



The Community BioRefinery, per the USDA, is the oldest Biofuel R&D Company in the United States.

## From Kerosene to Bio-Butanol: Join the Next Big Wave in Energy Investment with Community BioRefinery

Comparing the Community BioRefinery's New Standard Butanol-Based Biofuels to Rockefeller's Development of Kerosene and the Oil Industry

By Scott Hewitt CEO and Vincent R. James Ph.D. CTO

The Community BioRefinery, LLC (CBR) has been working to perfect true biofuel production since the early 80s. It found a thousand ways how NOT to make it work until hitting on the one solution that does work. That solution yielded a process that creates many end products and other incredible results not originally envisioned. It is important to note that CBR is *NOT* an ethanol company.

While conferring with the oil company Halliburton, their Chief Technology Officer observed that while the oil industry seeks to use every molecule of the oil from below the ground, Community BioRefineries seeks to use every molecule from plant sources above the ground in the truest form of a Circular Economy.



A Circular Economy involves cultivating plants sustainably, extracting essential nutrients, converting sugars into valuable products, recycling and reusing all waste materials, and treating and reusing water.

This missive seeks to highlight the similarities - and differences – of how Rockefeller was able to create and grow the oil industry into what it is today; and, how the Community BioRefineries will accomplish a similar feat within the agricultural sector. It is our hope that readers will conclude that CBR is definitely the sort of company they will want to be a part of.

*Background*

John D. Rockefeller's influence on the oil industry was a cornerstone of American industrial history. His pioneering work with Standard Oil transformed crude oil into a versatile and valuable commodity, primarily through the production of kerosene. Rockefeller's approach to utilizing every bit of the crude oil, turning what was once considered waste into profitable products, revolutionized the industry.

During the American Industrial Age, visionaries like Rockefeller, Vanderbilt, Carnegie, Astor, Ford, and Morgan were instrumental in building America's industrial might. These names are synonymous with the American dream, having transformed every industry they touched: oil, rail, steel, shipping, automobiles, and finance.

Rockefeller learned to use every part of the barrel of oil from underground to create vertically integrated products, driven by investments that spurred economic growth.

Today, a similar transformation is underway in the biofuel industry, led by the Community BioRefinery (CBR). Scott R. Hewitt, CEO of CBR, envisions the Community BioRefinery as the future and legacy for the next generation of biofuel, specifically focusing on biobutanol. Vincent R. James, Chief Technology Officer (CTO) of CBR, also emphasizes the innovative potential of turning industrial hemp into a valuable commodity. Like Rockefeller and his contemporaries, CBR is at the forefront of the green bioeconomy, creating vertically integrated products and revolutionizing the industry.

This article explores the parallels between Rockefeller's comprehensive utilization of crude oil and CBR's innovative approach to agricultural feedstocks and biomass, positioning CBR as the modern equivalent of Rockefeller in the biofuel sector. Unlike Rockefeller's "robber baron" business model, CBR's operations will not emulate his model...

John D. Rockefeller's legacy in the oil industry is defined by his ability to maximize the value of every fraction of crude oil, transforming waste into wealth. The Community BioRefinery carries forward this legacy in the biofuel industry, utilizing every component of agricultural feedstocks to produce a diverse range of high-value products.

Through its innovative and sustainable approach, CBR is poised to become the new standard in the biofuel industry, much like Rockefeller was in his time. As the world shifts towards more sustainable practices, the Community BioRefinery's model offers a compelling vision for the future of energy and resource utilization.

The Community BioRefinery is seeking accredited investors who want to be part of the group building the American green economy, echoing the legacy of those who built the industrial foundation of the nation.

## Rockefeller's Comprehensive Utilization of Crude Oil

**Components of a Barrel of Crude Oil:** A barrel of crude oil, approximately 42 gallons, can be refined into various components, each serving distinct purposes. The primary fractions and their approximate percentages are:

**Gasoline (47%):** Used mainly as fuel for vehicles.

**Diesel (23%):** Utilized in transportation, agriculture, and industrial machinery.

**Jet Fuel/Kerosene (10%):** Employed in aviation and heating.

**Fuel Oil (10%):** Used for heating and power generation.

**Liquefied Petroleum Gas (LPG) (4%):** Used for heating, cooking, and as a petrochemical feedstock.

**Residuals (6%):** Includes asphalt and other heavy residues used in construction and industry, plus, a host of *petro-chemicals*

o **Plastics:** Essential for packaging materials, bottles, containers, and household goods.

o **Synthetic Rubber:** Found in tires, footwear, and various industrial applications.

o **Solvents:** Used in paints, coatings, inks, and cleaning agents.

o **Detergents:** Key components in household and industrial cleaning products.

o **Asphalt:** Used for paving roads, driveways, and roofing materials.

o **Lubricants:** Motor oils and greases for engines and machinery.

o **Food Additives:** Preservatives, colorings, and flavorings used in food processing.

- o **Synthetic Fibers:** Fabrics such as polyester and nylon for clothing and home textiles.
- o **Adhesives:** Tapes, glues, and sealants for various applications.
- o **Pharmaceuticals:** Active ingredients and excipients for medicines and medical supplies.
- o **Paraffin** for wax used in candle making.
- o **Packaging:** Wax coatings used in food packaging and cardboard.

**Rockefeller's Focus on Kerosene:** Rockefeller recognized the growing demand for clean, affordable lighting, which led him to focus on kerosene production. Before electric lighting, kerosene lamps were a primary source of light, replacing whale oil and other less efficient fuels. Derived from the middle distillates of crude oil, kerosene provided a brighter and more reliable light source.

**The Standard Oil Monopoly:** Rockefeller's Standard Oil revolutionized the oil industry by implementing efficient production processes, economies of scale, and aggressive business strategies. By controlling a significant portion of the market, Standard Oil could standardize prices and quality, making kerosene more accessible. This monopoly allowed Rockefeller to dictate terms to railroads and competitors, ensuring favorable rates and market dominance.

**Utilization of Remaining Fractions:** While kerosene was the primary product, Rockefeller did not ignore the other fractions of crude oil. The remaining components found uses in various industries:

**Gasoline:** Initially considered a byproduct, gasoline later became crucial with the advent of the automobile.

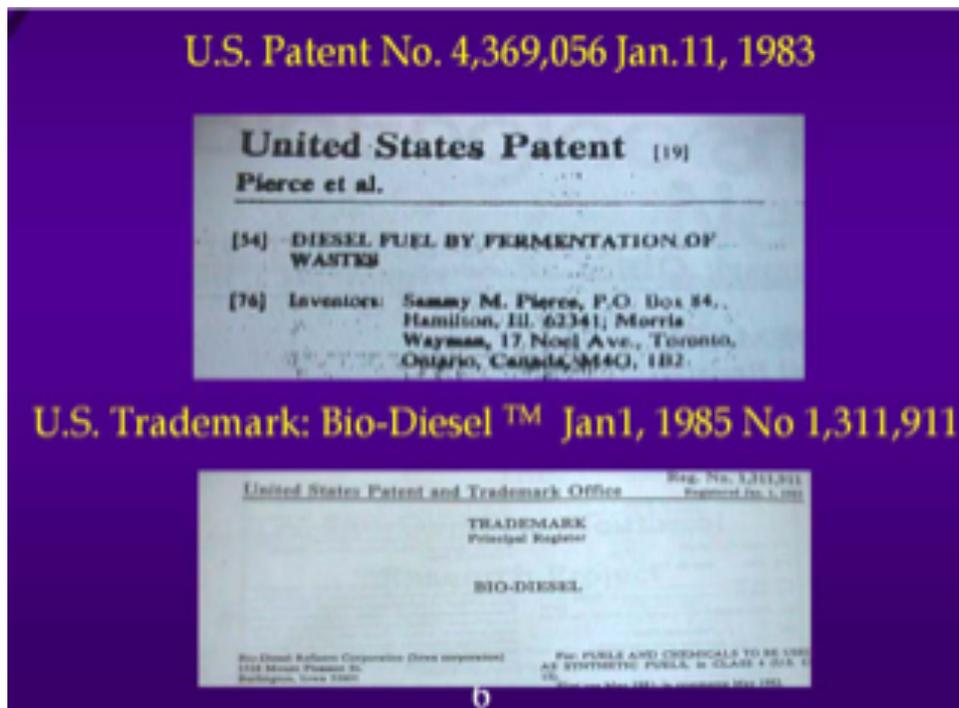
**Diesel and Fuel Oil:** Used in industrial applications and heating.

**Residuals:** Utilized in road construction and other heavy-duty applications.

Rockefeller's ability to market and utilize every fraction of crude oil maximized profits and minimized waste, setting a precedent for future industries.

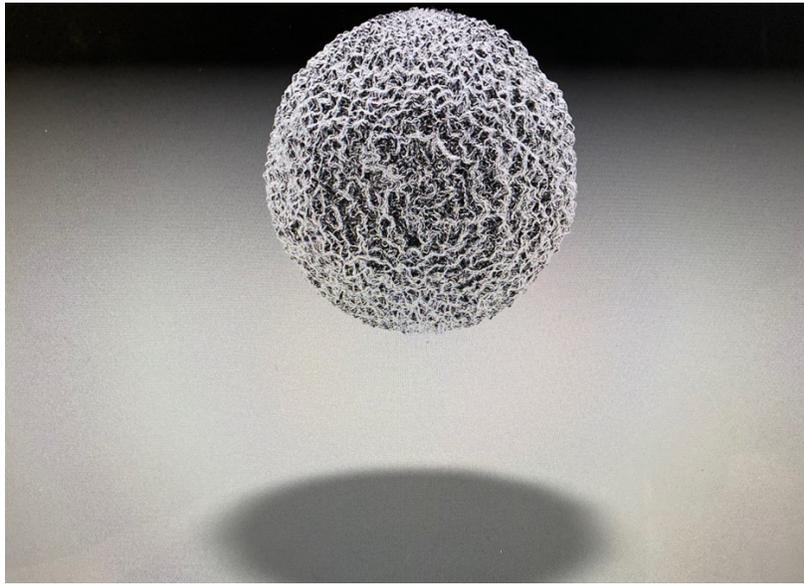
### The Community BioRefinery's Innovations

**Original Patent and Trademark:** CBR holds the original U.S. Patent No. 4,369,056 (Jan. 11, 1983) on biodiesel from organics and, trademarked the term "Biodiesel" (U.S. Trademark: Bio-Diesel TM, Jan. 1, 1985, No. 1,311,911). This early innovation in the biofuel industry laid the groundwork for CBR's current advancements.



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**Co-Patented Plant Protein Isolate:** The Community BioRefinery has co-patented with the USDA the world's first true plant protein isolate. This breakthrough product is the world's first 95% pure plant protein isolate with all the essential branched-chain amino acids needed in the human diet.



Under an electron microscope: The world's first 95% pure plant protein isolate, a groundbreaking innovation co-patented by the Community BioRefinery and USDA, boasting all intact branched-chain amino acids essential for the human diet.

**Circular Economy:** The world's economy is currently linear: crops are grown, farmed, processed, manufactured, sold, and then discarded into landfills. The idea of a sustainable 'circular economy'—one in which materials are used in a closed-loop, running on renewable energy—is gaining traction. Community BioRefineries' vertically integrated production model is perfectly suited to support the circular economy, ensuring that resources are reused and waste is minimized – or even eliminated.

**Research and Development:** Community BioRefineries applies research and development efforts to construct and operate sustainable CBRs in local communities throughout the U.S. and internationally (where legally accepted). Using advanced technologies, CBRs process entire feedstocks, utilizing a vertically integrated process to extract all components of the plant from root to bud. This comprehensive approach produces high-value foods, nutraceuticals, and other products, along with advanced (third-generation) biofuels, with *bio-butanol* at its heart.

**Decentralization and Local Impact:** CBRs decentralize the biorefinery model, allowing each facility to make quick decisions based on industry trends, saving money overall. This decentralized business model, similar to the microbrewery industry's rise in the 1980s, enables CBRs to compete effectively with large-scale producers. In 2018, while overall U.S. beer volume sales were down 1%, craft brewer sales grew by 4%, illustrating the success of decentralization.

CBRs produce foods, biofuels, bioplastics, aquaculture products, and energy, generating economic development in agriculture and local communities. By eliminating the use of petroleum and reducing food production and transportation costs, CBRs contribute to local energy independence and sustainability.

**Vision for Sustainable Communities:** The vision is to create networks of economically sustainable CBRs in local communities throughout the U.S. and internationally. These facilities aim to establish green communities by providing food, energy (in the form of biofuels and green electric power), and bio-products, contributing to local and national energy independence from foreign oil.

### Community BioRefinery Highlights and Future Prospects

**Facility Features:**

**Modular Design:** Adaptable to various local needs.

**Circular Economy:** Supports sustainable resource use.

**Smaller Scale:** Located near source materials reduces logistics costs.

**High Employment and Community Focus:** Generates numerous well-paying jobs and focuses on community benefits.

**Zero Waste and Pollution:** Implements systems that recycle and reuse all byproducts.

**Diverse Product Range:** From high-quality plant proteins suitable for all ages to bio-butanol and biodegradable plastics, CBR produces a wide array of products that cater to various market needs.

#### **Product Examples:**

**Pure Plant Protein Isolate:** A high-purity product suitable for all age ranges, from infants to the elderly. Food companies seek out these high-quality, undamaged plant proteins, which also fall into the *nutraceutical\** category. (\*A food that has medical characteristics.)

**Bio-Butanol:** An advanced biofuel with superior properties compared to ethanol.

**Biodegradable Plastics:** Environmentally friendly alternatives to traditional plastics.

**Hydroponic Vegetables and Berries:** Fresh, sustainably grown produce heated by the internal heat source from the biorefinery process, with organic fertilizer created by multiple sources within the process.

### **The Story of Community Bio-Refineries**

**Pioneering Biofuels:** Community Bio-Refineries (CBRs) will apply the research and development of our technology partners to the development and commercialization of advanced drop-in-place biofuels. CBR, one of the oldest privately held biofuels R&D groups in the U.S., was established following the oil embargo of the late 1970s. After studying 'gasohol' (ethanol), CBR realized there were many problems associated with ethanol as a biofuel and that bio-butanol held far greater potential as a biofuel.

**Historical Significance:** The use of bio-butanol as a performance fuel dates back to the British RAF during WWII, highlighting its historical significance and potential. CBR's founder expanded upon this forgotten technology, leading to significant advancements in biofuel research and development. Scientists at Oak Ridge National Laboratory became interested in the potential use of bio-butanol as a biofuel and invited CBR to sponsor this project. This was the first time a private group of researchers was ever invited into this government lab to conduct research since the development of the atomic bomb under the Manhattan Project.

**Advanced Utilization of Agricultural Feedstocks:** The Community BioRefinery operates with a philosophy similar to Rockefeller's approach, aiming to utilize every component of agricultural feedstocks. CBR focuses on extracting and recovering - intact - valuable products such as pure plant protein isolates, high oleic oils, resistant starch, food grade organic acids, *true* biofuels, fish feed for aquaculture, biodegradable plastics, and hydroponic vegetables and berries. Note: A *true* biofuel is, per the Department of Energy's own definition, a renewable fuel containing zero petroleum.

**Vertical Integration and Product Diversity:** CBR's vertical integration strategy (each step feeding into or enabling the next) allows for the production of a wide range of high-value products from the whole plant. Examples include:

- **Pure Plant Protein Isolates** (90%+ purity)
- **High Oleic Oils**
- **Resistant Starch**
- **Food Grade Organic Acids** (bio-acetic/bio-propionic)  
*Note:* Petro-based propionic acid is widely used as a preservative in the baking industry. CBR can make it in a plant-based organic form.
- **Biofuels** (true biodiesel; true aviation 'gas'; true bio-jet)
- **High Quality Fish Feed for Aquaculture**
- **Biodegradable Plastics**
- **Hydroponic Vegetables and Berries**
- **Green Electricity**

**Sustainability and Decentralization:** The concept and focus of the Community BioRefinery are rooted in sustainability and decentralization. Unlike traditional large-scale manufacturing facilities that rely on petroleum, CBR aims to produce essential necessities locally, reducing transportation costs and emissions. This approach not only makes the production process more sustainable but also fosters economic development within local communities.

**Innovations in Biofuels:** One of the most groundbreaking aspects of CBR's approach is its production of advanced (true) biofuels. These biofuels, including true biodiesel and bio-jet fuel, contain no petroleum and can replace traditional fossil fuels in the local community. Among these, bio-butanol stands out due to its high energy content and versatility. Bio-butanol has an energy content comparable to gasoline, making it an excellent candidate for sustainable aviation fuel (SAF). Its properties allow it to blend seamlessly with existing jet fuels (or be 100% bio-based), providing a renewable and less polluting alternative to traditional aviation fuels. By producing bio-butanol, CBR not only supports the aviation industry's shift towards sustainability but also contributes to reducing greenhouse gas emissions. Additionally, by producing green electric power, CBR facilities are energy self-sufficient and contribute to the local power grid, creating a more sustainable energy ecosystem.

### **Comparing Rockefeller and the Community BioRefinery**

**Efficiency and Comprehensive Utilization:** Rockefeller's success lay in his ability to utilize every fraction of crude oil, turning waste into profit. Similarly, CBR's process ensures that every part of the agricultural feedstock is used efficiently to produce high-value products. This comprehensive utilization reduces waste and maximizes profitability, mirroring Rockefeller's approach.

**Market Impact and Innovation:** Rockefeller transformed the oil industry with Standard Oil's monopoly, setting standards and controlling prices. CBR, on the other hand, is innovating in the bio-based economy by creating sustainable products that reduce dependency on petroleum. This shift not only has economic benefits but also addresses environmental concerns, positioning CBR as a leader in the green energy revolution.

**Economic and Environmental Benefits:** While Rockefeller's Standard Oil brought economic growth and market stability, it also had significant environmental impacts. In contrast, CBR's focus on sustainability and local production aims to create economic opportunities without compromising environmental health. This dual benefit is crucial in today's context of climate change and resource depletion.

### **The Future of Biofuels: CBR as the New Standard**

**Technological Advancements:** CBR's use of cutting-edge technologies, including a cold process, closed system with no waste, and the ability to isolate pharmaceutical-grade elements, sets a new standard in the biofuel industry. These technological advancements enable the production of superior products while maintaining environmental integrity.

**Community Impact:** By decentralizing production and creating local economic development clusters, CBR not only produces high-quality products but also revitalizes local economies. This community-focused approach ensures that the benefits of CBR's innovations are felt at the grassroots level, creating hundreds of jobs and fostering sustainable growth.

**Global Implications:** The potential for CBR's model to be replicated globally is significant. By providing a blueprint for sustainable, decentralized production, CBR can help address global challenges such as food security, energy independence, and climate change. This global reach mirrors the impact Rockefeller had on the oil industry, making CBR a transformative force in the biofuel sector.

### **Conclusion**

John D. Rockefeller's legacy in the oil industry is defined by his ability to maximize the value of every fraction of crude oil, transforming waste into wealth. The Community BioRefinery carries forward this legacy in the biofuel industry, utilizing every component of agricultural feedstocks to produce a diverse range of high-value products. Through its innovative and sustainable approach, CBR is poised to become the new standard in the

green economy, much like Rockefeller was in his time. As the world shifts towards more sustainable practices, the Community BioRefinery's model offers a compelling vision for the future of energy and resource utilization.

The Community BioRefinery is seeking accredited investors who want to be part of the group building the American green economy, echoing the legacy of those who built the industrial foundation of the nation. By investing in CBR, stakeholders will contribute to a sustainable future, supporting the development of advanced biofuels, eco-friendly products, and local economic growth. Join us in this transformative journey and help shape the green economy of tomorrow.

### **Important Notice**

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