

MISSION STATEMENT:

SynSel's spirit is rooted deep in Community Resiliency. Our intentions and ambitions are aligned with this core focus: Achieving a Holistic Impact on economically distressed communities such that the benefits are self-sustaining - providing a higher quality of life and wellness going forward for future generations.

HOLISTIC IMPACT:

- **Job Creation:** Approximately 100 jobs created per plant – plus many more secondary jobs (details in Exhibit A)
- **Sustainable Solutions:** SynSel plants provide a 90% reduction in greenhouse gases compared to fossil fuels
- **Energy Security:** Allows for domestic production of the highest spec transportation fuels
- **Fire Disaster Resilience:** Dead and dying trees can be culled within 75 miles of each plant to reduce wild fires
- **Community Resilience:** Planned Synergistic Enviro Industrial Parks will utilize free waste heat from SynSel plants
- **Alternative to Electric Vehicles:** Today's vehicles running on SynSel fuels are greener than electric vehicles
- **Advancement of Science, Education and Technology:** Working in conjunction with Michigan Technological University and Bradley University

COMPANY BACKGROUND:

SynSel Energy, Inc. was incubated by Preon Power, Inc, a company Tim Tawoda founded in 1996. SynSel's roots go back to Preon incubation in January 2012 and incorporated in October 2013 as a wood-to-fuel company with a vision of developing a replicable "biorefinery template" for use in building a network of biorefineries in the wood-baskets of North America. A "friends & family" raise provided initial operating capital, followed by subsequent private placement equity offerings that have sustained the company to date. **The total cash invested to date is \$3,451,000.**

In SynSel's beginning years, considerable effort was placed in vetting technologies to meet the growing worldwide demand for renewable fuels produced from wood feedstock. SynSel selected wood as its initial feedstock due to its high availability, content consistency and its manageable supply chain.

Market Capacity:

More than 300 wood-based mills have been shuttered in the USA over the last 40 years. Due to the "digital" age, newspaper and print are replaced by electronic displays. Also, many mills have been lost to overseas operations. However, each one of these closed mills in the USA and Canada represents an opportunity for a SynSel plant and a revitalized community. SynSel has aspirations to build 100 biorefineries in the USA, while Canada has capacity for double that. Once the plant core processes are "modularized", containerized systems can be dispatched and shipped to overseas locations.

PROVEN TECHNOLOGY:

SynSel has been working with our chosen Biofuels Technology Provider since April 2014. Our chosen technology was invented by one of the world's leading scientific energy R & D institutions. The institutional scientists have been running an in-house pilot plant with the technology since 2009. This extensive testing has produced many improvements in quality and yield over the years, and the output is currently the highest quality biofuels produced anywhere.

In addition to the in-house pilot plant that has been running since 2009, SynSel's chosen technology was scaled-up 100x to a 5 tonne per day demonstration plant that has been operating successfully since Q3 2018.

There are over 600 biorefineries in the USA creating biodiesel and ethanol. However, there are only two plants creating second-generation/drop-in fuel like the fuels produced by SynSel's chosen technology. These fuels currently command over \$4.30/gallon in market incentives, and demand for these fuels is much higher than first generation biodiesel and ethanol due to their high carbon intensity, cellulosic and renewable nature.

THE COMPETITION:

The two competing US plants that produce fuel similar to SynSel use fat, oil and grease (FOG) as the feedstock. On an energy basis, SynSel plants using waste wood feedstock have a 7.5X advantage over the competition on the cost of feedstock to generate the same volume of fuel. A confidential process upgrade to SynSel's chosen technology is currently in development that is expected to further increase output by 40% using the same volume of wood feedstock. Scandinavian companies are more advanced in producing renewable, drop-in, second-generation biofuels. Over 80% of the world production of this type of fuel is produced by Scandinavian countries.

THE SYNSEL NETWORK:

SynSel Energy, Inc. has assembled a world-class network of strategic service providers and contractors, including established alliances with key academic institutions such as Michigan Technological University and Bradley University. Due to confidentiality obligations, a full confidential list of SynSel stakeholders, strategic service providers and contractors is available for review upon execution of an NDA.

As the site developer, SynSel is responsible for the sourcing of site pre-construction and construction funds. SynSel is also responsible for feedstock agreements with local wood feedstock harvesters and fuel off-take agreements. SynSel and its engineering-construction contractors are responsible for integration with our chosen Technology Provider's engineering team to assure each project meets SynSel's own technical and commercial needs through a competitive bid process.

SynSel's group of in-house and contracted engineers and scientists will be evaluating ancillary processes and technologies to assure optimal plant safety, flexibility, reliability and efficiency.

SynSel executives will be synchronizing and growing in-house professional capabilities with availability of sites, funds, feedstock, supply chain vendors/stakeholders and fuel off-take to assure business goals are achieved. This requires a team integration with our selected network of legal, financial, risk-insurance, financiers/broker-dealers, engineering, construction, plant operations, environmental specialist, and real estate professionals.

LOCAL CO-DEVELOPERS:

A key element to the SynSel-X, Inc. business structure is that it must include a local Co-Developer to assist in site specific needs such as managing the wood harvesters and negotiating LOI's with the wood harvesters. The Co-Developer will either own the site property or facilitate the establishment of property control for SynSel. The local Co-Developer will work with local stakeholders such as regional Economic Development Corporations, railroad professionals, environmental watchdog agencies. The Co-Developer will also network with local business to assess potential strategic alliances. The Co-Developer will have an equity stake in the plant and receive operating fees from SynSel.

SYNSEL BIOREFINERIES:

Potential SynSel Biorefinery sites are at least 80 acres located in “wood-basket” areas with rail, highway access, and adequate utilities. Industrial brownfields that previously facilitated paper mills are ideal locations for SynSel plants. There are over 300 shuttered papermills in the USA and as much unutilized woody biomass to facilitate 300 SynSel biofuels plants.

Each SynSel Biorefinery will consume 1,000 dry metric tons of woody biomass per day to produce 90,000 gallons of synthetic fuel with working properties on par with fossil gasoline, diesel fuel and aviation fuel. Second-generation biofuels have been documented by Michigan Tech University to provide a “well-to-wheel” 90% reduction in greenhouse gases compared to fossil fuels. This is a much “greener” profile than electric cars.

The second phase of developing each site will include an Environmental Industrial Park (EIP). The EIP will utilize the waste heat from the biorefinery to support complimentary technologies such as wind, solar and steam-to-electric, geothermal, ethanol production and anaerobic digesters. Business well-suited for augmenting these technologies include on-site data centers, aquatic farming, greenhouses and renewable vehicle refill/recharge stations. Each EIP will be a product of master planning to consider all site-specific logistics and opportunities. The EIP will remain a work in progress and should ultimately employ more community professionals, technicians and construction labor than the biorefinery.

PLANT METRICS, FEEDSTOCK & OFFTAKE:

The base size for a SynSel Biorefinery is 500 dry metric tons of woody biomass feedstock per day. SynSel’s research revealed that doubling a plant to 1,000 dry metric tons per day doubled capacity with only a 50% cost increase, and this became SynSel’s plant template metric. Biomass of this metric is easily obtainable at our target sites in North American wood-baskets. The plants are located at sites that previously facilitated a “wood use” facility with similar cellulosic consumption.

SynSel’s emphasis for “papering-up” Feedstock agreements for wood and off-take agreements for fuel is to maximize profits. Wood agreements are set at 5 years and fuel will be sold as it is produced on the commodity markets to the highest bidders. This allows SynSel to purchase feedstock most competitively and to retain custody of production incentives with the sale of the fuel. It also allows SynSel the opportunity to sell the fuel to the Department of Defense – who typically will pay about \$2 per gallon above wholesale due to the fuel’s energy-security profile, renewable profile and superior working properties. The Department of Defense will not enter into a purchase agreement until the fuel is produced and ready to ship.

Each SynSel Biorefinery will receive about \$4.30 per gallon in incentives which amounts to about \$390,000 in net profits per day per plant.

<http://www.biofuelsdigest.com/bdigest/2018/11/20/a-fuel-value-over-7-00-per-gallon-and-everyones-chasing-it-the-birth-of-usa-bioenergy-and-the-surge-in-renewable-diesel/>

RECENT EVENTS:

In addition to the in-house pilot plant that has been running since 2009, SynSel's chosen technology has been scaled-up 100x in a 5 tonne per day demonstration plant that began operating in Q3 2018.

The technology inventor is also coming to market with technical enhancements to further improve the business case: **a.)** Hydrogen integration with off-take gases increases efficiency/production by 40%; **b.)** Improved catalyst for hydrogen production reduces plant cost by 20% and reduces operation cost of hydrogen plant by 50%; **c.)** modular and transportable skids reduces costs and construction schedule by an additional 25%. This will also facilitate worldwide deployment.

A bipartisan bill was introduced by Senator Ron Wyden (Oregon) in May 2019 to amend the Clean Air Act. In summary the bill would allow **a.)** private landowners to utilize all low-value woody biomass – currently only tree plantations qualify; **b.)** all wood mill residues to be processed; **c.)** wood on federal lands to be accessed. This will greatly reduce forest fires in the US and Canada as dry and dead timber now has value for a SynSel plant. There are more than 50 million acres of pine killed by the mountain beetle in the USA and Canada. This much biomass would feed 400 SynSel plants for 10 years.

In June 2019 SynSel was selected by the technology inventor to participate with the commercialization of the technology enhancement via a US Department of Energy Grant (DE-FOA-0001926), Drop-in Renewable Jet Fuel Blendstocks.

Effective January 1, 2020 the International Maritime Organization (IMO) has new regulations affecting the fuel used in international shipping. 170 nations (including the USA) have approved the new rules. The new acceptable level of sulfur in maritime fuel will be limited to ½ of 1%. It is currently at 3.2% with the average utilized at 2.7%. That impacts more than 3 million barrels of fuel currently burned per day in international shipping. Ships will have to be: **a.)** retrofitted with expensive "scrubbers"; **b.)** converted to LNG fuel system; or **c.)** switch to ultra-low sulfur (ULS) diesel. SynSel's diesel fuel has no sulfur. The demand and cost will increase significantly for traditional Ultra Low Sulphur diesel fuel and Synthetic No-Sulphur diesel such as SynSel fuel.

<https://www.msn.com/en-us/money/markets/the-biggest-change-in-oil-market-history-is-less-than-six-months-away/ar-AAEpkZ?li=BBnbfcl>

EXIT STRATEGY:

After 7 years of successful plant operations, SynSel plans to sell the individual plant corporations to qualified operators, preferably retaining ownership of the real properties. When sold, the plants will continue to generate passive income for SynSel through lease agreements. Marketing efforts will begin with local interests. With a sale value of 5 x profits, a plant would have a value of \$750 million in 7 years at calculated metrics, contingencies and stated assumptions. The initial budget per plant is \$440 million, the \$310 million additional sales metric over 7 years represents a \$44 million per year increase or 10% annual.

Exhibit A

SYNSEL BIOREFINERY JOB CREATION

CONSTRUCTION PHASE EMPLOYMENT:

The four-year Construction Phase is estimated to produce **2,538 Construction-Related Jobsⁱ**. These jobs are broken down into the following:

- 1,020 direct project development, onsite labor, and technical positions
- 866 indirect construction services, support, and supply jobs
- 652 induced jobs throughout the community

OPERATIONAL PHASE EMPLOYMENT:

SynSel Biorefineries will operate around the clock for 50 weeks out of the year with 2 weeks of scheduled maintenance. It is estimated that **98 Permanent Direct Jobs** will be created for each SynSel plant with the following breakdown:

- 18 management positions with an average annual salary of nearly \$62,000
- 80 labor positions with an average annual salary of nearly \$38,000

Hiring will initially focus on local, state, and regional labor pools for all positions. Please refer to Table 1 for an outline of permanent direct jobs created by a SynSel Biorefinery.

SynSel Biorefinery Permanent Direct Jobs							
Management Positions				Labor Positions			
	Count	Salary *	Extension		Count	Salary *	Extension
1 Plant Manager	1	\$ 150,000	\$ 150,000	1 IT Administrators	3	\$ 65,000	\$ 195,000
2 IT Manager	1	\$ 90,000	\$ 90,000	2 Procurement Specialist	1	\$ 48,000	\$ 48,000
3 Plant Engineer	2	\$ 80,000	\$ 160,000	3 Sales & Marketing	1	\$ 48,000	\$ 48,000
4 Production Supervisor	1	\$ 62,000	\$ 62,000	4 Maintenance Technician	16	\$ 42,000	\$ 672,000
5 Maintenance Supervisor	1	\$ 62,000	\$ 62,000	5 Shift Operators	20	\$ 40,000	\$ 800,000
6 Lab Manager	1	\$ 60,000	\$ 60,000	6 Lab Technician	4	\$ 38,000	\$ 152,000
7 Logistics Manager	1	\$ 60,000	\$ 60,000	7 Human Resources Specialist	2	\$ 34,000	\$ 68,000
8 Safety & Compliance Officer	1	\$ 54,000	\$ 54,000	8 Lead Production Trainer	2	\$ 32,000	\$ 64,000
9 Security Manager	1	\$ 54,000	\$ 54,000	9 Yard Employees	12	\$ 32,000	\$ 384,000
10 Shift Supervisor	4	\$ 48,000	\$ 192,000	10 Security Officers	6	\$ 32,000	\$ 192,000
11 Human Resources Manager	1	\$ 46,000	\$ 46,000	11 Logistics Coordinator	3	\$ 32,000	\$ 96,000
12 Accountant	2	\$ 40,000	\$ 80,000	12 Stock Room Assistant	2	\$ 30,000	\$ 60,000
13 Stock Room Manager	1	\$ 40,000	\$ 40,000	13 Administrative Assistant	8	\$ 30,000	\$ 240,000
Management Subtotal	18		\$1,110,000	Labor Subtotal	80		\$3,019,000
Management Average Salary			\$ 61,667	Labor Average Salary			\$ 37,738
Total	Count		Extension				
Overall Total	98		\$4,129,000				
Overall Average Salary			\$ 42,133				

* There may be regional differences in individual salaries

Table 1: Permanent Direct Jobs created from SynSel Biorefineries

INDUCED JOBS IN THE COMMUNITY:

In addition to the permanent direct jobs, it is estimated that an additional **150 Permanent Induced Jobs** will also be created in the community as a result of each SynSel Biorefinery. These jobs are broken down into the following:

- 101 local indirect manufacturing support and supply chain
- 49 local induced permanent service and support business jobs

The support and supply chain positions relate to both the harvesting and transportation of feedstock to the SynSel plant and the transportation of the finished goods. With the build out of SynSel Enviro Industrial Parks, additional direct and indirect jobs are expected.

SUMMARY:

SynSel Biorefineries offer tremendous opportunities for economically distressed communities to create resilient direct and indirect employment opportunities, use existing industrial-zoned infrastructure, and provide environmentally-responsible outlets to use readily available woody-biomass feedstock.