advanced engineering review phase for a potential new 400 million gallons per year renewable diesel plant in Port Arthur, Texas

⁽¹⁾ Historical average EBITDA includes the Blenders Tax Credit. Projected pro forma EBITDA estimate of \$1.26 per gallon excludes the Blenders Tax Credit.

State

Low Carbon Fuel Standard (LCFS)

- Low Carbon Fuel Standard mandate was enacted in 2007 by the California Air Resources Board (CARB)
- CARB has adopted regulations to extend LCFS from 2020 to 2030 with a Carbon Intensity (CI) reduction goal of 7.5% in 2020, increasing to 20% in 2030 versus 2010 benchmark

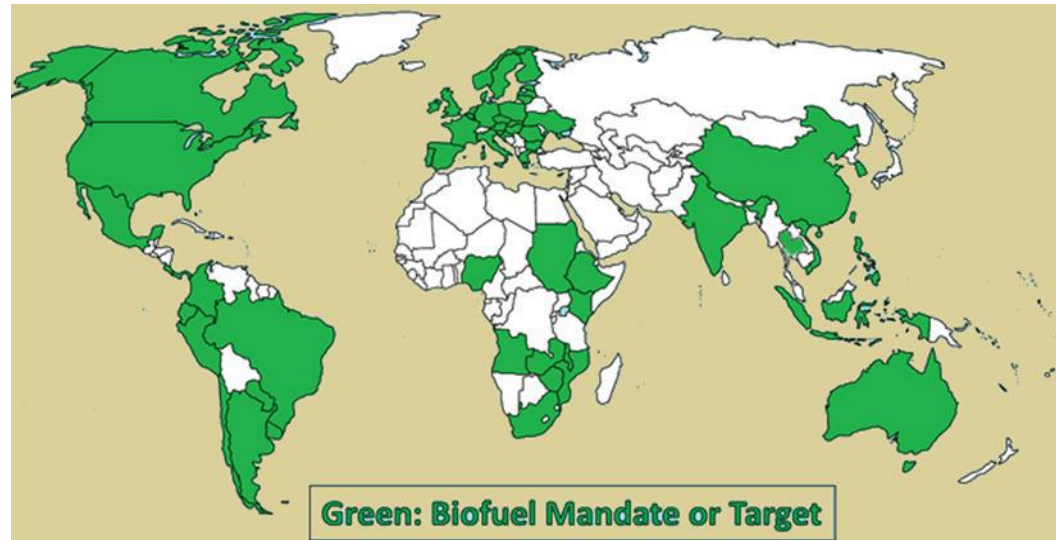
National

Renewable Fuel Standard (RFS)

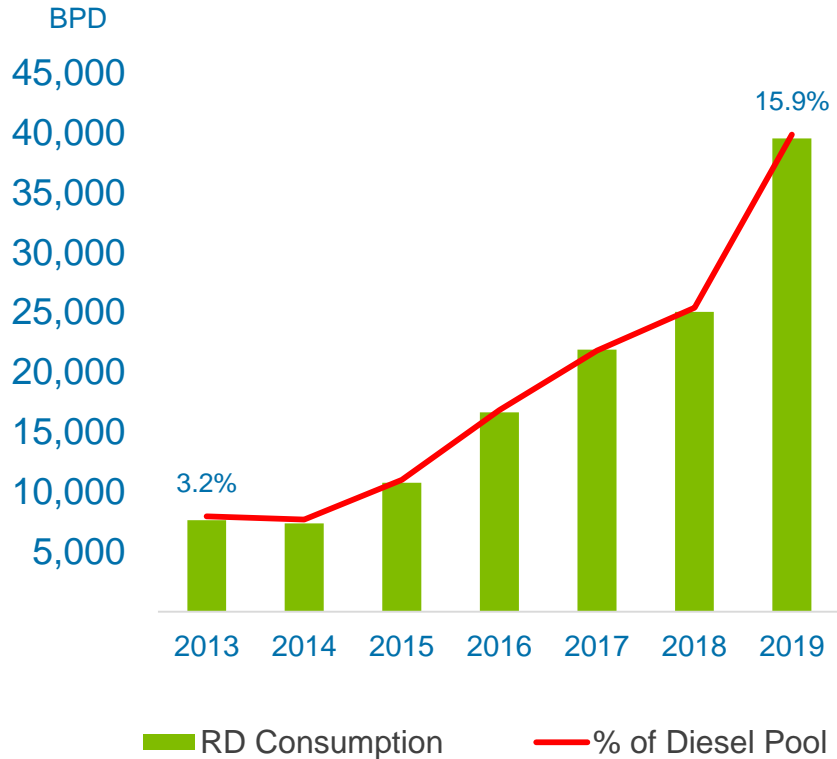
- RFS is a federal mandate aimed towards reducing the nation's use of traditional petroleum-based fuels by increasing the use of renewable fuels
- The 2020 renewable fuel volume requirement is 20.1 billion gallons

Global

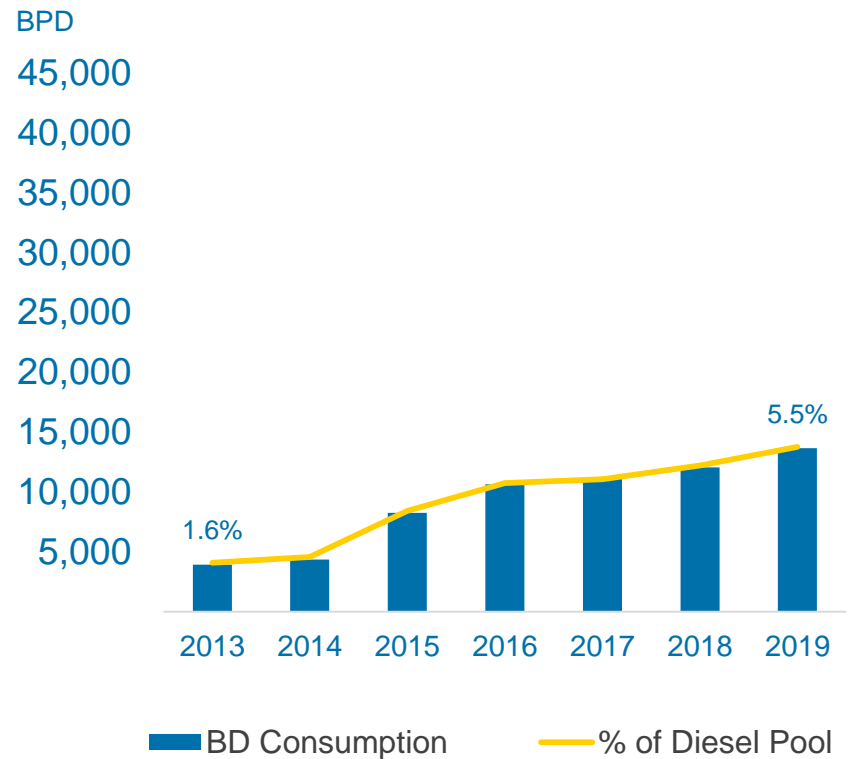
- 66 countries have adopted mandates or target goals to reduce emissions
- British Columbia, the European Union and the United Kingdom have adopted similar programs
- Sweden implemented a 19.3% GHG reduction mandate for diesel fuel in 2018, with the target increasing to 21% by 2020



LCFS Renewable Diesel (RD) Consumption



LCFS Biodiesel (BD) Consumption



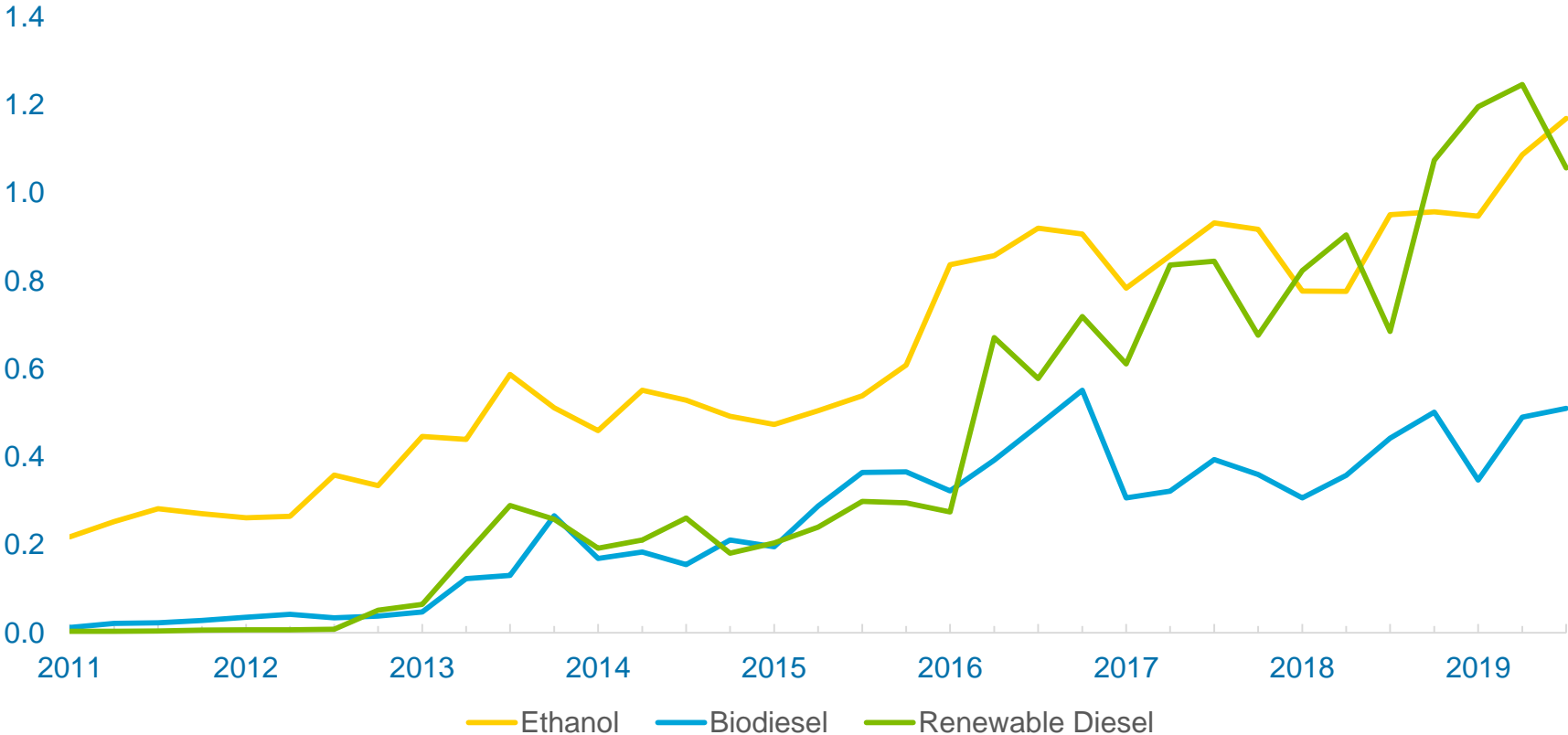
Renewable diesel blending is growing rapidly in the United States, Canada and Europe

Source: California Air Resources Board.



CARB Credits by Fuel Type

Million Metric Tons



Renewable diesel is projected to be a large carbon credit generator for the foreseeable future

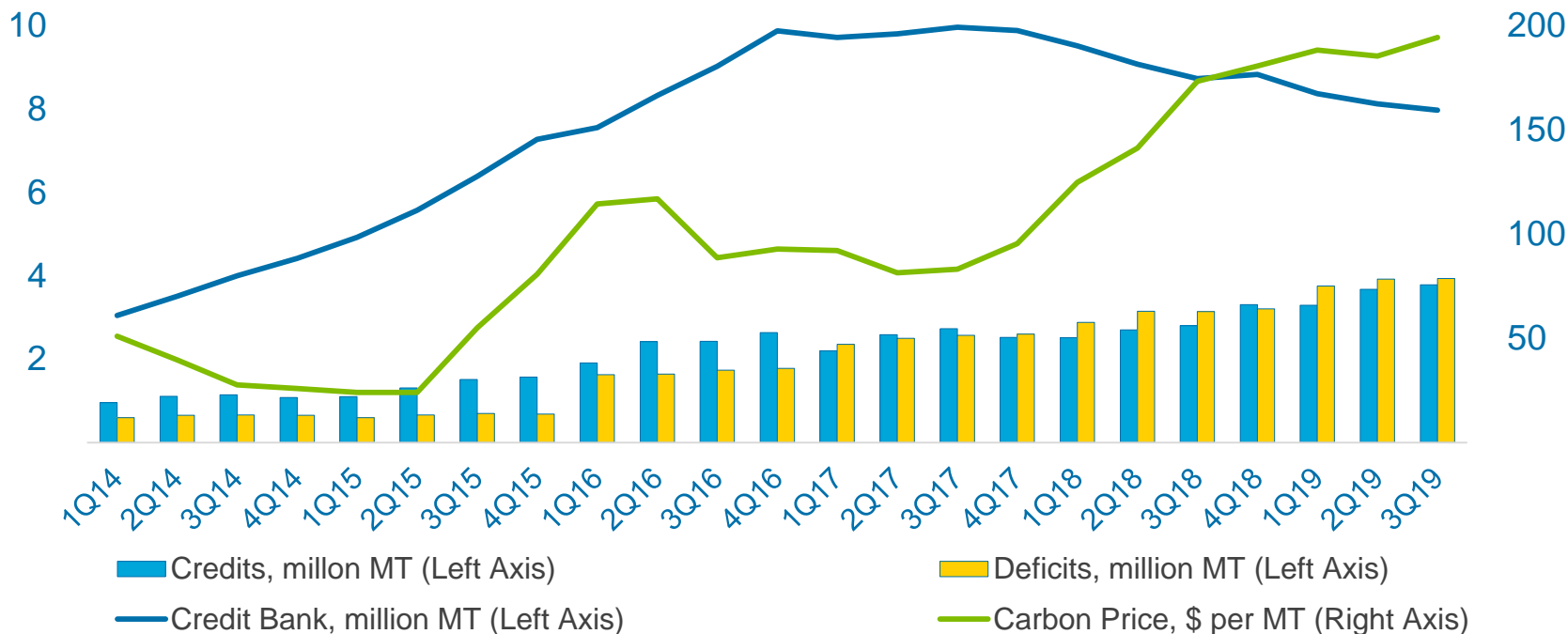
Source: California Air Resources Board as of September 30, 2019.



Million Metric Tons

LCFS Credit Bank and Carbon Price

\$ per MT



LCFS credit bank and carbon price

- Compliance standard was frozen at 1% carbon intensity reduction from 2013 – 2015 due to legal challenges
- This resulted in building credits in the credit bank
- Reduction goal for 2019 was 6.25% with a 10% goal for 2022
- The credit bank is now being drawn down, driving an increase in the carbon price

Source: California Air Resources Board as of January 31, 2020.

