

# The Economic Impacts of a Sangamon County Power Plant



## Construction and Operational Impacts August 2017

**Prepared By:**



NORTHERN ILLINOIS UNIVERSITY

**Center for  
Governmental Studies**

*Outreach, Engagement, and Regional Development*

148 N. Third Street  
DeKalb, IL 60115

[www.cgs.niu.edu](http://www.cgs.niu.edu)

***The Economic Impacts of a Sangamon County Power Plant*** was prepared by Brian Harger and Lisa Bergeron of the Center for Governmental Studies at Northern Illinois University. Questions and inquiries regarding the contents of this report can be directed to Brian Harger [bharger@niu.edu](mailto:bharger@niu.edu) or Lisa Bergeron [lbergeron@niu.edu](mailto:lbergeron@niu.edu). For more information on NIU Center for Governmental Studies, please visit our website at [www.cgs.niu.edu](http://www.cgs.niu.edu).

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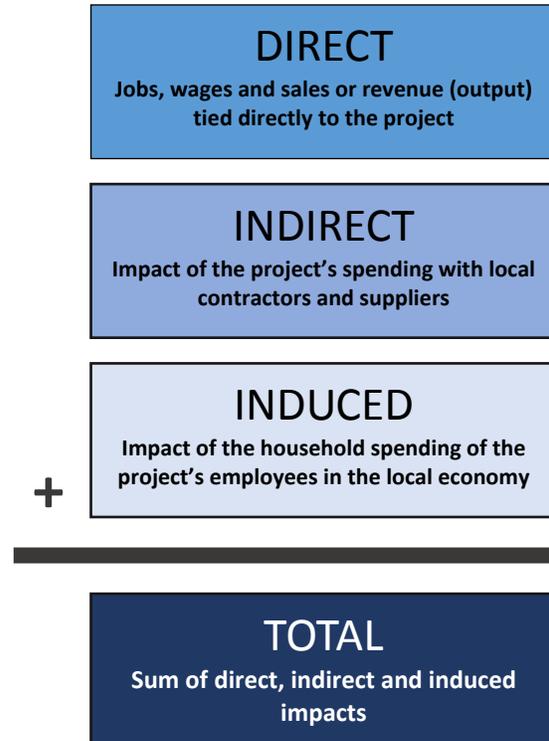
## Economic Impacts of a Sangamon County Power Plant

EmberClear is in due diligence on building a power plant utilizing natural gas combined cycle technology in Sangamon County, Illinois. The plant is expected to output up to 1,100 megawatts of electric power. The capital investment is expected to be \$1 billion and would create between 500 – 800 construction jobs during the construction period. Operations of the power plant will create 30 – 40 jobs with an average salary of \$80,000 - \$90,000 and total output or gross sales of \$165 million.

The Center for Governmental Studies (CGS) at Northern Illinois University completed an analysis of the economic impact of construction and annual operations of a power plant on the Sangamon County economy. The construction analysis represents impacts over the duration of the construction project while the operations analysis represents annualized impacts.

The analysis was completed using the IMPLANPro input/output model developed by IMPLAN group. The model is unique in that the I/O coefficients are based on 2015 county specific patterns and include both industry specific direct and indirect costs. Direct impacts are those that result from construction and operations such as employee compensation, output, and taxes. Indirect impacts are the secondary effects on the area. For example, construction of a new factory requires the services of both trades and service sector workers, as well as purchases of building materials. Some of these services and materials may be purchased locally while others can only be obtained from outside the area. The money remaining within the region continues to

Figure 1: Economic Impact Components



stimulate new economic activity as it moves up the supply chain until the source of a product or service falls outside the area. In a similar fashion, the workers employed directly or indirectly because of the project also contribute to the local economy through their household spending for goods and services such as housing, clothing, healthcare and entertainment. These expenditures also enhance the economic effects of the project as their money moves up the supply chain.

The economic activity of an industry is linked with other industries in the general economy. Sales, employment and payroll figures only illustrate a portion of the importance of an industry or individual facility to the local economy. Indirect effects in the regional economy result from businesses-to-business purchases of goods and services such as machinery and equipment, fuel, electricity, office supplies, and accounting and other services. Induced effects result from the Company's employees spending a portion of their income in the local economy for food, housing, furniture and appliances, transportation and entertainment (Figure 1).

Economic multipliers help predict the "ripple effects" of new and expanding, as well as declining, industry. A new or expanding company can have economic impacts beyond the jobs and income generated by the company itself. A multiplier is a single number which summarizes the total economic benefits resulting from a change in the local economy. Four multipliers were calculated for this analysis: employment, output, value-added and employee compensation.

## Summary of Overall Economic Impacts

<b>Construction (duration of project)</b>				
	<b>Direct</b>	<b>Indirect and Induced</b>	<b>Total</b>	<b>Multiplier</b>
Employment (full time, part time, temporary)	650	2,712	3,362	5.2
Labor Income	\$38 million	\$124 million	\$162 million	4.3
Output	\$609 million	\$348 million	\$957 million	1.6
Value Added	\$51 million	\$203 million	\$254 million	5.0

<b>Operations (annualized)</b>				
	<b>Direct</b>	<b>Indirect and Induced</b>	<b>Total</b>	<b>Multiplier</b>
Employment	35	410	445	12.7
Labor Income	\$3 million	\$20 million	\$23 million	7.7
Output	\$53 million	\$31 million	\$84 million	1.6
Value Added	\$165 million	\$56 million	\$221 million	1.3

## Construction Impacts

### Employment Impacts

- Construction of the power plant will directly support 650 full- and part-time jobs over the duration of the construction project. Indirect employment of 2,712 full- and part-time jobs will also be created or supported in the region due to the construction project. Industries with the greatest indirect and induced impacts include:
  - Employment services
  - Architectural and engineering services
  - Restaurants
  - Wholesale Trade
  
- *Multiplier Effect*  
For every 10 jobs created or supported by the construction of the power plant, another 52 jobs will be created or supported by other business sectors in Sangamon County – an employment multiplier of 5.2.

## Output Impacts

Output represents the value of an industry's business activities including sales and is used as a measure of overall industry productivity.

- Construction of the power plant will generate \$957 million in direct and indirect economic activity (sales and output) over the duration of the construction project, \$609 million in direct, in addition to \$348 million in indirect output. Industries with the greatest indirect and induced impacts include:

- Wholesale Trade
- Owner-occupied dwellings
- Architectural and engineering services
- Hospitals

- *Multiplier Effect*

For every million dollars of output generated during the construction of the facility, an additional \$4.3 million in output will be generated other business sectors in Sangamon County – an output multiplier of 4.3.

## Value Added (Wealth) and Labor Income

Value Added is a measure of wealth created by business in terms of total of employee compensation, rent, interest, taxes, and profit paid or earned, and is an important indicator of the industry's productivity and regional sector strength. Labor income includes employee compensation and proprietor income.

- Construction of the power plant will increase the value added (wealth) of the region by \$254 million over the duration of the construction project, \$51 million will be from construction of the plant directly and \$203 million from indirect impacts on other industries.
- Direct and indirect labor income from construction of the power plant will result in total employee compensation and proprietor income of \$162 million over the duration of the construction project, \$38 million directly due to construction, and an additional \$124 million from indirect impacts on other industries. Industries with the greatest indirect and induced impacts include:

- Architectural and engineering services
- Wholesale Trade
- Hospitals
- Employment Services

➤ *Multiplier Effect*

For every million dollars of value-added generated by the construction of the facility, an additional \$5,000,000 will be generated by other businesses in Sangamon County – a value-added multiplier of 5.0.

For every million dollars of labor income created by the construction of the power plant, an additional \$4,300,000 will be generated in labor income from other businesses in Sangamon County – a labor income multiplier of 4.3.

## Operational Impacts

### Employment Impacts

- Operations of the power plant will directly create 35 jobs annually. Indirect employment of 410 full- and part-time jobs will also be created or supported in the region due to operations. Industries with the greatest indirect and induced impacts include:
  - Employment services
  - Restaurants
  - Marketing research and all other miscellaneous professional, scientific, and technical services
  - Maintenance and repair construction of non-residential structures
  
- *Multiplier Effect*

For every 10 jobs created or supported by the operation of the power plant, another 127 jobs will be created or supported in other business sectors in Sangamon County – an employment multiplier of 12.7.

### Output Impacts

Output represents the value of an industry's business activities including sales and is used as a measure of overall industry productivity.

- Operations of the power plant will generate \$84 million in direct and indirect economic activity (sales and output) annually, \$53 million in direct, in addition to \$31 million in indirect output. Industries with the greatest indirect and induced impacts include:
  - Scenic, sightseeing transportation and support for transportation
  - Monetary authorities and depository credit intermediation
  - Maintenance and repair construction of non-residential structures
  - Wholesale trade
  - Pipeline transportation
  
- *Multiplier Effect*

For every million dollars of output generated by the operation of the facility, an additional \$1.6 million in output will be generated other business sectors in Sangamon County – an output multiplier of 1.6.

## **Value Added (Wealth) and Labor Income**

Value Added is a measure of wealth created by business in terms of total of employee compensation, rent, interest, taxes, and profit paid or earned, and is an important indicator of the industry's productivity and regional sector strength. Labor income includes employment compensation and proprietor income.

- Operations of the power plant will increase the value added (wealth) of the region by \$221 million annually, \$165 million will be from plant operations directly and \$56 million from indirect and induced impacts on other industries.
- Direct and indirect labor income from operations of the power plant will result in total employee compensation and proprietor income of \$23 million over the duration of the construction project, \$3 million directly due to operations, and an additional \$20 million from indirect impacts on other industries. Indirect and induced impacts will be greatest in the following industries:
  - Scenic, sightseeing transportation and support for transportation
  - Employment services
  - Maintenance and repair construction of non-residential structures
  - Wholesale trade
  - Monetary authorities and depository credit intermediation

### ➤ *Multiplier Effect*

For every million dollars of value-added created by the power plant's operation, an additional \$1,300,000 will be generated by other businesses in Sangamon County – a value-added multiplier of 1.3

For every million dollars of labor income created by the power plant's operations, an additional \$7,700,000 in labor income will be generated by in other businesses in Sangamon County – a labor income multiplier of 7.7.

## **About IMPLAN and Economic Impact Results**

The Center for Governmental Studies (CGS) at Northern Illinois University utilizes IMPLAN to model the economic impacts of construction, annual operations, or commodities for a specified industry on the economy of the region identified, generally counties or state. The analysis measures economic benefits by estimating the economic impact on the region's employment, household earnings, and business sales. The economic impact estimates use direct local spending and employment by the company or industry to determine their indirect effects on other industries and households in the region.

The analysis is completed using an economic input-output model developed by the IMPLAN Group. The IMPLAN model is unique in that the input-output coefficients are based on 2015 state data derived from county specific patterns and include both industry specific direct and indirect impacts. Input-output models are generally accepted tools used by economists and planners to project the movement of money within a defined region. These projections are based on the availability of local products and services that are known to serve as inputs to an end user.

For example, annual operations require various goods and services, some of which may be obtained locally while others may be obtained only from vendors that are outside the study area. Money remaining within the study area economy continues to stimulate new economic activity as it moves up the supplier and vendor chain until the source of the service or product falls outside the study area. These expenditures also contribute to the overall economic effects of the initial investment as their money moves up the supplier and vendor chain.

The economic impacts summarize both direct, indirect, and induced economic impacts. The direct impacts are those which result from industry activities such as employee compensation, output, and taxes. The indirect impacts are the secondary effects on the area. For example, due to industry activities, the economy will experience increased economic activity. This activity will lead to increases in employment, compensation, and output in retail trade, professional services, and other industry sectors. Induced effects represent the response by all industries caused by the expenditure of new house hold income generated by the direct and indirect effects per million dollars of final demand for a given industry.

The analysis completed by CGS addresses the following areas:

- **Output** is used as a measure of overall industry productivity and represents the value of an industry's business activities including sales. Output is the value of goods and services produced in the region. Output data is derived from several sources including Bureau of Census economic censuses and the Bureau of Labor Statistics employment projections.
- **Employment** includes the number of full- and part-time jobs created due to the additional funds in positions that could be both continuing and temporary positions. Employment data is derived from ES202 employment security data supplemented by county business patterns and REIS data.
- **Labor Income** captures changes in wages, salaries, and benefits paid to employees as well as proprietary income. Wages are assumed to be paid at the place of work but may be spent anywhere, even out of the study area. The model accounts for expenditures in the study area only.
- **Value Added** measures the change in the value of goods and services from initial production inputs to final production outputs. Value Added is a measure of wealth (Gross Area [Region] Product) created by a business in terms of total of employee compensation and benefits, rent, interest, taxes, and profit paid or earned. Value Added is an important indicator of the industry's productivity and regional sector strength. Employee compensation is derived for each industry from ES202 and RESI data. Proprietary income is derived from Federal taxes forms.