

Appendix M: Economic Assessment

Economic Assessment of Proposed Combined Cycle Electric Generation Facility in Carroll County, Ohio

Prepared for:

Carroll County Energy, LLC

31 Milk Street, Suite 1001, Boston, MA 02109

Prepared by:



Economic Development Research Group, Inc.

155 Federal Street, Suite 600, Boston, MA 02110

August 19, 2013

Table of Contents

The Firm.....	3
Executive Summary	4
1 Introduction	6
2 Existing Conditions	7
2.1 Population Trends.....	7
2.2 Educational Attainment	7
2.3 Economic Profile & Trends.....	8
2.3.1 Gross State Product	8
2.3.2 Employment	9
2.4 Facility Site Conditions.....	11
2.4.1 Facility Site.....	11
2.4.2 Adjacent Parcel	12
2.4.3 Municipal Services	12
2.4.4 Enterprise Zone Eligibility	13
3 Economic Impacts.....	15
3.1 Economic Impact Methodology.....	15
3.2 Impacts of Construction.....	16
3.2.1 Regional & Statewide Supply of Labor & Inputs	16
3.2.2 Economic Impacts of Construction.....	18
3.3 Impacts of Operations & Maintenance	20
3.3.1 Regional & Statewide Supply of Labor & Inputs	20
3.3.2 Economic Impacts of Operations & Maintenance	22
4 Conclusion	24

The Firm

Economic Development Research Group, Inc. (EDR Group) is a consulting firm focusing specifically on applying state-of-the-art tools and techniques for evaluating economic development performance, impacts, and opportunities. The firm was started in 1996 by a core group of economists and planners who are specialists in models and tools for evaluating impacts of infrastructure, technologies, and natural resources on economic development opportunities. EDR Group provides both consulting advisory services and full-scale research projects for public and private agencies throughout North America as well as in Europe, Asia, and Africa. Our work focuses on three issues:

- Economic Impact Analysis – How will my project/program affect economic growth & attraction? ...How can I best target my efforts?
- Market/Strategy Analysis – How will I be affected by changes in the economy? ...What should I do to respond to them?
- Benefit/Cost Analysis – What will the economic benefits and costs of my project/program be? ...What should I do to maximize net value?

The economic development work of EDR Group is organized in terms of five areas: (1) forecasting economic change and needs; (2) opportunities assessment; (3) strategy development; (4) benefit-cost analysis; and (5) program evaluation.

Our firm's work and clients have been nationally recognized for project excellence, including a 2005 recognition award by the International Economic Development Council, a 2002 award by the Northeast Economic Developers Association, and a 2000 award by the Government Research Association.

Executive Summary

The construction and operation of the proposed Carroll County Energy combined cycle electric generation facility (“Facility”) will create economic impacts for the state of Ohio and the 22-county Northeast Ohio Region. Economic impacts include direct spending associated with the construction phase and operations phase; subsequent indirect impacts from businesses making purchases of local supplies and services; and induced impacts from workers spending wages locally in the area where they live.

Construction of the Facility is estimated in the State of Ohio to generate \$943.8 million in total economic impact, \$308.3 million in gross state product, and 1,403 jobs over the 28-month construction period. The breakdown of the economic impacts in the Northeast Ohio Region and State of Ohio are as follows:

Northeast Ohio Region

- Direct: \$655.2 million in direct economic impact, including \$148.3 million in gross regional product and an average of 500 construction jobs and \$91.2 million in wages;
- Indirect: \$62.5 million of indirect economic impact, including \$31.1 million in gross regional product, an average of 156 jobs during construction, and \$20.1 million in wages; and
- Induced: \$127.4 million of induced economic impact, including \$76.2 million in gross regional product, an average of 450 during construction, and \$41.8 million in wages.

State of Ohio

- Direct: \$655.2 million in direct economic impact, including \$148.3 million in gross state product and an average of 500 construction jobs and \$91.2 million in wages;
- Indirect: \$114.1 million of indirect economic impact, including \$56.7 million in gross state product, an average of 294 jobs at any one time during construction, and \$36.7 million in wages; and
- Induced: \$174.4 million of induced economic impact, including \$103.3 million in gross state product, an average of 609 jobs at any one time during construction, and \$56.8 million in wages.

During the 30-year operational phase, the Facility is estimated in the State of Ohio to annually generate \$17.0 million in total economic impact, \$9.4 million in gross state product, and 72 jobs. The breakdown of the annual economic impact in the State of Ohio and the Northeast Ohio Region is as follows:

Economic Assessment of Proposed Combined Cycle Electric Generation Facility

Northeast Ohio Region

- Direct: \$11.7 million of annual direct economic impact, including \$6.2 million in gross state product, 29 new jobs, and \$3.8 million in annual wages;
- Indirect: \$0.7 million of annual indirect economic impact, including \$0.4 million in gross regional product, 5 new jobs, and \$0.3 million in annual wages; and
- Induced: \$4.3 million of annual induced economic impact, including \$2.6 million in gross regional product, 35 new jobs, and \$1.4 million in annual wages.

State of Ohio

- Direct: \$11.7 million of annual direct economic impact, including \$6.2 million in gross state product, 29 new jobs, and \$3.8 million in annual wages;
- Indirect: \$0.9 million of annual indirect economic impact, including \$0.5 million in gross state product, 6 new jobs, and \$0.3 million in annual wages; and
- Induced: \$4.5 million of annual induced economic impact, including \$2.7 million in gross state product, 37 new jobs, and \$1.5 million in annual wages.

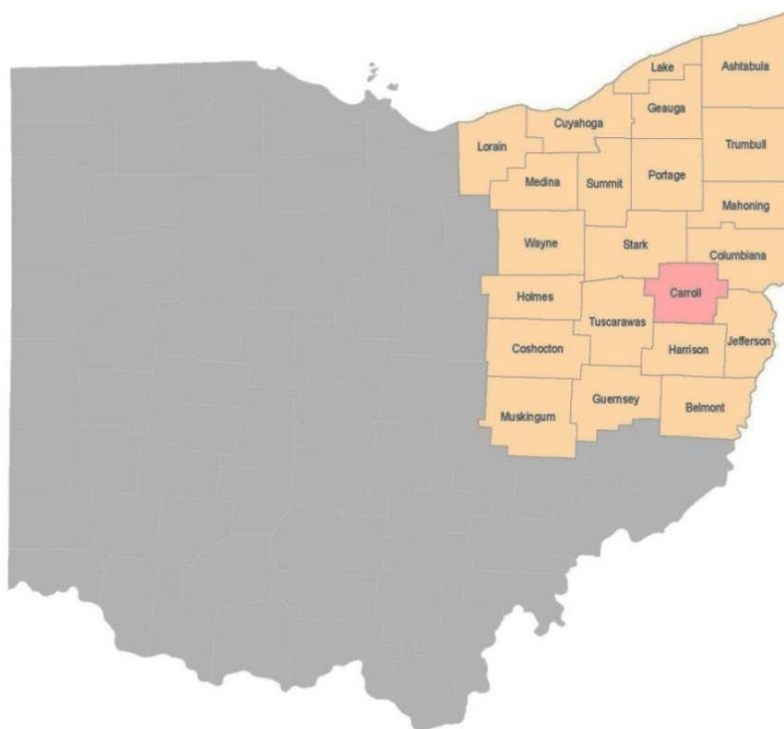
The Facility accomplishes three key outcomes: (1) addition of new natural gas fired generation capacity in Ohio to replace retiring aging coal fired generation capacity; (2) new opportunities for economic development in Carroll County through new infrastructure development and new revenue for municipal utilities; and (3) economic development opportunities (vis-à-vis construction-related and annual O&M spending) for business sales, household income creation, and future in-fill of suppliers to the local and regional economy.

1 Introduction

Economic Development Research Group, Inc., maintained full independence and impartiality in conducting the following analysis. The organization takes no institutional position on matters of policy and holds no conflicts of interest that impeded it from providing objective analysis to Carroll County Energy, LLC, or the citizens of Ohio.

The proposed facility is a 700-megawatt combined cycle electric generating facility (the “Facility”), to be located in Carroll County, Ohio, on a 77-acre site (“Facility Site”). Carroll County is located in the Northeast Ohio Region, which extends south from the southern shore of Lake Erie and includes rural areas as well as cities including Cleveland, Akron, Youngstown, and Canton. For the purpose of this analysis, the Northeast Ohio Region is defined as the 22 counties shown in “Figure 1 – Carroll County and the Northeast Ohio Region”. These counties were selected to represent a set of contiguous labor market areas and a consistent commuter shed from which workers would be likely to commute to/from the proposed Facility. The labor market areas were defined by the Ohio Department of Jobs and Family Services.¹

Figure 1 - Carroll County and the Northeast Ohio Region



¹ Former economic development regions 8, 9, 10, and 12 (see <http://ohiolmi.com/maps/MapofEDRs.htm>).

2

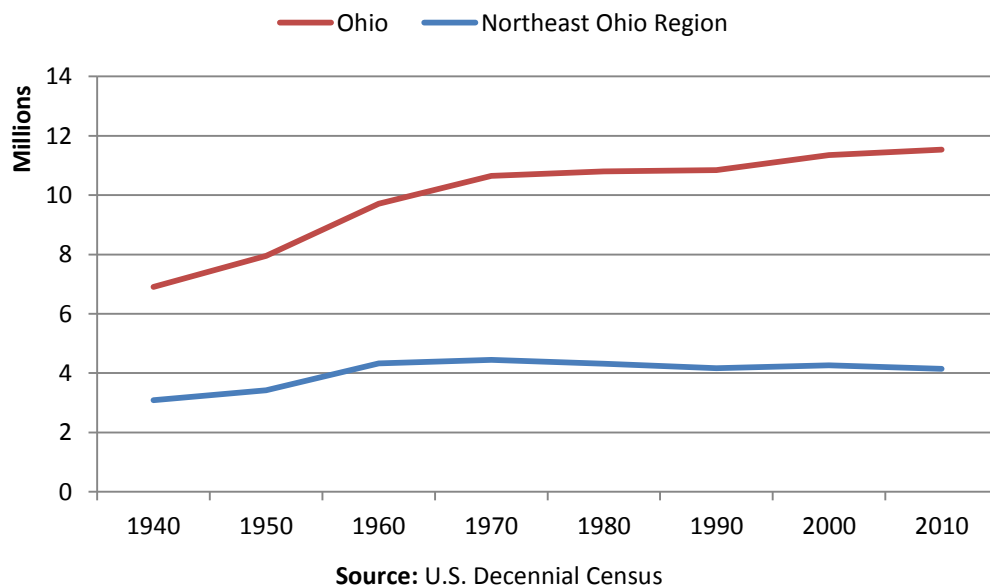
Existing Conditions

2.1 Population Trends

The population of Ohio has grown steadily over the last seven decades. The Northeast Ohio Region has experienced population decline since peaking at 4.4 million residents in 1970. Over the last 40 years, the Northeast Ohio Region has declined in population by 6.7 percent while the population of Ohio increased by 8.3 percent.

These trends of state population increase and regional population decline are shown in “Figure 2 – Population in Ohio and Northeast Ohio Region, 1940-2010”.

Figure 2 - Population in Ohio and Northeast Ohio Region, 1940–2010



2.2 Educational Attainment

The share of the Northeast Ohio Region population that has a high school education or greater is 87.7 percent while the share of the State of Ohio population that has the same level of education is 87.8 percent. The share of the Northeast Ohio Region population that has a college degree is 30.9 percent while the share of the State of Ohio population that has the same level of education is 31.9 percent.

This breakdown of educational attainment is shown in “Table 1 – Educational Attainment in Northeast Ohio Region, Ohio & the U.S.”.

Table 1 - Educational Attainment in the Northeast Ohio Region, Ohio & the U.S.

	Northeast Ohio Region	State of Ohio	U.S.
Population 25 Years and Over	3,010,404	7,688,501	202,048,123
Level of Education			
Less than 9th grade	3.5%	3.4%	6.1%
9th to 12th grade, no diploma	8.8%	8.8%	8.5%
High school graduate (includes equivalency)	36.3%	35.4%	28.6%
Some college, no degree	20.5%	20.5%	21.0%
Associate's degree	7.2%	7.5%	7.6%
Bachelor's degree	15.0%	15.5%	17.7%
Graduate or professional degree	8.6%	9.0%	10.5%
Source: 2007-2011 American Community Survey 5-Year Estimates			

2.3 Economic Profile & Trends

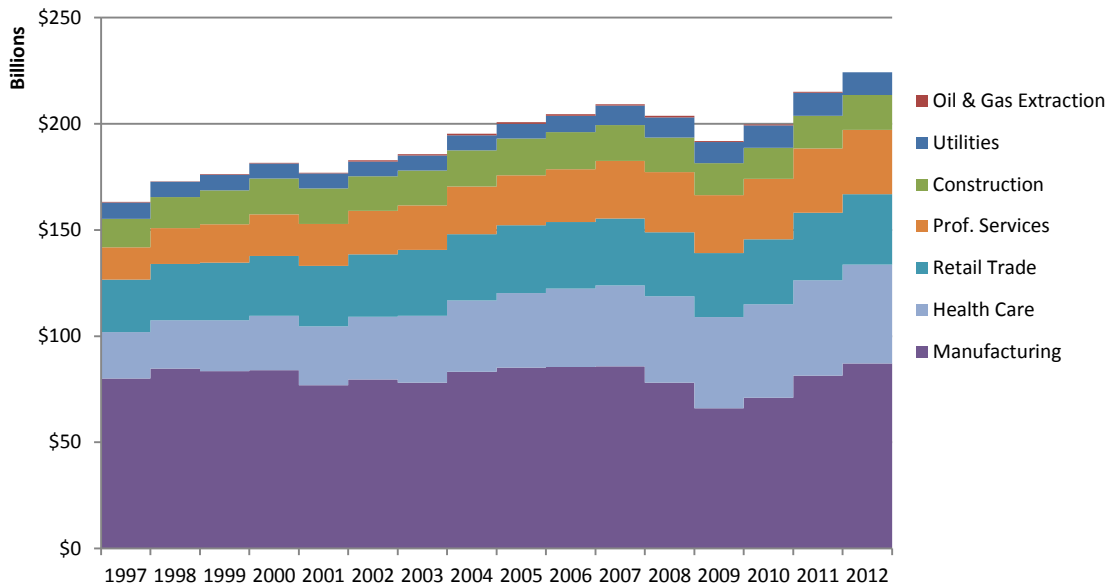
2.3.1 Gross State Product

Over the last 15 years, Ohio’s gross state product (“GSP”) has grown by nearly 53 percent from \$333.3 billion in 1997 to \$509.4 billion in 2012. This increase has been driven by high GSP growth in several industries, including health care, which grew by 114 percent; professional services, which grew by 99 percent; utilities, which grew by 42 percent; and oil and gas extraction, which grew by 42 percent.

The manufacturing, retail trade, and construction industries have also substantially contributed to Ohio GSP growth since 1997, but at a slower rate. These industries are more sensitive to consumer spending and changes in the national economy than others, as evidenced by declines in their GSP contribution during the 2008-2009 recession.

These trends are shown in “Figure 3 – Gross State Product by Selected Industries in Ohio, 1997-2012”, which is shown on the next page and provides detail on shifts in industry GSP over time.

Figure 3 - Gross State Product by Select Industries in Ohio, 1997–2012



Source: U.S. Bureau of Economic Analysis

2.3.2 Employment

Historically, the manufacturing sector was one of the dominant employers in the Northeast Ohio Region and in the U.S. Increases in labor productivity and a shift to overseas manufacturing have since shifted employment away from manufacturing in Ohio and the U.S. to other industries. In 2011, major employment industries in Northeast Ohio Region included restaurants, health care, wholesale trade, real estate, and nursing and care facilities.

Major employment industries in the Northeast Ohio Region are ranked in “Table 2 – Top Ten Private-Sector Industries by Employment in the Northeast Ohio Region, 2011”, which is shown on the next page and also lists industry employment levels in 2011.

Economic Assessment of Proposed Combined Cycle Electric Generation Facility

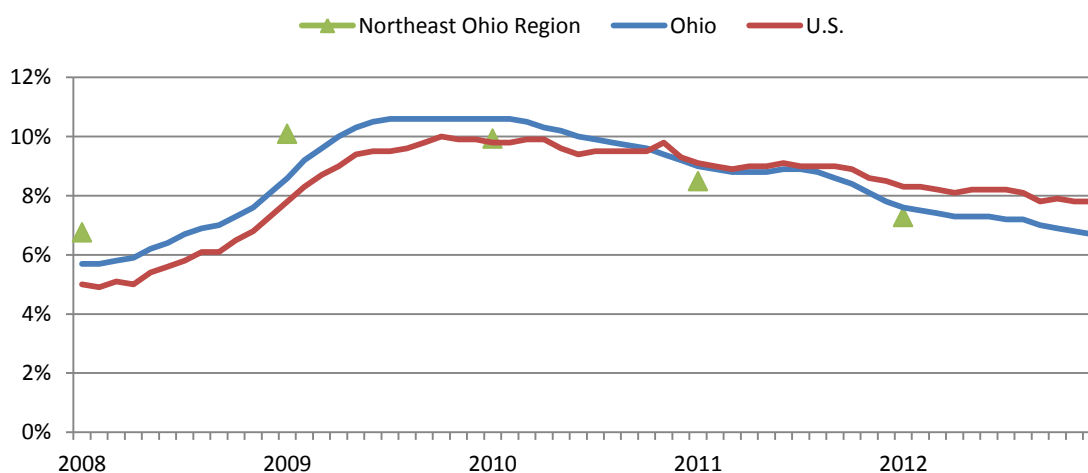
Table 2 - Top Ten Private-Sector Industries by Employment in the Northeast Ohio Region, 2011

Rank	Description	Employment
1	Food services and drinking places	156,390
2	Private hospitals	104,588
3	Wholesale trade businesses	93,934
4	Real estate establishments	85,436
5	Nursing and residential care facilities	70,875
6	Offices of physicians, dentists, and other health practitioners	62,615
7	Employment services	60,315
8	Retail Stores - Food and beverage	46,644
9	Management of companies and enterprises	45,227
10	Retail Stores - General merchandise	44,595
Source: IMPLAN 2011 based on U.S. Bureau of Economic Analysis data		

During the first two years of the Great Recession (2008-2009), the unemployment rate in the Northeast Ohio Region exceeded state and national levels, ultimately peaking at a rate of over 10 percent. Since 2009, however, the Northeast Ohio Region's unemployment rate has fallen below the state average and is now below the national level. At the end of 2012 the unemployment rate in the Northeast Ohio Region was 7.3 percent, 2.8 percentage points below its 2009 peak but still half a percentage point above its 2008 level.

These unemployment trends are illustrated in "Figure 4 – Unemployment Rates in the Northeast Ohio Region, Ohio & the U.S., 2008-2012".

Figure 4 - Unemployment Rates in the Northeast Ohio Region, Ohio & the U.S., 2008–2012



Note: Ohio and U.S. unemployment rates reflect a seasonally adjusted monthly value. The Northeast Ohio Region rate reflects an average annual value as monthly values are not available by county.

Source: U.S. Bureau of Labor Statistics

Based on U.S. Census data, approximately 290,224 workers were employed in the Ohio construction industry in 2011, or 5.4 percent of the total civilian employed population over 16 years of age. Within the Northeast Ohio Region, approximately 109,276 workers were employed in the construction industry in 2011, representing 11 percent of the total employed population.

By occupation, approximately 57,160 workers were employed as construction laborers in Ohio in May 2012, about 4,760 in the Cleveland metro, and 980 in Eastern Ohio non-metro areas.² The average annual wage paid among all construction occupations in 2012 was \$44,780 in Ohio, \$48,720 in the Cleveland metro, and \$37,960 in Eastern Ohio non-metro areas. In March of this year the national unemployment rate in the construction industry was 14.7 percent and there were 109,000 openings; because the unemployment rate in the Northeast Ohio Region and the State of Ohio is similar to that in the U.S., it is reasonable to assume that the local unemployment rate in the construction industry is also similar and would thus benefit from job creation.

2.4 Facility Site Conditions

2.4.1 Facility Site

The Facility Site is located approximately 2.5 miles north of Carrollton, Ohio in Washington Township on the east side of Ohio Route 9. The Facility Site is a 77 acre parcel of unincorporated land. Site control has been obtained by the CCE by entering a 5-year option agreement with the owner of the 77 acre parcel. As part of the option agreement, CCE has also acquired 23 acres of land to be utilized for construction laydown.

The specific location of the Facility Site and construction laydown is depicted in “Figure 5 – Facility Site” on the next page.

² U.S. Bureau of Labor Statistics Occupational Employment Statistics, http://www.bls.gov/oes/current/oes_oh.htm#47-0000.

Figure 5 – Facility Site



Red Outline (right) – Facility Site
Blue Outline (left) – construction laydown

2.4.2 Adjacent Parcel

Located to the north of the Facility Site are parcels owned by the Carroll County Community Improvement Corporation (CIC) and Carroll County. CIC, a non-profit organization managed by the Carroll County Commissioners, is actively marketing the CIC land for commercial and industrial uses. One company has developed 13 acres of CIC land and two others have initiated site options to pursue development. Carroll County currently runs multiple government facilities on the Carroll County land located north of the Facility Site.

2.4.3 Municipal Services

The proposed Facility plans to purchase water and sewer services within Carroll County that will result in significant revenue that can be made available to provide system upgrades to water utilities and sewer systems. At the time of this writing, water and sewer agreements have not been negotiated, so the value of the new revenue is not

definitely known. But new revenue associated with the Facility will provide opportunity for the water and sewer infrastructure in Carroll County to be expanded to attract new development.

2.4.4 Enterprise Zone Eligibility

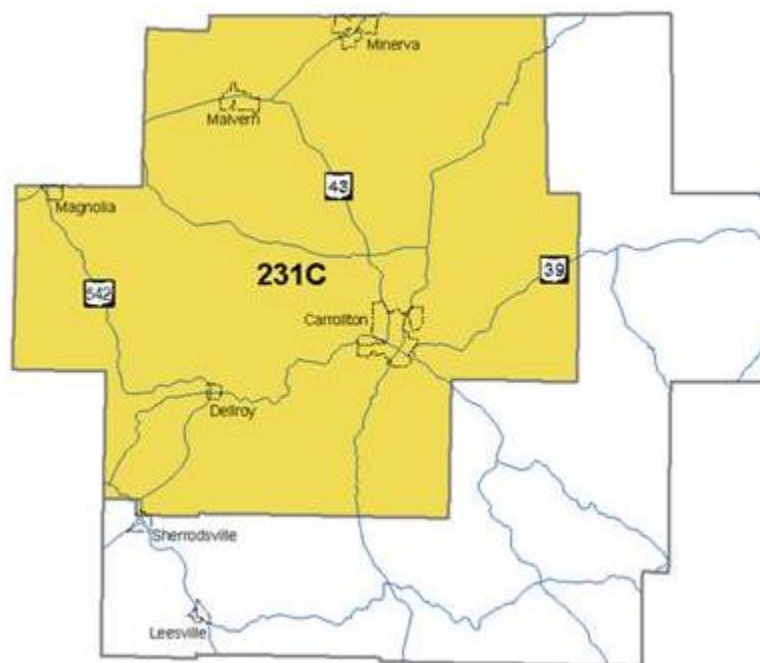
The Ohio Enterprise Zone Program is an economic development tool administered by municipal and county governments to provide tax exemptions to businesses making eligible new investments in pre-defined areas deemed appropriate for business development, have a continuous boundary, meet certain population requirements, and show distress, if applicable. Within a designated Enterprise Zone, local communities may offer tax incentives for non-retail projects that are establishing or expanding operations.

These tax incentives are negotiated at the local level and documented in an Enterprise Zone Agreement, which is executed prior to the start of a new project.³ Under SB 320, the current law concerning Enterprise Zones, local governments can approve tax exemptions for the increase in assessed value of real and personal property of up to 75 percent for municipalities and 60 percent for unincorporated areas for up to 10 years. A more generous tax incentive package offering up to a 100 percent tax exemption for up to 15 years can be authorized with approval from the local school district.

Carroll County has an enterprise zone designated as Zone #231. The location of this enterprise zone is depicted in “Figure 6 – Carroll County, Ohio, Enterprise Zone (#231)”. The proposed generation facility will be located approximately 2.5 miles north of Carrollton within the Enterprise Zone #231. Carroll County Energy, LLC (CCE) has approached the Carroll County Economic Development Director and the Carrollton Exempted School District Superintendent to enter negotiations for an Enterprise Zone Agreement. Negotiations are currently in progress with the Carrollton Exempted School District Superintendent for an incentives package that will be offered in exchange for a 100 percent tax exemption for 15 years. The incentive package will ensure a steady predictable stream of revenue to Carroll County and the Carrollton Exempted School District.

³ See http://development.ohio.gov/bs/bs_oezp.htm.

Figure 6 - Carroll County, Ohio, Enterprise Zone (#231)



Source: <http://development.ohio.gov/OTEISearch/ez/selection.aspx?County=Carroll>

3

Economic Impacts

This section evaluates the economic impacts associated with the proposed Facility, and is based on the Facility's preliminary budget estimates for construction and operations. Construction of the Facility will impact economic activity in the Northeast Ohio Region and the State of Ohio over a period of 28-months by hiring local construction trade labor and sourcing some construction inputs locally. After construction is complete, economic impact will continue as the Facility is operated by local employees and maintained using local parts and supplies. Total economic impacts during both phases are presented for the Northeast Ohio Region and the State of Ohio.

3.1 Economic Impact Methodology

The following economic impact analysis portrays the direct spending effects and "multiplier" effects associated with the construction phase (temporary) and annual operation and maintenance ("O&M") activities (on-going) associated with the proposed Facility. The spending effects traced can be classified as those resulting from hiring and spending at the Facility itself (direct); the purchasing of supplies (indirect); and the spending by those working at the Facility and at suppliers (induced). Total economic impacts are then represented as the combination of direct, indirect, and induced effects and typically stated in terms dollars of output, dollars of labor income, and employment.

Direct spending effects are identified from the Facility's preliminary construction and annual operating budgets for the proposed Facility. These budgets provide estimated labor and materials expenditures to support construction and continuing operations.

The indirect and induced effects are estimated using IMPLAN input-output models for the Northeast Ohio Region and the State of Ohio. These multipliers trace the indirect and induced impacts, and are generated from industry relationships in the Northeast Ohio Region and the State of Ohio. The models are calibrated to depict region-specific industry-by-industry purchasing patterns (for the indirect effects) and consumer purchasing patterns (for the induced effects). The indirect and induced multipliers for each industry estimate how much additional activity is created through the "local" portion of direct spending in a given industry.

The size of the affected area is critical for impact analysis as a larger economic region will capture more multiplier transactions than a single county alone. Therefore, it is crucial to this assessment that supplies and labor are distinguished by those that would come directly from the Northeast Ohio Region, those that would come from the rest of Ohio, and those that "leak away" from our analysis boundary. The impacts for the Northeast

Ohio Region are derived from local purchases in the 22 counties and the multiplier effects in that regional economy while the impacts for the State of Ohio are derived from the sum of impacts in the Northeast Ohio Region and the impacts resulting from purchases in the rest of Ohio. The results stemming from both the construction and O&M phases are presented for the Northeast Ohio Region and the State of Ohio.

Key to gauging the overall impact of the Facility is the identification of how much of spending will be local content. To better reflect construction and operations inputs for the Facility and the multiplier responses that would ensue, EDR Group approaches the construction and operations analyses by modeling a bill-of-goods approach using the information provided by CCE. In cases where the percentage of local purchases are unknown, the model's local purchase coefficient (LPC) is used—this describes the portion of local demand that is met by local firms.

3.2 Impacts of Construction

The capital outlay to develop and construct the Facility will be up to \$750 million; after excluding costs of land acquisition and taxes paid, however, direct spending on supplies and labor—or that which is expected to grow the economy—will be \$655.2 million (\$563.9 million of which is spent on supplies and \$91.2 million of which is spent on labor). During construction of the Facility, CCE will enlist local construction workers and pay wages that will be spent at local businesses. Also, locally sourced supplies will generate activity for contractors and manufacturers.

The impacts presented in this section are derived from construction budget and job estimates. Direct impacts represent all spending on-site; indirect impacts are generated from supply purchases and induced impacts are generated from disposable income spent locally in the Northeastern Ohio Region or within the State of Ohio.

3.2.1 Regional & Statewide Supply of Labor & Inputs

According to contractor estimates and regional average purchasing patterns provided by IMPLAN, of the total construction supplies and labor outlay of \$655.2 million, 34 percent will be purchased in Northeast Ohio Region and 51 percent will be purchased in the State of Ohio. It is assumed that 100 percent of the construction labor will be sourced within the Northeast Ohio Region. This assumption is supported by the fact that there is an ample-sized construction labor force in the region and relatively high unemployment (as discussed in Section 2.3.2). The remaining construction dollars represent supplies that are purchased outside of the State of Ohio. The largest portion of out-of-state purchases will be will be the General Electric Company (GE)-supplied gas and steam turbines.

The estimated construction budget is detailed in “Table 3 – Estimated Construction Budget – 28-month total” on the next page, which also lists the share of each expense category purchased in the Northeast Ohio Region and in the State of Ohio.

Economic Assessment of Proposed Combined Cycle Electric Generation Facility

Table 3 - Estimated Construction Budget – 28-month total

Expense Category	Total Expense (2013\$M)	Purchased in Northeast Ohio Region (2013\$M)	Purchased in Northeast Ohio Region (%)	Purchased in Ohio (2013\$M)	Purchased in Ohio (%)
Engineering & Design	\$31.5	\$0.3	1%	\$0.3	1%
Site Preparation	\$7.0	\$4.0	57%	\$7.0	100%
Pilings	\$4.5	\$2.0	45%	\$3.0	67%
Aggregates & Other Paving Materials	\$1.0	\$0.5	45%	\$1.0	100%
Concrete	\$14.6	\$6.6	45%	\$13.9	95%
Structural Steel	\$9.0	\$4.1	45%	\$5.9	66%
Pre-Engineered Building	\$9.7	\$4.4	45%	\$5.2	54%
Power Generation Equipment (Turbines)	\$281.2	\$2.5	1%	\$43.2	15%
Bulk Metal Materials (Piping)	\$39.5	\$19.0	48%	\$26.6	67%
Other Bulk Materials (Paint)	\$2.4	\$1.2	49%	\$1.6	67%
Transformers, Generators, Breakers, Controls	\$21.5	\$12.5	58%	\$12.6	59%
Waste & Waste Water Treatment Systems	\$7.3	\$4.1	57%	\$7.3	100%
Fuel Compressors	\$5.8	\$3.3	56%	\$3.6	62%
Instrumentation	\$2.7	\$1.7	63%	\$1.8	67%
Scaffolding & Other Construction Equip.	\$16.2	\$4.2	26%	\$11.5	71%
Distribution Equipment	\$13.4	\$4.0	30%	\$4.2	31%
Permitting Fees	\$2.9	\$2.9	100%	\$2.9	100%
Insurance	\$4.2	\$2.4	56%	\$3.5	83%
Indirect Commercial, Overhead, Oper. Costs	\$89.2	\$50.9	57%	\$89.2	100%
Supplies Subtotal	\$563.6	\$130.6	23%	\$244.3	43%
Labor Subtotal	\$91.2	\$91.2	100%	\$91.2	100%
Construction Total	\$655.2	\$221.6	34%	\$335.4	51%
Source: Carroll County Energy, LLC; calculations by EDR Group					
Note: Total of labor and supplies may not sum exactly due to rounding.					

Construction spending is estimated at \$221.6 million in the Northeast Ohio Region and estimated at \$335.4 million in the State of Ohio. Much of the spending on supplies during construction occurs in manufacturing industries, with the remainder supporting purchases in the utility and service industries.

Estimated construction spending by industry sector, and the share of each expense category purchased in the Northeast Ohio Region and in the State of Ohio, is detailed in “Table 4 – Estimated Construction spending by Industry Sector – 28-month total” on the next page.

Economic Assessment of Proposed Combined Cycle Electric Generation Facility

Table 4 - Estimated Construction Spending by Industry Sector – 28-month total

Industry Sector	Industry Sector Description	Total Expense (2013\$M)	Total Northeast Ohio Region Procurement (2013\$M)	Total Northeast Ohio Region procurement (%)	Total Ohio Procurement (2013\$M)	Total Ohio Procurement (%)
Labor						
5001	Employee compensation	\$91.2	\$91.2	100%	\$91.2	100%
Supplies						
33	Water, sewage and other treatment and delivery systems	\$7.3	\$4.1	56%	\$7.3	100%
36	Construction of other new nonresidential structures	\$96.3	\$54.9	57%	\$96.3	100%
116	Asphalt paving mixture and block manufacturing	\$1.0	\$0.5	50%	\$1.0	100%
136	Paint and coating manufacturing	\$2.4	\$1.2	50%	\$1.6	67%
161	Ready-mix concrete manufacturing	\$14.6	\$6.6	45%	\$13.9	95%
170	Iron and steel mills and ferroalloy manufacturing	\$53.1	\$25.1	47%	\$35.5	67%
186	Plate work and fabricated structural product manufacturing	\$9.7	\$4.4	45%	\$5.2	54%
222	Gas turbine and generator manufacturing	\$281.2	\$2.5	1%	\$43.2	15%
227	Air and gas compressor manufacturing	\$5.8	\$3.3	57%	\$3.6	62%
251	Power generation process controller manufacturing	\$2.8	\$1.7	61%	\$1.8	64%
266	Power, distribution, and specialty transformer manufacturing	\$34.9	\$16.5	47%	\$16.8	48%
357	Insurance carriers	\$4.2	\$2.4	57%	\$3.5	83%
365	Commercial and industrial machinery and equipment rental and leasing	\$16.2	\$4.2	26%	\$11.5	71%
369	Architectural, engineering, and related services	\$31.5	\$0.3	1%	\$0.3	1%
432	Other state and local government enterprises	\$2.9	\$2.9	100%	\$2.9	100%
Supplies Subtotal		\$563.9	\$130.6	23%	\$244.4	43%
Total of Labor & Supplies		\$655.2	\$221.6	34%	\$335.4	51%
Source: Carroll County Energy, LLC; calculations by EDR Group						
Note: Total of labor and supplies may not sum exactly due to rounding.						

3.2.2 Economic Impacts of Construction

The total economic impact of the construction of the Facility is a sum of the direct, indirect, and induced effects of construction spending. The direct impact is defined as the amount of total construction expenditure to be made at the site by CCE. Indirect and induced effects are calculated on the basis of the amount of additional business sales (from supplier purchases and worker spending) that would be generated within the Northeast Ohio Region or State of Ohio for sectors listed in “Table 4 – Estimated Construction Spending by Industry Sector – 28-month total”.

Economic Assessment of Proposed Combined Cycle Electric Generation Facility

The total economic impact of constructing the Facility in the Northeast Ohio Region is estimated to be \$845.1 million. Approximately \$255.6 million of this impact represents a contribution to gross regional product (“GRP”). Construction of the Facility is also expected to support 2,580 job-years and \$153 million in labor income over the 28-month construction period. The total impact of the construction of the Facility in the State of Ohio is estimated to be \$943.8 million, approximately \$308.3 million of which is a contribution to GSP. Construction is also expected to support 3,273 job-years and \$184.7 million in labor income in the state over the 28-month construction period.

Economic impacts of construction over the entire 28-month period are detailed in “Table 5 – Economic Impacts of Construction – 28-month total”.

Table 5 - Economic Impacts of Construction – 28-month total

Impact Measure	Direct	Indirect	Induced	Total Impact
Impacts in Northeast Ohio Region				
Output (\$2013M)	\$655.2	\$62.5	\$127.4	\$845.1
Contribution to Gross Regional Product (\$2013M)	\$148.3	\$31.1	\$76.2	\$255.6
Labor Income (\$2013M)	\$91.2	\$20.1	\$41.8	\$153.0
Employment (job-years)	1,167	364	1,049	2,580
Impacts in Ohio				
Output (\$2013M)	\$655.2	\$114.1	\$174.4	\$943.8
Contribution to Gross State Product (\$2013M)	\$148.3	\$56.7	\$103.3	\$308.3
Labor Income (\$2013M)	\$91.2	\$36.7	\$56.8	\$184.7
Employment (job-years)	1,167	685	1,421	3,273
Source: Carroll County Energy, LLC and IMPLAN model; calculations by EDR Group				

The annual total economic impact of the construction of the Facility in the Northeast Ohio Region is estimated to be \$362.2 million, \$109.5 million of which is a contribution to annual GRP. Construction of the Facility is also expected to support an average of 1,106 jobs at any one time during the construction period and \$65.6 million in annual labor income in the Northeast Ohio Region. The annual total economic impact of the construction of the Facility in the State of Ohio is estimated to be \$404.5 million, \$132.1 million of which is a contribution to annual GSP. Construction of the Facility is also expected to support an average of 1,403 jobs at any one time during the construction period and \$79.1 million in annual labor income in the State of Ohio.

Annual average economic impacts of construction are detailed on the next page in “Table 6 –Economic Impacts of Construction – Annual Average”.

Table 6 - Economic Impacts of Construction – Annual Average

Impact Measure	Direct	Indirect	Induced	Total Impact
Impacts in Northeast Ohio Region				
Output (\$2013M)	\$280.8	\$26.8	\$54.6	\$362.2
Contribution to Gross Regional Product (\$2013M)	\$63.6	\$13.3	\$32.7	\$109.5
Labor Income (\$2013M)	\$39.1	\$8.6	\$17.9	\$65.6
Employment (jobs)	500	156	450	1,106
Impacts in Ohio (Statewide Total)				
Output (\$2013M)	\$280.8	\$48.9	\$74.7	\$404.5
Contribution to Gross Regional Product (\$2013M)	\$63.6	\$24.3	\$44.3	\$132.1
Labor Income (\$2013M)	\$39.1	\$15.7	\$24.3	\$79.1
Employment (jobs)	500	294	609	1,403
Source: Carroll County Energy, LLC and IMPLAN model; calculations by EDR Group				

3.3 Impacts of Operations & Maintenance

In operating and maintaining the proposed Facility, a total of \$11.7 will be spent annually, including \$7.9 million on supplies and \$3.8 million on labor. The impacts presented in this section are derived from provided O&M budget and hiring estimates. Direct impacts represent all spending on-site while the indirect effects are generated from supply purchases and induced effects are generated from disposable income spent regionally or within the state.

3.3.1 Regional & Statewide Supply of Labor & Inputs

According to contractor estimates and regional average purchasing patterns provided by IMPLAN, of an annual O&M outlay of \$11.7 million, 91 percent will be purchased in the Northeast Ohio Region and 96 percent will be purchased the State of Ohio.

The estimated annual operations and maintenance budget is detailed in “Table 7 – Estimated Annual O&M Budget” on the next page, which also lists the share of each expense category purchased in the Northeast Ohio Region and in the State of Ohio. This estimated budget is applicable for an operational life of 30 years.

Economic Assessment of Proposed Combined Cycle Electric Generation Facility

Table 7 - Estimated Annual O&M Budget

Expense Category	Annual Expense (2013\$M)	Purchased in Northeast OH (2013\$M)	Purchased in Northeast Ohio Region (%)	Purchased in Ohio Region (2013\$M)	Purchased in Ohio (%)
Training, Travel, Other Expenses	\$0.12	\$0.08	60%	\$0.11	87%
Office Equipment & Furnishings	\$0.03	\$0.03	82%	\$0.03	96%
Office Supplies & Expenses	\$0.02	\$0.02	91%	\$0.02	100%
Maintenance Equipment & Tools	\$0.04	\$0.04	89%	\$0.04	99%
Plant Spares & Major Maintenance	\$4.10	\$3.70	90%	\$3.90	95%
Consumables	\$0.24	\$0.12	49%	\$0.18	75%
Chemicals	\$2.10	\$1.90	90%	\$2.00	95%
Plant Vehicles & Heavy Mobile Equip.	\$0.09	\$0.01	6%	\$0.02	18%
Outside Services	\$0.26	\$0.26	99%	\$0.26	100%
Equipment Rental	\$0.04	\$0.03	68%	\$0.04	87%
Buildings & Grounds	\$0.15	\$0.13	84%	\$0.15	98%
Utilities (Communications)	\$0.04	\$0.03	71%	\$0.04	90%
Insurance	\$0.03	\$0.01	56%	\$0.02	82%
Staffing	\$0.02	\$0.02	95%	\$0.00	95%
Management Fees	\$0.59	\$0.54	91%	\$0.58	99%
Supplies Subtotal	\$7.82	\$6.84	87%	\$7.35	94%
Labor Subtotal	\$3.84	\$3.84	100%	\$3.84	100%
O&M Total	\$11.66	\$10.68	92%	\$11.19	96%
Source: Carroll County Energy, LLC; calculations by EDR Group					
Note: O&M total may not sum exactly due to rounding.					

O&M spending is estimated at \$10.7 million annually in the Northeast Ohio Region and estimated at \$11.2 million annually in the State of Ohio. Much of the O&M spending is for labor and supplies related to wholesale trade, retail, manufacturing, and management industries.

Estimated annual O&M spending by industry sector, and the share of each expense category purchased in the Northeast Ohio Region and in the State of Ohio, is detailed in “Table 8 – Estimated Annual O&M Spending by Industry Sector” on the next page.

Economic Assessment of Proposed Combined Cycle Electric Generation Facility

Table 8 - Estimated Annual O&M Spending by Industry Sector

Industry Sector	Industry Sector Description	Total Expense (2013\$M)	Total Northeast Ohio Region Procurement (2013\$M)	Total Northeast Ohio Region Procurement (%)	Total Ohio Procurement (2013\$M)	Total Ohio Procurement (%)
Labor						
5001	Employee compensation	\$3.84	\$3.84	100%	\$3.84	100%
Supplies						
170	Iron and steel mills and ferroalloy manufacturing	\$0.24	\$0.12	50%	\$0.18	75%
319	Wholesale trade businesses	\$6.10	\$5.50	90%	\$5.80	95%
320	Retail stores – Motor vehicle and parts	\$0.09	\$0.01	11%	\$0.02	22%
321	Retail stores – Furniture and home furnishings	\$0.03	\$0.03	100%	\$0.03	100%
330	Retail stores – Misc.	\$0.04	\$0.04	100%	\$0.04	100%
331	Retail nonstores – Direct and electronic sales	\$0.02	\$0.02	100%	\$0.02	100%
351	Telecommunications	\$0.04	\$0.03	75%	\$0.04	100%
357	Insurance carriers	\$0.03	\$0.01	33%	\$0.02	67%
365	Commercial and industrial machinery and equipment rental and leasing	\$0.04	\$0.03	75%	\$0.04	100%
381	Management of companies and enterprises	\$0.59	\$0.54	92%	\$0.58	98%
382	Employment services	\$0.02	\$0.02	100%	\$0.02	100%
386	Business support services	\$0.26	\$0.26	100%	\$0.26	100%
388	Services to buildings and dwellings	\$0.15	\$0.13	87%	\$0.15	100%
393	Other private educational services	\$0.12	\$0.08	67%	\$0.11	92%
Supplies Subtotal		\$7.82	\$6.84	87%	\$7.35	94%
Total of Labor & Supplies		\$11.66	\$10.68	92%	\$11.19	96%
Source: Carroll County Energy, LLC; calculations by EDR Group						
Note: O&M total may not sum exactly due to rounding.						

3.3.2 Economic Impacts of Operations & Maintenance

The total economic impact of the construction of the operations and maintenance of the Facility is a sum of the direct, indirect, and induced effects of O&M spending. The direct impact is defined as the amount of total O&M expenditure to be made at the site, and represents the first round of spending by CCE. Indirect and induced effects are then calculated on the basis of the amount of additional business sales (from supplier purchases and worker spending) that would be generated within the Northeast Ohio Region or State of Ohio for sectors listed in “Table 8 – Annual O&M Supply Spending by Industry Sector”.

Economic Assessment of Proposed Combined Cycle Electric Generation Facility

The annual total economic impact of the operations and maintenance of the Facility in the Northeast Ohio Region is estimated to be \$16.6 million, \$9.2 million of which will be a contribution to GRP. Operations and maintenance is estimated to support 70 jobs and generate \$5.5 million in annual labor income in the Northeast Ohio Region during the expected 30-year operational life of the Facility.

The annual total economic impact of the operations and maintenance of the Facility in the State of Ohio is estimated to be \$17.0 million, \$9.4 million of which will be a contribution to GSP. Operations and maintenance is estimated to support 72 jobs and generate \$5.6 million in annual labor income in the State of Ohio during the expected 30-year operational life of the Facility.

Annual economic impacts of operations and maintenance (applicable for a 30-year operational life) are detailed in “Table 9 – Annual Economic Impacts of O&M Spending”.

Table 9 - Annual Economic Impacts of O&M Spending

Impact Measure	Direct	Indirect	Induced	Total Impact
Impacts in Northeast Ohio Region				
Output (\$2013M)	\$11.7	\$0.7	\$4.3	\$16.6
Gross Regional Product (\$2013M)	\$6.2	\$0.4	\$2.6	\$9.2
Labor Income (\$2013M)	\$3.8	\$0.3	\$1.4	\$5.5
Employment (jobs)	29	5	35	70
Impacts in Ohio				
Output (\$2013M)	\$11.7	\$0.9	\$4.5	\$17.0
Gross Regional Product (\$2013M)	\$6.2	\$0.5	\$2.7	\$9.4
Labor Income (\$2013M)	\$3.8	\$0.3	\$1.5	\$5.6
Employment (jobs)	29	6	37	72
Source: Carroll County Energy, LLC and IMPLAN model; calculations by EDR Group				

Conclusion

Construction of the proposed Carroll County Energy Facility represents an investment of \$655.2 million in direct spending on supplies and labor. This investment is estimated to result in significant economic and tax revenue impacts in the Northeast Ohio Region and the State of Ohio. The total economic impact of the construction of the Facility in the Northeast Ohio Region is estimated to be \$845.1 million, \$255.6 million of which is a contribution to GRP. Construction is also expected to support 2,580 job-years and \$153.0 million in labor income in the Northeast Ohio Region over the 28-month construction period. Total impact of the construction of the Facility in the State of Ohio is estimated to be \$943.8 million, \$308.3 million of which is a contribution to GSP. Construction is also expected to support 3,273 job-years and \$184.7 million in labor income in the State of Ohio over the 28-month construction period.

The total economic impact of the operations and maintenance of the Facility in the Northeast Ohio Region is estimated to be \$16.6 million annually, \$9.2 million of which represents a contribution to annual GRP. Operations and maintenance is also expected to support 70 jobs and generate \$5.5 million in annual labor income in the Northeast Ohio Region during the expected 30-year operational life of the Facility. Total economic impact of the operations and maintenance of the Facility in the State of Ohio is estimated to be \$17.0 million annually, \$9.4 million of which is an annual contribution to GSP. Operations and maintenance is also expected to support 72 jobs and generate \$5.6 million in annual labor income in the State of Ohio during the expected 30-year operational life of the Facility.

In considering these estimated economic impacts, it is important to note that this analysis considered only the impacts associated with project spending, and not the quantitative impacts associated with infrastructure upgrades stemming from construction of the proposed Facility. The construction of the Facility has the potential to provide significant revenue to local municipalities to provide water and sewer services which could also foster additional economic growth in the region.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

11/15/2013 1:30:09 PM

in

Case No(s). 13-1752-EL-BGN

Summary: Application Appendix M: Economic Assessment electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC