

# Spiritwood Energy Park

ASSOCIATION

PO Box 2092  
Jamestown, ND 58402-2092

December 10, 2020

Karlene Fine, Executive Director  
North Dakota Industrial Commission  
State Capitol – 14th Floor  
600 East Boulevard Ave Dept 405  
Bismarck, ND 58505-0840

Dear Karlene,

The members of the Spiritwood Energy Park Association (SEPA) thank you for the opportunity to present this application to the Renewable Energy Council. SEPA will provide a site location to a world class greenhouse planned by Glass Investments Projects Inc. of Delta, BC, an experienced owner and operator of large-scale greenhouse production facilities. Their existing facilities incorporate innovative industry-leading technology. The proposed SEPA location provides existing infrastructure and amenities including the availability of CO<sub>2</sub>, steam, water supply and transportation logistics. These attributes make the property an optimal location for the development and operation of a large-scale commercial greenhouse.

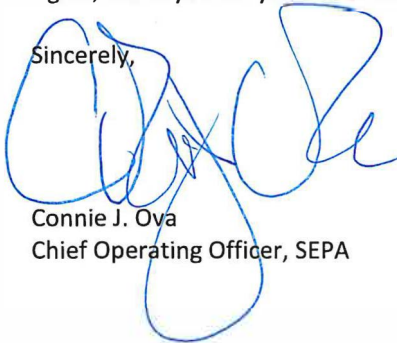
The objective of this grant request is to complete the design and installation of a CO<sub>2</sub> collection and distribution system between Dakota Spirit and Glass Investment, Inc. The scope of this request includes developing final engineering designs, procurement and design of the CO<sub>2</sub> collection and distribution system. Results of this project will provide the most efficient collection and distribution of the critical crop nutrient CO<sub>2</sub> to the commercial greenhouse. This cost-effective supply of CO<sub>2</sub> will allow the greenhouse project to achieve economic viability.

We believe this project aligns well with the mission of the Renewable Energy Council to promote the growth of North Dakota's renewable energy industries through research, development, marketing, and education. Synergies on this project are significant with the capturing of a currently unutilized byproduct (CO<sub>2</sub>) at Dakota Spirit, monetizing the byproduct by selling it to the greenhouse and then beneficially using this byproduct as a crop nutrient by the greenhouse.

The ultimate indicator of this project's success will be when there are 100 direct employees harvesting over 20,000,000 lbs. of produce each year. The employees will become integral parts of the community, contributing to the local economy. This will all contribute to adding value to the already successful Spiritwood Energy Park.

Again, thank you for your consideration of this request.

Sincerely,



Connie J. Ova  
Chief Operating Officer, SEPA



## Renewable Energy Program

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North Dakota Industrial Commission

## Application

**Project Title:**  
**Spiritwood Greenhouse CO<sub>2</sub> Supply**

**Applicant:**  
**Glass Investment Projects Inc**

**Principal Investigator:**  
**Richard Garman**

**Date of Application:**  
**December 15, 2020**

**Amount of Request:**  
**\$500,000**

**Total Amount of Proposed Project:**  
**\$1,884,713**

**Duration of Project:**  
**18 months**

**Point of Contact (POC):**  
**Richard Garman**  
**(701) 250-2160**  
**rgarman@GREnergy.com**  
**Spiritwood Energy Park Association**

**Jamestown, ND**

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## **ABSTRACT**

### **Objective**

Glass Investment Projects Inc. (Glass Investments), greenhouse developer and operator are partnering with Midwest AgEnergy (MAG) and Spiritwood Energy Park Association (SEPA) to development of a 27-acre commercial greenhouse.

Glass Investment has determined the Spiritwood Energy Park is a strategic location due to the potential synergies the site offers, including.

- Carbon dioxide (CO<sub>2</sub>) will be supplied by the Dakota Spirit ethanal biorefinery via a direct pipeline, which is not currently captured or utilized by Dakota Spirit.
- Steam supplied by Spiritwood Station for heating.
- Water and wastewater infrastructure already in place will be utilized by the greenhouse development.
- Existing transportation infrastructure will also be utilized by the greenhouse development.

This project is being managed in two phases. Phase one will be managed by Glass Investments and include the design and construction of the greenhouse. Phase two includes the infrastructure support projects, which will be managed by SEPA. The four areas within phase two include:

- Part A: Site leveling and preparation, including road access to site.
- Part B: Interconnection of the facility to water supply and wastewater disposal utilities.
- Part C: Design, procurement and installation of a steam supply and condensate return line to the facility.
- Part D: Design, procurement and installation of a CO<sub>2</sub> collection, compression, conveyance and delivery pipeline.

The objective of this grant request is to complete the design and installation of a CO<sub>2</sub> collection and distribution system between Dakota Spirit and Glass Investment. The scope of this request includes developing final engineering designs, procurement and design of the CO<sub>2</sub> collection and distribution system.

Results of this project will provide the most efficient collection and distribution of the critical crop nutrient CO<sub>2</sub> to the commercial greenhouse. This cost-effective supply of CO<sub>2</sub> will allow the greenhouse project to achieve economic viability.

This solution for CO<sub>2</sub> collection and distribution is an economic alternative to the more traditional CO<sub>2</sub> capture, compression and export from ethanol biorefinery sites. By using an economical method to gather and convey CO<sub>2</sub> to the greenhouse, it will make it an easily transferable business model to other sites in North Dakota.

There is an opportunity in the North Dakota market for commercial greenhouses. Our climate within the state is very similar to that of Southern Canada. Canadian greenhouses outnumber United States based greenhouse 6:1 on a per capita basis. The business model utilized on this project can easily be transferred to other ethanol biorefineries with CO<sub>2</sub> availability.

We seek a NDIC Renewable Energy grant in the amount of \$500,000. The total cost for this phase of the project is approximately \$2,584,713 with a proposed schedule proposed of 16 months.

Partners in the project are Glass Investment, Midwest AgEnergy and SEPA. Richard Garman, SEPA, will serve as principal investigator.

### **Expected Results**

In cooperation with SEPA and Midwest AgEnergy, Glass Investment is proposing the construction of a 110,000 m<sup>2</sup> (27 acres+) commercial greenhouse within the Spiritwood Energy Park near Spiritwood, ND. This greenhouse will bring crop diversity and extension of the growing season to North Dakota. It will also bring leading edge greenhouse technology to the region.

This facility will also provide a market for Dakota Spirits unutilized CO<sub>2</sub>, using up to 15% of the CO<sub>2</sub> produced. Other synergies will also be realized with construction of the greenhouse:

- Shared water and transportation infrastructure costs
- Utilization of approximately 100 million pounds of steam per year provided by Spiritwood Station

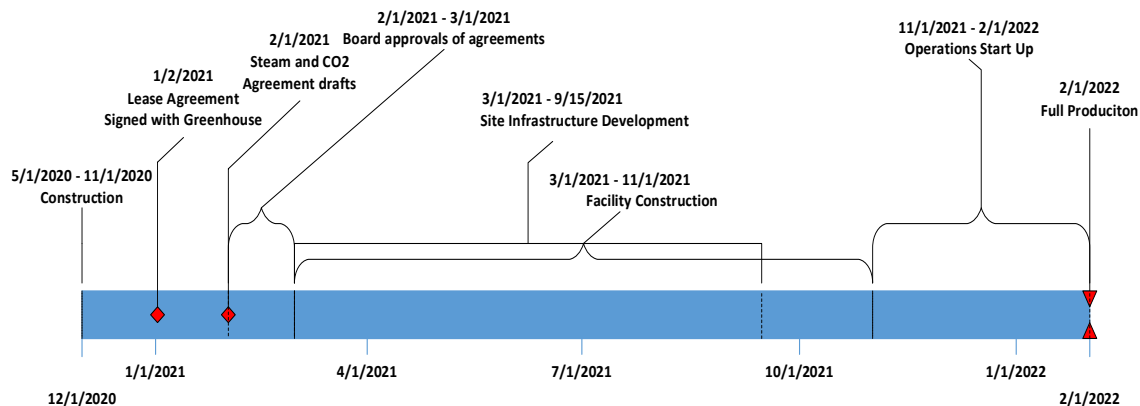
The greenhouse will produce nearly 20 million pounds (345,000 bushels) of produce per year. Production will be predominantly tomatoes, with cucumbers and peppers grown as markets demand.

Markets for this produce will be primarily the upper Midwest (North Dakota, South Dakota, Minnesota, Montana, Iowa, Nebraska, Wisconsin and South-Central Canada).



### Duration

The project will begin in early 2021, with commercial production being achieved by early 2022.



### Total Project Cost

Given successful financing, construction is estimated to begin in the second quarter of 2021 and provide for approximately 150 jobs during construction and 100 direct-hire jobs once operations commence. Overall local employment benefit is expected to be significantly greater. The facility is expected to deliver significant value to North Dakota agricultural products, specifically new crops and extension of the growing season. The infusion of new revenues into the surrounding communities and the State of North Dakota, leading the way for the efficient and economic production of new crops and utilization of a previously unutilized byproduct from Dakota Spirit.

This grant request is to compliment other identified funding sources, including the following potential partners for the project infrastructure development:

- North Dakota Industrial Commission: \$500,000
- US Economic Development Grant: \$1.5M
- Bank of North Dakota Infrastructure Development Loan: \$8.6M
- Balance of Project: Private investment and debt

Project costs	
Primary project	
Greenhouse	\$30 M
Infrastructure support project	
Site preparation	\$3 M
Steam supply	\$6.1 M
Water supply	\$500 K
CO2 supply	\$2.6 M
Total	\$42 M

This grant request, supplemented with the other identified funding sources, will provide for the final engineering, procurement and installation of the portions of the infrastructure required to support this project:

1. Final engineering design
  - a. CO<sub>2</sub> collection equipment design
  - b. CO<sub>2</sub> conveyance device design (blowers)
  - c. Pipeline and pipe support design
2. Bid package preparation
3. Drawing preparation
4. Material procurement
5. Construction of CO<sub>2</sub> collection and conveyance
6. Construction of CO<sub>2</sub> pipeline installation

## **Participants**

### ***Glass Investment Projects Incorporated***

Glass Investment, owner and operator of Houweling's Tomatoes is a world-renowned greenhouse tomato grower with facilities in Camarillo, CA, Mona, UT and Delta, BC. Founded by Cornelius Houweling and now led by his son Casey, Houweling's is dedicated to delivering a full complement of tomatoes and cucumbers, while constantly innovating to reduce its environmental footprint.

Houwelings operates a large-scale hydroponic greenhouse covering 50 acres in Delta, BC, followed by a 125-acre facility greenhouse in California. In 2014, Houweling's broke ground on its third greenhouse location in Mona, UT. This location is unique as it is collocated by an existing natural gas power plant on the national energy grid and captured the waste heat and CO<sub>2</sub> from the exhaust stacks.

The next project that Houwelings intends to pursue is a greenhouse operation in North Dakota. Synergies of neighboring power plant and ethanol biorefinery will be utilized in a sustainable business that produces the highest quality fresh food with a world class operations team in place.

### ***Spiritwood Energy Park Association***

The Spiritwood Energy Park is an 871-acre industrial park, located approximately 10 miles east of Jamestown, ND and just south of Spiritwood, ND. The energy park has an abundance of resources including rail, abundant water and wastewater, affordable utilities, heavy power and steam and CO<sub>2</sub>.

SEPA manages the Energy Park and provides common-use transportation infrastructure, industrial lots, property management and value-added services on a fee-for-service basis to new and expanding businesses in the Spiritwood Energy Park. Majority owned and operated by Jamestown/Stutsman Development Corporation (JSDC) with Great River Energy being the minority owner, the association has invested in road and rail infrastructure within the energy park that will benefit all tenants. The project site is of critical strategic significance due to its proximity to utilities, transportation and market



### *Midwest AgEnergy's Dakota Spirit*

Dakota Spirit became fully operational in 2015 and is the anchor tenant at the Spiritwood Energy Park. The 65 million-gallon-per year biorefinery produces ethanol, distillers' grains and fuel-grade corn oil by utilizing steam from Spiritwood Station. Future growth opportunities for this biorefinery are emerging with cellulosic, isobutanol and other biofuel technologies. Dakota Spirit also produces approximately 200,000 tons of extremely pure CO<sub>2</sub> as a byproduct.

## **PROJECT DESCRIPTION**

### **Objective**

The North Dakota Industrial Commission's Renewable Energy Program grant will help facilitate the construction – specifically funding of the design, procurement and installation of CO<sub>2</sub> gathering and compression system and supply line- infrastructure project in support of a commercial greenhouse at the energy park.

### ***Methodology***

This CO<sub>2</sub> supply system line will originate at the Dakota Spirit. The line will supply a 27+ acre commercial greenhouse being developed and constructed by Glass Investment located approximately 500 yards south of the Dakota Spirit.

### **Anticipated Results**

#### ***Crop diversity for North Dakota***

Bringing a commercial greenhouse to North Dakota allows for diverse crops -tomatoes, peppers and cucumbers- not currently commercially grown in North Dakota to be brought to market.

#### ***Extended growing season***

A commercial greenhouse will allow the agricultural growing season in North Dakota to extend to year-round. This concept is realized across southern Canada which has a very similar climate to North Dakota. Canadian greenhouses outnumber US based greenhouse 6:1 on a per capita basis.

### ***Energy efficiency and process synergy***

Colocation of a commercial greenhouse will allow for an economical, efficient operation. These synergies will benefit the other tenants of the park allowing for sharing of resources and opening markets for currently unmarked byproducts.

### ***Positive regional economic impact***

The North Dakota Department of Commerce has developed a Regional Economic Model for this project that indicates the regional gross domestic product (GDP) will realize a positive impact of \$43M+ the first year, followed by \$30M+ annually. Personal income will increase regionally by an average of \$20M+ annually.

### ***Jobs creation***

The commercial greenhouse will promote economic development through the creation of 100 direct jobs. In addition, 150 jobs will be created with construction during the first year and then another 145 induced and indirect jobs each year thereafter.

### ***Environmental stewardship***

Dakota Spirit will utilize 15% of their annual production their process byproduct of CO<sub>2</sub>. This CO<sub>2</sub> will be utilized as a beneficial crop nutrient at the greenhouse, increasing production up to 25%.

### ***Effective use of ethanol biorefinery CO<sub>2</sub>***

This business model gives the ethanol biorefinery an economic viable outlet for their CO<sub>2</sub>. This model could be easily transferrable to other ethanol biorefineries in the state.

### ***Facilities/Resources***

SEPA has assigned its chief operation officer as the project owner, business development manager to manage the funding sources and a senior project manager to manage the design, procurement and installation of the project. *Glass Investment* will assign design engineers to manage the interface of the CO<sub>2</sub> system with the commercial greenhouse facility. Dakota Spirit will assign engineers and technicians to advise and guide the

installation of the collection and compression equipment on the Dakota Spirit site. Each partner will provide their own facilities and travel expenses will be included in the cash and in-kind matches from the applicants.

#### **Techniques to be used**

Industry standard design will be utilized to design the collection, compression and conveyance of the CO<sub>2</sub> from Dakota Spirit to the greenhouse. The initial design was developed by Karges Falconbridge Incorporated (KFI). KFI has extensive design experience in the field of process plants, including design for Dakota Spirit. Due to the public and private partnership that exists at SEPA, the final engineering, procurement and installation work will be publicly bid in conformance with legal requirements. The process of identifying an owner's engineer is currently in progress.

#### **Environmental and economic impacts**

Minimal environmental impact is anticipated during the construction phase of this project. The project site is within the Spiritwood Energy Park which has been developed over the past 10 years.

The North Dakota Department of Commerce provided a *Regional Economic Model* showing a direct employment of 100+ employees with another 252 regionally induced employment the first year.

The entire project will have a positive impact of \$43M on North Dakota's GDP. Personal Income will see a positive impact of \$21 million during construction.

#### **Technological and economic impacts**

This project will transfer approximately 15,000 tons of CO<sub>2</sub> per year from Dakota Spirit to the greenhouse. This CO<sub>2</sub> will be beneficially utilized by the greenhouse as a crop nutrient, which will increase its production by approximately 25%.

Synergies across the Spiritwood Energy Park will be far reaching. Up to 18 MW of power will be supplied by local power providers for the supplemental lighting system. Over a million pounds of steam will be provided for heating, snow melting and site cleaning from the adjacent Spiritwood Station. Dakota Spirit will provide CO<sub>2</sub> to the greenhouse operation as a nutrient for the crops. Existing water infrastructure will be utilized to provide approximately 150 gallons of minute to the greenhouse facility.

During ensuing years there will be on going employment of 100+ direct employees and approximately 140+ induced employment. Ongoing years will realize a positive impact of \$30+ million impact to regional GDP. Personal incomes will see a positive impact of an average of over \$19 million over the next four years.

### **Why the project is needed**

This project has several positive, long lasting impacts on the region and the state.

- **Agricultural diversity** – This project is essential to help diversify the agricultural products and the grow the growing season in North Dakota.
- **Economic Impact** – The initial investment of approximately \$40 million will have immediate and long-lasting impacts on the regional and State economy. The five-year impact to North Dakota GDP will be approximately \$180M. Personal incomes will see nearly \$100M in positive impacts.
- **Energy Efficiency and Process Synergy** – Colocation of a commercial greenhouse will allow for economical efficient operation of the commercial greenhouse. These synergies will also benefit the other tenants of the park allowing for sharing of resources and opening markets for currently unmarked byproducts (CO<sub>2</sub>).  
In addition to these benefits, the business model would be easily transferrable to other ethanol biorefineries in the State allowing them a cost-effective way to utilize their CO<sub>2</sub> byproduct.
- **Environmental Stewardship** – Dakota Spirit to beneficially utilize on to 15% of their annual production their process byproduct of CO<sub>2</sub>. This CO<sub>2</sub> will be utilized as a beneficial crop nutrient at the greenhouse.

### **STANDARDS OF SUCCESS**

The mission of the Renewable Energy Council is to promote the growth of North Dakota's renewable energy industry through research, development, marketing and education. This project aligns well with their mission. Synergies on this project are significant with the capturing of a currently unutilized byproduct (CO<sub>2</sub>) at Dakota Spirit, monetizing the byproduct by selling it to the greenhouse and then beneficially using this byproduct as a crop nutrient by the greenhouse.

Successful funding of the infrastructure projects will allow the greenhouse to realize financial stability quickly by reducing the amount of initial capital required to develop the facility. Swift financial stability of the greenhouse allows the other participants to achieve all the synergies the project offers.

The ultimate indicator of this project's success will be when there are 100 direct employees harvesting over 20,000,000 lbs. of produce each year. The employees will become integral parts of the community, contributing to the local economy. This will be measurable by monitoring the State GDP and observing a \$180M increase. Adding value to the already successful Spiritwood Energy Park. The bottom line of Dakota Spirit will see positive impact from sales of CO<sub>2</sub> to the greenhouse. Spiritwood Station will also benefit by the sale of heating steam to the greenhouse.

Without funding of the infrastructure project, there will be higher burden placed on the new greenhouse business. The purpose of SEPA is to support tenants by developing various infrastructure projects in support of the various tenants and partners of the energy park. By developing these infrastructure projects, each tenant and partner can more quickly achieve financial stability, and therefore contributing to the overall synergy of the Energy Park. Support of these synergies provides more financial stability for each tenant and partner in the park, preserving the economic contribution to the community of each entity and preserving the jobs at each site (80+).

## **BACKGROUND/QUALIFICATIONS**

### **Connie Ova**

As chief executive officer (CEO) of the Jamestown Stutsman Development Corporation, Connie is responsible for formulation and implementation of strategies leading to development of primary sector industries to the region, and retention/expansion of existing primary sector businesses. Connie is also the chief operating officer for SEPA. She manages long term partnerships with key park investors and vital public/private partnerships with local governmental entities for the design and construction key infrastructures.

Connie began employment with JSDC as training and projects coordinator and accepted the position of CEO in November of 2003. She has been instrumental in developing partnerships among many community entities. She assisted with coordination of South East North Dakota Manufacturers Roundtable, packaged several business expansions and startups, and developed relationships with several firms considering location in Jamestown.

Connie has a Bachelor of Science in business administration/management. She previously worked for the James Valley Vocational Center as program coordinator for Adult Farm Business Management.

**Richard Garman**

Richard has 29 years of industrial and project experience alongside a strong business development background. He can combine these skill sets which allows him to successfully manage the most intricate business processes. He is the senior project manager and key business developer for the Spiritwood Energy Park. This project brings industrial partners together to build facilities to utilize the heat and power supplied by Spiritwood Station, a combined heat power plant and the developed rail, water and road infrastructures.

Richard has a Bachelor of Science in mechanical engineering degree from the South Dakota School of Mines & Technology. He also holds master's degrees in business administration and project management from the University of Mary. He is also a registered as a Project Management Professional with the Project Management Institute.

**Corry Shevlin**

Corry directs the planning and direction of business recruitment, development, retention and implantation of business and economic development strategies for the improvement of the Jamestown/ Stutsman County business community. Corry also functions as the business development director for SEPA.

Corry graduated from the University of Jamestown with a degree in economics and from the Oklahoma University Economic Development Institute.

**Casey Houweling**

As chairman of the Houweling's Group, Casey is responsible for the oversight for the Houweling's Group of Companies. Casey brings the entrepreneurial spirit and extensive greenhouse experience learned over his 35 years working in his father's, and now his family's company.

Casey led the company from floral nursery roots in British Columbia, Canada to greenhouse vegetable farming, ultimately expanding with USA farming operations in California and Utah. Additionally, Casey provides consulting services to other Greenhouse Growers located around the world and has developed and patented industry advancing proprietary, sustainable growing technologies. In addition to the business endeavors of the greenhouse industry that Casey participates in he also has been instrumental in starting a charity in Guatemala named "Seeds of Tomorrow". Casey spearheaded the construction and now continued operation of a greenhouse

opening on September 30, 2013 in Guatemala. The purpose of the greenhouse is to provide vegetables in all the schools of Guatemala.

Casey Houweling's vision for sustainability is based on the principles of environmental soundness, economic feasibility and social equity. His company has made tremendous inroads toward fulfilling this vision, such as generating solar electric power, conserving water, minimizing pest and plant disease, and developing greenhouse that utilize synergies of collocated industrial facilities.

#### **Adam Dunlop**

Adam provides leadership surrounding regulatory and technical services for MAG. He has been with the company for over 14 years in various roles with increasing responsibilities. He leads all activities surrounding carbon dioxide project development for MAG. He is passionate about continuous learning, clean energy technologies, and preserving the environment through sensible regulations. He facilitates development and implementation of MAG's strategic plan; working diligently to enable continuous facility improvements leading to strong financial performance. His group evaluates, selects, and implements projects and new technologies that align with core business objectives and long-term goals. Under his direction, MAG has increased market opportunities by successfully petitioning for unique carbon intensity pathways to various state, federal and provincial governments with renewable or low carbon fuel standards. Adam holds a Bachelors of Art in biology and chemistry from Jamestown College (now the University of Jamestown) and an Masters in Science in Environmental Management from the University of Maryland.

#### **MANAGEMENT**

SEPA will serve in a leading role managing this project including direction and oversight of the financial management, engineering, design, procurement and construction of this CO<sub>2</sub> infrastructure project.

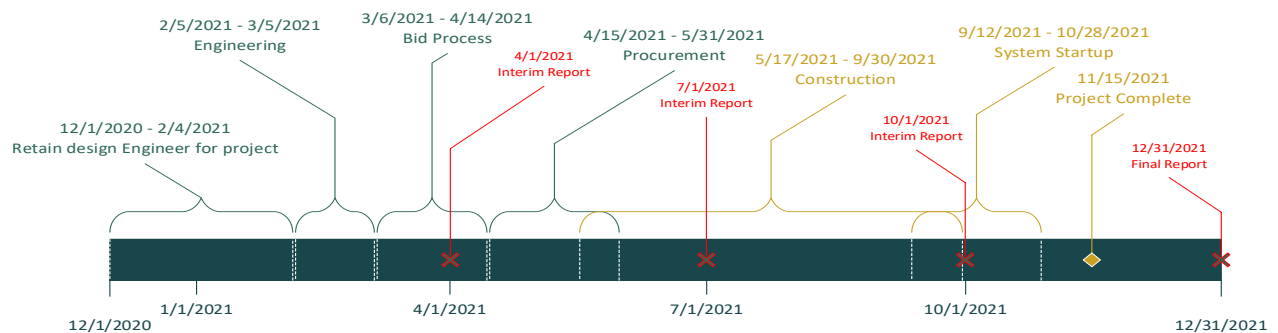
The project milestone achievement and cashflow will be continuously monitored during the duration of the project. Weekly written reports will be made to the project owner forecasting future cashflow and schedule adherence.

Quality will be maintained on the project by starting with a world class design of the collection, compression and conveyance systems. The quality design parameters will be transferred to the project in the field

with consistent supervision by the SEPA project manager. Any deviations to quality or scope will be rectified immediately and reported to the project owner.

Fiscal reporting for grants, loans and other financing will be administered by the SEPA business development manager with the SEPA project owner being ultimately responsible for the accurate and efficient use and reporting of the available financial sources.

## TIMETABLE



## BUDGET

Project Associated Expense	NDIC's Share	Applicant's Share (Cash)	Applicant's Share (In-Kind)	Other Project Sponsor's Share
Engineering	\$100,000			
Material Procurement	\$200,000			\$1,212,156
Construction	\$200,000			\$572,557
Project Administration			\$180,000	
Office Facility			\$20,000	
Land provided			\$200,000	
<b>Total</b>	<b>\$500,000</b>		<b>\$400,000</b>	<b>\$1,684,713</b>

## CONFIDENTIAL INFORMATION

Due to the public/private partnership SEPA operates, no information related to this portion of the project is considered confidential.



## **PATENTS/RIGHTS TO TECHNICAL DATA**

There are several patents associated with the greenhouse design, but the collection, compression and conveyance of CO<sub>2</sub> will have no patents or rights that are outside of industry norms.

## **STATE PROGRAMS AND INCENTIVES**

- NDDOT FRIP Rail Loan – Current – \$5.25M, 10 years, ½ of prime rate
- Bank of ND Infrastructure Loan – Future – up to \$8.6M, 30 years, 2%
- Bank of ND PACE Interest Buydown – up to \$650,000
- Department of Agriculture, Agriculture Products Utilization Commission Grant - \$136,000
- Sales Tax Exemption on Materials and Equipment – 5% sales tax exemption
- North Dakota Corporate Income Tax Exemption – Base on Taxable Income
- Workforce Training, New Jobs Training Funds – up to \$348,630
- Development Fund – Rural Development Fund, New Venture Capital Fund, \$2 million, Below Market Rate Financing.

## ***Appendix 1***

Tax liability statement

# Spiritwood Energy Park Association, LLC

## Profit & Loss YTD Comparison

12/09/20

Accrual Basis

November 2020

	Nov 20	Jan - Nov 20
<b>Ordinary Income/Expense</b>		
<b>Income</b>		
40000 · Lease Income-cropland	0.00	30,000.00
40200 · Ind Track O&M/G&A Fxd Chg	33,810.00	141,909.54
<b>Total Income</b>	33,810.00	171,909.54
<b>Gross Profit</b>	33,810.00	171,909.54
<b>Expense</b>		
60000 · RECOVERABLE Expenses		
60100 · Amortization Expense	136.94	1,506.34
60150 · County Road Special Assessment	0.00	156,833.57
60175 · Property Taxes	4,708.00	51,788.00
60200 · Insurance Expense	1,695.41	18,649.51
60300 · Wetland Mitigation	2,057.00	13,524.08
60350 · Industry Track O&M	15,238.00	30,096.00
60400 · DSA Rail Fixed Chg-Depreciation	10,166.67	111,833.37
60450 · Ind Track Fxd Chg-Depreciation	19,736.11	217,097.21
60600 · DSA Rail Repair/Replace-As Need	0.00	665.97
60700 · Bank Service Charges	5.00	5,235.01
60710 · Interest Expense		
60710-1 · DSA Interest Expense 33.3%	0.00	10,698.78
60710-2 · SEPA Interest Expense 66.7%	0.00	21,429.68
60710 · Interest Expense - Other	11,228.13	123,509.43
<b>Total 60710 · Interest Expense</b>	11,228.13	155,637.89
60715 · Leasing Expense BNSF-NO Crop	0.00	1,545.09
60730 · Permits/Licenses	0.00	50.00
60740 · Postage and Delivery	0.00	168.00
60750 · Professional Fees-No Cropland		
60750-1 · Engineering Services	0.00	7,719.46
60750 · Professional Fees-No Cropland - Other	2,543.75	31,950.55
<b>Total 60750 · Professional Fees-No Cropland</b>	2,543.75	39,670.01
<b>Total 60000 · RECOVERABLE Expenses</b>	67,515.01	804,300.05
65000 · UNRecoverable Expenses		
65010 · Leasing Expense-Cropland	570.00	570.00
65050 · Offc Supplies/Equip	0.00	256.80
65750 · Professional fees	0.00	32,051.80
<b>Total 65000 · UNRecoverable Expenses</b>	570.00	32,878.60
<b>Total Expense</b>	68,085.01	837,178.65
<b>Net Ordinary Income</b>	-34,275.01	-665,269.11
<b>Net Income</b>	<b>-34,275.01</b>	<b>-665,269.11</b>

**Spiritwood Energy Park Association, LLC**

**Balance Sheet**

12/09/20

Accrual Basis

As of November 30, 2020

	<u>Nov 30, 20</u>
<b>ASSETS</b>	
<b>Current Assets</b>	
Checking/Savings	
1010 · FCCU Checking	236,755.61
1015 · Cash in Bank-Savings FCCU #3	5.00
Total Checking/Savings	236,760.61
Accounts Receivable	
1020 · Accounts Receivable	6,298.52
Total Accounts Receivable	6,298.52
Other Current Assets	
1040 · Prepaid Deposit	550.00
1050 · Prepaid Expense	13,851.98
Total Other Current Assets	14,401.98
Total Current Assets	257,461.11
<b>Fixed Assets</b>	
1200 · LAND	
1201 · Land - contributed by GRE	1,744,728.55
1202 · Land - contributed by JSDC	344,420.08
1203 · Land improvements	4,000.00
Total 1200 · LAND	2,093,148.63
1300 · Plant & Equipment	
1310 · Rail - SEPA Shared Track	7,055,909.06
1320 · Rail - DSA Dedicated Track	3,660,000.00
1330 · Rail - DSA Dedicated CIAC	300,000.00
1350 · Capitalized Interest DOT	189,438.99
1360 · Road Improvements	4,257,000.00
1370 · Rail improvements	19,442.83
Total 1300 · Plant & Equipment	15,481,790.88
1400 · Accumulated Depreciation	
1410 · AD Rail SEPA Shared Track	-1,334,282.82
1420 · Rail - DSA Dedicated Track Dep	-691,333.53
1450 · DSA Track CIAC Accum Depreciati	-56,666.47
1460 · AD-Capitalized Interest DOT	-25,258.52
1465 · A/D Rail improvements	-1,350.25
1470 · AccumDepreciation-Road Imp	-1,011,037.50
Total 1400 · Accumulated Depreciation	-3,119,929.09
Total Fixed Assets	14,455,010.42
<b>Other Assets</b>	
1600 · Organizational Costs	13,424.94
1605 · Financing Fees	18,625.00
1700 · Less Accum Amort-Org costs	-6,873.70
1705 · Less Accum Amort-Loan Costs	-8,739.10
Total Other Assets	16,437.14
<b>TOTAL ASSETS</b>	<b>14,728,908.67</b>

	Nov 30, 20
<b>LIABILITIES &amp; EQUITY</b>	
<b>Liabilities</b>	
<b>Current Liabilities</b>	
<b>Accounts Payable</b>	
2000 · Accounts Payable	20,175.00
<b>Total Accounts Payable</b>	20,175.00
<b>Other Current Liabilities</b>	
2010 · Property & Other Taxes	80,011.54
2025 · Current portion of Special Asse	123,000.00
2035 · Current Portion of LTDebt	82,222.00
2040 · Accrued Interest Payable	
2044 · SEPA Accrued Interest 66.7%	21,429.68
2047 · DSA Accrued Interest 33.3%	10,698.78
<b>Total 2040 · Accrued Interest Payable</b>	32,128.46
2048 · Accrued Interest - Specials	123,509.43
<b>Total Other Current Liabilities</b>	440,871.43
<b>Total Current Liabilities</b>	461,046.43
<b>Long Term Liabilities</b>	
<b>Long Term Obligations Less Curr</b>	
2020 · NDDOT Loan	3,909,145.01
2027 · Special Assessments Payable	3,648,000.00
2030 · REDLEG Loan - \$740,000	294,629.75
2031 · JSDC Loan - \$785,000	542,958.21
2045 · Current Portion Offset	-82,222.00
<b>Total Long Term Obligations Less Curr</b>	8,312,510.97
2012-0 · Deferred Revenue	
2012 · Aid to Construction	243,333.56
<b>Total 2012-0 · Deferred Revenue</b>	243,333.56
<b>Total Long Term Liabilities</b>	8,555,844.53
<b>Total Liabilities</b>	9,016,890.96
<b>Equity</b>	
3000*OE · JSDC Equity	
3010 · JSDC Cash	3,918,458.78
3011 · JSDC Land Equity	344,420.08
<b>Total 3000*OE · JSDC Equity</b>	4,262,878.86
3015 · GRE Equity	
3020 · Land Equity	1,744,728.55
<b>Total 3015 · GRE Equity</b>	1,744,728.55
32000 · Retained Earnings	369,679.41
Net Income	-665,269.11
<b>Total Equity</b>	5,712,017.71
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>14,728,908.67</b>

## ***Appendix 2***

### REMI Model



Regional Economic Models, Inc.

## Economic Impact Analysis of Houweling Tomatoes

February 14, 2019

Prepared by  
**North Dakota Department of Commerce**

Using  
Regional Economic Models, Inc.

## Executive Summary

This report evaluates the economic impacts that would occur in North Dakota from a Houweling Tomatoes greenhouse in North Dakota. The model is based on information provided on the project and the data generated using a customized REMI Policy Insight™ model for North Dakota. The analysis shows the change in economic activity caused by the industry expansion. In order to show the total implications of the expansion, REMI developed a Policy Insight model with detailed employment, population, personal income, and other data specific to North Dakota. Using this model, REMI generated the regional baseline forecast and then used the information provided by the new project to develop an alternative forecast that would occur in the event of the expansion in this sector. The table below shows the difference to the economy that occurs from the project.

The tables below show the effect this expansion has on the economy of North Dakota.

Table 1 Summary Results

Category	Units	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Total Employment</b>	Individuals (Jobs)	352	245	246	243	238
<b>Gross Domestic Product</b>	Millions of Current Dollars	\$43.03	\$33.13	\$33.75	\$34.42	\$35.06
<b>Personal Income</b>	Millions of Current Dollars	\$21.39	\$17.32	\$18.94	\$20.15	\$21.11

Table 2 Employment Effects

Category	Units	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Total Employment</b>	Individuals (Jobs)	352	245	246	243	238
<b>Direct Employment</b>	Individuals (Jobs)	100	100	100	100	100
<b>Indirect &amp; Induced Employment</b>	Individuals (Jobs)	252	145	146	143	138



## Definitions

### **Total Employment**

Employment comprises estimates of the number of jobs, full-time plus part-time, by place of work. Full-time and part-time jobs are counted at equal weight. Employees, sole proprietors, and active partners are included, but unpaid family workers and volunteers are not included. The Employment variable in REMI Policy Insight uses historical data from the Bureau of Economic Analysis (BEA). Employment figures projected are the difference from baseline and should not be cumulated.

### **Direct Employment**

This is the number of jobs that directly result, or will be hired, because of this project.

### **Indirect & Induced Employment**

This number represents the jobs that will be demanded in the economy because of the increase in direct jobs. This will include jobs created in industries that support this project (suppliers and services) and in consumer industries that are affected by an increase in demand.

### **Personal Income**

Income received by persons from all sources. It includes income received from participation in production as well as from government and business transfer payments. It is the sum of compensation of employees (received), supplements to wages and salaries, proprietors' income with inventory valuation adjustment (IVA) and capital consumption adjustment (CCAdj), rental income of persons with CCAdj, personal income receipts on assets, and personal current transfer receipts, less contributions for government social insurance.

### **Gross Domestic Product (GDP)**

GDP is the market value of goods and services produced by labor and property in the United States, regardless of nationality.

## Methodology & Assumptions of REMI

### **REMI Policy Insight**

REMI Policy Insight® is the leading regional economic-forecasting and policy-analysis model. REMI built this model using the REMI model building system, which consists of hundreds of programs developed over the last two decades. The model uses data from the Bureau of Economic Analysis, the Bureau of Labor Statistics, the Department of Energy, the Bureau of Census, and other public sources.

REMI Policy Insight is a structural model, meaning that it clearly includes cause-and-effect relationships. The model is based on two key underlying assumptions from mainstream economic theory: households maximize utility and producers maximize profits. Since these assumptions make sense to most people and the structure is transparent, lay people as well as trained economists can understand the model.

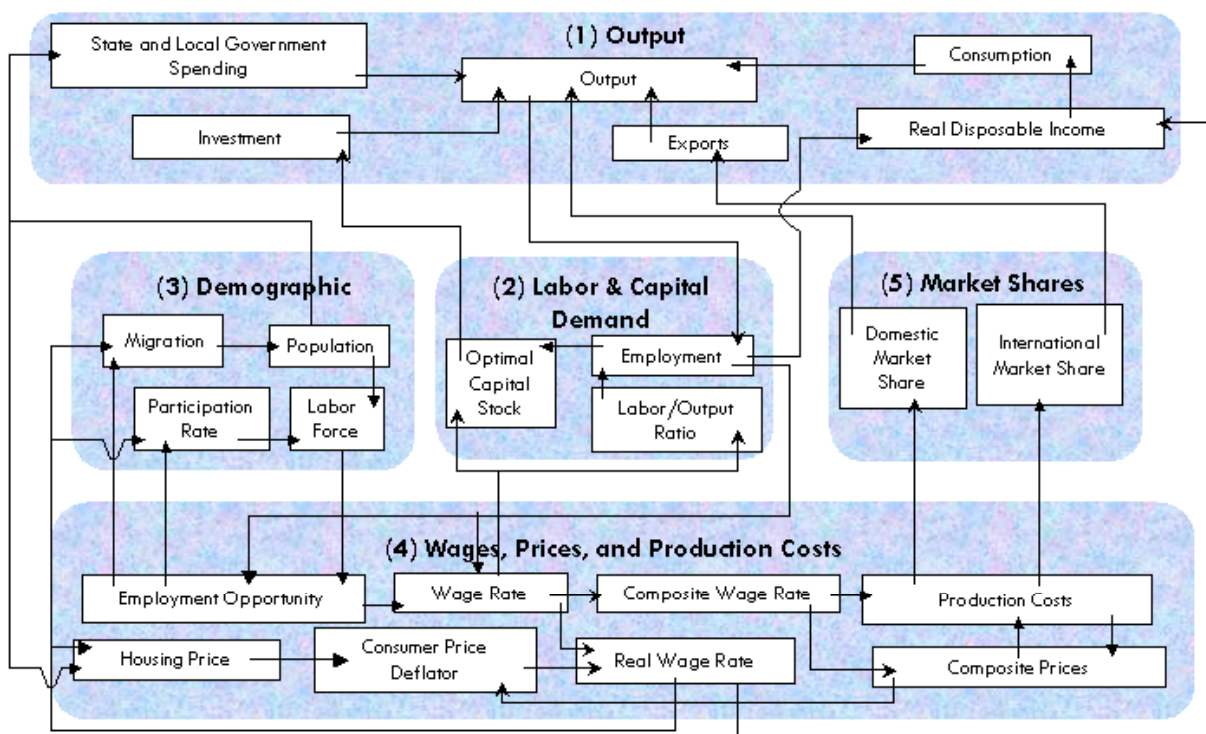
In the model, businesses produce goods to sell to other firms, consumers, investors, governments and purchasers within and outside economic regions. The output is produced using labor, capital, fuel, and intermediate inputs. The demand for labor, capital and fuel per unit of output depends on their relative costs, since an increase in the price of any one of these inputs leads to substitution away from that input

to other inputs. The supply of labor in the model depends on the number of people in the population and the proportion of those people who participate in the labor force. Economic migration affects the population size. People will move into an area if the real after-tax wage rates or the likelihood of being employed increases in a region.

Supply and demand for labor in the model determines the wage rates. These wage rates, along with other prices and productivity, determine the cost and opportunity of doing business for every industry in the model. An increase in costs would decrease the markets supplied by firms. This market share combined with the demand described above determines the amount of local output. The model has many other feedbacks. For example, changes in wages and employment impact income and consumption, while economic expansion changes investment, and population growth impacts government spending.

Figure 2-1 is a pictorial representation of REMI Policy Insight. The Output block shows a business that sells to all the sectors of final demand as well as to other industries. The Labor and Capital Demand block shows how labor and capital requirements depend both on output and their relative costs. The demographic block includes population and labor supply, contributing to demand and wage determination. Economic migrants in turn respond to wages and other labor market conditions. Supply and demand interact in the Wage, Price and Profit block. Relative production costs determine market shares. Output depends on market shares and the components of demand.

## REMI Model Linkages (Excluding Economic Geography Linkages)



## Figure 2-1 REMI Policy Insight overview

The REMI model brings together all of the above elements to determine the value of each of the variables in the model for each year in the baseline forecast, as well as for simulation purposes. The model includes all the inter-industry interactions that are included in input-output models in the Output block, but goes well beyond an input-output model by including the linkages among all of the other blocks shown in Figure 2-1.

In order to broaden the model in this way, it is necessary to estimate key relationships. This is accomplished by using extensive data sets covering all areas in the country. These large data sets and two decades of research efforts enable REMI to simultaneously maintain a theoretically sound model structure and build a model based on all the relevant data available.

The model has strong dynamic properties, which means that it forecasts not only what *will* happen but also *when* it will happen. This results in long-term predictions that have year-by-year changes. This means that the long-term properties of general equilibrium models are preserved while maintaining accurate annual predictions, using estimates of key equations from primary data sources.

All changes in population are cumulative. Population reflects mid-year estimates of people, including survivors from the previous year, births, special populations, and economic migrants.

## ***Appendix 3***

### KFI Engineering Report

# **HOUWELING'S EVALUATION – SPIRITWOOD STATION GREENHOUSE STUDY - DRAFT**

---

Great River Energy  
Spiritwood Greenhouse Study  
KFI Project Number: 20-406.00

July 7, 2020  
REV 1

The logo for KFI ENGINEERS is centered within a large, thick blue circle. The text "KFI" is in a large, bold, blue sans-serif font, and "ENGINEERS" is in a smaller, bold, blue sans-serif font directly below it.

**KFI**  
**ENGINEERS**

## Executive Summary

---

KFI was asked by the Spiritwood Energy Park Association (SEPA) to evaluate the infrastructure requirements to provide heat and carbon dioxide to a new greenhouse to be constructed by Houweling's.

KFI recommends that the greenhouse low temperature and high temperature heating requirements be met by available medium pressure steam (nominal 120 PSIG) with a 100% condensate return to the Spiritwood power plant in a similar configuration as was implemented with the ethanol plant. A "condensate only" design was reviewed and it was determined that the available condensate return to the power plant from the Midwest Ag Energy Ethanol Plant (DSA) does not contain sufficient energy to meet the energy needs of the greenhouse.

Carbon Dioxide will be provided to the greenhouse through capture at DSA and use of a blower to transport the CO<sub>2</sub> through an above ground pipeline to the greenhouse. The utilities will be metered in a small utility building to be provided as part of the infrastructure project.

The estimated installation cost to provide steam and carbon dioxide to the greenhouse is \$XX million. Future expandability to meet the utility requirements for doubling the foot print of the greenhouse was included in the preliminary infrastructure design and captured in the above investment cost.

## **Appendix A – Capital Cost Estimate**

See Capital Cost Estimate on the following pages.

## 2020 SEPA HOUWELINGS GREENHOUSE CAPEX ESTIMATE

### Worksheet Title: SEPA Utilities

KFI Project #: 20-406

Date: 7/8/2020

#### Legend:

	data entry cell
	calculated cell
	subtotal,calculated

#### Scope of Work:

Provide utilities and carbon dioxide from existing infrastructure in and around Spiritwood station and Dakota Spirit Agency to supply Houwelings requirements. Utilities supplied by GRE include: Low Temperature Water Supply, High Temperature Water Supply, Carbon Dioxide. CO2 is assumed to be supplied from DSA. Infrastructure in this estimate is based on utilizing some existing steam line and pipe rack to DSA for the CO2 line. A new pipe rack is figured from the current DSA metering building to a greenhouse utility metering building near the Houwelings site. Estimate is based on the layout as shown to south of SEPA rail loop.

#### Site Work and Miscellaneous Construction:

Category:	Description, Limits or Special Conditions	Source	No. of Units	Units	Unit Price	Total
Soils Correction	none		-		\$ -	\$ -
Outfall for water return	none		-		\$ -	\$ -
Site Demolition	none		-		\$ -	\$ -
Underground Utilities	none		-		\$ -	\$ -
Underground Vaults	none		-		\$ -	\$ -
Road Crossing Tunnel			-	LF	\$ 1,600.00	\$ -
General Site Work	Utility building found., gravel approach	KFI Allowance	1	lot	\$ 75,000.00	\$ 75,000
Earthwork	Pier excavation	KFI Historical Data	9,240	CY	\$ 8.50	\$ 78,540
Existing Conditions	none		-		\$ -	\$ -
Surface Preparation	none		-		\$ -	\$ -
Landscaping	none		-		\$ -	\$ -
Fencing	Allowance for modification to existing	KFI Allowance	1	LS	\$ 10,000.00	\$ 10,000
Weather Conditions	none		-		\$ -	\$ -
<b>Total, Site Work:</b>						\$ 163,540

#### Utilities Distribution

Category:	Description, Limits or Special Conditions	Source	No. of Units	Units	Unit Price	Total
Low Temperature water supply - above	none			LF	\$ -	\$ -
Low Temperature water supply - UG	none			LF	\$ -	\$ -
Low Temperature water return - above	none		-	LF	\$ -	\$ -
Low Temperature water return - UG	none			LF	\$ -	\$ -
Steam supply for high and low temperature water loop	(1) - 20", insulated CS	KFI Historical Data	2,000	LF	\$ 475.00	\$ 950,000
Condensate return line	(1) - 6", insulated CS	KFI Historical Data	2,000	LF	\$ 290.00	\$ 580,000
CO2 Pipe	(1) - 8", insulated SS from DSA	KFI Historical Data	3,000	LF	\$ 315.00	\$ 945,000
Fresh Water supply Line	by others		-		\$ -	\$ -
Equipment Interconnecting Piping	Heat Exchange Equipment Piping	KFI Historical Data	200	LF	\$ 350.00	\$ 70,000
Valves	included above	KFI Historical Data	-		\$ -	\$ -
Mechanical Metering	metering in building	KFI Historical Data	5	ea	\$ 10,000.00	\$ 50,000
Pipe Rack Earthwork	included above	KFI Historical Data	-	LS	\$ -	\$ -
Pipe Rack Concrete	Includes 250' of high rack and 1500' of low rack	KFI Historical Data	463	CY	\$ 725.00	\$ 335,313



Pipe Rack Steel	Includes 250' of high rack and 1500' of low rack	KFI Historical Data	33	ton	\$ 7,500.00	\$ 249,000
			-		\$ -	\$ -
<b>Total, Utilities Distribution:</b>						\$ 3,179,313

**Building General Construction - Metering Building @ 25'x70'**

Category:	Description, Limits or Special Conditions	Source	No. of Units	Units	Unit Price	Total
Demolition			-		\$ -	\$ -
General Construction Activities		KFI Allowance	1	lot	\$ 31,000.00	\$ 31,000
F/F - Metering Building	Substructure	KFI Historical Data	1,750	SF	\$ 40.00	\$ 70,000
F/F - XFMR bases and structure	none	KFI Historical Data	-	CY	\$ 725.00	\$ -
Structural Steel - Equipment and pipe supports	for piping	KFI Historical Data	1	lot	\$ 10,500.00	\$ 10,500
Metering Building Shell	Insulated Metal Building includes doors	KFI Historical Data	1,750	SF	\$ 53.00	\$ 92,750
Masonry	Masonry building	KFI Historical Data	-	SF	\$ -	\$ -
Interior Finishes	none		-		\$ -	\$ -
HVAC	Steam heat w/electric backup for metering bldg	KFI Historical Data	1	ea	\$ 15,500.00	\$ 15,500
Plumbing			-		\$ -	\$ -
Fire Protection	not included		-		\$ -	\$ -
Fire Alarm	not included		-		\$ -	\$ -
Electrical "House" Power & Lighting	Lighting for utility metering building	KFI Historical Data	1,750	SF	\$ 4.50	\$ 7,875
Low Voltage - VDV systems			-		\$ -	\$ -
<b>Total, Building General, Mechanical, Electrical:</b>						\$ 227,625

**OFCI Equipment**

Category:	Description, Limits or Special Conditions	Source	No. of Units	Units	Unit Price	Total
Transformers	by others	KFI Historical Data	-	ea	\$ -	\$ -
Relay Protection & Metering	by others	KFI Historical Data	-	lot	\$ -	\$ -
Switchgear	none		-		\$ -	\$ -
Battery Banks	by others		-	ea	\$ -	\$ -
138 kV Circuit Breakers	by others		-	ea	\$ -	\$ -
Regulators and Bypass	by others		-	ea	\$ -	\$ -
MCC's	none		-		\$ -	\$ -
Condensate Monitoring Skids	added to scope	KFI Historical Data	2	ea	\$ 70,000.00	\$ 140,000
Steam Letdown Station	added to scope	KFI Historical Data	1	ea	\$ 45,000.00	\$ 45,000
Steam/Hot Water Heat Exchanger	added to scope	Vendor Estimate	2	ea	\$ 50,000.00	\$ 100,000
Condensate Collection Tank(installed)	added to scope	Vendor Estimate	1	ea	\$ 756,000.00	\$ 756,000
Condensate return Pump	added to scope	KFI Historical Data	2	ea	\$ 15,000.00	\$ 30,000
Low Grade Heat Exchangers	added to scope	Vendor Estimate	2	ea	\$ 50,000.00	\$ 100,000
Low Grade recirculation Pumps	by others	KFI Historical Data	-	ea	\$ -	\$ -
CO2 Blower	Positive Displacement Blower to transfer CO2	Vendor Estimate	1	ea	\$ 50,000.00	\$ 50,000
Instrumentation	Allowance	KFI Historical Data	20	ea	\$ 5,000.00	\$ 100,000

<b>Total, OFCI Equipment:</b>	ea	\$ 1,321,000
<b>Total, OFCI Equipment Setting Labor:</b>		\$ -

**Infrastructure Mechanical**

Category:	Description, Limits or Special Conditions	Source	No. of Units	Units	Unit Price	Total
Mechanical Equipment Install		Factored	1	LS	\$ 305,250.00	\$ 305,250
Tank Insulation		KFI Historical Data	1	LS	\$ 250,000.00	\$ 250,000
Relocation of Existing Equipment	none		-		\$ -	\$ -
<b>Total, Mechanical Infrastructure:</b>						<b>\$ 555,250</b>

**Infrastructure Electrical**

Category:	Description, Limits or Special Conditions	Source	No. of Units	Units	Unit Price	Total
Equipment connections 480V bucket and wiring	Assume spare available in Ethanol Plant MCC		1	lot	\$ 50,000.00	\$ 50,000
Electrical Feeder	None		-	lot		\$ -
Switchgear	None		-	LS	\$ -	\$ -
Disconnects	None		-	EA		\$ -
Site Lighting	Allowance		1	ea	\$ 30,000.00	\$ 30,000
Grounding Grid	Includes rods, wiring, and exothermic welds		1	lot	\$ 15,000.00	\$ 15,000
Controls Wiring	Allowance		1	lot	\$ 25,000.00	\$ 25,000
Heat Trace	for all piping on rack		-	LF		\$ -
PI&C	metering		10	pt	\$ 2,100.00	\$ 21,000
UPS			-		\$ -	\$ -
Feeders			-	LS		\$ -
<b>Total, Electrical Infrastructure:</b>						<b>\$ 141,000</b>

**Total Raw Equipment, Materials, and Labor: \$ 5,587,728**

<b><u>CM Fees and Contingency:</u></b>			Total
General Conditions	10.0%		\$ 558,773
CM Fee	3.0%		\$ 167,632
Construction Contingency	10.0%		\$ 558,773
Design Contingency	5.0%		\$ 279,386
Owner's Contingency	5.0%		\$ 279,386
			subtotal \$ 1,843,950
<b>Subtotal, Construction including Contingencies:</b>			<b>\$ 7,431,678</b>
<b><u>Costs related to Design:</u></b>			Total
Design, Bidding and CA Fees	7.0%		\$ 520,217
Reimbursables	0.5%		\$ 37,158
Special Inspections	0.10%		\$ 7,432
Permitting	0.20%		\$ 14,863
FF&E for Buildings	0.20%		\$ 14,863
			subtotal \$ 594,534
<b>Total Design, Construction, and Contingencies: +/-30%</b>			<b>\$ 8,026,212</b>

## ***Appendix 4***

### Greenhouse Engineering Reports



# BUILDING TOMORROW'S WORLD

Q U O T A T I O N

Houweling Nurseries Project Bismarck

[WWW.KUBOGROUP.NL](http://WWW.KUBOGROUP.NL)



Mr. / Ms.  
Houweling Nurs. Delta  
2776 64th street  
Delta, BC V4L 2N7  
  
T +1 604 613 0072  
E casey.houweling@houwelings.com

Building site:  
Coordinates 47.3818830, -101.166498  
29<sup>th</sup> Ave SW  
Underwoor, North Dakota, USA

KUBO Greenhouse Projects B.V.  
Visiting address: Vlotlaan 710  
Delivery address: Havenstraat 51  
P.O. Box 1041  
2681 TX MONSTER  
T +31 174 28 61 61  
E info@kubo.nl  
I [www.kubo.nl](http://www.kubo.nl)

ING 65.72.79.315  
IBAN NL42INGB 0657279315  
BIC code INGBNL2A  
Chamber of Commerce  
27.27.35.63  
VAT nr. NL 81.42.25.913 B01  
Member AVAG  
Member Metaalunie  
ISO 9001 and HortiQ

WK / LK / Quotation no. 18-00224

Monster, January 31<sup>st</sup>, 2019

Dear Mr. Houweling,

We have the pleasure to present you a quotation for the delivery and building of the following products, items and services for the project: Houweling Nurseries Bismarck.

#### Contract-price

A1. The KUBO Ultra Clima® greenhouse delivered for labor for	EUR 7,325,500.-- + USD 4,100,100.--
A2.1. Ultra-Clima® Start-up / set-up training	EUR 475,200.-- + USD 3,040,200.--
A2.2. Ultra-Clima® Sensor setup	<b>Excluded.</b>
A2.3. Remote Smart Growing Support	<b>Excluded.</b>
A2.4. Pylot monitoring platform	EUR 29,550.--
	<b>Included.</b>
B. The screening system delivered for	EUR 805,950.-- + USD 101,650.--
The screening system labor for	EUR 606,950.--
C. The heating system	<b>Excluded</b>
D. The irrigation	<b>Excluded.</b>
E1. The electrical system	<b>Excluded.</b>
E2. The grow light system delivered for	EUR 3,459,150.-- + USD 100,550.--
F. The roof washer delivered for	EUR 88,150.-- + USD 7,750.--
G. The grow gutter system delivered for	EUR 583,850.-- + USD 93,200.--
H1. The ground cover delivered for	EUR 64,650.-- + USD 11,650.--
I. Supervision (total 55 weeks) for	EUR 363,850.--
	=====
<b>In total</b>	<b>EUR 13,802,800.-- + USD 7,445,950.--</b>

Sincerely yours,

KUBO Greenhouse Projects B.V.  
Robert Keijzer  
Commercial Director

## Project summary

The total project will be delivered DAP, Bismarck, North Dakota, USA with supervision / and installed.

### General Conditions

- Location building place	Bismarck, North Dakota, USA
- Altitude above sea level	600 m
- Crop	Tomato
- Minimum desired inside temperature	18 °C
- Minimum outside temperature	-30 °C

### Greenhouse

- Greenhouse type:	Ultra-Clima®
- Bay/truss size:	3.20 m / 9.60 m
- Section Size	4.60 m
- Column height under the gutter	6,75 m
- Roof type	W4
- Ventilation window type:	2 pane Ultra-Clima® roof windows
- Surface greenhouse and leaf corridor	126,054 m <sup>2</sup>
- Amount of climate departments	6
- Roof cover	Glass
- Wall Cover	Polycarbonate and sandwich panels
- Rainwater transportation system	End gable posts in the greenhouse
- Insect Netting	Yes
- Cooling system	cooling pad

### Ultra-Clima® Installations

- Air Handling Unit type	AHU1VECA800 (Enerdes)
- Number of fans	516 pieces
- Tube diameter	840 / 900
- Evaporative cooling system	Yes
- Mechanical cooling system	No

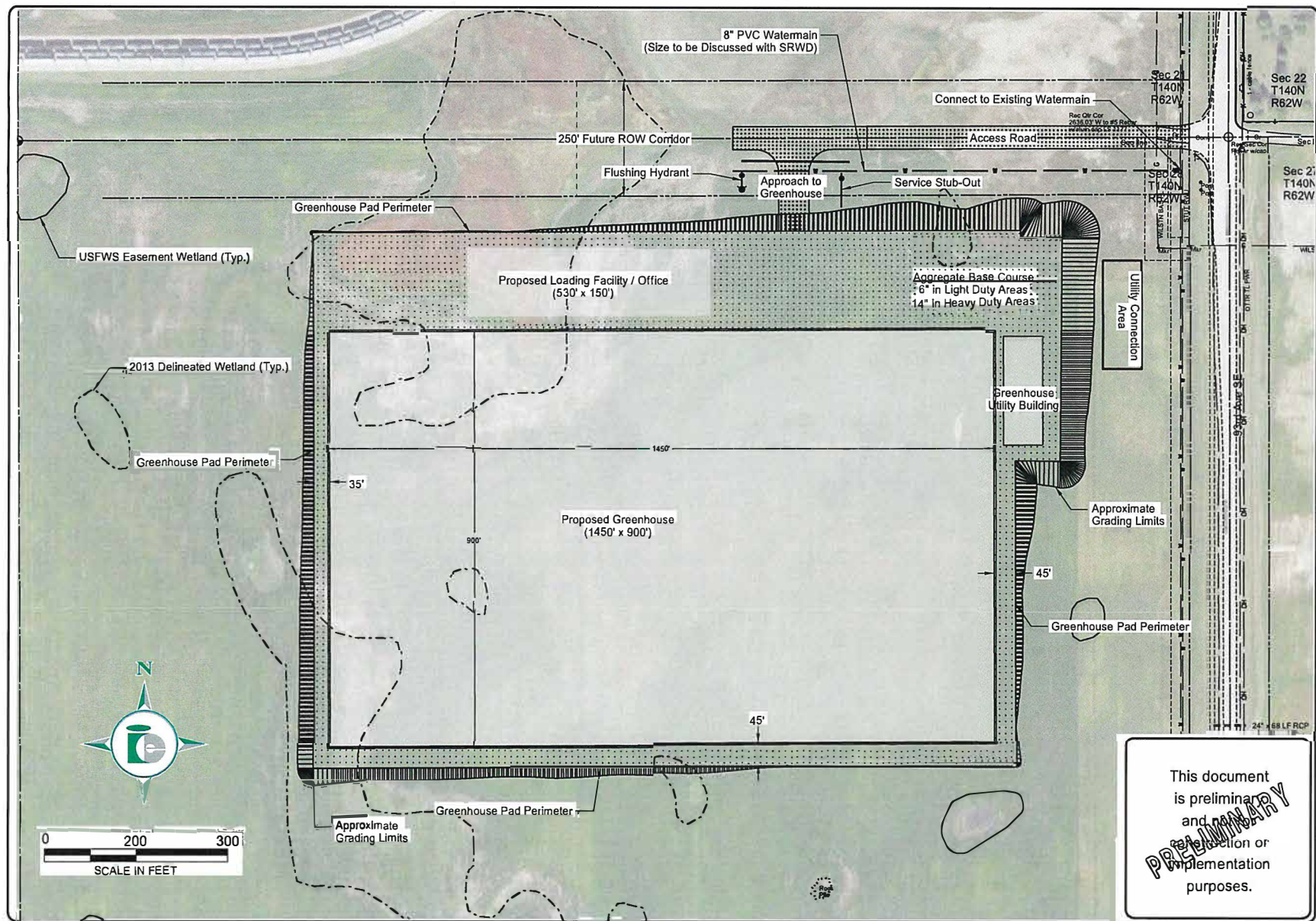
### Screening system

- Horizontal screening type	Single
- Screening cloth upper screen	SF 10 Diffuse - FR
- Screening cloth lower screen	Not applicable
- Gable screening type	Not applicable
- Screening cloth gable screen	Not applicable
- UC opening gable screening type	Twinroll screens
- Screening cloth UC gable screen	OBSCURA
- Fire retardant screens	Yes
- PDI Slip-in system	Yes

## ***Appendix 5***

### Map of Spiritwood Energy Park Association





Rev. No.	Date	Description

Proposed Greenhouse Facility Jamestown / Sibley Development Corporation Sibley Township, Sibley County, N. Dak.	
Drawn By: BA	Checked By: BA
Design By: BA	Project No.: 200-0001
Project No.: 200-0001	Date: 07/02/2002

Interstate Engineering, Inc. 1803 12th Avenue SW Jamestown, ND 58402-2035 Tel: (701) 252-0000 Fax: (701) 252-0003 www.interstateeng.com	
"We're in charge of the future. We're in charge of the future."	

**PRELIMINARY**

This document is preliminary and not for construction or implementation purposes.

**1 of 1**

Sheet Number



## ***Appendix 6***

Images of Houweling's Utah facility



**Aerial view of Utah greenhouse**



**Connection between Utah greenhouse and power plant**



**Connection piping between Utah greenhouse and power plant**



**Connection piping into Utah greenhouse**



**Section of Utah greenhouse being prepped for new planting**



**Casey Houwelings describing harvesting**



**Rows of tomatoes in Utah greenhouse**



**ND contingent visiting Utah greenhouse**



**Produce being packaged at facility**



## Produce grown at Utah greenhouse



Tomatoes on vine



Tomatoes



Peppers



Cherry tomatoes



Cucumbers



Cucumbers

## ***Appendix 7***

Letters of support



**STATE OF NORTH DAKOTA**  
DEPARTMENT OF AGRICULTURE  
600 E BOULEVARD AVE, DEPT 602  
BISMARCK, ND 58505-0020

DOUG GOEHRING  
COMMISSIONER

Dec. 9, 2020

To Whom It May Concern:

I'm writing in support of the planned greenhouse facility at Spiritwood Energy Park. The planned facility will have about 30 acres initially with the option to expand to 60 acres in the future. Investment in the project is estimated at between \$30-35 million including infrastructure and greenhouse building and equipment. Construction is slated to start in the spring of 2021 with completion by August or September of 2021.

Unlike any part of agriculture presently in the state, the greenhouse will receive heat in the form of waste steam from Spiritwood Station, the electrical generating plant operated by Great River Energy. It will also receive carbon dioxide from Dakota Spirit AgEnergy, which is produced as a byproduct of ethanol production.

The North Dakota Department of Agriculture (NDDA) supports all forms of agriculture. Diversity is critical in keeping the industry strong. The addition of the greenhouse will add value to local foods, provide economic diversification, determine new and emerging markets and create employment opportunities of 100 direct jobs and as many as 250 indirect jobs.

In conclusion, I fully support the planned greenhouse facility. It will expand the ag footprint in the state and will be a unique addition to the Jamestown area.

Sincerely,

Doug Goehring  
Agriculture Commissioner

December 7, 2020

[SENT VIA EMAIL ONLY]

Connie Ova  
Chief Executive Officer  
Jamestown / Stutsman Development Corporation (JSDC)  
PO Box 293  
Jamestown, ND 58402

**RE: Renewable Energy Council (grant request)**

Dear Connie:

The North Dakota Department of Commerce is committed to improving the quality of life for all North Dakota citizens by leading efforts to attract, retain and expand wealth. The North Dakota Department of Commerce serves businesses and communities statewide through committed people and partners who offer valuable programs and dynamic services.

The planned greenhouse facility at the Spiritwood Energy Park (SEPA) will have approximately 30 acres under glass initially with the option to expand to 60 acres. Investment in the project is estimated at \$30 - \$35 million, including infrastructure such as transferring steam/CO2 delivery over from ethanol and Great River Energy, power transmission, greenhouse building and equipment. This new greenhouse will receive heat in the form of waste steam from Spiritwood Station, the generation plant operated by Great River Energy. It will also receive carbon dioxide from Dakota Spirit AgEnergy that is produced as a byproduct of the ethanol production.

The economic impact to the area is substantial and includes 100 plus direct jobs including labor and management positions and up to 250 indirect jobs including transportation, electrical and construction crews. This doesn't include the added benefit of fresh produce provided to local and regional markets.

From the prospect of new job creation, to emphasizing the synergies that exist between energy and agriculture; Houweling's will be a high value addition to the State of North Dakota. This endeavor is a great example of the collaboration that exists between private businesses, state agencies and local economic development offices. The North Dakota Department of Commerce is proud to support this project.

Sincerely,



Shawn Kessel  
Interim-Commissioner  
North Dakota Department of Commerce

cc: Kevin Sonsalla  
Maria Effertz-Hanson  
Jonathan Russo

1600 East Century Ave. Ste. 2 | P.O. Box 2057 | Bismarck, ND 58502

PHONE: 701-328-5300 | TOLL-FREE: 1-866-4DAKOTA | ND RELAY TTY: 1-800-366-6888 | VOICE: 1-800-366-6889 | ND.gov



# STUTSMAN COUNTY

## Auditor's Office



511 2<sup>nd</sup> Ave SE Suite 102

Jamestown, ND 58401



(701) 252-9035



[auditor@stutsmancounty.gov](mailto:auditor@stutsmancounty.gov)



[www.stutsmancounty.gov](http://www.stutsmancounty.gov)

December 4, 2020

To Whom it May Concern:

At the September 15, 2020 Stutsman County Commission meeting, the board unanimously gave their support for the planned greenhouse facility at the Spiritwood Energy Park (SEPA). The Stutsman County Commission is dedicated to area economic development growth and diversification and the project is consistent with the economic development plans for the county.

The planned greenhouse facility at SEPA will consist of approximately 30 acres with the option to expand to 60 acres in the future. Investment in the project is estimated between \$30 million and \$35 million including infrastructure and greenhouse building and equipment. Project plans call for construction to start in the Spring of 2021 with completion by August or September 2021. The greenhouse will receive heat in the form of waste steam from Spiritwood Station, the electrical generating plant operated by Great River Energy. It will also receive carbon dioxide from Dakota Spirit AgEnergy that is produced as a byproduct of the ethanol production.

The economic impact to the area is substantial and includes 100 plus direct jobs and as many as 250 indirect jobs. The project will provide a new and reliable source of income for Jamestown and Stutsman County and will prove to be a great addition to the community.

Thank you for your consideration of funding for this project.

Respectfully,

Jessica Alonge  
Interim Auditor/COO

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#### County Commissioners

Mark T. Klose – Jamestown  
Ramone Gumke – Jamestown  
Dennis Ova – Cleveland  
David Schwartz – Jamestown  
Steven J. Cichos – Jamestown

#### County Officials

Jessica Alonge – Interim Auditor/COO  
Jessica Alonge – Chief Deputy Auditor  
Jessica Moser – Treasurer/Recorder  
Tyler Perleberg – Tax Director  
Fritz Fremgen – States Attorney

Josh Smaage – Dir. Of Information Technology

Shannon Larson – Human Resource Director  
Emeline Burkett – Human Service Zone Director  
Chad Kaiser – Sheriff  
Chad Jackson – Jail Administrator  
Jerry Bergquist – 911/Emergency Manager

David Bratton – Veterans Service Officer

Mickey Nenow – Road Superintendent  
Karl Bergh – Park Superintendent  
Christina Rittenbach – Extension Agent  
Alicia Harstad – Extension Agent





SARAH HELLEKSON  
CITY ADMINISTRATOR/CITY AUDITOR  
102 THIRD AVENUE SOUTHEAST  
JAMESTOWN, ND 58401

SHellekson@JamestownND.gov  
701 252 5900 GENERAL LINE  
[www.JamestownND.gov](http://www.JamestownND.gov)  
[Info@JamestownND.gov](mailto:Info@JamestownND.gov)

December 10, 2020

To Whom It May Concern:

On December 7, 2020, the Jamestown City Council unanimously approved Spiritwood Energy Park Association's request to use the city's authority to borrow the city's remaining \$8,600,000 Bank of North Dakota infrastructure loan at 2% interest over 30 years to develop public infrastructure supporting the planned greenhouse facility at Spiritwood Energy Park. At the May 21, 2020 City Council meeting, the City Council unanimously voted to spend \$16,800 to fund a preliminary design report and survey for the greenhouse.

The City Council, city staff, business community and public has shown interest and positive support for this planned greenhouse in our region as well as the potential expansion in the future. We look forward to the reuse of waste energy in the form of steam from the Great River Energy electrical generating plant, new employment opportunities, and the potential agricultural and market diversity the greenhouse will add to our region.

The City of Jamestown supports the planned greenhouse facility and looks forward to its addition as part of the Spiritwood Energy Park and North Dakota.

Sincerely,

A handwritten signature in black ink, appearing to read "Sarah C. Hellekson". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Sarah Hellekson

City Administrator

Cc: Connie Ova, COO, Spiritwood Energy Park Association  
Dwayne Heinrich, Mayor, Jamestown, ND



120 2<sup>nd</sup> Street SE  
PO Box 1530  
Jamestown, ND 58402-1530  
701-252-4830  
[director@jamestownchamber.com](mailto:director@jamestownchamber.com)  
[www.jamestownchamber.com](http://www.jamestownchamber.com)

December 4, 2020

To whom it may concern,

I am writing as the Executive Director of the Jamestown Area Chamber of Commerce and wish to show the Chamber's support for the planned greenhouse facility at the Spiritwood Energy Park (SEPA). As the leading advocate for businesses in Jamestown since 1931, the Chamber is dedicated to helping our members grow and succeed in a prosperous business environment.

The planned greenhouse facility at the Spiritwood Energy Park (SEPA) will have about 30 acres under glass initially with the option to expand to 60 acres in the future. Investment in the project is estimated at between \$30 million and \$35 million including infrastructure, greenhouse building and equipment. Project plans call for construction to start in the spring of 2021 with completion by August or September. This greenhouse will receive heat in the form of waste steam from Spiritwood Station, the electrical generating plant operated by Great River Energy. It will also receive carbon dioxide from Dakota Spirit AgEnergy that is produced as a byproduct of the ethanol production.

The economic impact to the area is substantial and includes 100 plus direct jobs and as many as 250 indirect jobs for this area. We are excited that the greenhouse project will bring a new and reliable source of income for Jamestown and Stutsman County and will prove to be a great addition to the community.

The Chamber feels that our partnerships with local agencies on projects such as this has been a large part of our region's success. We appreciate the opportunity to share our enthusiasm for this future project.

Sincerely,

A handwritten signature in black ink that reads "Emily Bivens".

Emily Bivens  
Executive Director  
Jamestown Area Chamber of Commerce



December 4, 2020

To Whom it May Concern:

The Jamestown/Stutsman Development Corporation (JSDC) is dedicated to area economic development growth and diversification. JSDC was organized to develop employment to improve business conditions and advance the interests of the City of Jamestown and Stutsman County, North Dakota by implementing and sustaining an organized effort to attract new businesses and industry, support existing businesses and industry, and encourage new business starts.

The planned greenhouse facility at the Spiritwood Energy Park (SEPA) will have about 30 acres under glass initially with the option to expand to 60 acres in the future. Investment in the project is estimated at between \$30 million and \$35 million including infrastructure, greenhouse building and equipment. Project plans call for construction to start in the spring of 2021 with completion by August or September. This greenhouse will receive heat in the form of waste steam from Spiritwood Station, the electrical generating plant operated by Great River Energy. It will also receive carbon dioxide from Dakota Spirit AgEnergy that is produced as a byproduct of the ethanol production,

The economic impact to the area is substantial and includes 100 plus direct jobs and as many as 250 indirect jobs for this area which has been hard-hit by the closing of the Spiritwood Cargill Malt facility in October of 2018. Aside from jobs, the project also brings some opportunities for other vendors in the community to do business with the greenhouse. We are excited that the greenhouse project will be providing a new and reliable source of income for Jamestown and Stutsman County and will prove to be a great addition to the community.



Connie J. Oya, CEO  
Jamestown/Stutsman Development Corporation  
PO Box 293  
Jamestown, ND 58402-0293  
connie@growingjamestown.com



2875 Third Street SW  
Underwood, North Dakota 58576  
701-442-3211  
greatriverenergy.com

December 7, 2020

Karlene Fine, Executive Director  
North Dakota Industrial Commission  
State Capitol – 14th Floor - 600 East Boulevard Ave Dept 405  
Bismarck, ND 58505-0840

Ms. Fine:

Great River Energy is a proud member of the Stutsman County community and its support to the proposed greenhouse project, located in the Spiritwood Energy Park.

The primary goal of the energy park is to create synergy between the tenants, which is exemplified in the proposed project. Colocation of a commercial greenhouse will allow for it to be an economical and efficient operation for all involved by utilizing heat from the Spiritwood Station and CO2 from the Dakota Spirit Ethanol Biorefinery.

In addition to synergies realized by the partners at the energy park, this facility would be economically beneficial for the community and the State of North Dakota because of its agricultural diversity, economic impact, synergies and environmental stewardship.

Agricultural Diversity

This project will diversify agricultural products grown in North Dakota and expand the growing season to year-round.

Economic Impact

The greenhouse will have immediate and long-lasting impacts on the regional and state economy. It's anticipated that the five-year impact to North Dakota gross domestic product will be approximately \$180 million and personal incomes will see a positive impact of \$100 million.

Energy Efficiency and Process Synergy

Synergies realized at the energy park will benefit other park tenants by allowing sharing of resources and opening markets for currently un-marketed byproducts (CO2). This business model could be transferrable to other ethanol biorefineries in the state allowing them a cost-effective way to utilize their CO2 byproduct.

Environmental Stewardship

Dakota Spirit could beneficially utilize up to 15% of its annual production of CO2 as process byproduct which would be used to as a nutrient at the greenhouse.

We are excited to lend our support to this new project and look forward to a mutually beneficial relationship with them.

Sincerely,

John Bauer  
Director, North Dakota Generation



2841 3rd St SW  
Underwood, ND 58576  
(701) 442-7500

December 10, 2020  
Karlene Fine, Executive Director  
North Dakota Industrial Commission  
State Capitol – 14th Floor - 600 East Boulevard Ave Dept 405  
Bismarck, ND 58505-0840

Ms. Fine:

Midwest AgEnergy is hereby expressing our support for the proposed greenhouse project, located in the Spiritwood Energy Park.

Synergies in the energy park are a key part of our business plan. A greenhouse tenant in the park will allow for economical and efficient operation for all involved. In addition to steam sales for Spiritwood Station and Dakota Spirit having a market for their CO<sub>2</sub>, other synergies will be shared costs of other infrastructures serving the Energy Park.

In addition to these synergies realized by the partners at the energy park, this facility would be economically beneficial for the community and the State of North Dakota because of its agricultural diversity, economic impact, synergies and environmental stewardship.

This project will diversify agricultural products grown in North Dakota and expand the growing season to year-round. The greenhouse will have immediate and long-lasting impacts on the regional and state economy.

The ethanol industry will benefit with the opening of markets for currently un-marketed byproducts (CO<sub>2</sub>). This business model could be transferrable to other ethanol biorefineries in the state allowing them a cost-effective way to utilize their CO<sub>2</sub> byproduct.

Significant, positive environmental impact will be realized as Dakota Spirit could beneficially utilize up to 15% of its annual production of CO<sub>2</sub> as process byproduct which would be used to as a nutrient at the greenhouse.

We are excited to lend our support to this new project and look forward to a mutually beneficial relationship with them.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jeff Zueger", is written over a light blue rectangular background.

Jeff Zueger  
Chief Executive Officer  
Midwest AgEnergy

