Community Bio-Refineries

An Introduction to and Overview of

Community Bio-Refineries, LLC (CBR)

A Breakthrough Solution for Today's Food and Energy Crisis

Includes Description of the Hemp-BioRefinery (HBR)

October 2020 Edition

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Note: Throughout this document, there are references to 'Community Bio-Refineries' and 'CBR'. "CBR" is used as an abbreviation of the Company name; however, it is also used to describe a production facility using Community Bio-Refineries processes. The context of the use of "CBR" will help to clarify.

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Executive Summary

In recent years, four significant and far-reaching socioeconomic issues have impacted the lives of both U.S. and global consumers. These issues, which will continue to impact the lives of the United States and Western World consumers, are:

- Consumer's increased awareness of diet and nutrition on the overall health, quality and longevity of life;
- Increasing sensitivity to our dependence on oil to meet energy demands;
- An ever-increasing level of awareness and concern about the health of our environment and the planet;
- The loss of jobs and subsequent decline in economic development in local communities across the U.S.

The world faces huge challenges. The growing imbalance of demand vs. supply of food and fuel has driven prices for both commodities to record levels. In addition, depleting resources of arable land and dwindling sources of potable water are making it harder to sustain people, crops, and livestock. Further, dramatic population growth in the Third World, a diminishing fresh water supply, continued instability in the Middle East, and the uncertainties of Global Warming all contribute to the search for alternative approaches for food and fuels to sustain our planet and the billions of people who live here. Various initiatives are underway to try to resolve these problems, including government intervention, but at most, efforts to date have resulted in only limited success.

Enter CBR

Community Bio-Refineries, LLC (CBR) is a privately-held biotechnology research and development firm. For a period of nearly 40 years, CBR has developed and/or applied breakthrough technologies that produce novel food and bio-fuel products which the Company believes can dramatically and positively impact the food and energy crisis that looms ahead. CBR and its research collaborators developed proprietary processes to produce high value-added food proteins and nutraceuticals which may be integrated with a novel continuous-flow fermentation process. Together with other applied technologies, including utilizing the carbohydrate by-products from various feedstocks (i.e. grains, biomass and food wastes), the process also produces renewable bio-chemicals and "green" bio-fuel products for use in local communities.

The Mission of the CBR Project is to decentralize the local production of many of the essential necessities of life (e.g. food, energy, water, power) rather than rely upon large massive scale manufacturing or processing facilities - often located thousands of miles away - that depend upon petroleum to produce and transport these products to the local supper table.

The local CBR Project will produce the highest quality foods and nutraceutical products, including revolutionary new branded food products, and organic aquaculture and vegetables that will be sold in local markets. CBRs will also produce, in the same biorefinery, advanced biofuels as "drop-in-place" clean biofuels that will replace petroleum (diesel fuel, gasoline, avgas) in the local community. The CBR Project will also produce green electric power that will serve to sustain the local community, with hydrogen and purified water as by-products. This accomplishment will make the local community safer and more sustainable through the local production of safe products that will help reduce the community's dependency upon these potentially "unsafe" products.

This Mission will be accomplished through the vertical integration of the production methods which will yield much higher value-added foods, nutraceuticals* and other products, along with the production of advanced (Next Generation) biofuels within the same biorefinery. These products will be produced from local feed stocks and sold in local markets. CBRs will decentralize the production of these products in the local community to

generate economic development ("economic development clusters") throughout the agriculture sector and in participating local communities. CBRs will offer energy independence to our local communities - CBRs will serve to replace petroleum fuels, from diesel fuel, to gasoline, to aviation fuels and bioplastics and biochemicals. The local community will have, essentially, its own "green oil well" and "green power generating plant" that cannot be disrupted. CBRs will also serve to reduce municipal landfill wastes by producing value-added products, such as bioplastics, preventing such products from being land-filled. The CBR Project will produce hydrogen which can be used to not only produce green electric power, but distilled water, and organic fertilizer.

***Nutraceuticals are natural food products that act like preventative medicines which help combat dietary related diseases such as diabetes, cancer, stroke and coronary diseases.**

The Vision of the CBR Project is to successfully complete the research, demonstration and commercial-scale up operations of a CBR manufacturing plant (factory) in a selected local community. Thereafter, we intend to create networks of economically sustainable CBR Projects in local communities throughout the U.S. and globally. CBRs will help establish sustainable green communities by providing food, energy, fuels, green electrical power, and bio-products to help meet the goal of energy independence of local communities and our nation, from foreign oil.

CBR's applied technologies will allow for the low-cost production of biofuels and energy through the production of such higher valued foods, nutraceuticals, and biochemicals which will be produced as co-products during the biofuels production. Once commercialized, producing food and energy the "CBR way" will not depend on investments from governmental or multi-national levels, but rather on maximizing the resources available at the individual community level. CBR believes this will set the stage for further breakthroughs in food and energy production, leveraging an approach akin to the farmers' markets springing up across our nation.

CBR has validated its applied technologies through an independent engineering assessment of its pilot plant sites and is now seeking funding to incorporate these pilot plant operations into pre-commercial demonstration plants and on to full-scale commercial production. At the CBR plant's core will be the Pilot/Demonstration element which will continue to serve as an in-house R&D site as well as a Quality Control center. The goal is to rapidly bring as many of these technologies to market in a cost-effective manner, and at a reasonable price point, in order to inject "sustainability" into the global food and energy equation before it is too late.

The Approaching "Perfect Storm"

As mentioned, a number of significant and far-reaching socio-economic issues are starting to dramatically impact the lives of both U.S. and global consumers. These include:

- The increasing (production and transportation) costs of food products, as well as availability in less developed areas;
- The growing scarcity of fresh water;
- The emergence of Asia-Pacific Rim countries (especially China and India) and South America onto the world economic scene and the resultant strain on vital resources…especially oil;
- The skyrocketing cost of energy and the national security risks of our dependence on foreign oil;
- And, regrettably, the decades-long unwillingness or inability to address this approaching "perfect storm" by our nation's leadership.

Socio-Economic Issues

- **The Increasing Costs of Food Products –** Largely driven by increasing fuel costs, the price of food is rising at an alarming rate. Many of our staple food products – in the United States at least — are grown largely in the nation's breadbasket and the distance to deliver these food products to the consumers' supper table averages 1,300 miles.

- **The Growing Scarcity of Water –** A Goldman Sachs "Top Five Risks" conference concluded that fresh water would be the *"petroleum for the next century."* Their panel of experts stated that *"a catastrophic water shortage could prove an even bigger threat to mankind this century than soaring food prices and the relentless exhaustion of energy reserves. Globally, water consumption is doubling every twenty years (and) by 2025, it is estimated that about one-third of the global population will not have access to adequate drinking water."*

- **The Emergence of Developing Countries –** Asia-Pacific rim countries (especially China and India) and some in South America are moving onto the economic world stage at a blistering pace. Beijing adds 1,000 cars to their road network every day. Just a few years ago, there was a world-wide shortage of steel and concrete as China hoarded supplies for their 3-Rivers Dam Project. U.S. companies that have long done business in Asia because of the lower labor costs are starting to move manufacturing back to the United States because of soaring transportation costs. Most analysts believe the skyrocketing cost of fuel is partly influenced by the growing demand in China and India. We have experienced China's impact on world energy, electronics, steel, and agricultural markets.

- **The Skyrocketing Cost of Energy and the National Security Risks of our Dependence on Foreign Oil:** Fuel costs have doubled in the past few years. To illustrate the collateral impact of rising fuel costs, a 16 June 2008 Washington Times article indicated that every time the price of fuel rises just one penny, it costs the U.S. Postal Service $8,000,000 to support its fleet of 215,000 vehicles and pay for the cost of contract carriers (including trucks and airlines). Instability in oil-rich regions such as the Middle East, Nigeria, and Venezuela can dramatically affect both the price and the availability of oil. Add to the mix the frequently fickle behavior of OPEC's pricing and production "policies", and our continuing dependence on foreign oil places at risk the national security interests, and economic well-being, of the United States. Everyone seems to agree we need to move towards truly *sustainable* energy independence. The problem has been, and continues to be, that policy-makers do not agree on how. As such, we find ourselves going nowhere fast.

- **Political Inaction –** We didn't learn from the energy crisis of the 70's and it seems that the current emphasis has shifted to wind and solar energy, pushing bio-fuels into the back seat with the current emphasis being on "cellulosic ethanol", but what have we learned from this technology?

- **Hemp/Cannabis**: Hemp/cannabis has become more acceptable and legalized in over half of the US with more states considering it. We would be remiss to ignore the phenomenal attributes hemp presents, from both biomass and feedstock perspectives. With the use of hemp as a biomass puts one more significant arrow in the quiver of plant sources, we can use to produce biofuels. We intend that our first Joint Venture shall include the establishment of Hemp Bio-Refineries, or "HBRs" as a division of that Joint Venture.

Renewable Energy and the Problem with "First Generation" Biofuels

The conventional method of production practices leans toward "bigger is better," but the conventional approach to biofuel production has some notable drawbacks.

- **FOOD vs. FUEL**: Making biofuels from plants is already experiencing growing demand for use as food risks both the rising cost, and the growing scarcity, of food for human and animal consumption. Add to this the diversion of corn and soy for export, and even more pressure is placed on the food side of the equation.

- **LAND USEAGE**: Current approaches require huge amounts of land. According to the International Institute for Applied Systems Analysis, even if the current 'traditional' biofuel industry used the maximum available land mass, it would meet only *one-tenth* of the projected energy demands for 2030.

- **CARBON FOOTPRINT**: Clearing new land for biofuel raises the carbon footprint dramatically. A February 2008 report from the Nature Conservancy and the University of Minnesota reports that "converting rainforests, peat land, savannahs or grasslands to grow fuel crops releases CO_2; in some cases, a staggering 420 times more CO_2 than from burning fossil fuel." A second study, conducted at Princeton University used a worldwide agricultural model to show that corn-based ethanol nearly doubles greenhouse emissions over 30 years.

- **HIGH PRODUCTION COSTS**: An economic analysis of biofuel production by Oregon State University compared the cost of production to the benefits, citing the "net" gain, economically. By subtracting the energy spent to produce the biofuel from the energy gained as a result of the process, economists estimated that the price of production could be upwards of seven times the price of gasoline.

- **WATER**: Inordinate amounts of water are required in the process of turning food or waste products into fuel. Ethanol plants have no water recycling capabilities. For example, a single 100-million-gallon (annual) ethanol plant uses about the same amount of water on a daily basis as a city with a population of 10,000 - or over 400 million gallons of water per year. In Iowa, the largest ethanol producing state in the U.S., ethanol plants currently use 7% of the state's water capacity, and this is expected to increase to 14% in the coming few years. These ethanol plants also produce as much as 13 times the amount of salts permitted by EPA regulations. In Iowa, as many as one third of the state's 34 ethanol plants have been fined repeatedly by the EPA with hundreds of violations of sewage spills into waterways. The fines seem to be considered no more than a cost of doing business…

- **WASTE**: The US generates nearly 1/3 of the world's food production. In 1995, over 48 million tons of food wastes were lost at the farm, retail and consumer levels, enough to generate well over 5 billion gallons per year of biofuels. By 2018, we managed to waste nearly 195 million tons annually with it commensurate and lost biofuels capability. In addition, the waste biomass generated, including from food processing (cheese whey, brewery effluents, grape/wine production [grape pomace], tomato and melon harvest waste, almond and citrus wastes, sawdust and forest debris) account for enough biomass to generate 60 billion gallons per year of biofuels.

- **DISTILLERS' GRAINS:** Dried Distillers' Grain (DDG) is the protein and fiber left over after the corn kernel is processed for ethanol. In 2007, 2.3 billion bushels of corn were used to produce 6.5 billion gallons of ethanol in the U.S. From those bushels, approximately 39.1 billion pounds of DDGs were generated, containing nearly 1/3 protein - or approximately 10 billion pounds of

protein per year. At 100 grams average daily FDA recommended allowance of protein per person, the average person requires approximately 78.5 lbs. of pure protein per year. With 10 billion lbs. from DDGs and 78.5 lbs. needed per person, that's enough protein to feed over 127 million people, ***or enough protein to feed almost 40% of the US population each year*** if such protein could be salvaged and used for human food use. The DDGs are, however, virtually useless as people food or even animal feed. Ethanol production methods destroy the nutritive value of the proteins present and even become toxic. When presented as animal feed, many animals will not touch it and it ends up being spread on fields.

- **OVER-RELIANCE ON PETROLEUM BASED FUELS**: The use of traditional engineering models applied to biofuels has led us into a world of over-engineering based upon traditional cooking, steeping and distillation methods. This has created bio-refineries which are highly dependent upon petroleum-based fuels and energy.

CBR studies have shown that the new pathway to an economically sustainable, renewable fuels industry is through smaller scale bio-refinery plants, the "Community Bio-Refinery" or "CBR". Based on the premise that "smaller is better" and more controllable, CBR overcomes the massive problems now associated with such "first generation biofuels." (For a more complete description please referred to **Appendix B--Competitive Technologies**.)

The CBR Solution

CBR's Applied Technologies. The economics of traditional ethanol and soy diesel operations are almost solely dependent upon the cost of grain feedstocks on the front-end and, the value of petroleum (gasoline and diesel fuel) on the back-end. They also use petroleum to produce such biofuels (the costs of feedstocks to grow, fertilize, harvest, haul and process biofuels, then ship biofuels to giant petro-chemical plants usually located thousands of miles away). Current economic business models are, therefore, dependent upon large-scale centralized ethanol and soy diesel plant operations, usually costing hundreds of millions of dollars each. Further, the economics of ethanol and soy diesel are tied to the value of only two end products: biofuels and low-grade animal feed (DDGs). With the cost of feedstock (the bushel) usually accounting for 30-60% of the total cost of producing biofuels and the use of petroleum accounting for another 25% of the costs of producing biofuels, such biofuels are heavily dependent upon government price supports.

CBR applied technologies employ highly specialized, smaller scale pharmaceutical equipment to micron-grind grain and biomass 5,000 times smaller, dramatically increasing surface area. This technology avoids the energy intensive steps of cooking, steeping and distillation, dramatically reducing the use of petroleum in the biofuels production process. Further, CBR applied technology allows for a reduction in the scale of biorefineries - where traditional ethanol plants usually process 5,000 bushels per hour, CBRs will process as low as 500 or fewer bushels per hour. CBR applied technologies employ continuous flow fermentation processes, allowing for the production of biofuels in continuous flow bioreactors that replace much larger batch reactors currently employed in ethanol fermentations. This is a key aspect allowing us to downsize the process but produce quality products.

The Third Generation Biofuels. CBRs will produce "the next generation" or "Third Generation" of biofuels. These are biochemicals called "esters" and "micro-emulsions" based upon the production of bio-butanol. Bio-butanol is a higher form of alcohol and is closer to the petroleum molecule, but is produced by bacteria. These "Third Generation Biofuels" can also be sold and used in the local communities where they are produced. For example, in the tractors and combines of participating farmers; in first responder, municipal, and county fleet vehicles, such as school buses and autos, and by local trucking and fleet users. This "CBR Biofuels Marketing Approach" will dramatically reduce the carbon footprint of petroleum in local communities and retain biofuels profits in local communities which are normally captured by large petro-chemical industries. Since CBRs are smaller and modular in scale, they also can be decentralized near feedstock sources, helping to further reduce the cost of accessing feedstocks for biofuels production. CBRs can also use many different feedstocks native to local regions, corn, soy, rice, sweet cane sorghum, jatropha, algae, food wastes and biomass, and of course, hemp/cannabis, as appropriate.

One novel feedstock of great significance is a new non-GMO corn hybrid developed by the USDA which is drought resistant and contains novel new nutraceutical components. The USDA has granted the Company the exclusive rights to this new hybrid. Management believes the use of these new hybrids could allow for the spread of biofuels production from corn across the country and worldwide similar to the way the Midwest has become the largest corn to ethanol producing region in the world.

Community Bio-Refineries has also perfected its CBR applied technologies to use sweet cane sorghum and other locally available carbohydrate wastes through a novel and proprietary preservation process that allows sweet cane sorghum to be used year-round, including in cold and rainy seasons. Management believes this approach will allow sweet cane sorghum to become the "new sugarcane of U.S. biofuels" production, similar to the way sugarcane allowed Brazil to become energy independent from petroleum. (Sweet cane sorghum is known to have as much as 500% the amount of sugar per acre as corn.)

The use of corn in biofuels production has caused mounting concerns over the increase in food costs, whether real or perceived, as grain is diverted from human consumption to fuel and animal feed. CBR's applied technologies extract and recover the human food values of grains *first*, in advance of biofuels production, into much higher valued foods and nutraceuticals, thus eliminating the food versus fuel debate. CBR preserves the food values of the grain during biofuels production. Some of these higher valued food and nutraceutical products produced by CBRs include corn protein isolates and phytosterols (specialty oils) valued as high as $10,000--$200,000 per ton versus distillers' grains (animal feed) currently valued at only a few hundred dollars per ton. The Company estimates that CBR applied technologies can derive from $40-$100 in net value per bushel of corn in the production of foods, nutraceuticals, and other value-added products *before* the production of biofuels. Therefore, CBR applied technologies will serve to significantly reduce the costs of producing biofuels by maximizing the profits received from a bushel, thereby helping to recover the cost of the bushel through the production of such value-added products during biofuel production.

Problems Solved by CBR Applied Technologies.

Problem: Currently, grain-based alcohol and soy diesel refineries require large-scale facilities to achieve economies of scale. Ethanol plants must be designed to produce 50-100 million gallons of biofuels per year and cost $100 million or more in order to be economically sustainable. Current cellulosic ethanol plants are being designed at the 200-400 million annual gallons. These plants will be similar to the large-scale petro refineries.
Solution: CBRs, however, will overcome these economic barriers and allow for the "miniaturization" of the production of biofuels.

Problem: Current ethanol and soy diesel operations require tremendous amounts of petroleum-based energy in the form of natural gas, gasoline, petroleum diesel fuel, propane fuel oil and fertilizer which are used during the production and refining processes. Consequently, as the price of petroleum goes up so does the cost to produce ethanol and soy diesel. Further, current biodiesel production involves blending soy oil, for example, with traditional petroleum diesel fuel - making their product still dependent upon petroleum.
Solution: CBRs employ no cooking, steeping, or distillation, and because hydrogen is a by-product, petroleum usage is substantially reduced or eliminated. CBR biofuels are based principally upon plant-based oils and bio-butanol. No petroleum. **CBR production costs are not tied to petroleum prices.**

Problem: Ethanol and soy diesel operations usually produce only two products, ethanol or soy diesel and animal feed. The profits of ethanol and soy diesel producers are highly tied to the cost of one feedstock, corn or soybean, as well as to the cost of petroleum.
Solution: CBRs are capable of producing dozens of value-added products and by-products worth hundreds of times the value of animal feed, ethanol or biodiesel, and these value-added products serve to offset the feedstock costs of biofuels production.
OBSERVATION: Some 'traditional' biofuels producer groups boast about all the "co-products" made from the left-over DDGs; how they can process their corn with dry milling or wet milling, etc. Those claims are likely valid, however, they leave out a key aspect of their process: the corn, no matter how it is milled, is subjected to very high and very prolonged heat, both pre-fermentation and to dry down the left-over mush afterward. High and/or prolonged heat destroys the protein – period. The protein is still present, but it is virtually useless. FURTHER, you may also see claims about how their biofuels provide more energy than it takes to create it. That

may be true (growing harvesting transporting, etc.); however, they leave out the part about the huge amount of energy needed to cook the corn to break the starch bonds to free it up for fermenting; then, the huge amount of energy needed to then dry down the left-over mush to create DDGs. The CBR process requires *zero* heat.

Problem: Traditional ethanol and soy diesel plants are very large and expensive facilities, dependent upon government subsidies.
Solution: Because CBRs are smaller-scale and modular they are expected to **cost** approximately $50 million each (for biofuels only). **T**his lowers the overall capital costs and reduces the risks for implementing CBRs. In addition, due to the reduced "mini-sizes" and decentralization of CBRs which can be located much closer to grain and biomass supplies, hauling costs are greatly reduced, which are a major cost in current ethanol and soy diesel operations. Because a CBR has such a diverse revenue stream, including biofuels, food and nutraceuticals, bioplastics and hydrogen, it is not reliant on government subsidies in order to have a sustainable business model. This financial independence makes a CBR better suited to withstand future political and economic changes. Independent economic analysis also shows that our CBR financial model could potentially have a high overall return on investment from 30% to as much as 50% per year.

Problem: Water usage is also of major concern in biofuels production. This has become an economic and political issue for traditional ethanol and soy diesel plants because they require vast quantities of water in the production process and often pollute local lakes and streams post-production.
Solution: CBRs employ a patented process to recycle post-production water and are expected to have “zero discharge” and will use far less water than traditional ethanol plants.

Problem: Inadequate refining capacity in the US.
Solution: The CBR will also overcome the problem of a lack of new refining capacity in our country by distributing small refineries that will sell fuel directly into the local market. CBRs will eliminate the need to transport biofuels very long distances to centralized petroleum refineries for blending. These new biofuel refineries or CBRs will also act as "biotechnology clusters" to attract jobs, economic growth and development throughout agricultural sectors of the U.S. and eventually worldwide where thousands of new jobs will be created in a local community where an CBR will be located. Our Company's goal is to demonstrate that one city, county or state can become "petroleum independent" through CBR technologies, much like Brazil has become over the past 30 years. The new biofuels and bio-based products produced by an CBR will ultimately help replace a petroleum-based economy and usher in a new age of "carbohydrate-use" in the U.S.

Social and/or Environmental Impact of CBRs.
CBRs will lead to the downscaling and decentralization of the renewable fuels industry similar to the way "mini-steel mills" now dominate the once giant steel industry. This down-sizing will lead to the proliferation of renewable fuels and energy production throughout the U.S., causing a new wave of economic activity never before seen in the production of biofuels. CBRs will be employed in every town and city in America to produce locally consumed biofuels and other high-value products. Community Bio-Refineries management believes that thousands of CBRs will dot the countryside producing the highest quality biofuels, health foods, nutraceuticals, bioplastics, aquaculture, hydroponics, hydrogen and electrical power.

Thousands of CBRs will create "clusters of economic development" opportunities never before seen in rural areas. And because all of the products and co-products can be utilized in local communities, from foods and nutraceuticals to biofuels, hydrogen and electrical power, CBRs will minimize or eliminate the "petroleum food shipping miles" racked up in the delivery of food products to local communities (which reportedly range from 1500--2600 ‘food miles’).

CBRs are environmentally friendly to the local environment by reducing the emissions in the local community. CBRs they are “closed-loop” so as not to emit toxic ash, smoke or odors to the air or water, and, therefore, have “zero discharge” into the local environment. CBRs will be recognized to be more similar to esthetically pleasing food or pharmaceutical plants rather than the traditional smelly grain milling or ethanol plants which emit enormous pollutants into the local environment where they are located.

Applying the technology advancements and patented breakthroughs of the CBR business model, Community Bio-Refineries will be well positioned to produce products that will meet the growing demand for healthy and nutritious

foods, help the United States gain energy independence with an economically stable and secure fuel supply in local communities, and provide significant economic returns to our investors.

With the application of proprietary technologies developed by our technology partners, higher value-added foods and nutraceuticals can be produced in the same bio-refinery simultaneously with production of biofuels. Some of these higher valued foods and nutraceuticals include:
- food protein isolates (95% pure proteins from corn, soy, rice, barley, and hemp worth hundreds of times the value of animal feeds, e.g. $12,000 per ton versus $200 per ton);
- higher valued specialty oils, e.g. sterols and stanols which can serve to lower "LDL—bad" cholesterol and eliminate transfats in foods;
- fluffy cellulose for use in whippings, toppings, and many bread products
- resistant* starches—worth $5.00 per pound versus cents per pound when used to produce ethanol. (*Resistant starches are resistant to digestion thus helping to decrease the caloric content in our foods, e.g. breads, snacks, cereals, cookies, donuts, ice creams, etc.)

The Company plans to integrate these process technologies with smaller-scale modular fermentation technologies that will use the carbohydrate "waste streams" to produce renewable bio-chemicals and "green" bio-fuels which are the next (Third Generation) of bio-fuels. Such an economic model will change the economic model of producing biofuels, which today are highly dependent upon the cost of grains on the front-end and on the price of petroleum on the back-end.

Short-Term (0-2 years)

Food Industry Applications — In the food industry, the production of corn, soy, rice, and hemp seed protein isolates, phytosterol oils, and resistant starches as nutraceuticals will have extensive applications in the following markets:

- Beverages, dietary, sports, infant and geriatric;
- Health foods;
- Dairy and non-dairy imitation products;
- Nutritional supplements;
- Meats, sausages, processed meats, hamburgers;
- Baked goods, breads, cakes;
- Nutritional extruded cereals, pastas; pizza and tortilla shells;
- Snack foods and cookies;
- Branded food products which can be sold in the local community, thus reducing the carbon footprint in delivering our food products to our supper tables;
- Organic acids such as propionic acids and other bio-chemicals from waste carbohydrate by-product streams for use as natural food preservatives and in health-related product lines;
- Other food products such as all natural and organic aquaculture products (tilapia, catfish, bass, shrimp, salmon) and year-round hydroponic/aquaponic vegetables for local community markets.

Longer-Term (2-5 years)

Alternative Fuels and Energy Applications — In the alternative fuels and energy industry, Community Bio-Refineries' new bio-chemical products will have extensive applications:

- Production of bio-butanol as the basic building block in bio-fuels production which will lead to the "Third Generation" in biofuel production;
- Use of butanol and bio-chemicals as "neat" 100% replacements for petroleum-based fuels and in blends with ethanol and soy diesel to produce esters which can be used as biodiesel, bio-aviation, bio-jet and bio-gasoline replacement fuels for their petroleum counterparts thereby creating the "next generation in bio-fuels";

- Production of hydrogen and electricity through novel fuel cell technologies which can make the CBRs energy independent; excess electrical power can be made available as "green electrical power" for the local grid, thus offering a decentralized source for the supply of hydrogen as a potential new energy source produced from grains and biomass;
- Use of such bio-chemicals as green bio-chemicals in cleaning agents, all-natural pesticides and herbicides;
- Production of new bio-polymers from carbohydrate waste streams which may be used to create biodegradable plastics, e.g., PLA, PHA. (NOTE: "PLA" is poly-lactic-acid; "PHA" is poly-hydroxy-alkanoate);
- Production of protein-biopolymers from waste proteins for use in bioplastics;
- Production of bio-fuels, bio-chemicals from ligno-cellulosic biomass and plant fibers;

The CBR process significantly improves on standard industry methods. Community Bio-Refineries has pioneered new industry standards and its revolutionary breakthrough processes provide the following benefits:

- Superior product quality and functionality;
- Effective and efficient use of inexpensive raw materials, accessed from local sources, proximate to the Company's CBR facilities;
- Significantly lower capital costs to produce value-added products and by-products;
- Environmentally clean processes and products (including organic products) which will be sold in local markets without reliance upon petroleum for growing, processing, shipping and delivery of CBR products to the local community - resulting in a "0" carbon footprint;
- No waste – everything is used, to include complete recycling of the "waste" water.

Why Community Bio-Refineries? CBR's products are derived from proprietary patents, to include patents and technologies licensed from the United States Department of Agriculture ("USDA") and many other major universities. (See **Appendix A**)

CBR's scientists and engineers have combined and developed these patented technologies to create the world's first sustainable and replicable vertically-integrated "Community Bio-Refinery" (CBR), which employs wet precision micron-milling to refine feedstocks (corn, soybeans, rice, barley, hemp, etc.) and biomass (sweet sorghum, corn stover, rice straw, etc.) into their basic components (proteins, starches, sugars, oils and fibers) without degrading the integrity of these components through harsh cooking, steeping, and acid processing.

As a result, the Company's products are high quality, natural, 100% biodegradable, and renewable. CBR is then able to further process these basic components using patented and licensed technologies to produce high value "green" by-products, including the next "Third Generation" biofuels for local consumption.

A Word About Hemp/Cannabis.

Hemp/Cannabis as BioMass and as Feedstock: The Hemp-BioRefinery (HBR)

With the capabilities inherent with the Community Bio-Refineries process, the Company would be remiss if it failed to acknowledge and provide for an additional source material for processing. Specifically, the biomass materials referred to as hemp and/or cannabis. The Company acknowledges that the Food and Drug Administration (FDA) does not recognize any medical attributes which currently may or may not be inherent in hemp/cannabis due to the lack of empirical (US) study. Virtually no non-governmental research had been permitted until late 2018, therefore the FDA currently prohibits any medical claims related to hemp/cannabis or their derivatives. There is, however, a virtual "mountain" of empirical study data from non-US sources. We will not make any medical property claims; however, we will continue to strive to support relevant Research and Development efforts to eventually secure and validate such claims to the satisfaction of the FDA. Until then, we shall focus, at a minimum, on the aspects of food (protein), therapeutic oils, sugars for fermentation, creation of biodegradable plastic, and the elimination of the inherent solid waste issues currently

plaguing processors in the many states where cultivation and processing of hemp/cannabis/marijuana has been approved.

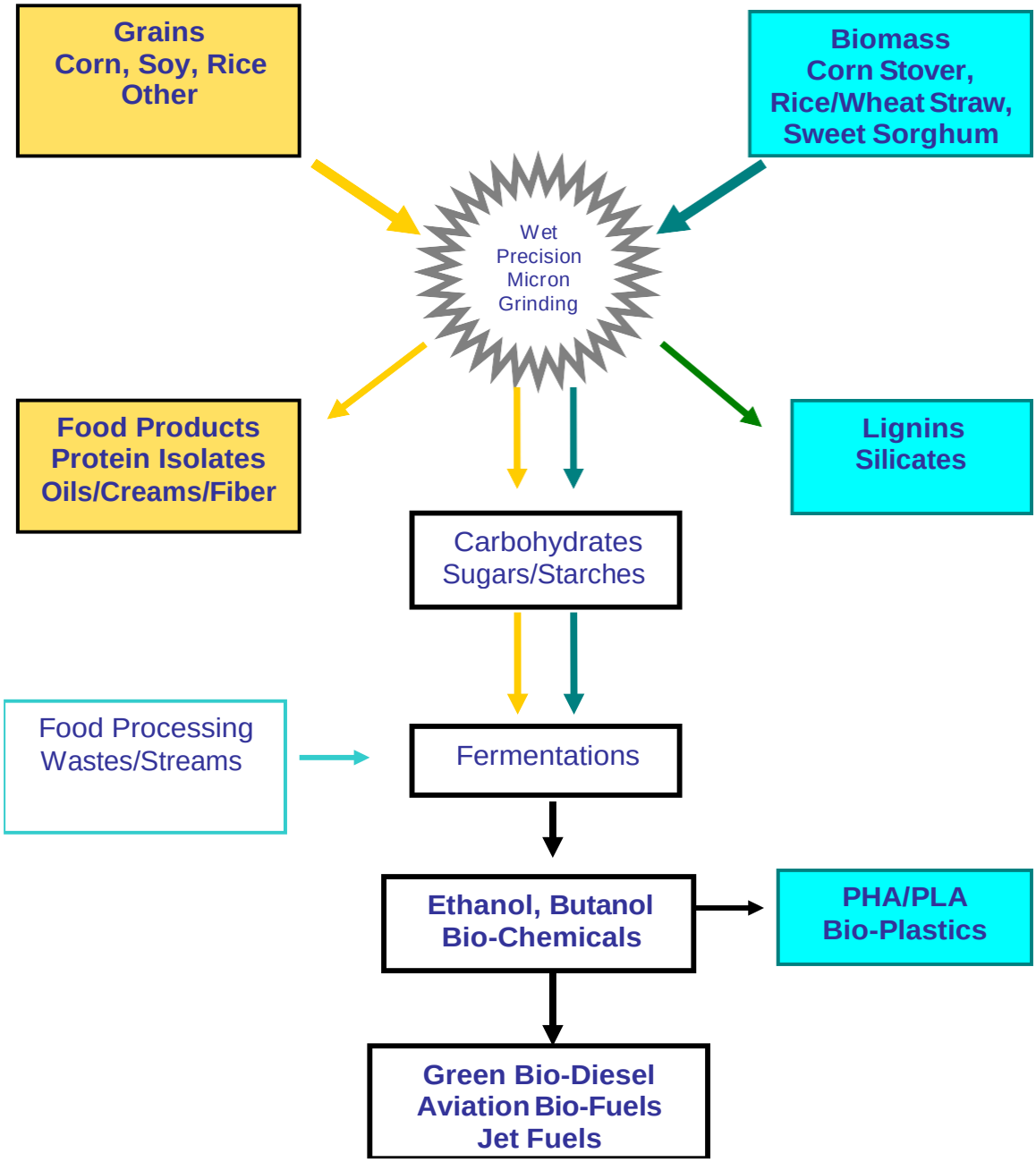
The many uses of hemp/cannabis are well-documented. Tens of thousands of products and derivatives are possible from this single plant source. A *Popular Mechanics* article from the mid-1930s articulated very well the potential bounty of products possible, as well as the potential revenues which could be reasonably expected from such products. The love-hate relationship between cannabis/marijuana and the United States government harkens back to the Depression era, when self-righteous newspaper editors and politicians spread fear and prejudice among the population. There were even motion pictures made depicting the horrid results to anyone who dared to experiment with cannabis. A special "Marihuana Tax" was imposed on those who cultivated hemp or manufactured related products, which soon found itself at odds with the needs of a wartime military requiring vast amounts of hemp-sourced rope. The newspaper publisher, William Randolph Hearst, made a point of ensuring his newspapers emphasized how horrible marijuana is and what lay is store for those foolish enough to use it. Mr. Hearst maintained a long-held prejudice against all things Mexican, so his admonitions made sure Mexican were concurrently demonized since marijuana came primarily from Mexico in the 1930s. Hearst even changed the plant's spelling from 'marihuana' to 'marijuana' to emphasize its Mexican origins.

The Founder of Community Bio-Refineries, LLC felt strongly that the potential medicinal and other properties of cannabis had not been properly explored, particularly within the US. His motivation was heightened when he, himself, became afflicted with cancer and experienced, firsthand, the side effects of various treatment substances created. Right up until the time of his passing, he was in close coordination with the CBR Director of Western States Operations and the CBR Chief Operating Officer to determine how best to apply the CBR process with cannabis as a feedstock/biomass so as to create the best possible results.

International studies of hemp/cannabis have revealed that cannabis contains a very high-quality protein within it seeds (similar to tomato seeds), as well as similarly high-quality oil, making it an exceptional feedstock as well. With this in mind, the Hemp-BioRefinery will likewise strive to extract and recover, intact, as many food and nutraceutical elements as may be possible using the CBR process.

NOTE: The creation of a 'Hemp-BioRefinery' shall not be construed as a separate business entity or "subsidiary" of Community Bio-Refineries, LLC. The HBR will be a CBR facility processing hemp/cannabis.

THE
COMMUNITY BIO-REFINERY
PROCESS



CBR has identified a distinctive and unique niche market advantage. Its primary competitive advantages, however, are two-fold:

- CBR's smaller, modular, scalable production process requires far less capital and ongoing production resources, compared to traditional large-scale capital-intensive soy or corn refining processes that rely on high temperature cooking, steeping and harsh acid soaking/precipitation steps which result in bitter tastes.
- Through exclusive patent licenses, CBR controls key elements of the vertically integrated production process. This vertically integrated process results in the production of higher quality isolated proteins from soy, corn and grains that have greater nutritional, functionality and nutraceutical traits over traditional animal-based products or soy protein proteins.

Pilot/Demonstration Plant Validation – The Company has spent considerable resources at various pilot plants to successfully test the concept of the various process technologies. CBR products produced at the pilot plants show significant improvement for certain attributes over existing protein isolate products.

- In conjunction with leading independent engineering firms using ASPEN feasibility studies, the USDA has assessed the integrated technologies to be both technically and commercially feasible under certain conditions.
- The Company has received various grants from the USDA, State of Iowa, U.S. Department of Energy and the State of Arizona to study these technologies.
- A Major University Department of Food Science completed Corn Protein Isolate (CPI) functionality comparison studies finding CBR's CPI product equal to or superior to animal-based and/or soy-based protein additives across many functions.
- A State of Iowa funded consumer market study concluded that CPI would have overwhelming support if commercially available even at a slightly higher price than existing Soy Protein Isolate (SPI) products.
- An independent third-party engineering study has been conducted to verify and validate the technologies, equipment, process, and products.

Having successfully completed the testing of its pilot plant operations, CBR is positioned to scale up these processes at pre-commercial demonstration site locations, capable of producing large volumes of product samples. Shortly thereafter, commercial scale construction is expected to begin.
Please Note: Our model shows the Pilot/Demonstration element for all commercial plants serving as in-house and organic R&D elements as well as a continuing Quality Control center.

CBR is well positioned to use proprietary integrated process technologies to produce products that will meet both the growing demand for more healthy and nutritional foods and the growing demand for alternative fuels. The Company's ultimate, long-term vision is to create a network of scalable bio-refineries throughout the United States….and ultimately, the world.

So how do we get there from here?

We started with one single premise and built on it. This premise is centered on the "miniaturization" of biofuels production much like the miniaturization of computing that ultimately led to the development of the personal computer. It is the word "miniaturization" which holds the true promise for the economic sustainability of biofuels production.

Distinctive Advantages of Smaller Scale Operations

1. **Biofuels Downsizing —** CBRs offer the miniaturization or the downsizing of biofuels production—where the buzz words are "modular", "skid-mounted", "processor-controlled units." Consider the petroleum industry itself, or, the massive grain processing industry whose multi-billion-dollar refineries resemble the gigantic petroleum refineries in almost every respect, or even the giant plastics industries which are off-shoots of the petroleum industry. Not us.

2. **Flexibility of Feedstocks** — CBRs offer the flexibility of mixing and matching feedstocks since smaller scale operations can be located next and adjacent to, feedstock supplies. Again, the use of petroleum can be minimized under this approach and distributed CBR's will be able to access all of the grains, biomass and organic wastes available in a local area. This local economic advantage can then be repeated across the nation in a similar fashion. With the eventual application of a local area biomass process in every one of the 3,077 counties in the U.S. (as suggested by a former US Secretary of Agriculture), the dependency on foreign petroleum would be virtually eliminated.

3. **The Production of Value-Added Foods and Nutraceuticals —** CBRs allow for the production of value-added products such as higher valued foods and *nutraceuticals* (foods that act like medicines), instead of just producing low value animal feed. This has the potential of entirely changing the biofuels economic equation by taking food out of the economic equation. Such foods and nutraceuticals will be worth hundreds, perhaps even thousands, of times that of animal feed values. This would eliminate service stations competing with our supermarkets for the same grain as they do currently.

4. **Eliminate Shipping Costs of Food Products –** Value-added foods and nutraceuticals can be far more nutritious and health beneficial than traditional grain processed products. And, just as importantly, they can be marketed and consumed within the communities where they are produced, thus eliminating the 1,300 food miles and the petroleum energy required to deliver food to our supper tables.

5. **The Use of Novel, Value-Added Feedstocks** – What if there was a corn hybrid that was non genetically modified (non-GMO) and could be grown equally well, on less productive farm lands, with only a fraction of the water and fertilizer required by regular corn? And, what if this new hybrid was comprised of much higher valued food and nutraceutical components which — if only they could be unlocked – could have a major impact on the health of mankind: from controlling blood pressure, to diabetes and obesity to reducing the incidents of coronary disease and stroke. And, these new hybrids are all natural and non-genetically modified. What if this novel new corn crop could be grown in 49 of our 50 states as well as in arid regions of the world? **CBR has such a hybrid today** and has produced samples that meet or exceed protein efficiency standards established by the World Health Organizations of the United Nations and are considered to be a "whole food." The patents of these novel hybrids and the technologies to process them exist and are highly secured to prevent the possibility of being pirated by competitors.

6. **Downscaling of Fermentation Processes —** CBRs will also allow for the downscaling of biochemical fermentations to produce alcohols and biochemicals on a continuous-flow basis. This is accomplished through the exponential increase of surface areas within the bioreactor itself by factors of 1,000% or more over traditional batch reactors. These "mini-bioreactors" can produce alcohols, organic acids, and esters that some consider the basic building blocks used to replace all petroleum-based fuels: from gasoline, to diesel fuels, aviation and jet fuels, even plastics. This will be accomplished through the production of esters which have superior fuel

quality traits over just ethanol, methanol, or bio-butanol, e.g. extremely high octane, very low Reid Vapor Pressure (RVP), high cetane.

7. **Eliminate Petroleum and Natural Gas –** CBRs also allow the recovery of such biochemicals and alcohols without the use of petroleum or natural gas-based distillation. No heat or chemicals of any kind are used in the process.

8. **Distributed Production of Biofuels —** The deployment of CBRs will lead to decentralization of biofuels production and to a more distributed and entrepreneurial biofuels industry, rather than having to rely on the giant "petroleum-like" ethanol and biodiesel refineries which are heavily dependent upon the use of even more petroleum.

9. **Water Recycling —** CBRs, by definition, can downsize the enormous usage of water and, in fact, recycle and control this "out-of-control" variable that will otherwise most certainly have a major adverse impact on generations to come. CBRs allow for the complete recycling of all "waste" water. CBRs also allow for the dramatic downsizing of the water requirements of such biofuel plants.

10. **Preservation and Use of Free Sugar Feedstocks** — CBRs can allow for the preservation and use of "free sugar-based" feedstocks, including purpose grown non-ligno-cellulosic crops. This will include preserving and utilizing sugar-laden food waste and waste streams. These technologies are here now. We do not have to wait on cracking the "ligno-cellulosic code."

11. **The Hydrogen Highways –** The automotive industry is developing hydrogen-based automobiles, but the question remains "Where will the hydrogen come from?" CBRs can provide the answer since hydrogen is a by-product when certain biofuels, such as bio-butanol, is produced by fermentation.

12. **Economic Development** – CBRs will produce not only food, electrical power, and biofuels, but more importantly they will create economic development in many agricultural regions throughout the US and the world. Consider the economic development created just within the State of Iowa from corn ethanol plants over the past ten years: over 12,500 new jobs. If every one of the 3,077 counties in the U.S. had 3-4 of these mini-biofuel refineries, the collective volume of biofuels which could be produced annually could completely replace all petroleum used in the U.S. annually and the new jobs created -- based upon the Iowa model -- would exceed 2 million. It is also estimated that for every dollar spent on biofuels in the U.S., an additional five dollars in spin-off economic development within the communities occurs in the ag-supporting industries, e.g., more tractors, cultivation equipment, seeds, fertilizers, jobs, etc.

13. **Organic Farms and Foods –** One of the benefits of CBRs will be an increase in organic farming and food products. Since the CBR applied technologies are all "organic" by definition, and do not rely on petroleum fuels, natural gas, or toxic chemicals (like hexane) during the production processes – and they use manure-based fertilizers – CBRs will lead to the benefits of organic farming. Even the pesticides and insecticides can be produced as all-natural bio-chemicals in CBRs. Therefore, each farm supplying feedstocks for CBR processing can ultimately become self-sustaining "organic farms," and the products produced will become "organically certified products."

14. **Bottom Line:** Community Bio-Refineries has achieved all of this through a series of discoveries, starting with the single premise that smaller -- even nano-technologies -- can be better and more readily controlled and diversified. CBRs can lead to the development of the "carbohydrate tree or economy" leading to products which can ultimately and completely replace petroleum products.

CBR Solves the Next Generation Biofuel Problem

Over the past 30 years of CBR research and development, **six breakthrough technologies** have resulted that solve most of the challenges faced today by the biofuels industry:

6 Core EGI Technology Breakthroughs

1	2	3	4	5	6
Micron-Grinding 1000x's Smaller	**Higher Valued Food and Nutraceuticals**	**New Feedstocks New Corn Hybrids Grown Worldwide**	**Smaller Continuous Fermentations**	**Water/Waste 100% Recycled**	**Preserve Seasonal Feedstocks**
No Cooking	*$100/lb. vs. cents/lb.*	*Drought Resistant Semi-Arid Land*	*Ethanol: 5 hrs. Butanol: 6 hrs.*	*Produce PHA Bioplastics*	*Sweet Cane Sorghum Food wastes*

VERTICALLY INTEGRATED TECHNOLOGIES = CBR TECHNOLOGIES

1) **Micron Grinding** – Increases the surface area of material up to 5,000 times. The result eliminates the need for cooking or steeping to break the chemical bonds of the material components which, in turn, eliminates the need for heat in the process (meaning: No petroleum required.) The process is completed in a matter of minutes versus the 2-3 days now required by the ethanol production process. It also allows for the recovery of food components and nutraceutical components.

2) **Production of High Valued Foods and Nutraceuticals** – CBR applied technologies, with the exclusive rights to USDA discoveries, allow for the recovery of new proteins, special oils, fibers, and starches. All can be used for human consumption and animal feed. Nutraceutical properties (foods that act like medicines) are able to reduce cholesterol, lower blood pressure, lower blood sugars, and even fight cancer.

3) **Novel Feed Stocks used in Biofuels Production** – CBR has acquired the exclusive rights to an all-natural variety of ancient maize (corn) with nutritive properties never seen before, and this maize can be grown in 49 of the 50 states and in many arid parts of the world.

4) **Smaller, More Efficient Continuous Flow Fermentation for Biofuels Production** – Applying techniques found in the micro-brewing industry, along with unique fermentation technology, CBR can produce biofuels on a continuous basis (vs. the batch method used by ethanol plants) to produce biofuels in a matter of hours (versus days) on a continuous basis.

5) **Water Waste 100% Recycled** – CBR wastes nothing. Biofuels are produced from the food recovery waste stream. From the fermentation waste stream also comes the recovery of the means to produce bioplastics. Finally, the remaining water goes through a final special treatment process to purify the water, which is then recyclable. Every molecule is used for something positive. Zero waste; zero pollution. The recycled water may also be used as distilled drinking water, a process that is lacking in the current ethanol production process.

6) **Preservation of Sugar-rich Feedstocks for Year-round Biofuels Production** – Sweet cane sorghum and food waste can all be grown and/or recovered and processed through the CBR year-round. Special Ag-Bag technology applications allow for preservation of perishable source materials for up to 18 months. This allows for year-round processing.

The CBR Advantage

CBR's primary competitive advantage comes from its leadership in the advancement and implementation of CBR facilities. Similar to the way "mini" steel mills have come to dominate the giant steel industry or micro-breweries the brewing industry, or the personal computer has miniaturized computer processing, the next monolithic industries remaining to be miniaturized are the grain and fuel industries.

These industries (including ethanol and biodiesel) are poised for revolution. A CBR applied technology adapts advanced pharmaceutical "precision" micron-milling technology to grind grains and biomass up to 5,000 times smaller than is currently practiced can be the key. ***This technology eliminates the need to cook and steep grains*** (and biomass) or process in harsh acids for days to refine them, eliminating the immense amounts of natural gas necessary to current ethanol production methods.

As a result, refining costs are significantly reduced, and proteins, sugars, starches, and other components are not degraded during the process, resulting in much higher quality products. By applying these smaller-scale CBR applied technologies, economies of scale can be achieved in relatively small-scale plants, resulting in the commercial viability of CBRs which can be located near to where the crops or biomass are grown or are available. In summary, the benefits of CBR units include:

- **CBRs Are Small Scale.** Five to ten percent of conventional ethanol, grain operations—easier to finance—less capital investment—constructed in shorter period of time – minimal environmental impact to local communities-– increase local infrastructure and economic enhancement;

- **CBRs Produce Higher Valued Products.** Corn protein isolate can be worth $6,000--$10,000 per ton as opposed to the ethanol plant-derived DDGs used as. animal feed, which sell for only $150/ton—giving a net value to the bushel of only $45 per bushel. The CBR can be continuously expanded to produce additional value-added products;

- **CBRs Can Process Multiple Grains.** Simultaneously, corn, soy, rice, canola, jatropha and energy crops such as sweet sorghum, grape pumice, vegetable wastes, citrus and biomass can be processed to produce a multitude of products based on market conditions;

- **CBRs Are Vertically Integrated.** From the field to the supper table; from grain, to fertilizer, to biofuel; to the products and by-products produced: nutraceuticals, foods, ethanol, bio-diesel, hydrogen, electrical power, biofuels, aquaculture, hydroponics all become part of a vertically integrated process;

- **CBRs Use No Petroleum or Natural Gas.** Hydrogen is a 'waste' by-product and can be used to produce electrical power through hydrogen fuel cells, making CBRs energy self-sufficient;

- **CBRs Can Identity Preserve Products.** Genetically Modified **(**GMO), Non-GMO, and organic grains and products are preserved through CBR processing;

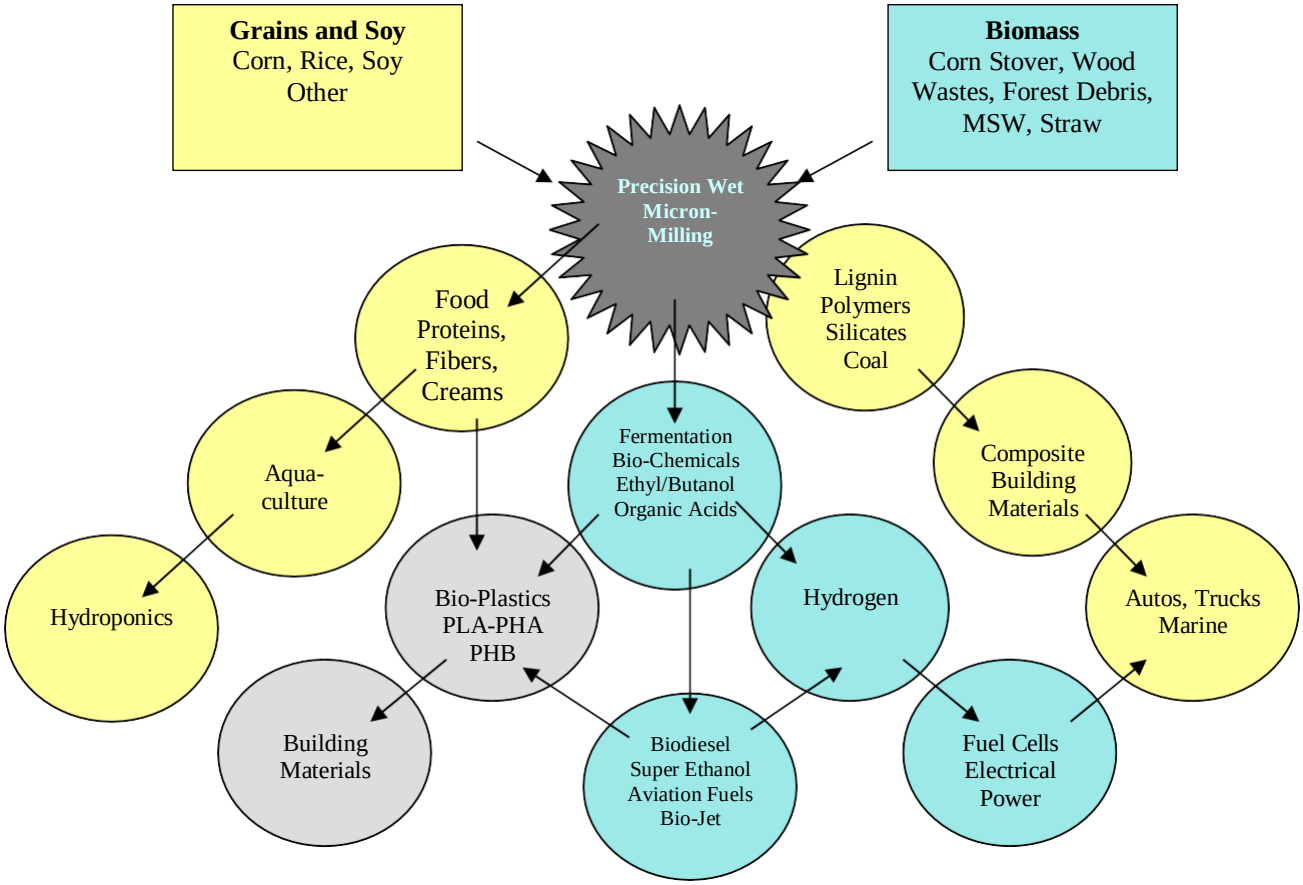
- **CBRs Can Create Economic Development.** CBRs can bring higher paying technical jobs back to communities through agricultural manufacturing. This will bring new economic development opportunities that will restore the agricultural economic base and will simultaneously assist our country (and all other countries) in becoming energy self-sufficient;

- **CBRs Can Be Added to the Front-End of Existing Ethanol or Soy Diesel Plants.** CBRs can add value to existing ethanol and soy diesel plants that normally produce only ethanol or soy diesel and animal feed. Through CBR processing, a host of value-added products, including corn, soy protein isolates, specialty food oils and fiber, resistant starches, bioplastics, hydrogen, electrical power, aquaculture and hydroponics can be produced.

- **CBRs can reduce water usage and preserve water supplies.** CBRs will allow for total recycle of water during biofuels production, a major disadvantage in current ethanol processing. The CBR process can also purify brackish water for use in the plant.

- **CBRs can offer a high return on investment.** Due to the higher valued products produced in tandem with biofuels, CBRs are highly economically sustainable without dependence upon federal subsidies. (Please see the attached **Appendix B, Economic Forecast and Projections of One CBR Model**.)

- **Finally, CBRs can create "Technology Clusters"** resulting from the many by-products of the process:



Management Team and Partnerships

The Company has assembled a staff of experienced scientists, as well as marketing, engineering, and legal professionals, most of whom serve as outside consultants to the Company. They include:

- **S. "Sammy" Mayfield Pierce (dec)**, was the Founder, President and CEO, and was the visionary behind CBR and the driving force behind the continued grain protein development efforts of the Company. Mr. Pierce had well over 30 years of R&D management experience in alternative fuels, corn processing and fuel technologies. He held the U.S. patent and trademark for "Biodiesel Fuel" and had been in the process of working with the USDA to file additional patents on the wet micron-milling process.

- **Vincent James** has been affiliated with prior CBR-related entities for over 25 years and is a microbrewing process engineer and a brew master by trade, having constructed microbreweries throughout the U.S. and abroad. His vision and experience lead to the downsizing of the CBR fermentation applications.

- **Scott Hewitt** has been affiliated with CBR since 2004. His academic background in Food Science and Technology, as well as leadership, management, and organizational skills acquired through a successful military career have - and will continue to - serve CBR well.

- **Dublin and Mike Hennigar** have provided practical and vital process experimentation, resulting in the successful technology transfer of USDA-developed technology to apply in the principal CBR pilot plant.

- **Don Tomala**, President of Matrix Partners, a senior food marketing firm based in Chicago and comprised of major food Company executives. Mr. Tomala was past Vice President of Quaker Oats and Sara Lee.

- **Dr. Qiang Tan, Ph.D.**, operated CBR's pilot plant at Louisiana State University for over two years and is now a senior research scientist for C&H Sugar in Oakland.

- **Ph.D.'s from a dozen major universities**

Through the years, CBR has also developed significant strategic partnerships with the following organizations:

- USDA
- Over a dozen major universities and research facilities, including:
- Louisiana State University
- Illinois State University
- Oak Ridge National Laboratories
- Iowa State University
- The Ohio State University

In addition to the above, CBR has worked with a number of prominent engineering firms, including Raytheon (Badger); John Brown (Travalgar Groups); Sverdrup; and others. The Company is working with several engineering firms which have consulting and development contracts with the USDA, leading genetic engineering, pharmaceutical, antibiotics and food firms. One of the firms has particular expertise in protein, yeast, single cell recovery and currently serves the beer, wine, corn and wheat industries. The firm has completed a confidentiality agreement and has agreed to enter into a non-compete agreement to

act as part of the CBR management team in conducting debugging, process design, setup and operation of the Company's beta sites, as well as commercial plant operations.

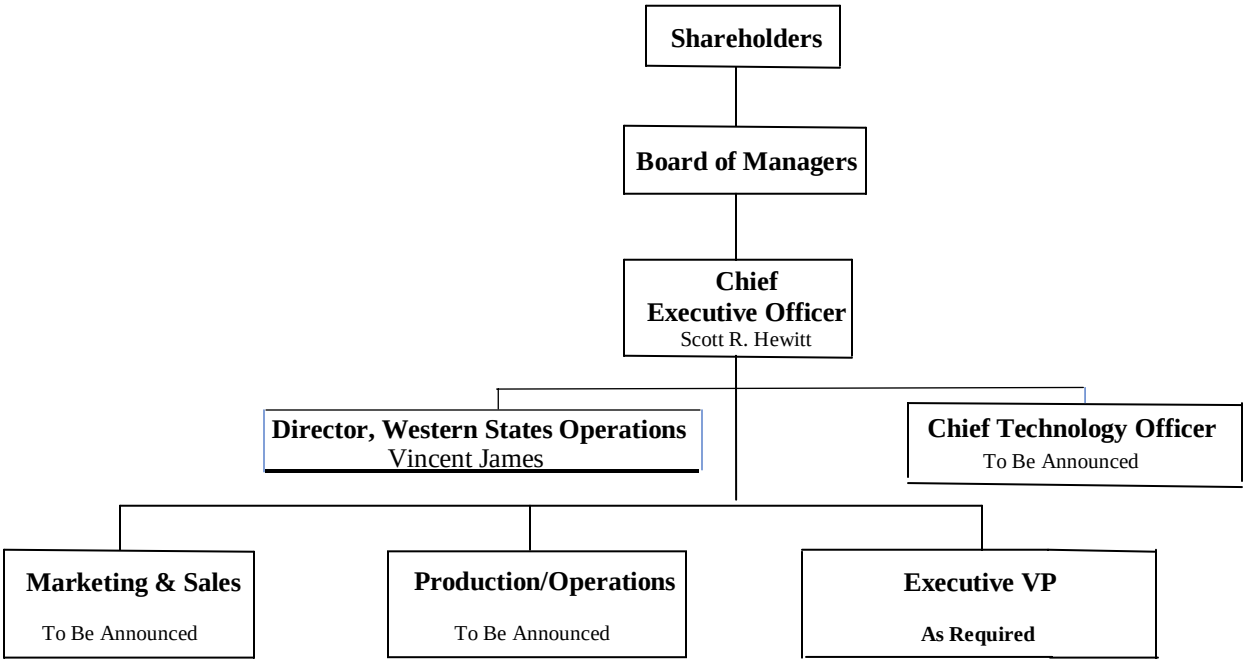
Markets Indicating an Interest in CBR: A number of the major food companies have contacted CBR directly, or via the USDA, expressing great interest in partnering. These include: Nestle, Mitsubishi International, Safeway, Archway, Borden, Tyson, The Dial Corp, Optimal Health Systems, Amway, Perdue, L.A. Dreyfus, McNeil Specialty Products, Hormel Foods, Amaizo American Maize Products, Pillsbury, Worthington, Multifoods, Hershey Foods, Kraft Food Ingredients, Ross Products Division, The Coca-Cola Company, Blue Bunny, and Guiness. CBR intends to participate and remain an involved business partner in the marketing of its products to insure an aggressive market penetration plan. The marketing of end-products will not be done solely through these companies, however. CBR plans to produce many products itself and market them to the local communities.

The Way Ahead

CBR plans to have a solid, experienced management team that has vision and strong execution capabilities. As a Stage 2 start-up company, CBR has collaborated with scientists and professionals in a variety of fields, rather than hiring full-time employees. This allowed process and product development to be accessed without prematurely committing the Company to employment contracts.

CBR expects that as the Company proceeds through the beta/demonstration site phase and commercialization, it will continue to involve the key technical advisors and consultants discussed above. The Company plans to add management personnel with relevant business, industry, technology, and marketing experience recruited from the top companies in the country. Upon Mr. Pierce's passing, Mr. Hewitt assumed the responsibilities of Chairman, CEO and Chief Operating Officer of the Company and will remain as such during the initial phases of Company development.

Once experienced senior management leadership is in place to manage the Company, Mr. Pierce will remain as Chairman of the Company and move into a position focused on continued research and technology development initiatives. The anticipated organization structure is provided below:



The Company plans to implement a number of key steps as it moves towards commercialization. To implement these steps and move ahead as a commercial Company, CBR will seek to raise capital to accomplish several key missions:

1. Raise the necessary capital to complete the final Beta/Demonstration Plants, capitalize the Company, enable continuing R&D, and solidify the position of the Company through Joint Ventures at the CBR level in local communities;

2. Create subsidiaries of CBR at the focal points for the construction and commercialization of CBRs in local communities. These subsidiaries will enter into Joint Venture agreements with interested parties who wish to participate in the growth and future success of CBR. These key joint venture partners will provide the crucial capital to launch the commercial operations of Community Bio-Refineries' local CBRs.

An International View. The multiple ground-breaking applications represented by the CBR have not been lost on the international community. Keen interest has been expressed by senior representatives of the governments of Brazil, Egypt, and the European Union. Further, Sammy Pierce was asked by representatives of UNESCO, a division of the United Nations, to author a chapter for the UNESCO Encyclopedia of Life Support Systems (EOLSS), published on 20 November 2007.

Sammy's chapter is entitled "The Next Generation in Biofuels – The Mini Biofuels Refinery". This document can be found at **www.eolss.net**. CBR has already seen a sharp increase in interest in a variety of applications for the CBR to benefit the citizens of our planet.

APPENDIX A: Economic Forecast and Projections

One CBR Model

CAUTION: THE READER IS CAUTIONED NOT TO RELY UPON THESE PROJECTIONS AS THEY ARE PREDICTIONS OF EVENTS WHICH MAY OR MAY NOT OCCUR IN THE FUTURE. CBR MANAGEMENT CAUTIONS THAT BETA-SITES AND FINAL ENGINEERING CERTIFICATION MUST BE COMPLETED IN ORDER TO FIRST VERIFY THAT THE TECHNOLOGIES RELIED UPON IN FACT ARE SCALABLE TO COMMERCIAL-SCALE; AND, THE ACTUAL EFFICACY OF SUCH PROJECTIONS HAS YET TO BE DETERMINED. THEREFORE NO CREDENCE CAN BE MADE AS TO THE ACCURACY OF SUCH FORECASTS.

MBR's

15-Nov-07

Corn Hybrid and Sweet Sorghum

Forecasted Profit and Loss

ASSUMPTIONS	Years after construction	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Inflation		0.00%	2.00%	2.00%	2.00%	2.00%
Total Revenue	$	73,061,812	77,932,600	87,674,175	97,415,750	97,415,750
Total Cost of Sales	$	43,455,227	46,301,908	51,974,128	57,646,789	57,669,681
Total Marketing and Administrative	$	8,079,845	8,218,788	8,360,160	8,503,694	8,649,432
Net Income Before Interest & Taxes	$	21,526,740	23,411,904	27,339,886	31,265,267	31,096,637
Interest Income	$	0	333,183	505,198	630,240	772,460
Interest Expense	$	(1,693,292)	(1,505,586)	(1,303,802)	(1,086,884)	(853,698)
Net Income Before Taxes		19,833,448	22,239,502	26,541,282	30,808,623	31,015,400
Income Taxes		(7,661,684)	(7,145,370)	(9,927,541)	(12,443,352)	(13,028,737)
Net Income	$	12,171,765	15,094,132	16,613,742	18,365,271	17,986,663
			Plant Capacity	90%	90%	
			Equity	19,800,000	25,000,000	
			Investm	134.0%	94.2%	
			Annual ROE	42,377,221	49,727,220	
			Total Plant Inve	62.6%	53.4%	
			Annual ROI			

Disclaimer: *This material has been prepared by the Company described and contains forward looking statements related to future events and future performance that may not be realized, and therefore such statements involve a number of risks and uncertainties. No representation or warranty as to the accuracy or completeness of the information presented herein is made. This summary is not an offer to sell securities or a solicitation of an offer to buy securities.*

MULTIPLE CBR MODEL

No. CBRs Projected	2	5	7	10
Net income (loss) (to collective JV's)	24,314,214	87,882,705	131,758,200	196,135,450
CBR 51% (assuming all JV CBRs)	12,400,249	44,820,179	67,196,682	100,029,079
IPO after 3 years assuming 30/1 P/E (in millions$)		1,344.6	2,015.9	3,000.8
25% Equity Value of CBR Investors		336.1	503.9	750.2
ROE to 25% CBR Equity Investors		336%	503%	750%

Management anticipates that commercial CBRs will be configured to maximize the full potential of the process,

enabling as much food and nutraceutical product results as possible, as well as bio chemical and bio fuel production as is possible. This will be determined by the availability of source materials in the areas surrounding the CBRs. Multiple lines in a CBR are entirely possible to help achieve full potential. Availability of source materials will also play a key role in the specific placement of CBRs.

APPENDIX B: Competitive Technologies

The following analysis comparing competitor technologies to the Company's applied technologies are sub-divided into five main categories:

A. **Feedstock Challenges**.

In corn ethanol plants, feedstock costs are considered to be the largest single cost in the production of biofuels. The cost of the bushel currently accounts for up to 50-60% of the total production cost of each gallon of ethanol produced. As a result, CBR management has focused much of its effort on recovering these costs, mostly through: **1)** production of valuable co-products such as much higher food and nutraceutical products, or **2)** through the preservation and processing of feedstocks containing much higher energy (sugars for fermentation), such as sweet sorghum, which can contain upwards of 500% greater sugar per acre versus corn. Additionally, most government sponsored research focuses on non-food feedstocks due to the diversion of corn away from food and animal-feed uses. The single major challenge in achieving the “holy grail” of biofuel feedstocks (cellulosic ethanol) is the "breaking of the enzymatic code". Most enzymatic companies (such as Genecor and Novozyme) predict this will occur in approximately 5-10 years. Once this is achieved, there still will be a cost to ethanol plant operators for such enzymes.

Another associated challenge in achieving "cellulosic ethanol" is the immense capital investment required to construct such large-scale 100--200 million-gallon plants. Usually, accessing feedstocks for such monstrous plants will require hauling these feedstocks from long distances, and then factoring in the energy required for breakdown and pre-treatment of such feedstocks normally requiring massive amounts of energy to produce the necessary pressures and temperatures. Further, vast amounts of water will be required for such operations. [CBR's miniaturization concept has been applied to ligno-cellulosics as well.] There are approximately 30 major research groups in this cellulosic-biofuels area.

CBR's strengths lie in its application of smaller-scale technologies that require far less water, recycles all remaining water used, and co-produces energy required in its CBR biofuels production process, thus eliminating the need for petroleum during the processing of biofuels. This allows the addition of ligno-cellulosics in the production of biofuels at a much smaller-scale level. Another CBR strength in feedstock lies in its ability to preserve sweet cane sorghum (and food waste) containing high levels of "free sugars" for year-round use as feedstocks for biofuels production.

Finally, the very nature of the CBR allows it to be an engine of change by being able to turn the vast amount of farm and production level food waste into the valuable products discussed throughout this document.

B. **Food Proteins and Nutraceuticals**.

In addition to competition from soy proteins (though they have serious limitations in food protein applications but have been gradually improving the qualities of soy protein isolates, e.g. Cargill and Solae), there are two potentially competitive technologies to CBR's protein isolate technologies. One is a snack-food Company called Lifeline located in St. Joseph, Missouri which produces snack-foods from corn protein concentrates and also ethanol. A second competitive technology utilizes extremely high-pressure carbon dioxide to extract protein, but some destruction of the protein occurs to such high pressures (10,000 psi). ADM is also working in this field, backing a Canadian Company called Burcon which is developing a canola protein isolate (public valuation set at $400 million) and is also patenting a new process to add nutraceuticals to proteins and extruded food products.

A key CBR's strength lies in the introduction of novel new corn hybrids, leading to the production of not only much higher protein isolates, but up to 500% greater yields per bushel, and the production of phytosterol (oils) - comparable to olive oils and resistant starches - all produced from a Non-GMO drought-resistant new corn hybrid discovered by the USDA.

C. **Bio-butanol and Hydrogen**.

Just as cellulosic-ethanol is considered to be the "holy grail" of biofuels feedstocks, bio-butanol and hydrogen are considered to be the holy grail of the biofuels themselves. There are several large companies which have partnered in an attempt to develop more effective methods of bio butanol production, as well as several high-profile individuals. We have seen the press releases about the partnering of British Petroleum and DuPont and their $500 million investment in the UK; another $500 million from BP for genetics research related to improving butanol yields at UC-Berkeley; plus, another $500 million to the University of Illinois. Sir Richard Branson and Vinod Khosla have also made press releases to let the public know about their own efforts. Finally, there are numerous smaller-scaled projects throughout the US at universities and smaller research companies, as well as similar efforts on-going in Europe and Asia, all attempting to "break the code" of bio butanol and hydrogen.

CBR sponsored 16 major pilot plant operations over a 28-year period to improve the production of bio-butanol. Its technology premise is to **1)** first reduce the process to a continuous flow process (already accomplished in small liter reactors); then **2)** increase butanol yields from carbohydrates (CBR has achieved yields as high as 0.4 grams butanol/1 gram of carbohydrates - over double that of other researchers and the old butanol process); and finally **3)** reduce recovery costs (CBR developed an extraction process in a small pilot plant reactor which has reduced this cost by an estimated 90%).

CBR has accomplished these goals; CBR management places CBR far ahead of other research companies in this area. CBR's technology partner has scaled these processes to full commercial scale. Relative to hydrogen, CBR applied technologies produce approximately 0.6 lb of hydrogen per gallon of butanol; therefore, if more butanol is produced per pound of carbohydrate, then more hydrogen is also produced.

D. Bio-Plastics.

There are several major players in the production of bioplastics. DuPont, with its novel Sorona biopolymer produced from corn; Proctor and Gamble with its PHA production process from oils; Metabolix and ADM with their PHA production process from corn; and Cargill Dow with its PLA production process from corn.

CBR's bioplastics technologies capitalize on using wastes found in BOD/COD* laden waste streams and proteins. CBR has exclusive options to both PLA and PHA technologies and protein biopolymer patents in these areas. The use of wastes and waste streams will have a significant impact on the production costs of these biodegradable plastics.

*BOD = Biological Oxygen Demand; COD = Chemical Oxygen Demand. The typical biofuel plant dumps its waste, loaded with BODs/CODs) into local lakes and streams, killing all life by depleting the oxygen available. Fines from the EPA are considered overhead and a cost of doing business.

E. Water Usage and Recycling.

Water recycling and usage is only now coming to the forefront as one of the major obstacles in the widespread adoption of biofuels production in the U.S. and worldwide. Permitting for some ethanol plants in several states has been denied due to the large volume of water usage by ethanol plants, and, the larger the ethanol plant the more water required. Cellulosic ethanol plants will require double the water requirements of corn ethanol plants. CBRs will not only require only a fraction of the water of traditional ethanol plants, but will recycle all left-over water, losing to the fuel itself only about 20% of the total water consumed daily. In addition, CBRs will be able to recover and process brackish water for its use, making CBRs more versatile over traditional biofuels operations.