Profiting from Biofuels

Business summary to build and operate biofuels plants under the EPA and California incentive programs

August 14, 2018

JatroRenewables®

SUSTAINABLE CHEMISTRY FOR EARTH

Renewable biofuels targeting a $120bn market[1]

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Who We Are

- Manufacturer of renewable biofuels
- BQ9000 biodiesel producer[2]
- Premium pricing through innovative technology and sustainable sourcing
- In house R&D, design and engineering

Biofuel Market Channels

Trucking

Municipalities

Petroleum refiners

Petroleum distributors

Platform

- Patented protected technology platform
- Centralized management for multiple plants in the U.S.
- Production cost advantages
- National sales network
- Next generation platform under development

Note: 1. Total #2 diesel fuel market consumption @ $3/gallon under the EPA's Renewable Fuel Standard (RFS) and California's Low Carbon Fuel Standard (LCFS) government programs
2. New plants coming on line will become BQ9000 compliant (a quality assurance program)

Commercial production
1st *Supercritical* production facility in Illinois[1]

Successful Scale-up . . .

From laboratory through pilot plant to full commercialization


Production control room


Production facility at CHS, Inc., Annawan, IL


Production laboratory

. . . With strong technology platform

Note: The company has built or re-engineered 18 plants, the one pictured above is the first *Supercritical.* Another is under construction in California with a third to close on its financing in September.

Supercritical technology development, fluids processing expertise and product IP
combined with operational know-how

Our journey
Past and into the future

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Biodiesel Producer 2004 - 2008	Tech. Development 2009- 2015	Supercritical Dev. 2012 - 2019	2nd Generation Expansion 2024+

R&D

- Initial R&D - IP base
- On-going R&D - and extending IP with Super
- On-going R&D - and extending IP to 2nd Gen.

Activity

- Pilot & Demo
- 2006 - Full scale plant
- Closed plant. Engineered or built 17 plants. R&D *Super*, 1st plant 2016; 2nd under construction

1st Super. Commissioned 2016
2nd Super under construction 2017

Market Development

- Biodiesel Production
- Marketing biodiesel design & engineering to biofuels industry
- Build plants and become the producer

Industry Trend

- Max. FFA 2%
- FFA increased to 15%. Jatro extends it to 100%. 2019: 2nd generation Cellulosic Diesel

Unique technology deployed at industrial scale

Now building a 2nd *Supercritical* plant in California

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Supercritical technology

- Refines oils to 100% FFA[2]
- Requires no catalyst (therefore no contamination of by-product glycerin)
- Lowers OPEX 25% to 30%
- Drop-in fuel, use at any ratio. No engine upgrades
- Reduces harmful emissions and particulates 50% to 60%
- Patented IP

Distillation

- Eliminates chilling
- Removes contaminates
- Lowers cloud point
- Removes sterols insuring biodiesel passes cold soak filtration test
- Renders finished biodiesel as clear as water
- Meets BQ9000 & QAP

Collecting an in-process biodiesel sample for testing

- Feedstock Preparation
- Hydrolysis

→

- Transesterification
- Methanol recovery
- Glycerin settlement

→ Glycerin (co-product)

→

- Distillation[3]
- Final wash

→

Biodiesel For Sale (ASTM 6751)

Notes

2. 98% of all biodiesel plants (out of 128) are unable to refine more than 15% FFA feedstocks
3. Only about 5% of plants have distillation

Feedstock acquisition
Development of quality, reliable and recurring sources

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Maximizing Supercritical for profit by processing blends of low cost, high FFA feedstocks


12% FFA
- CORN OIL


72% FFA
- TRAP GREASE

22% FFA
- TALLOW


15% FFA
- USED COOKING OIL (UCO)

- 98% of existing biodiesel plants are unable to process over 15% FFA feedstocks.
- The cost advantage of *Supercritical* is significant: OPEX and glycerin add $0.25/gallon; and using a 25% blend of high FFA feedstock adds $0.23/g to the margin

Traditional

15% CORN OIL		60% UCO		25% TALLOW			
$0.25/lb	+	$0.24/lb	+	$0.24/gal.	=	$0.24/lb	$1.81/gal

Supercritical

15% CORN OIL		60% UCO		25% TRAP			
$0.25/lb	+	$0.24/lb	+	$0.12/gal.	=	$0.21/lb	$1.58/gal[1]
							-0.20 OPEX/g
							-0.05 Glycerin[2] /g

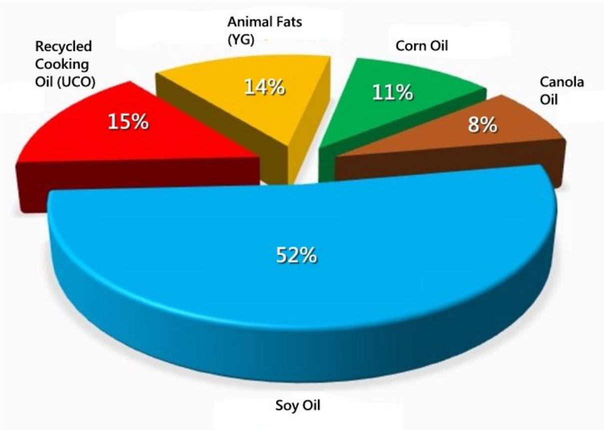
EBITDA Advantage = $0.48/gal

Notes: 1. Number of lbs per gallon is 7.55
2. Glycerin is 95% pure as no catalyst is used to contaminate it and typically worth double traditional value.

CAPEX and OPEX
Biodiesel margin and feedstock types

Supercritical Biodiesel Margin		15,000,000/year	
COST OF GOODS SOLD		Units	Per gallon
Feedstock (>30% FFA)		$0.00/lb	$0.00
Feedstock (<15% FFA) less 2% loss		$0.28/lb	2.11
Production (labor, energy, chemicals)			0.45
G&A (all other costs)			0.06
Total Cost of Goods Sold			**2.62**
REVENUE			
B99 Biodiesel	Heating Oil: 2.14/g)	HO-102	1.12
Low Carbon Fuel Standard	$191/mt	CI=24	1.76
Renewable Fuel Standard (D4 RIN)	$0.44/g	x1.5	0.66
Glycerin (@>95% purity)			0.11
Total Revenue			**3.65**
TOTAL Annual Revenue			54,750,000
TOTAL EBITDA Margin			15,390,000
Total EBITDA per gallon			**1.03**
CAPEX			
Supercritical Biodiesel plant			$19,750,000
Working Capital			4,000,000
Total Plant Cost w/Working Capital			**23,750,000**

Feedstock Usage for Biodiesel[1]



Notes
1. First generation feedstocks used to make biodiesel in the U.S. and Canada and must be below 15% FFA as plants are unable to process anything higher.
2. There are about 450 million gallons of trap grease in North America with FFAs as high as 100% that could be used to make biodiesel with *Supercritical.*

Competitive advantage: *Supercritical* will refine high FFA feedstocks. Using just 30% increases EBITDA by $0.28/gal.(after MIU losses). Plus, operations advantage ~$0.20/gal.

CAPEX and OPEX

Biodiesel margin and return on investment

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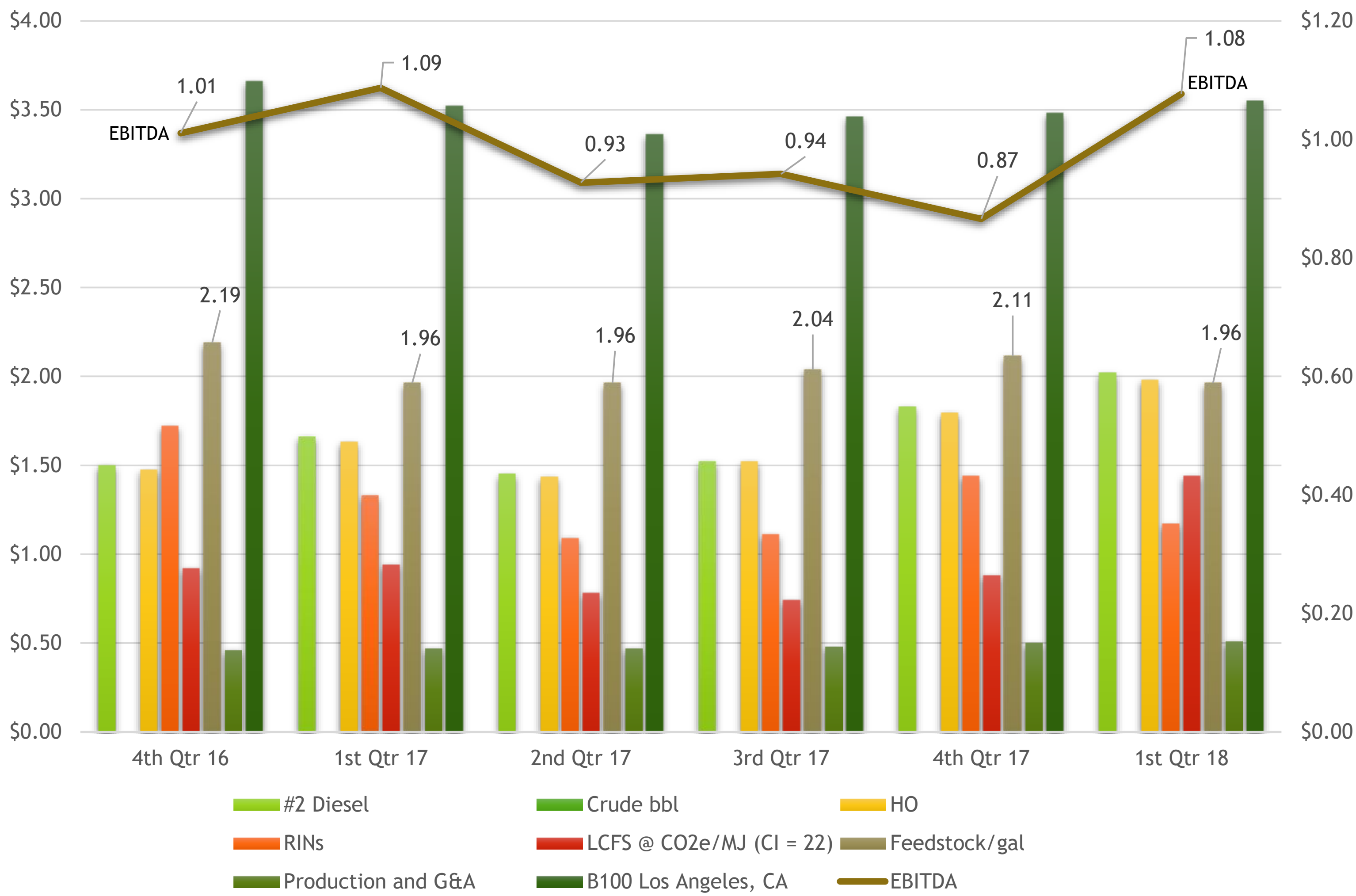
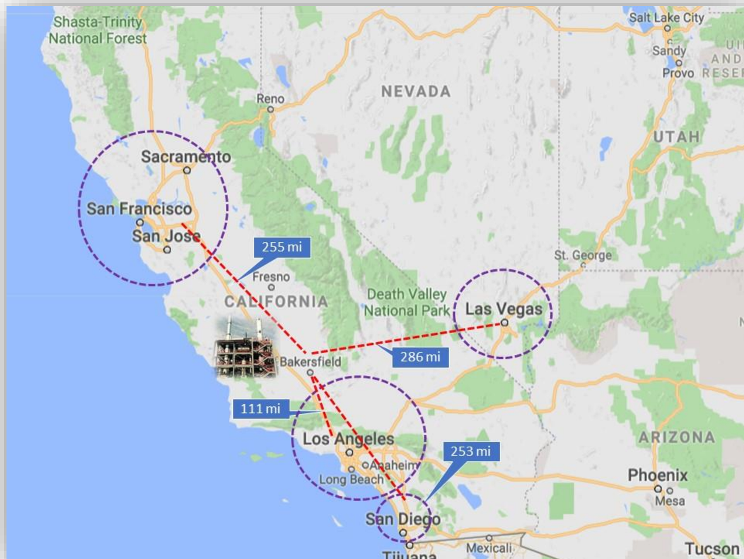
Margin Analysis w/RINs, LCFS *(historical, but assumes Supercritical OPEX, but no use of high FFA oils*

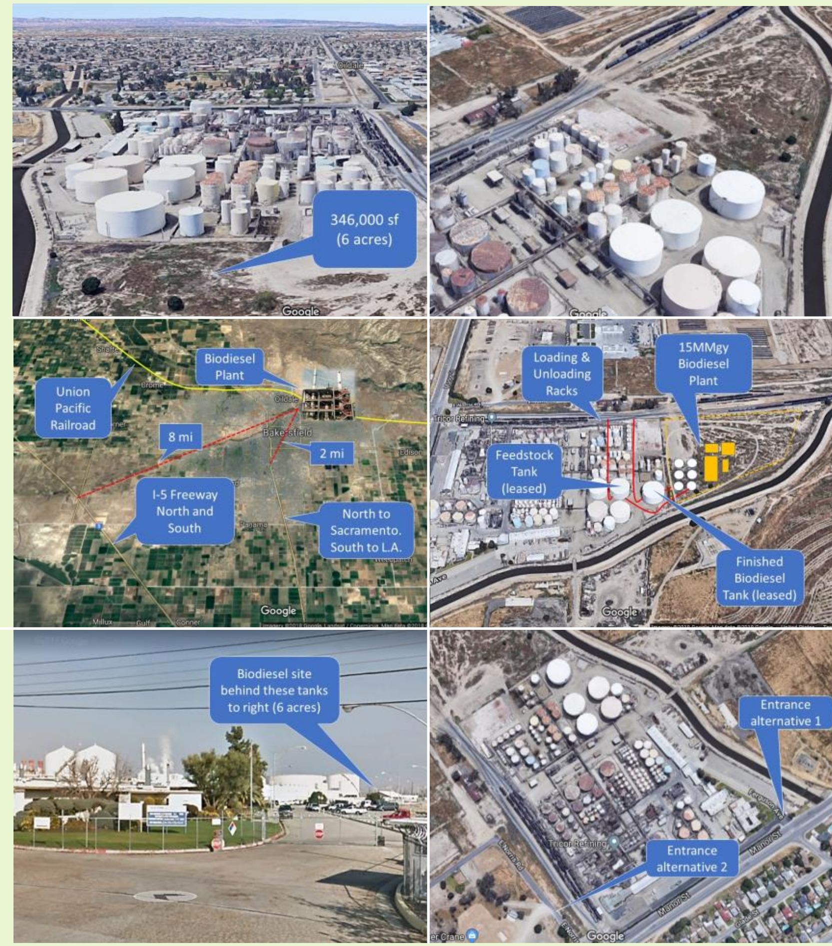


CALIFORNIA
Biodiesel plant co-located with petroleum refiner



Location, location, location!

- The biodiesel plant will be co-located with a refiner to take advantage of nearby assets such as storage tanks, rail and loading facilities
- Markets are close to the plant and primarily southern and central California (pops. 27m)
- Bakersfield is an oil producing area but far diminished from its heydays of the '60s and '70s
- There are many stranded assets to leverage.



Plant site location allows for extensive future plant expansion

Biodiesel plant roll-out, revenues and margins
Cellulosic Diesel to follow starting about 2025

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Year[1] Operating	BD 15MMgy	CD 15MMgy	Total Plants	Market[3] Price/gal (fob)	Gallons (000)	Total Revenue Per Year (000)	Total EBITDA (000)	EBITDA[5] /gal
2020	1		1	$3.10	15	$46	$10	0.67
2021	1		2	3.20	30	96	21	0.70
2022	3		5	3.25	75	244	54	0.71
2023	2		7	3.20	105	336	74	0.70
2024	2		9	3.15	120	378	83	0.69
2025[2]	1		10	3.65	170	620	155	0.91
2026		1	11	3.85	325	1251[4]	313	0.96
2027		3	14	3.75	400	1500	375	0.94
2018		3	17	3.65	475	1733	433	0.91
2029		4	21	3.55	585	2076	623	1.06
2030		4	25	3.45	685	2363	709	1.03
Totals	10	15	25		2,985	10,643	2,850	

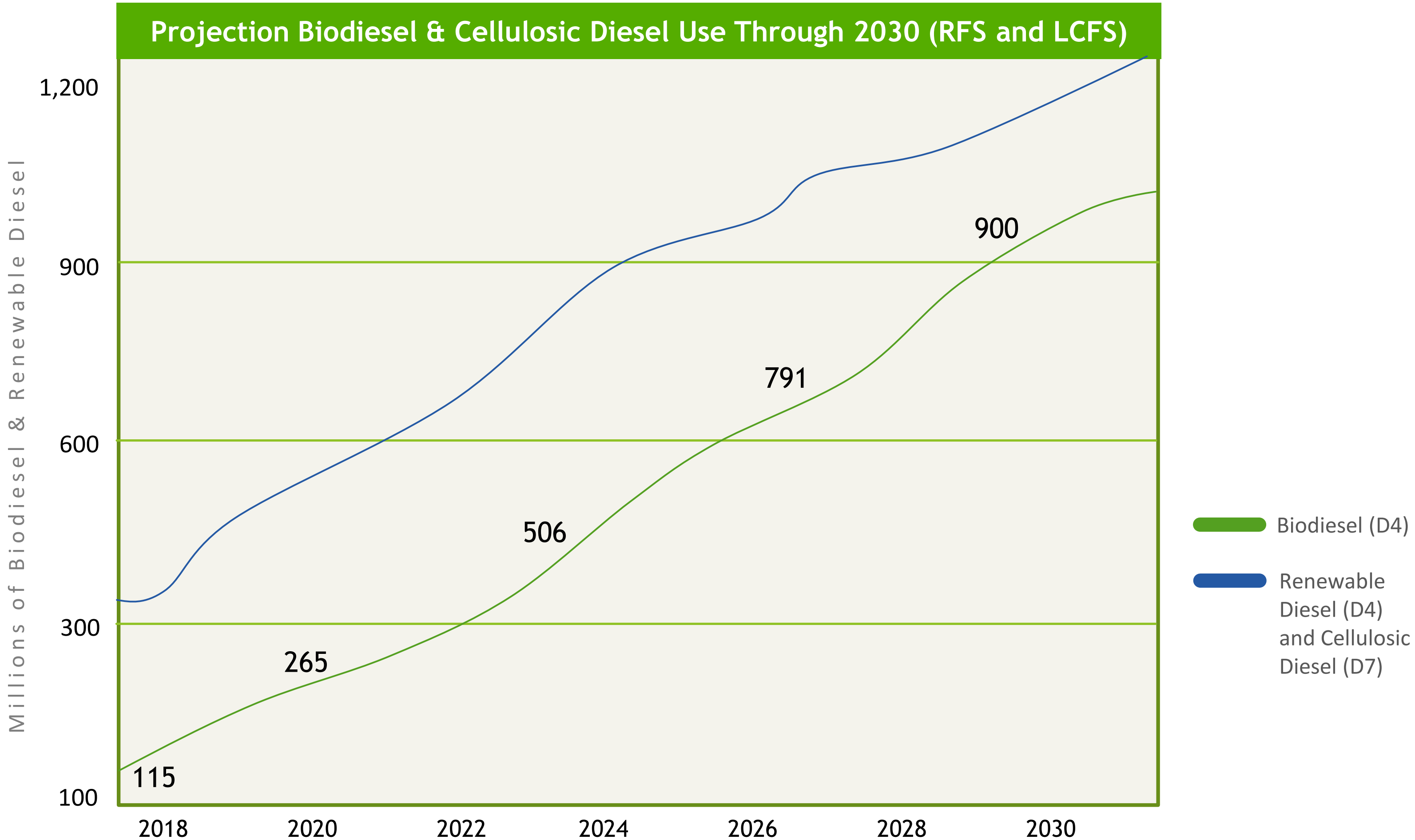
Assumptions for the above numbers

Notes

1. Average of 2.4 new plants per year
2. Cellulosic diesel plants
3. Cost per gallon average from past years
4. Margins for cellulosic increase as RIN value for a D7 at about $2.50/g (by comparison D4 biodiesel is about $0.70/gal)
5. Assumes Producer negotiates RINs and LCFS

Biodiesel consumption for California thru 2030

After 2030 cellulosic diesel will dominate the market



Source: California Air Resources Board (CARB)

Plant operations and management

Company Structure - Maximum efficiency with central control and autonomous ownership

Newco Renewables
(Corporate Management)

- Finance
- Funding

- Plant operations supervision
- Feedstock procurement
- Offtake sales & hedging
- QAP and RIN/LCFS mgt.
- Transportation logistics

- New Plant Marketing Development

- R&D
- Design & engineering
- Plant commissioning
- Plant maintenance

- Plants are all Newco branded
- All plant operations monitored 24/7 year round by Newco
- Feedstock acquisition, offtake sales, chemicals purchasing and maintenance scheduling by Newco

Plant 1

Plant 2

Plant 3+

- Plant owner equity will vary by plant but all 100% controlled by Newco

Biofuels products comparison

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Differences between #2 Diesel[2], Biodiesel, Renewable Diesel and Cellulosic Diesel

Properties	#2 Diesel	Biodiesel	Cellulosic Diesel[1]
Distillation Range	OK	OK (most not distilled)	Less lubrication degradation Change oil less
Cetane	Baseline	Good starting	Fast cold starts Less engine noise
Oxidation Stability	Baseline	< 3 hrs w/o additive (test) 6 month shelf life	No oxygen = no limit Less injector fouling
Emission CO_2, Nox, Particulates	Baseline	Minimum 50% higher	Minimum 60% higher
Cold Flow Properties, °C	To -40 w/additive	To -20 w/additive	Typically -15; can be refined to -40
Chemical Composition	Hydrocarbon	Methyl ester	Hydrocarbon Less engine oil thickening
Solubility of Water	Low	Medium	Very low risk of water absorbsion
Fuel Consumption	Baseline	Same as baseline	2% to 4% higher than Petrodiesel 3% to 5% lower vs. neat FAME
Engine Oil Dilution and Deterioration	Baseline	Due to higher boiling temps in distillation, slight chance fuel could contaminate engine	About the same as baseline
Injector Fouling	Baseline	(Typically not used neat). Would follow additive for petrodiesel	Use typical detergents as petrodiesel especially for corrosion issues
Engine Power	Baseline	The same	The same except in older engines

Notes
1. Cellulosic Diesel is the same chemically as Renewable Diesel (both have ASTM designations as D975 Diesel Fuel). However, the difference (and very importantly) is Renewable Diesel is made from the same feedstocks as biodiesel. Cellulosic Diesel is made from cellulosic waste such as woody biomass, municipal solid waste, grasses etc.
2. Also referred to as ultra low sulfur diesel (ULSD)

Biofuels engineering team

Management team and experience

Raj Mosali, *President and Project Director*

Operated a biodiesel plant for five years. Designed and/or re-engineered 19 biodiesel plants since 2004. Developed the Supercritical process for transesterifying feedstocks to 100% FFA. Mr. Mosali has an M.S. in Electrical Engineering from Florida Atlantic University.

Ian Lawson

Director, Business Development

Develops business and marketing strategies. Has 40 years of experience and has owned successful companies in solar energy, telecommunications, and since 2008, biodiesel production. Mr. Lawson has a B.S. Degree in Communications from Boston University.

John Cooper

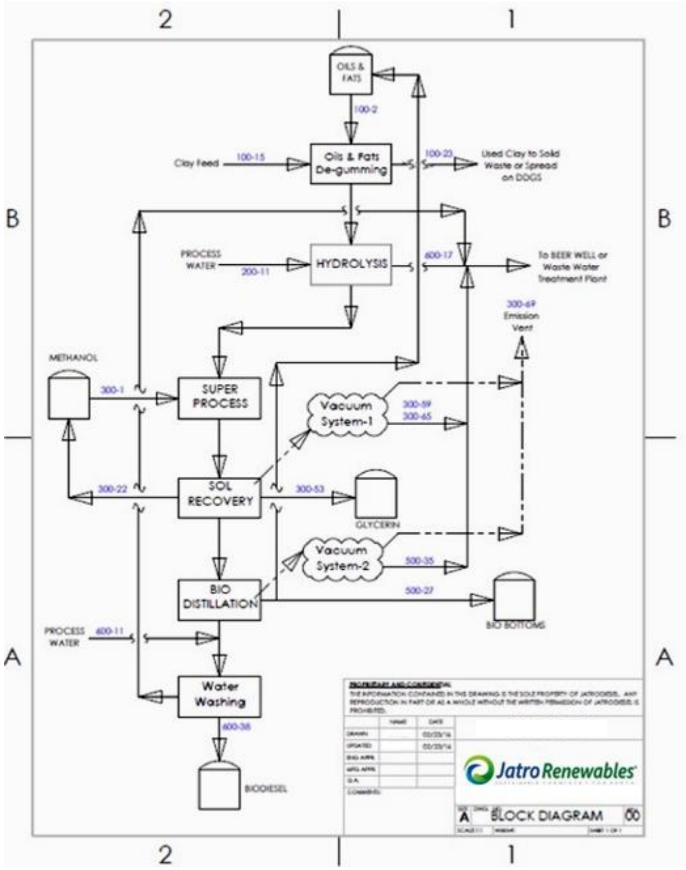
Senior Engineer

Co-developed the supercritical process for biodiesel refining.

Sabrina Pennington

Chief Financial Officer

Twenty-four years of experience in business accounting.



Block diagram*: Supercritical* biodiesel plant co-located at Calgren Energy ethanol plant (59MMgy), Pixley, CA (near Visalia)

Our biodiesel resume

Biodiesel Built or Re-engineered Since 2004

1. American Ag Fuels, Defiance, OH
2. Middletown Biofuels, Harrisburg, PA
3. Michigan Biodiesel, Bangor, MI
4. Walsh Biofuels, Mauston, WI
5. Mt. Coco Products, Philippines
6. Imperial Valley Biodiesel, El Centro, CA
7. Greenlight Biofuels, Princess Anne, MD
8. Western Biodiesel, High Plains, AB, Canada
9. African Energy Initiative, Kampala, Uganda
10. Jatrodiesel, Miamisburg, OH
11. Center Alternatives, Cleveland, OH
12. Vanguard Synfuels, Alexandria, LA
13. Biovantage Fuels, Belvidere, IL
14. Washakie Renewables, UT
15. Greenleaf Biofuels, New Haven, CT
16. United Refining, PA (NYC project)
17. Mid-America Biofuels, North Platte, NE
18. CHS, Inc. Ethanol, Annawan, IL (co-located)
19. Calgren Renewable Fuels, Pixley, CA (co-located)
20. Bio California, Bakersifeld, CA (financing stage)

Above: Vanguard Synfuels biodiesel plant (15MMgy), Alexandria, LA. Jatro increased production to continuous and added esterification to enable refining of animal fat feedstock to 15% FFA (formerly soy only with a maximum of2% FFA)

Biofuels Pathways Alternatives

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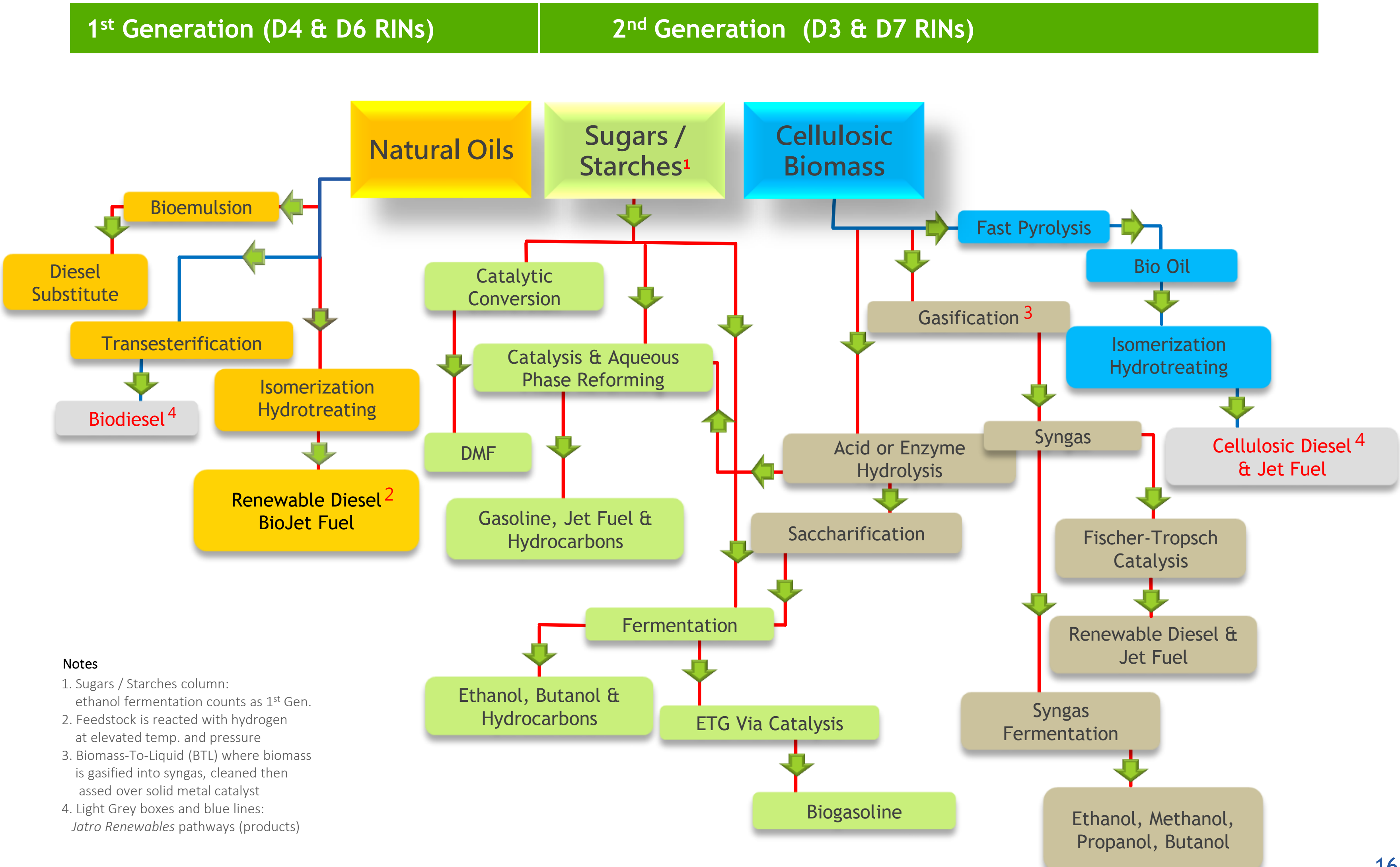

Notes

1. Sugars / Starches column: ethanol fermentation counts as 1st Gen.
2. Feedstock is reacted with hydrogen at elevated temp. and pressure
3. Biomass-To-Liquid (BTL) where biomass is gasified into syngas, cleaned then assed over solid metal catalyst
4. Light Grey boxes and blue lines: *Jatro Renewables* pathways (products)