

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

Current Report
Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (date of earliest event reported): October 1, 2021

GLOBAL CLEAN ENERGY HOLDINGS, INC.
(Exact Name of Registrant as Specified in Charter)

Delaware
(State of Incorporation)

000-12627
(Commission File Number)

87-0407858
(I.R.S. Employer Identification No.)

2790 Skypark Drive, Suite 105, Torrance, California
(Address of Principal Executive Offices)

90505
(Zip Code)

(310) 641-4234
(Registrant's Telephone Number, Including Area Code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425).
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12).
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b)).
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c)).**

Securities registered pursuant to Section 12(b) of the Act

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
N/A	N/A	N/A

Securities registered pursuant to Section 12(g) of the Act: Common Stock, par value \$0.001 per share

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter). Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

On October 1, 2021, Global Clean Energy Holdings, Inc. (the "Company") increased the annual base salary of Ralph Goehring, the Company's Chief Financial Officer from \$225,000 to \$250,000 and paid Mr. Goehring an interim performance bonus of \$8,500.

Item 7.01 Regulation FD Disclosure.

The Company from time to time makes presentations at conferences and to analysts, current stockholders, potential investors and others, and has prepared presentation materials that the Company uses in this regard. A copy of the presentation materials is furnished as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

The information contained in this Item 7.01 and in Exhibit 99.1 furnished herewith shall not be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under Section 18 of the Exchange Act, nor shall it be deemed incorporated by reference into any filings made by the Company under the Securities Act of 1933 or the Exchange Act, except as shall be expressly set forth by specific reference in such a filing. The furnishing of this information will not be deemed an admission as to the materiality of any information contained herein.

Item 8.01. Other Events.

On October 5, 2021 the Company issued a press release announcing that its subsidiary is relocating its headquarters to Great Falls, Montana. The full text of the press release is attached hereto as Exhibit 99.2 and incorporated herein by reference.

Item 9.01 Financial Statements and Exhibits

- (d) Exhibits.

Exhibit No.	Description
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[99.1](#)

[Global Clean Energy Holdings, Inc. October 2021 Corporate Presentation, October 5, 2021](#)

[99.2](#)

[Global Clean Energy Holdings, Inc. press release, dated October 5, 2021.](#)

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

October 5, 2021

By: /s/ Richard Palmer

Richard Palmer

Chief Executive Officer

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Corporate Presentation

Fall 2021

Ticker: GCEH

Exchange: OTCQX



Disclaimer

This presentation contains forward-looking statements reflecting management's current assumptions, projections, expectations, targets, intentions or beliefs about future events or other statements that are not historical facts. These forward-looking statements can be identified with words such as "expects", "plans", "projects", "potential", "suggests", "may", or similar expressions. The forward-looking statements in this presentation involve known and unknown risks, uncertainties and other factors that may cause the actual results to be materially different from any future results, performance or achievements expressed or implied by such statements. Forward-looking statements in this presentation include, without limitation, statements regarding the future cost of Camelina feedstock, our ability to cultivate Camelina in forecasted amounts, the achievement of anticipated low carbon intensity scores of our products, the operation and development of our Bakerfield, California biorefinery, the market size of our products, and the availability of the capital needed to expand our refinery and related operations. For more detailed information about the risks and uncertainties that could cause actual results to differ materially from those implied by, or anticipated in, these forward-looking statements, please refer to the Risk Factors section of our Annual Report on Form 10-K and subsequent updates that may be contained in our Quarterly Reports on Form 10-Q and current reports on Form 8-K on file with the SEC. Forward-looking statements speak only as to the date they are made. Except as required by law, we do not undertake to update forward-looking statements to reflect circumstances or events that occur after the date the forward-looking statements are made. This presentation does not constitute an offer to sell or buy securities, and no offer or sale will be made in any state or jurisdiction in which such offer or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.



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Company Overview

Global Clean Energy Holdings at a Glance

We are the only fully-integrated and nonfood-based renewable fuels producer in the world

Origin Story

- Addressing the root problem – **Feedstock Scarcity & Supply/Cost**
- Tenured history in feedstock development** is the foundation of our business

27 proprietary patents and patent applications

6 States currently have substantial acreage under commercial cultivation

1 Brownfield Biorefinery conversion

Renewable Fuels Innovator

- Differentiated renewable fuels process** that aims to **solve** the industry wide **feedstock conundrum**
- Developer of **sustainable, ultra-low carbon feedstock technology & patent protected intellectual property**

Proprietary Feedstock Cultivator

- Largest **nonfood-based energy crop** (Camelina) producer in North America
- Over **15 years** of commercial cultivation across **24 states** plus Canada, with substantial acreage currently under commercial cultivation in **six states**

Advantaged Renewable Fuels Producer

- Owner of a **strategically positioned 230MMGPY Biorefinery** in Bakersfield, CA
- Regionally advantaged** within a large demand center (San Joaquin Valley) and close proximity to Los Angeles and San Francisco
- Scalable growth** platform targeting multiple downstream renewable fuels end-markets

Industry Leader with Relationships

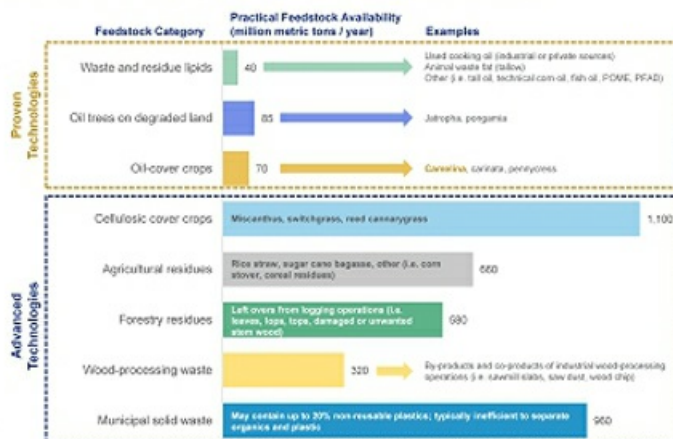
- Strategic relationships** with various industry leaders
- Growth platform underscored by a **long-term, take-or-pay** renewable diesel ("RD") **offtake contract** with ExxonMobil



Global
clean energy

The Renewable Fuels Feedstock Conundrum

- The **finite** amount of sustainable **feedstock constrains** the **production** of renewable fuels
- **Producers need to choose** between pursuing **abundant feedstocks** or **proven technologies**
 - Abundant feedstocks require advanced technologies
 - Proven technologies use competitive feedstocks
- GCEH aims to **solve the issue** with our **proprietary Camelina feedstock** and **proven technology**



5. Sources: World Economic Forum (WEF) and McKinsey & Company's Clean Skies for Tomorrow November 2020 Insight Report.
 Note: The WEF excludes unsustainable feedstock from its report (e.g. corn) as the indirect emissions from converting unsustainable feedstock into fuel largely offset the environmental benefits (e.g. lower direct emissions).

Our Farm-to-Fuel Strategy

We utilize a differentiated, vertically-integrated, farm-to-finished fuel strategy





Investment Highlights

Investment Highlights

1

Vertically-Integrated, Sustainable, Scalable, "Farm-to-Fuel" Solution

2

Ample Access to Reliable Feedstock for BKRF

3

Long-Term Offtake Agreement with ExxonMobil Provides Margin Certainty

4

Ultra-Low Carbon Intensity ("CI") Score Drives Higher RD Value

5

Proprietary Feedstock with Leading Value Proposition

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Strategically Located Biorefinery with Early Entrant Advantage

7

Favorable Industry Trends and Regulatory Environment Supports Long-Term RD Growth

Vertically-Integrated, Sustainable, Scalable Solution

Our vertical integration gives us a number of advantages relative to peers

Vertical integration enables us to further our goal of profitably producing "below zero carbon" renewable fuels while also creating a positive impact on food security by easing the demand on food crops for fuel production

	Global clean energy	Non-Vertically Integrated Renewable Fuel Producers	Traditional Ag / Renewable Feedstock Companies
Sustainable, Nonfood-Based Feedstock Technology	✓	✗	✓
Ample Feedstock Availability (Supply Assurance)	✓	✗	✗
Full Control over Finished Fuel Carbon Intensity	✓	✗	✗
Optimized / Low-Cost Supply Chain Advantage	✓	✗	✗
Revenue Generation from Seed / Meal Sales	✓	✗	✓
Revenue Generation from Co-Product Sales	✓	✓	✗
Long-Term, Price Established Contracts & Offtake Visibility ⁽¹⁾	✓	✓	✗

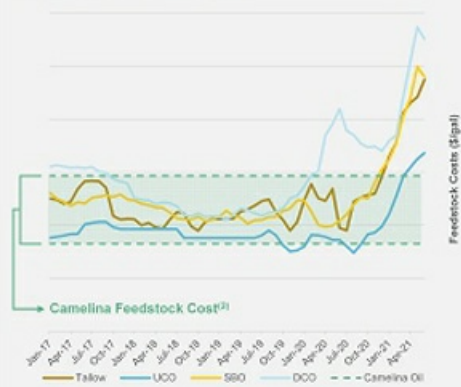
⁽¹⁾ Source: Management expertise.
Excludes Offtake Agreement based upon both a fixed and variable price.

Ample Access to Reliable Feedstock for BKRF

GCEH Feedstock Advantages

Camelina	Conventional
✓ Secure feedstock source with scalable growth	✗ Exposure to market based drivers & price competition
✓ Stable, contract-based pricing	✗ Subject to price volatility due to potential supply / demand imbalances
✓ Lower relative CI Score	✗ Higher relative CI score
✓ Nonfood-based crop with low relative water usage	✗ Competes with food crops / industry
✓ Ability to grow on fallow or double cropped land	✗ Negative impact on food security and sustainability
✓ Provides farmers with additional revenue opportunities	
✓ Long-term licensing potential	
✓ Patent protected	
✓ RED II compliant	

Relative Feedstock Prices⁽¹⁾



10 Source: FactSet
Note: Feedstock prices based on monthly averages.

(1) Department of Energy (DOE) fiscal conversion assumptions for Tallow (0.0), Used Cooking Oil (7.5), Soybean Oil (7.5) and Can Oil (8.2).

(2) Camelina feedstock cost based on Management estimates as the Company ramps up Camelina production.

Long-Term Offtake Agreement with Oil Major

Strategic relationship with ExxonMobil expected to provide long-term offtake and margin certainty

Large-Scale, Blue-Chip Customer

- ExxonMobil has the **right to purchase** all renewable diesel produced at the Bakersfield Biorefinery under **two contracts**: a Product Offtake Agreement ("POA") and a Term Purchase Agreement ("TPA")

Long-Term Contracts

- Both agreements have a **five-year term** with ExxonMobil holding the **option to extend** for an additional five year term

Volume Commitment

- POA covers **105 MMGPY** (~50% of expected run-rate RD production)
- TPA covers any renewable diesel production above the POA

Established Structure with Upside Sharing

- Our POA with ExxonMobil will generate a **stable long term margin** with **mutually benefitting upside sharing** potential while **mitigating feedstock cost** volatility risk
- The POA agreement significantly **mitigates margin volatility** while **enhancing feedstock and profitability flexibility** as Camoëna production ramps

	POA	TPA
Customer	ExxonMobil	
Type	Take-or-Pay	Option
Pricing	Establishes defined margin with upside sharing	Market based
Term	Five years ⁽¹⁾	Five years ⁽¹⁾
Volume Commitment	105 MMGPY	Any additional volumes above POA

⁽¹⁾ ExxonMobil has the option to extend for one additional five year term.

Ultra-Low Carbon Intensity Score

Utilization of ultra-low carbon Camelina feedstock drives higher RD product values

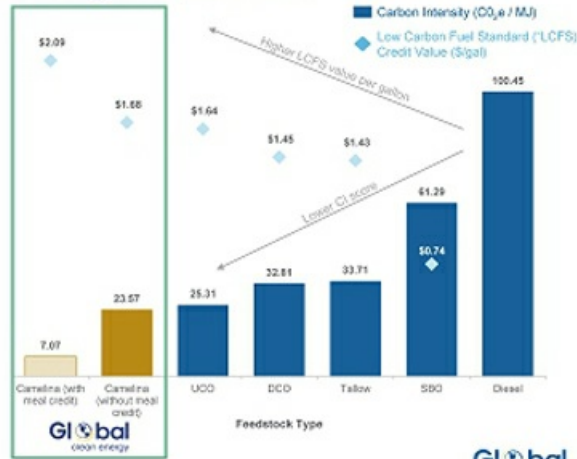
Not all renewable fuels are equal

(Lower CI = higher LCFS credits)

- Camelina has the potential to receive the **lowest CI score** of available RD feedstock on the market
- GCEH's Camelina California Air Resources Board ("CARB") approved pathway has a **CI score of ~23**, reflecting **~\$1.68/gal of LCFS credits**
- Including a potential meal credit, our Camelina's CI score could be reduced to **~7** and generate upwards of **~\$2.09/gallon of LCFS credits**
- In the future, with carbon capture & sequestration (CCS), Camelina could potentially produce RD with a **below zero CI score**

CI Score = ~7
(with meal credit)

LCFS = \$2.09/gal
(with meal credit)



12. Source: CARB-GREET 3.0 pathways (DCO excludes East Kansas Agri-Energy and Japon pathways).
 Note: LCFS price per credit assumes 20 2021 LCFS credit weighted average. CA LCFS Benchmark assumes 2021 CARB benchmark of 91.25 and RD energy density of 129,652,648.24. Camelina CI score with meal credit of 7.07 is a Management estimate and has yet to be approved by CARB.



Proprietary Feedstock & Leading Value Proposition

Camelina has the potential to displace other feedstocks due to its sustainability and economic advantage

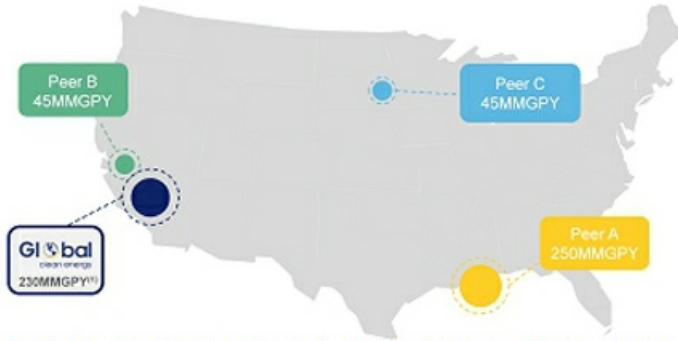


- While the Bakersfield Biorefinery will **partially** rely on alternative feedstock, the **ExxonMobil Offtake Agreement** will provide **margin protection**
- Once the Bakersfield Biorefinery is fully supplied with **Camelina**, SusOils can leverage the relatively **advantaged gross margin** to sell to third parties
- Once in the refinery, Camelina oil is **chemically similar** to soybean oil, so all active biorefineries using soybean oil **can run Camelina**
- Camelina oil production is **highly scalable** because of its **benefits to the farmers** growing it:
 - It grows on **fallow land**, requires **no incremental harvesting equipment** and has a **low breakeven yield level**

13. Source: FactSet, USDA, EPA, DOE bigal conversion assumptions and GREET 3.0 pathways (DCO excludes East Kansas Agri-Energy and Jason pathways).
 Note: 2020 average used for corn oil, soybean oil, tallow, used cooking oil, diesel, LCP's credit weighted average and D4 RIN prices. May 2021 Joint Auction Prices used for OCA Prices. RD OCA avoidance set at 2.0104 mtCO2/gal. Camelina oil price based on Management estimates. RD energy density of 129,652,646-24 and California LCP's benchmark-GI of 91.25.

Strategically Located with Early Entrant Advantage

Bakersfield is positioned in the advantageous California market with a timing and capacity advantage



GCEH is years ahead of its peers (timeline of capacity additions) in terms of first production



14. Note: Lined capacities based on nameplate renewable fuels production capacity. Peer Group is AMTX, GEVO and REDJ. Facility expected to produce ~230MMGPY of RD plus other renewable co-products.

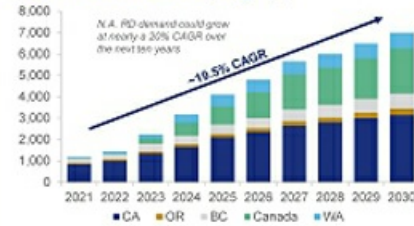
Favorable Industry Trends & Regulation

Lack of a blend wall and increasing regulatory support driving renewable diesel demand

Renewable diesel demand growth is being driven by growing federal and state level renewable fuels mandates

- RD benefits from the Renewable Fuel Standard ("RFS", LCFS, Blenders Tax Credit ("BTC") and Renewable Energy Directive ("RED II")
- Lack of a blend wall gives RD a substantial advantage
- Strong pipeline of further LCFS adoption aimed at reducing emissions, reinforcing long-term RD demand growth expectations

RD N.A. Demand Outlook (MMgal/yr)



15 Source: Simmons Energy (A Division of Piper Sandler equity research and SSP Global Platts)





Business Overview

Global Clean Energy Holdings Business Strategy

Integrated solution anchored by our proprietary, sustainable feedstock solution & Biorefinery operations

- 1 Reduce Feedstock Costs through Proprietary Technology
- 2 Further Expand Margin through Lower CI Scores to Maximize Revenue
- 3 Enhance Cash Flow Visibility through Long-term Contracts
- 4 Leverage Vertical Integration Approach and Strategic Relationships to Scale the Business



Global Clean Energy Holdings



Strategic Relationships



Upstream Operations

We will contract directly with growers / farmers to cultivate, grow and produce our proprietary Camelina

Camelina Cultivation Strategy

- Contract with farmers to grow Camelina grain that will be processed into oil for use in Bakersfield Biorefinery
- Distribute certified Camelina grower seed to farmers through strong relationship with CHS Inc., an agribusiness cooperative owned by farmers
- Farmers plant the seeds using fertilizers, chemicals and other supplies through grower cooperatives
- Pay farmers on a per pound of harvested grain basis

14 Years of Plant Science / R&D Work



10 Source: Management estimates

Camelina Grower Pipeline

We have identified nearly 50 million target acres for potential Camelina cultivation across eight states

We currently have substantial acreage under commercial cultivation across six states

Average Acreage Owned per Operator = >8,000



★ Biorefinery

States currently with commercial cultivation of our proprietary Camelina

States with planned commercial cultivation of our proprietary Camelina

State	# of Farming Operations	Target Acres
Washington	1,700	5.5MM
Montana	1,300	15MM
Oregon	410	1.5MM
Idaho	60	300K
Wyoming	20	40K
Colorado	900	5.5MM
Kansas	2,800	11.3MM
Oklahoma	2,100	7.6MM

Upstream Operations Cont'd

SusOils' efficient, asset-light business model allows for ease of scalability and adds to farmer's bottom lines

Key Benefits to Farmers



Minimal excess costs for growers as farmers can utilize existing **equipment already owned**



Additive acreage that creates an **incremental revenue stream** for farmers due to lack of competition with other crops



Extremely **low breakeven** cost per acre drives value proposition



Grown on **empty (fallow) land** during field rotation cycles and **does not displace food** or create indirect land use change



Very **resilient crop** due to **low water consumption** needs and relative resistance to crop-related disruptions (insects, etc.)

Key SusOils Attributes



Minimal capital expenditure required to run / grow the business due to **asset light** nature of the strategy



Ease of scalability through the utilization of existing land already being farmed



Minimizes need for dependency on **third parties** across the **supply chain**



Maximum value extraction through the utilization of existing supply chain



Minimal incremental infrastructure required to support long-term growth given logistics **already in place**

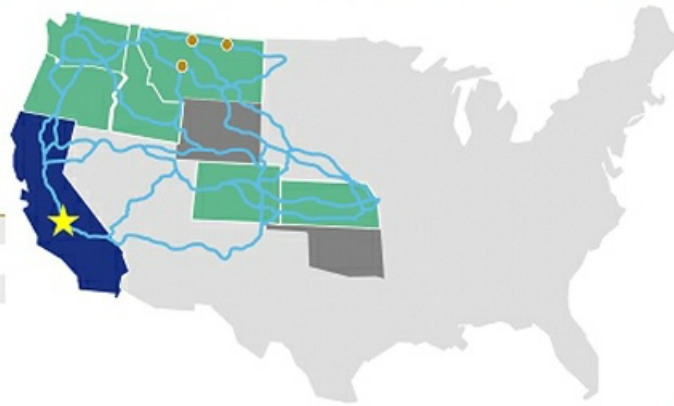
Midstream Operations

Our Biorefinery is strategically located on the BNSF Railway mainline, providing enhanced interconnectivity and ease of access to regions where we are currently, commercially cultivating our proprietary Camelina crop

GCEH Owned Infrastructure

Type	Capacity
Rail loading / unloading	20 bays
Truck Racks	8 racks
Total Storage	3.3 MM barrels

- BNSF Mainlines
- Location of the Biorefinery
- States with current commercial cultivation
- States with planned commercial cultivation
- Planned aggregation sites



Downstream Operations

Our strategically located production facility will be the largest Biorefinery on the Western U.S.

Bakersfield Biorefinery Overview

Location	Bakersfield, California
Capacity	230 MMGPY (15,000 BPD) nameplate throughput capacity ²¹
Expected Commercial Operations Date	Q1 2022
Total CapEx (Amount Spent)	\$420MM ²² (\$279MM ²³)
Infrastructure	Grid power, natural gas, steam, electricity, fiber / controls, rail access and bypass gas pipeline access
Logistics	8-bay truck rack, railcar facilities on mainline BNSF system with San Joaquin Valley Railroad / Union Pacific Railroad potential, and pipeline access
Feedstock Flexibility	Phase 1: Vegetable oils (i.e., soy, Camelina), Fats / Oils / Grease ("FOG") Phase 2: Expanded Camelina, onsite oil extraction
Storage Capacity	Total storage tanks capable of storing up to 3.3MM barrels of feedstock and product



Global
clean energy

21. (1) Nameplate capacity refers to feedstock processing capacity.
(2) Includes O&G, working capital, acquisition costs, capitalized interest and an estimated contingency of \$22 million.
(3) Excludes \$35 million that has been incurred to date, but not yet spent.

Downstream Operations Cont'd

Our downstream operations benefit from a variety of key strategic attributes

Key Bakersfield Biorefinery Attributes



Located within a **large demand center** (San Joaquin Valley) within **close proximity** to Los Angeles and San Francisco



Over 2/3rds of the **500+ contiguous acre** site is unused and available for future operational **expansion projects**



Valuable existing permitting portfolio, including land use, air, and infrastructure for grid power, water, gas, water treatment, disposal, which is expected to allow for **reduced time to market**



Ease of scalability due to oversized infrastructure footprint, including excess rail, storage and utilities capacity



RD is sold to **ExxonMobil** and backstopped by a **volume commitment** for ~50% of expected run-rate RD production



Ability to refine a variety of feedstock, including our **proprietary Camelina**, **enhances cost control and supply assurance**

Growth Strategy

Global Clean is pursuing multiple strategic avenues to long-term growth

- Camelina Development**
 - Accelerate Camelina development
 - Grow **local and regional** feedstock relationships
 - Expand purpose grown Camelina to greater overall percentage of feed demand
- Bakersfield Biorefinery**
 - Target online date in **Q1 2022**
 - Continue managing Engineering, Procurement & Construction ("EPC") process to begin RD output and delivery
- Midstream Agriculture Assets**
 - Grain elevation, cleaning and storage assets located near **primary** Camelina agricultural regions
 - Focus on Northern Plains, Pacific Northwest and Midwest
- Onsite Crush Plant**
 - Crush Camelina and soybeans onsite, **removing the need to pay for toll-processing**
 - Benefits: feedstock cost, **lower CO₂**, waste stream utilization, meal sales, corporate credits and **supply certainty**
- Hydrogen Plant Expansion**
 - Solution to hydrogen capacity constraint** on RD production, production from 150 to 210 MMGPY
 - More efficient Steam Methane Reforming**, reducing the CO₂ of output and lower natural gas costs
 - Surplus H₂ to market or to further expansion of the Biorefinery
- Carbon Capture**
 - Capture **85% to greater than 95%** of CO₂ sequestration and synthetic fuels production
 - Permit case complete, pending submission to SJV Air District
 - Potential to benefit from Section 45(Q) tax credit for carbon sequestration
- Biorefinery Expansion**
 - Total estimated cost of \$250MM⁽¹⁾
 - Increases capacity by an additional 15,000+ BPO**
- Waste Heat Recovery to Power**
 - Use waste heat** to generate electricity and steam for the facility
- Solar PV**
 - Displace grid energy** with solar electricity produced onsite

⁽¹⁾ CapEx projections are included herein for illustrative purposes only; actual expenditures are likely to vary.



GCEH – CapEx Overview

	Projected CapEx	Proposed Timing	CI Score Improvement	Margin Improvement
Bakersfield Biorefinery and SusOils	~\$430MM ⁽¹⁾ (\$279MM spent ⁽²⁾)	Q1 2022		
Agricultural Processing	\$130MM ⁽³⁾	2023	✓	✓
Hydrogen Processing	\$160MM ⁽³⁾	2024	✓	✓
Carbon Capture & Sequestration	\$100MM ⁽³⁾	2025	✓	✓

24 SOURCE: Company financial model.
 (1) Majority of CapEx to be spent on Bakersfield Refinery, including open, working capital, acquisition cost, capitalized interest and an estimated contingency of \$22 million.
 (2) Includes \$31 million that has been accrued to date, but not yet spent.
 (3) CapEx projections are included herein for illustrative purposes only; actual expenditures are likely to vary.



Appendix



Board of Directors Overview

 Richard Palmer CEO, President & Founder	 Martin Wenzel Director	 David Walker Independent Director	 Susan Anhalt Independent Director	 Phyllis Currie Independent Director
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Prior Experience						
Education						
Independent	<table border="1"> <tr> <td></td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </table>			✓	✓	✓
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Audit Committee	<table border="1"> <tr> <td></td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </table>			✓	✓	✓
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Senior Management Overview



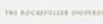
Richard Palmer
Chief Executive Officer,
President & Founder

35+ years of experience in
renewables &
commodity management



Noah Verleun
Executive VP, Development &
Regulatory Affairs

12 years of experience with GC&E in
commercial & regulatory



Ralph Goehring
Vice President, Chief
Financial Officer

17+ years of experience as public
company CFO



Tom Rizzo
Senior Vice President,
BKRF

Previously General Manager of Shell
Martinez Refinery

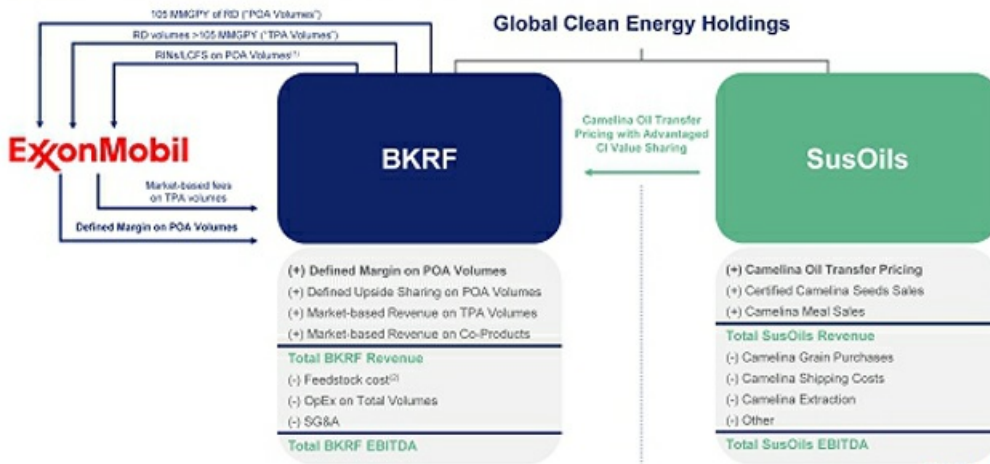


Mike Karst
Vice President, SusOils

35+ years of experience in agronomy
sales, marketing & management



GCEH Summary Revenue Model



28 Note: Not an exhaustive business model. Created for illustrative purposes only. Does not include Crush plant associated revenues / costs in SusOils.
 (1) While all RIN&LCFS are transferred to ExxonMobil, GCEH is compensated for TPA-related RIN&LCFS credits.
 (2) Varies by contract (POA vs. TPA).

Camelina 101

Camelina Overview

Camelina is a **fast-growing, low input**, dryland farmed crop traditionally grown in **rotation** with wheat and other row crops



27
proprietary patents
& patent
applications

1,150
certified seed acres
under production

75 – 125
RD equivalent
gallons per acre of
Camelina grain

2013 Approved as an advanced biofuel feedstock and **granted a pathway** under the U.S. EPA RFS program

2016 Granted **first-of-its-kind** pathway from CARB

2020 Commenced commercial crop production & produced enough Camelina grower (certified) seed for **2021 planned plantings**

Advantages of Camelina

Ideal Rotation Crop



- Grown on **empty (fallow) land** in wheat field rotation cycle
- Gives farmers **additional revenue**
- Existing equipment can be utilized
- Does not **displace food** or create indirect land use change

Low Water Consumption



- Grows with less than **10"** annual rainfall
- Grown only on **dry land**, does not compete for scarce water resources
- Tolerant to **low nitrogen** conditions



Millions of Acres

- Over **15 years** of commercial cultivation in **24 states plus Canada**
- **15,000,000 target** U.S. acres
- **Millions more acres worldwide**

Regulatory Approvals



- USDA crop insurance eligible
- USDA labeled & approved plant protection chemicals



- RFS pathway approval for conversion into D5 and D4 for RIN generation & compliance



- FDA approved for meal as a livestock feed additive



- **Lowest CI** virgin feedstock pathway approval under CA's LCFS
- Approval applies only to GCEH's patented plant varieties

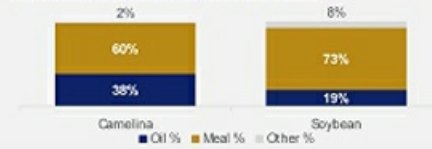


Camelina 101 Cont'd

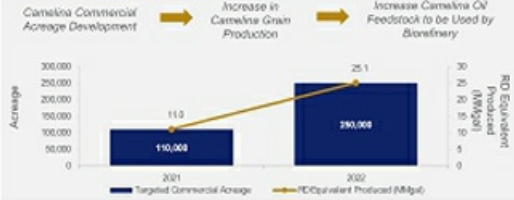
Camelina Statistics

- Camelina yields **~2,000 pounds** of grain production per acre
- Camelina grain yields a much **higher percentage** of oil relative to soybeans (**38% vs. 19%**)
- Each acre of Camelina grain results in **800 pounds** of Camelina oil (or **106 gallons** of Camelina oil)
- Each acre of Camelina grain results in an RD equivalent of **102 gallons**

Camelina vs soybean oil yield per pound



Camelina Acreage & Equivalent RD Summary⁽¹⁾



Select Camelina Production Metrics

	Low	Base	High
Camelina grain production per acre (lbs/acre) ⁽²⁾	1,500	2,000	2,500
Camelina oil produced per acre (lbs/acre) ⁽³⁾	600	800	1,000
Camelina oil produced per acre (gal/acre) ⁽⁴⁾	80	106	133
RD equivalent per acre (gal/acre) ⁽⁵⁾	75	102	125

- (1) The company has enough certified seed for grain production in 2021 and certified seed production acreage in 2021 for acreage in 2022.
- (2) Assumes a range of 1,500-2,000 lbs of Camelina oilseed (grain) produced.
- (3) Assumes 40% oil content.
- (4) Assumes 7.5 lbs of Camelina Oil per gallon.
- (5) Assumes an 84% feedstock to renewable diesel conversion.



Renewable Diesel Overview

RD has a number of advantages over both petroleum-based diesel and biodiesel

What is Renewable Diesel?

- **Biomass-based fuel**
- **Uses:**
 - **Modern diesel engines**
 - Home heating
- **Development:**
 - Feedstocks include **Camelina**, soybean oil, used cooking oil, tallow or various vegetable oils
 - Feedstock is hydrotreated and isomerized
 - Produces a **cleaner fuel** that is chemically identical to petroleum-based diesel

How is RD different from other biofuels?(1)

- RD **does not have a blend wall** like biodiesel (i.e. B5 and B20)
- Unlike biodiesel, RD has:
 - **Better** cold weather performance
 - **Better** water absorption
 - **Lower** microbial growth issues

Diesel Type Comparison	U.S.D.	Biodiesel	RD
% Oxygen	0	11	0
Specific Gravity	0.86	0.88	0.75
Sulfur Content, ppm	<10	<1	<1
Heating Value, MJ/kg	43	38	44
Cloud Point, deg. C	-6	-10 to -15	-20 to +20
Octane	40	50-55	70-90
Stability	Good	Marginal	Good

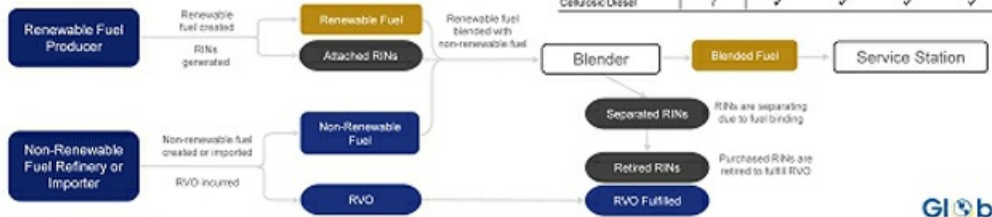
What is RD used for?

- RD is **chemically identical** to petroleum-based diesel
- RD can utilize the same infrastructure and function as a drop-in, **100% replacement** for petroleum-based diesel
- Lower levels of contaminants enable RD to burn cleaner than petroleum-based diesel, **reducing emissions by up to ~33%**
- RD alleviates engine maintenance issues
- RD qualifies under the **RFS, BTC** and **LCFS** renewable incentive programs

Renewable Fuel Standards (“RFS”) Overview

Program Summary

- Enacted by Congress in 2005, the RFS program establishes **minimum renewable volumes** to be blended into traditional petroleum-based fuel products
- To comply with the program, a refiner or importer of gasoline or diesel fuel must either **blend renewable fuel** into transportation fuel or **obtain a credit** (“Renewable Fuel Number” or “RIN”) to meet its Renewable Volume Obligation (“RVO”)
- Renewable fuel types are categorized by “D-Code” which fulfill different RVO categories.
- RVOs are established **annually** by the EPA and determine the percentage renewable blend threshold and corresponding RINs an obligated party **must obtain for compliance**
- RINs can be generated by blending renewable fuel products with petroleum-based fuels. Once generated, the blender can **sell the RINs independently** from the fuel product



32 Source: EPA, CARB, EIA.

RFS Overview

Renewable Fuel Standard Volume Requirements (12/19/2019)

Fuel Type (Bgal)	2017	2018	2019	2020	2021
Biomass-Based Diesel	2.00	2.10	2.10	2.45	2.43
Celulosic Biofuel	0.31	0.29	0.42	0.56	N/A
Advanced Biofuel	4.28	4.20	4.00	5.00	N/A
Renewable Fuel	19.28	19.29	19.92	20.09	N/A

Renewable Fuel Standard D-Codes and Obligation Standard Threshold

D-Code	Celulosic Biofuel	Biomass-Based Diesel	Advanced Biofuel	Total Renewable Fuel
3	✓		✓	✓
4		✓	✓	✓
5			✓	✓
6				✓
7	✓	✓	✓	✓



Low Carbon Fuel Standard ("LCFS") Overview

Program Summary

- LCFS and similar programs target a **reduction in carbon intensity** ("CI") as measured by the direct and indirect **greenhouse gas** ("GHG") emissions produced from producing transportation fuels
- Multiple U.S. and foreign jurisdictions have implemented versions of LCFS programs to **incentivize lower CI** by requiring credits to offset high carbon emissions
- LCFS operates alongside other programs (RFS, BTC, etc.) provides additional **financial benefit** to those companies that **produce renewable fuels** and qualifying credits

U.S. Programs

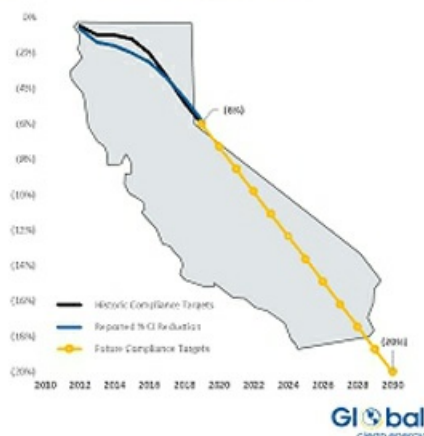


Other Programs



33 Source: EPA, CARB, EIA.

California Performance (Reduction in CI)



Global clean energy

Blenders Tax Credit (“BTC”) Overview

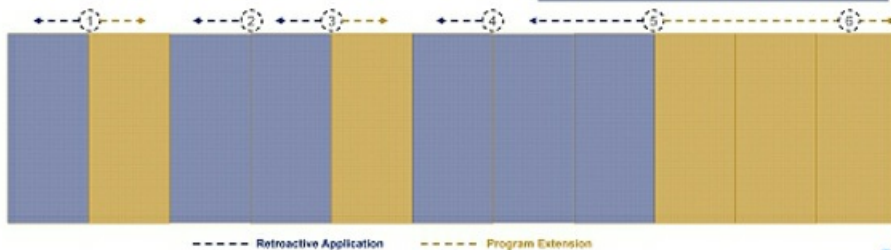
Program Summary

- The **Blenders Tax Credit** (also called the “Biodiesel Tax Credit” or “BTC”) currently provides qualified producers a **tax credit of \$1.00 per gallon** when the required amount of **biodiesel or renewable diesel is blended with petroleum diesel** for use in trade or business
- The BTC acts to **incentivize production and support revenue for qualified producers**. The incentive must first be taken as a credit against the blender’s fuel tax liability and any excess over this tax liability may be claimed as a direct payment from the Internal Revenue Service
- Initially enacted under the American Jobs Creation Act of 2004, Congress has **extended or retroactively applied** the program **five times since 2011**

Program History

- Although currently set to expire in 2022, legislation introduced in both the **House of Representatives and U.S. Senate on May 25, 2021** aims to extend the current blenders credit through 2029⁽¹⁾

1. Jan 2013: American Taxpayer Relief Act of 2012
2. Dec 2014: Tax Increase Prevention Act of 2014
3. Dec 2015: Consolidation Appropriation Act, 2016
4. Feb 2018: Bipartisan Budget Act of 2018
5. Dec 2019: Consolidated Appropriations Act, 2020
6. May 2021: Biodiesel Tax Credit Extension Act of 2021⁽²⁾



34. Source: EIA, U.S. Congress.
 Note: The Biodiesel Tax Credit Extension Act of 2021 has been introduced but has yet to pass through Congress.
 (1) Biodiesel Tax Credit Extension Act of 2021 and companion legislation.
 (2) Senators Chuck Grassley (R-Iowa) and Marki Delgado (D-Washington) introduced the bill in the Senate and Cindy Amodeo (D-Iowa) and Mike Kelly (R-Pennsylvania) introduced the bill in the House.

Glossary

Term	Definition
AB 32	California's Global Warming Solutions Act of 2006
AB 398	An extended version of AB 32 to include a 40% GHG reduction target in 2030 and an 80% reduction target in 2050
ASTM	American Society for Testing and Materials International, an organization that develops and delivers international voluntary consensus standards, including United States standards for fuel
B2, B5, B6, B10, B11, B99.9, and B100	Refers to blends of biodiesel with petroleum-based diesel. The number represents the biodiesel percentage of the blend. For instance, a blend of 5% biodiesel and 95% petroleum-based diesel would be represented as B5
Bakersfield Refinery	The renewable diesel facility currently owned by the Company and expected to be completed in 2022
BTC	Blender's Tax Credit, the federal excise tax credit of \$1.00 per gallon of biodiesel that is available to the person who blends biodiesel with petroleum-based diesel
CA	Carbon Allowances as defined through CARB's Cap-and-Trade Program
Camelina	Camelina Sativa, an expected feedstock at the Bakersfield Biorefinery
CARB	California Air Resources Board
CBOT	Chicago Board of Trade

Term	Definition
CI or CI Score	Carbon Intensity and is a measurement of all total hydrocarbons versus the amount of energy consumed
CO	Carbon Monoxide
CO2	Carbon Dioxide
D3	Cellulosic Biofuel, produced from cellulose, hemicellulose, or lignin and must meet a 60% lifecycle GHG reduction as defined by the EPA's RFS
D4	Biomass-based Diesel and must meet a 50% lifecycle GHG reduction as defined by the EPA's RFS
D5	Advanced Biofuel, produced from a non-corn starch, renewable biomass and must meet a 50% lifecycle GHG reduction as defined in the EPA's RFS
D6	Corn-based Ethanol, derived from corn starch and must meet a 20% lifecycle GHG reduction as defined in the EPA's RFS
Distillate Fuel	Involves two products: low-sulfur distillate, which is used as a transportation fuel (diesel) for on-highway vehicles, and high-sulfur distillate, which is used for space heating (heating oil) in the residential and commercial sectors and as a fuel for other stationary (non-transportation) applications in the commercial, industrial, and electricity generation sectors
EIA	United States Energy Information Association



Glossary

Term	Definition	Term	Definition
EPA	Environmental Protection Agency	Product Offtake Agreement	The product offtake agreement exclusively signed with ExxonMobil in April 2019
EPC	Engineering, Procurement & Construction	RD	Renewable Diesel
ESG	Environmental, Social, and Governance practices	RIN or RINs	Renewable Identification Numbers to define D4 and D5
ExxonMobil	ExxonMobil Oil Corporation	RFS	Renewable Fuel Standard described in the Energy Policy Act of 2005 enacted by U.S. Congress and administered by the EPA
FOG	Fats / Oils / Grease	RFS2	The expanded RFS biofuels mandate described in the Energy Independence and Security Act of 2007 enacted by U.S. Congress and administered by the EPA
GHG	Greenhouse Gas emissions	SAF	Sustainable Aviation Fuel
LCFS	Low Carbon Fuel Standard, a market-based incentive program intended to reduce the carbon intensity of transportation fuels within the state of California	SusOils	Sustainable Oils, Inc., a subsidiary and operating partner of the Company
mmgy	Million gallons per year	TPA	The Term Purchase Agreement with ExxonMobil signed on April 20, 2021 granting ExxonMobil the right to purchase additional renewable diesel from the Bakersfield Biorefinery
MOU	Memorandum of Understanding	ULSD	Ultra-Low Sulfur Diesel
MT	Metric Ton		
NOx	Nitrogen Oxides		
Nameplate Production Capacity	The production capacity of a particular facility based on the expected annual throughput in gallons based upon producing at 100% of design capacity for approximately 330 days per year using a particular feedstock		



Thank You



contact@gceholdings.com



Global Clean Energy Holdings, Inc., announces relocation of the headquarters of its wholly owned subsidiary, Sustainable Oils, Inc., to a new state-of-the-art facility in Great Falls, Montana

The headquarters relocation and personnel expansion will support Sustainable Oils target of contract-growing more than one million acres of camelina annually for renewable diesel production

GREAT FALLS, Montana, Oct. 5, 2021 - Global Clean Energy Holdings, Inc. (OTCQX: GCEH) today announced that Sustainable Oils, Inc., its camelina feedstock subsidiary, is relocating its North American headquarters to a new state-of-the-art facility in Great Falls, Montana. This new facility will consolidate Sustainable Oils crop innovation programs, commercial grower support and executive and administrative activities at one location and will be fully operational by November 1, 2021.

The new facility and the additions to its technical and commercial teams will support Sustainable Oils Camelina breeding and development program and Sustainable Oils' goal of cultivating over one million acres of camelina to produce low carbon intensity, nonfood feedstock to be used at GCEH's renewable diesel refinery in Bakersfield, California. Under its crop innovation and breeding programs, Sustainable Oils continues to increase the commercial value of camelina through agronomics and improved plant genetics to increase overall yield, modify plant oil chemistry to enhance biorefinery efficiency and improve livestock feed qualities.

"We have aggressive expansion plans for camelina production with our goal of over one million acres of annual production projected at market maturity, and Great Falls is an excellent location for our headquarters as it is the anchor of Montana's agricultural 'Golden Triangle,'" stated Mike Karst, President of Sustainable Oils. "While this is a large target for us, we believe it is a positive revenue generator for our contract growers as it will generate over \$250 million per year of additional revenue to them and their rural communities."

"Camelina is an integral part of the feedstock plan for GCEH's vertically integrated farm-to-fuels strategy, to produce renewable diesel at its refinery in Bakersfield, California, and beyond. Our Camelina varieties have been approved through California's Low Carbon Fuel Standard program, which adds significant value to the camelina oil," said Richard Palmer, CEO of GCEH. "We will continue to invest heavily in the science, grower education and the necessary grain logistical systems to make it a success in Montana and other states in the Western United States."

Sustainable Oils maintains a large intellectual property portfolio of camelina, including various patented varieties. With a short growing cycle and excellent water efficiency, Sustainable Oils' patented varieties exhibit superior agronomic performance and increased tolerance to both drought and frost versus alternative crops. Sustainable Oils' Camelina also produces higher oil content and has the lowest carbon intensity score of any plant-based renewable diesel feedstock alternatives. Renewable diesel made from Sustainable Oils' Camelina is a high-demand drop-in fuel that meets all specifications for today's engines, which makes it the cropped feedstock of choice for renewable diesel production.

About Global Clean Energy Holdings, Inc.

Global Clean Energy Holdings, Inc. (“GCEH”) is a uniquely positioned vertically integrated renewable fuels company. GCEH’s strategy since the inception of its business has been to control the full integration of the entire biofuels supply chain from the development, production, processing, and transportation of feedstocks through to the refining and distribution of renewable fuels. GCEH is retooling and constructing its renewable diesel refinery in Bakersfield, California, which when completed in early 2022, will be the largest renewable fuels facility in the western United States and the largest in the country that produces renewable fuels from nonfood based feedstocks. More information can be found online at www.gceholdings.com.

GCEH Corporate Presentation: The Company is providing its initial Corporate Presentation to stakeholders on its website. This presentation describes the Company’s business strategy, unique industry position and environment, history, and general pertinent information. The presentation will be filed with the Securities and Exchange Commission and uploaded on the Company’s website.

About Sustainable Oils, Inc.

Sustainable Oils, Inc., GCEH’s wholly owned plant science subsidiary, owns an industry leading portfolio of intellectual property rights, including patents and production know-how, to produce its proprietary varieties of camelina as a nonfood based ultra-low carbon biofuels feedstock. Sustainable Oils, Inc. was formed in 2007 and its headquarters is in Great Falls, Montana.

Forward-Looking Statements

Certain matters discussed in this press release are “forward-looking statements” of Global Clean Energy Holdings, Inc. within the meaning of the Private Securities Litigation Reform Act of 1995. Investors are cautioned that statements in this press release which are not strictly historical statements, including, without limitation, the Company’s ability to have one million acres of Camelina in production in Montana, are forward-looking statements and are subject to a number of risks and uncertainties. Important factors that could cause actual results, developments and business decisions to differ materially from forward-looking statements are described in the sections titled “Risk Factors” in our filings with the Securities and Exchange Commission, including our most recent Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K.

Contacts:

Global Clean Energy Holdings, Inc.

Natalie Findlay
contact@gceholdings.com
(424) 318-3518

Sustainable Oils, Inc.

Fran Castle
contact@susoils.com
(919) 348-8013
