

Appendix E: Economic and Fiscal Impact Report



The Economic and Fiscal Impacts of the Construction and Operation of the “Oregon Clean Energy Center”

City of Oregon
Lucas County, Ohio

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Prepared By: Calypso Communications

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I. Executive Summary

The Oregon Clean Energy Center (OCEC) will contribute more than \$800 million to the economy of Ohio, Lucas County and the City of Oregon from the OCEC's construction and the first 20 years of operations.

This positive stimulus will occur without the need for any capital expenditures by a governmental entity. Also, no Federal action including: grants, gifts, loans, subsidies or loan guarantees will be required.

This report uses standard methods and models employed in economic analysis to document the economic impacts in Lucas County, as well as the state of Ohio, resulting from the construction and operation of the Oregon Clean Energy Center (OCEC) in Lucas County, Ohio.

The report profiles the characteristics of the regional economy and its performance since the last recession, and it analyzes the regional availability of industry and labor inputs required to construct the OCEC. Econometric modeling is used to measure the impact on regional employment, income, and tax revenue that will result from the construction and annual operations of the OCEC.

The report presents a baseline forecast of employment growth for Lucas County and the Toledo Metropolitan Statistical Area and documents the magnitude of change in the region's employment growth outlook that will occur as a result of construction and operation of the OCEC.

Finally, the report discusses the OCEC in the context of developments in the regional electricity market and in the context of efforts to confront the longer-term challenges facing the regional economy.

Results of this analysis indicate the OCEC will have a large positive impact on the region, generating over \$411 million in economic activity in the state of Ohio during the construction phase of the Project, with more than \$361 million of it in Lucas County. Once operational, the OCEC will result in more than \$15 million annually in new business activity in a wide variety of industries in Lucas County.

¹ As of this analysis, the timing of construction expenditures over the expected two-and-one-half-year construction period was not available. Construction impacts were thus allocated by averaging impacts over the construction period.

Specific Findings of Project Impacts:

- Of the approximately \$750 million project construction and development costs (\$860 million total project cost), \$225 million of direct expenditures to construct the OCEC will be made in Lucas County.
- Construction of the Center will directly support a total of 986 jobs in Lucas County, on average¹, in each year of the two-and one-half-year construction phases, including an estimated 532 in the construction industry.
- The indirect and induced job (multiplier) impacts of the construction activity will create or support a total of 454 jobs in Lucas County each year of the construction phase. In total, the OCEC will create or support a total of 1,356 jobs throughout the state of Ohio during each year of the construction phase.
- Construction of the Oregon Clean Energy Center will increase the forecasted rate of job growth in Lucas County by an average of nearly 0.5 percent each year of the construction phase and contribute more than 20 percent of the Toledo MSA's forecasted job growth. The impact on just Lucas County's job growth rate (not including Fulton, Ottawa, and Wood Counties that are a part of the Toledo metropolitan statistical area) is larger as a percentage of the county's job growth.
- An estimated \$134.9 million in labor income (or \$53.9 million each year-plus of the construction phase) will be earned in Lucas County as a result of construction of the OCEC and its secondary and tertiary multiplier impacts. Across Ohio, another \$29.3 million (\$11.7 million each year-plus) in labor income will be earned.
- Construction of the OCEC and the economic activity it generates will produce \$15.4 million in additional state and local tax revenues during the construction phase.
- Once operational, the OCEC will employ approximately 25 full-time workers and have impacts that result in an additional 27 jobs in the Lucas County region. Average annual wages at the OCEC will be significantly higher than the current regional average.
- The operation of the OCEC will generate economic activity throughout Ohio that will increase state and local revenues by \$1.5 million annually and payments by the OCEC for water and sewer services may reach \$1 million annually.
- Annual labor income will increase by \$3.9 million in Oregon and by an additional \$1.6 million in other parts of Ohio as a result of annual OCEC operations.

¹ As of this analysis, the timing of construction expenditures over the expected two-and-one-half-year construction period was not available. Construction impacts were thus allocated by averaging impacts over the construction period.

- The OCEC will help provide low-cost electricity needed by an energy intensive regional economy facing the loss of coal-fired generating capacity. In doing so with clean, state-of-the-art generation technologies, the OCEC can help develop the image of a region looking to gain a reputation as a location for advanced electricity-generation technologies.²

In addition, by generating cleaner electricity, the OCEC will contribute to efforts to increase the environmental and amenity appeal of a region that is looking to strengthen its appeal to younger individuals and families with higher-levels of educational attainment. By providing a clean, reliable, less expensive source of electric power, the OCEC helps improve the quality of life in the region while it contributes to efforts to enhance perceptions of the region.

Table 1

<u>Annual Impacts of the Construction Phase of the Oregon Clean Energy Center (\$ Millions)</u>		
		<u>Totals</u>
Output	Lucas County	\$144.3
	Other Ohio Counties	\$20.4
Jobs	Lucas County	986
	Other Ohio Counties	370
Labor	Other Ohio Counties	\$53.9
Income		\$11.3

Table 2

<u>Annual Impacts of the Operation of the Oregon Clean Energy Center (\$ Millions)</u>		
		<u>Totals</u>
Output	Lucas County	\$14.5
	Other Ohio Counties	\$5.5
Jobs	Lucas County	52
	Other Ohio Counties	51
Income	Lucas County	\$3.9
	Other Ohio Counties	\$1.6

² The University of Toledo has invested heavily in faculty and research infrastructure in the area of alternative energy and recently created a School of Solar and Advanced Renewable Energy, as well as the Clean and Alternative Energy Incubator to help nurture businesses that want to access and partner with the resources and talents in advanced energy technologies located in the region.

II. Introduction

Oregon Clean Energy, LLC, (OCE) is planning to construct and operate the Oregon Clean Energy Center (OCEC) in Lucas County, Ohio. The facility will be a state-of-the-art facility that makes use of the region's ample access to clean-burning natural gas to generate environmentally friendly electric power.

The OCEC will have a maximum capacity to generate 800 megawatts (MW) of electricity. The OCEC will occupy approximately 30 acres just south of the BP-Husky refinery in the City of Oregon. The Project will supply power that will increasingly be needed as the region faces the closure of several coal-fired power plants; concurrently, it provides an economic and fiscal stimulus to the City of Oregon, Lucas County, and the state of Ohio.

The purpose of this report is to provide an independent analysis of data that will inform elected and appointed officials and members of the public who are interested in the economic and fiscal impacts of the Project. All analyses in this study employ standard economic methods and models widely used by economists and extensively reviewed in academic journals. All data used in the construction of models and in calculating impacts (with the exception of facility construction and operating cost data) is publicly available from federal and state government agencies.

Detailed economic models using unique data for Lucas County and the state of Ohio were constructed to estimate economic impacts on the region. In addition to impacts in the City of Oregon, Lucas County, and state of Ohio, some Project expenditures will be made outside of the County and will have impacts on neighboring counties in Ohio as well as on other parts of the country that may supply equipment and materials² needed for the construction and operation of the facility.

Results indicate the construction and operation of the OCEC will provide substantial economic benefits to Lucas County and produce significant economic activity outside of the county, as well as generate millions of dollars of revenue for state and local government.

Although commissioned by Oregon Clean Energy, LLC, this report was prepared independently of the company. The company supplied data on construction and operating expenditures as well as employment and labor required to operate the facility on an annual basis. Economic methods and models used in this report were chosen independent of the company. Oregon Clean Energy, LLC, was provided an opportunity to suggest corrections to the description of the Project and its operations and to correct material errors in the description or details of Project expenditures; however, the company had no role in calculating economic impacts outlined in the report and was not given an opportunity to edit any of the results or presentation of impact analyses.

The report is an independent, quantitative assessment of the economic and fiscal impacts resulting from the construction and operation of the proposed OCEC. The report can help inform elected and appointed officials and members of the public interested in the economic impacts of the Project.

³ For example, equipment such as gas turbines and other unique machinery used in the electric generating process will be manufactured outside of the region and Ohio.

III. The Economy of Lucas County and the Region

The Lucas County regional economy is characterized by:

- Declining population characterized by a slowdown in natural population growth (births minus deaths) but, more significantly, the net out-migration of individuals from the county (more residents from the county moving out of the region than are moving into Lucas County).
- Slow job growth in relation to metropolitan areas throughout the country.
- Higher volatility associated with manufacturing, export-sensitive industries, and an above-average concentration of employment in the automobile industry.
- Lower costs of living and costs of doing business relative to the national averages.
- Above-average concentrations in health and educational services that provide a base and some stability to employment trends, but which face increasing headwinds from fiscal austerity and efforts to restrain the costs of health care and higher education.
- A solid manufacturing infrastructure and a strategic location that facilitates exports and access to inputs needed by industries in the region.
- Lower levels of educational attainment in its workforce that challenge the ability of the region to capture growth in higher-level service industries, as well as some advanced manufacturing industries.
- In the City of Oregon (like many communities outside of larger cities such as Toledo), a high percentage of local government property tax revenue is dependent on residential property valuation.

Lucas County, along with Fulton, Ottawa, and Wood Counties, also forms the Toledo metropolitan statistical area (MSA).⁴ By national standards, the Toledo MSA has experienced well below-average economic performance over the past decade, although the region briefly showed significant strength as the nation emerged from recession and as the U.S. automobile industry was rejuvenated.

Weakness in the manufacturing sector of the U.S. economy, a sharp slowdown in exports prompted by declines in the European and many other world economies, and continued declines in government employment have combined to significantly slow the Toledo MSA's recovery over the past several months.

⁴ Metropolitan statistical areas are regions formed by one or more counties, having at least one central city with a population of at least 50,000. They are defined by commuting patterns (inter-community linkages) in a region.

Table 3 summarizes the relative performance of the Toledo MSA on some key measures of economic performance. The table ranks the Toledo MSA among all U.S. metropolitan areas on some key economic metrics.

Table 3

Relative Economic Performance of Toledo MSA (Rank Among All U.S. Metro Areas – Either 363 or 393 Depending on the Metric)	
	<u>Toledo MSA</u>
Total Pop. Growth (2006-2011)	-2.0% (343)
Forecast of Avg. Annual Pop. Growth 2011 to 2016*	0.1% (360)
Avg. Annual Job Growth (2011-2013)	0.2% (268)
Avg. Annual Job Growth (2011-2016)*	1.5% (245)
10 Yr. Employment Growth (2001-11)	-11.3% (335)
Avg. Annual Change in Gross Metro Product (2000-10)	1.7% (342)
Avg. Annual Change in Gross Metro Product (2007-09)	-4.5% (318)
Change in Unemployment Rate (2010-13)	-1.9% (164)
Index of Costs of Living (100%=U.S. Avg.)	86%
Index of Business Costs (100=U.S. Avg.)	86%
*Forecast by Moody's Analytics	

Looking ahead, Lucas County and the larger Toledo MSA face both short- and long-term challenges that must be overcome for the region to improve its relative economic performance. Over the next several years the Toledo MSA is expected to have an improving economy, but one which will continue to experience growth below that of a majority of metropolitan areas across the country, according to our forecast of regional job growth and several sources reviewed for this report.

Our near-term outlook is optimistic and reflects a renewed automobile industry and eventual improvements in world economies that will help boost the region's important export industries. As documented in subsequent sections of this report, construction of the OCEC can significantly improve the region's outlook over the next several years and beyond.

Ultimately the Toledo MSA, and many other regions around in the Great Lakes, will become the centers of the greatest economic and population growth in the country. The nation is resolving its energy supply issues but a larger and even greater challenge will be solving the water supply issues in a country where large and growing segments of the population do not have ready access to the only invaluable resource of all, water. It won't happen soon but when it does the region will again become a booming region.

But until that time, the region will still see improving economic conditions (although still more cyclically sensitive) and it can improve those prospects even more by enhancing the natural, environmental, cultural and civic, educational and technology assets in the region.

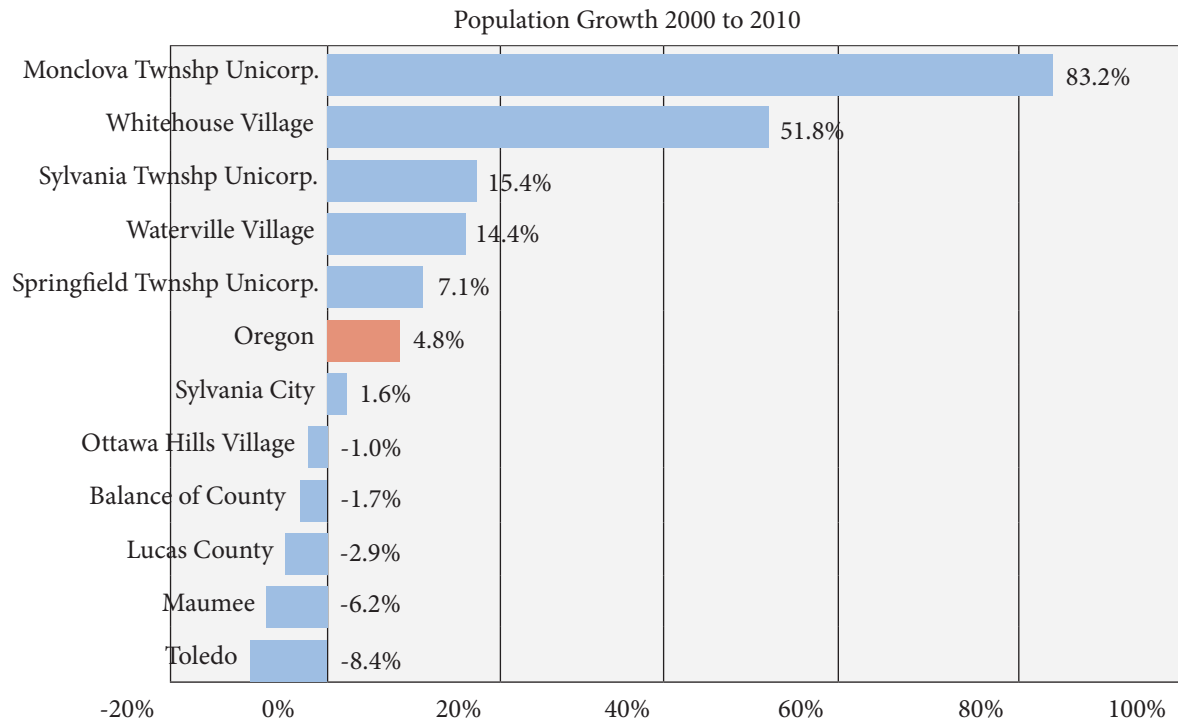
Weak Population and Housing Growth is Driven by Domestic Out-Migration to the County

Weak population and job growth are the most significant trends in Lucas County and the Toledo MSA during the past decade. Toledo's population declined by a whopping 8.4 percent and Maumee's by 6.2 percent between 2000 and 2010.

The population of some cities and townships in the county increased, however: Oregon grew by 4.8 percent between 2000 and 2010, faster than any city in Lucas County (Figure 1). Overall, however, Lucas County's population declined by 2.9 percent during the decade. As weak as this growth rate was, seventeen counties in Ohio had a greater percentage decline in population during the decade.

Figure 1

Some Smaller Cities, Villages and Rural Parts of the Country Bucked the County's Overall Trend of Declining Population



Population decline and demographic composition present the region's greatest challenges moving forward. Population growth is both a result of, and a driver for, significant and sustained economic growth. Expanding employment opportunities is vital to attracting and retaining key demographic groups (younger workers, college graduates, etc.) that increase the vitality and dynamism of the region over the longer term.

Lucas County and the Toledo MSA have a solid base of higher-skill manufacturing industries and a quality manufacturing infrastructure to support future growth. In addition, the region is strategically located to facilitate exports. In the short term, the importance of the region's manufacturing (especially concentrated in a few industries) and export industries make the region more vulnerable to larger swings resulting from changes in the business cycle. Recent weaknesses and lower levels of capital investment in manufacturing across the U.S. in the second-half of 2012, along with weakening world economies, have stalled the region's recovery from recession.

Longer term, productivity increases will limit growth in manufacturing employment in the region, unless the region can grow by diversifying its manufacturing base. Most regions experiencing stronger employment and economic growth are increasingly relying on, and transitioning to, higher-level service industries for economic growth.

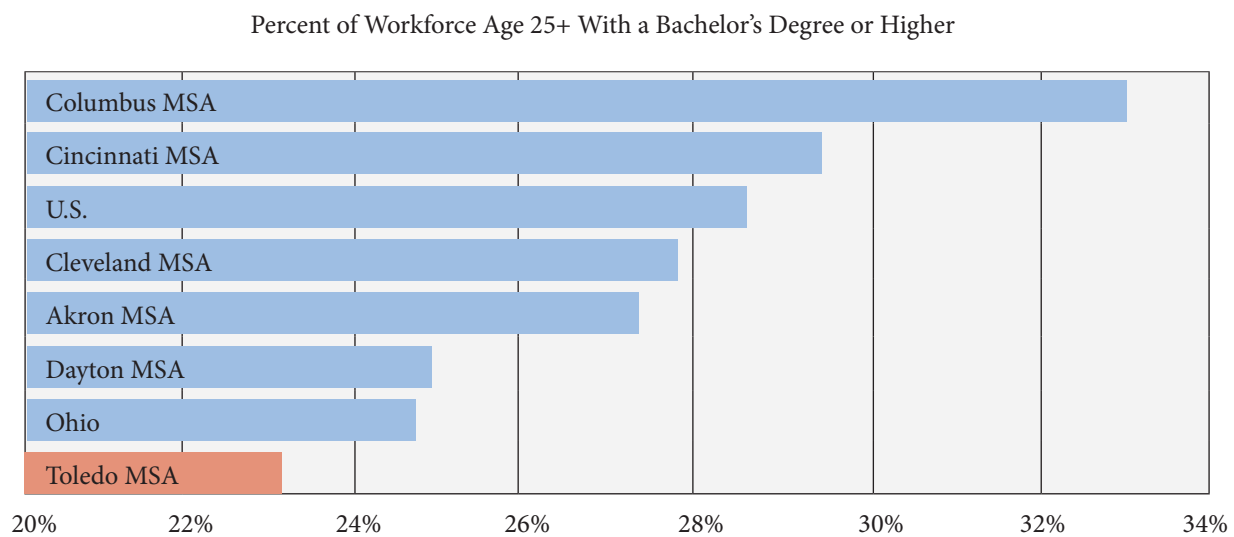
The Toledo MSA's high-level services industries are more heavily concentrated in health care industries, with lower levels of employment in business, professional, technical, and scientific services that are especially attractive to skilled, well-educated younger workers. Moreover, health care industries face increasing vulnerability because of efforts to restrain Medicare and Medicaid expenses as well as the cost control efforts associated with health care reform. Slow population growth restrains employment growth in service industries.

In addition, the demographics of the region show a lower level of workers age 25+ with a college degree (Figure 2), reducing the attractiveness of the region to high-level service industries. Well-educated and skilled individuals tend to be mobile; where they choose to locate is a good predictor of solid economic growth in the future.

In general, industries in this country that are the fastest growing tend to employ higher percentages of individuals with a post-secondary education. The challenge for Lucas County and the Toledo MSA is to increase their attractiveness to skilled, well-educated individuals in order to grow and attract the industries that demand access to a workforce with those qualities.

Figure 2

The Educational Attainment of the Toledo MSA's Workforce Lags Other Ohio Metropolitan Areas



Out-Migration Continues to Threaten the Region

Population growth can occur in three ways: as a result of natural increase (more people born in than die in a region), net international migration (more people moving into a region from another country than move out of the region to another country), and net domestic migration (more people moving into a region from another location in the U.S. than leaving for another U.S. location).

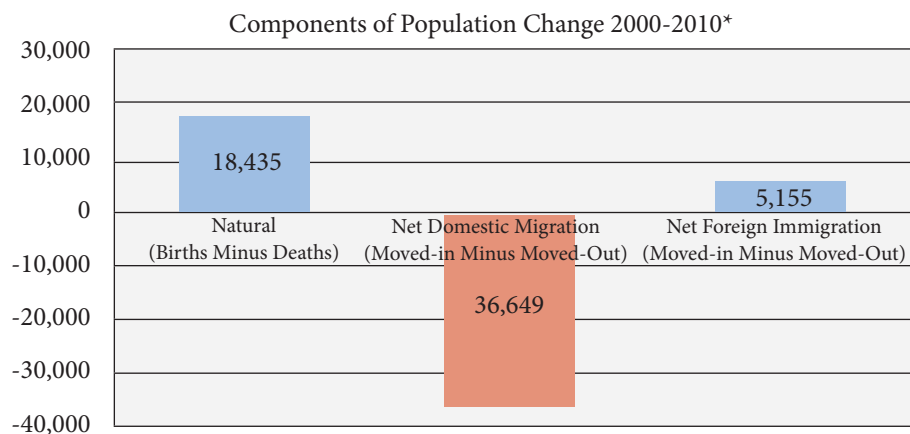
Ohio has been characterized this decade by slow population growth and a dramatic loss of residents through net domestic migration. Between 2000 and 2010, almost 400,000 more residents left Ohio than moved into Ohio from another state.

A large number of international migrants (more than 120,000) and an increase of 400,000 via natural population growth (births minus deaths) kept the state from a net loss of population. Lucas County had among the largest absolute and percentage decreases in population as a result of net domestic migration of any county in Ohio from 2000 to 2010.

Figure 3 shows the components of population change in Lucas County.

Figure 3

Out-Migration From Lucas County is the Largest Component of Population Change in the County During the Past Decade



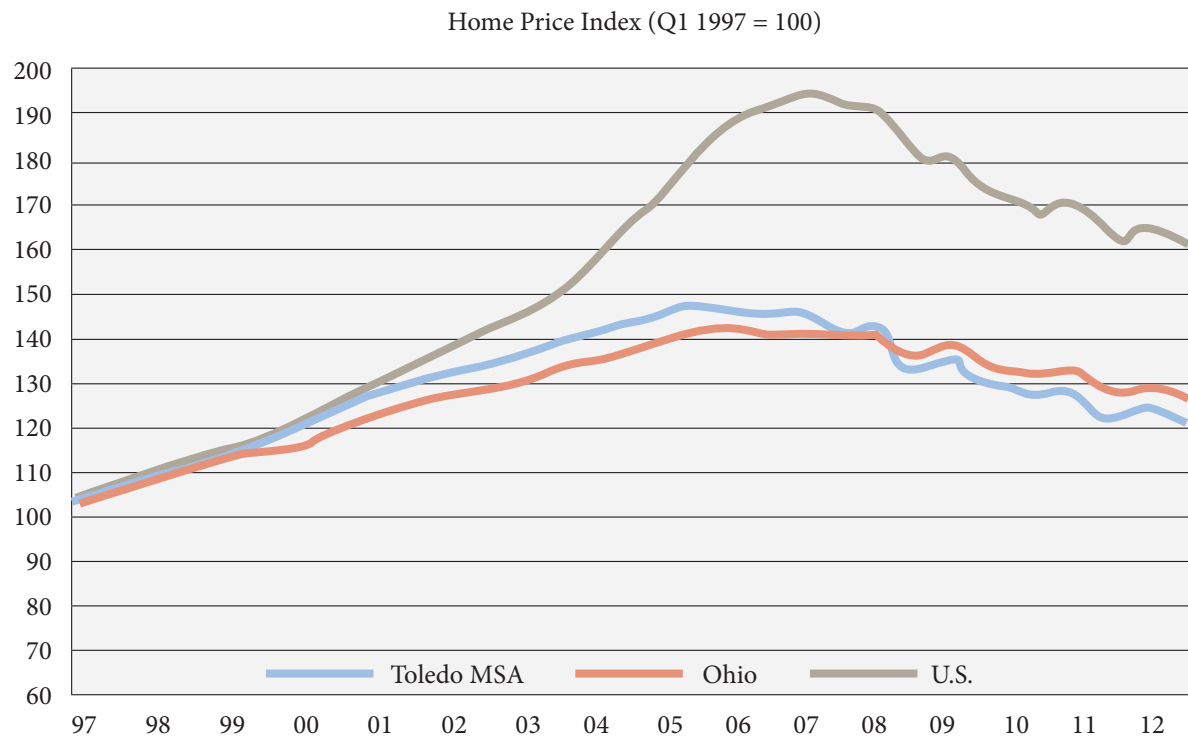
*Total population change includes a residual. This residual represents the change in population that cannot be attributed to any specific demographic component.

The chart shows that an estimated 36,649 more residents moved out of Lucas County than moved into the county during the past decade. Only Cuyahoga, Hamilton, and Montgomery Counties saw more net out-migration during the decade. Lucas County and the Toledo metro area's growth and success will depend on their ability to stem that trend that has plagued much of Ohio and the industrial Midwest.

The Housing Market

Figure 4

Slow Population and Employment Growth Have Kept Home Price Appreciation Low



Slow population growth and out-migration decrease the number of households in a region and the need for housing units. Slow rates of population and job growth in Lucas County and the Toledo MSA have resulted in slow home price appreciation in the county and the Toledo MSA. The Federal Housing Finance Agency (FHFA) calculates price indices for all MSAs in the nation.

Figure 4 shows how slow population and job growth in Ohio and the Toledo MSA have hurt home price appreciation relative to national averages, even prior to the housing market bust and recent recession. Slow home price appreciation, or depreciation, affects homeowners' financial well-being and reduces their ability and willingness to spend, further reducing economic activity in the region. The positive side is that lower home prices in the region contribute to a lower overall cost of living in the region than in the U.S. as a whole.

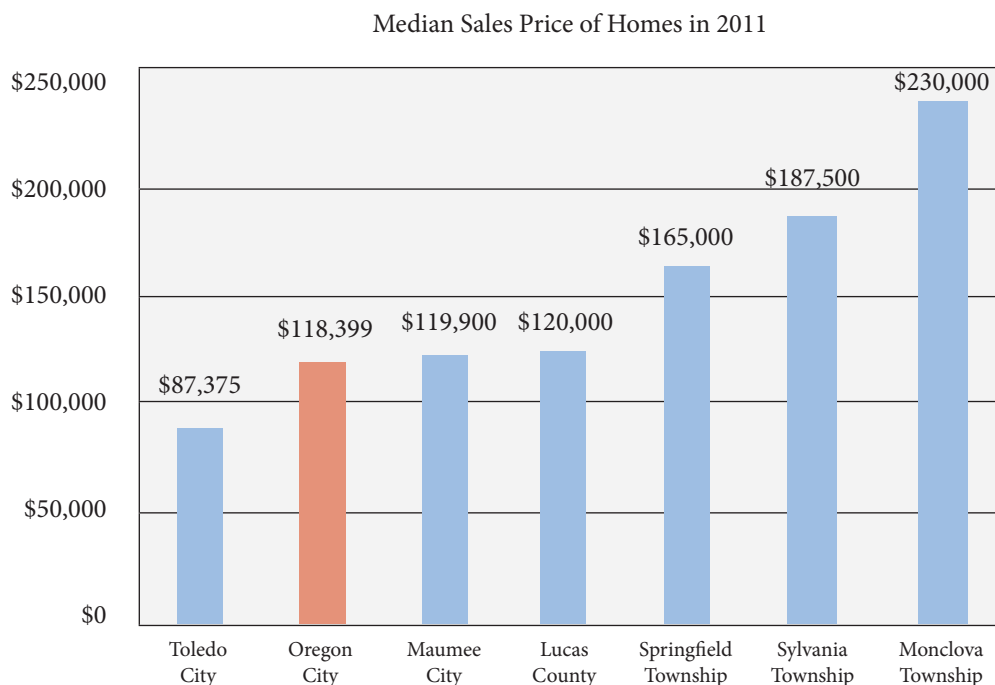
As noted in Table 3, the cost of living in the Toledo MSA is estimated to be just 86 percent of the U.S. average, which is largely a result of lower housing costs. Housing prices in Lucas County and the entire Toledo MSA vary greatly by community, however.

Currently, the City of Oregon has among the lower housing costs in region and in the county. In 2011, the median sales price of homes in Oregon was about one-half the median price in Monclova Township, but just under the median price for Lucas County as a whole (Figure 5). The retirement of a coal-fired electricity generation facility in the City of Oregon with the cleaner OCEC, along with its location in a commercial and industrial zone and away from residential areas will reduce any negative effects on home values associated with the less environmentally friendly coal-fired facility.

Until the region increases employment opportunities for skilled, well-educated individuals, or otherwise becomes more attractive to potential movers from other regions (because of increased job opportunities in the region or nearby regions, and/or through increases in the amenity appeal of the region), home price appreciation will continue to lag appreciation rates for the state of Ohio and the nation.

Figure 5

Home Prices in Oregon are Below Most of the County Outside of Toledo



The Regional Economy and the Recession

Lucas County and the Toledo MSA are much more reliant on health care than are either the Ohio or U.S. economies. The two largest employers in the region are ProMedica Health Systems and Mercy Health Partners, and the health care industry accounts for 22 percent of all private sector employment in the Toledo MSA. While health care and educational services provided some stability in a very difficult job market, they are unlikely to grow as much as they have in past decades as cost containment and public sector fiscal restraint increasingly affect both industries.

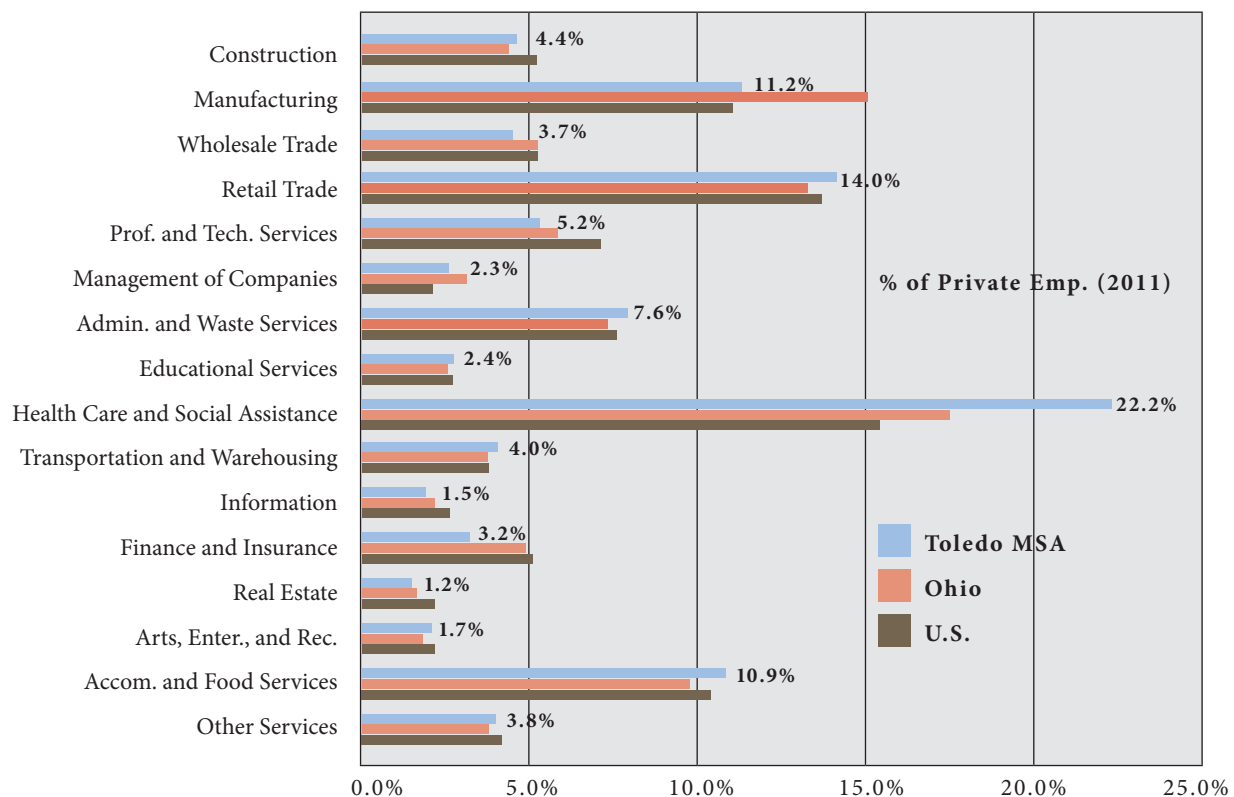
Manufacturing accounts for just over 11 percent of private employment but contributes an outsized portion to the region's gross metropolitan product. The automobile industry accounts for the largest share of manufacturing employment, and total employment growth in the Toledo MSA is very responsive to growth or decline in the automobile industry nationally.

Weakness in the auto industry deepened the region's decline during the recession, and recovery in the auto industry provided a significant lift to the region when the U.S. auto industry began its comeback. The region has a low concentration of employment in professional, business, and technical services; information industries; and finance and insurance industries: all higher-level services that employ a high percentage of individuals with higher levels of educational attainment (Figure 6).

Higher-growth regions generally have higher concentrations of one or more of these industries. Notable exceptions include regions where increases in natural resource extraction (oil and gas) have created rapid job growth.

Figure 6

Lucas County Employment is Much More Dependent on Health Care Industries and Cost Containment and Fiscal Austerity Efforts Could Affect Regional Employment

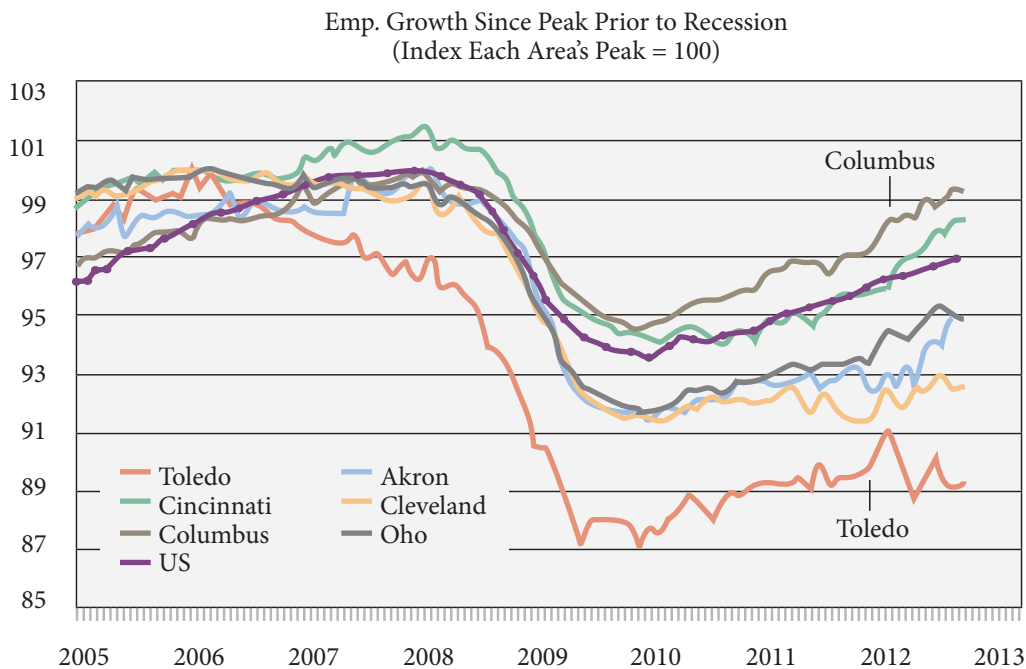


The Toledo MSA's recovery has taken a step back over the past few months and is now trailing those of Ohio and the U.S. Manufacturing remains stuck in low gear as employment is declining and production tapers off. Outside of consumer industries and health care, private services have been uniformly weak. State and local governments remain the largest weight on growth as fiscal restraint takes its toll. The unemployment rate inched up to 8 percent in September, but this understates the amount of labor market slack. The labor force hit a multi-decade low in September.

Figure 7 shows job growth in the Toledo and other Ohio MSAs since each region's employment peak prior to the last recession. The chart shows that the Toledo MSA had a sharper decline in employment during the recession than did most other Ohio MSAs and that job growth in the region has stalled after showing some strength as the national recession ended. The chart also shows the weakening of job growth in the region as 2012 has progressed.

Figure 7

Compared to Most Regions in Ohio, Toledo Suffered More During the Recession and Its Once Solid Recovery has Slowed in 2012



On the positive side, though manufacturing has deteriorated over the past few months, recent auto-related capital investments will help stabilize employment over the next couple of quarters. For example, Chrysler will invest \$500 million in its Toledo Assembly Complex to expand and upgrade capital equipment. The plant will add a second shift of 1,100 workers to its production line in the third quarter of 2013. Local Chrysler parts suppliers, including Toledo Molding and Die, are also boosting production and hiring.

Conditions are not as favorable elsewhere for manufacturing. Export-led growth is slowing and will be a weight on manufacturing through much of 2013. Ohio exports are little changed over the past year as the European and Chinese economies have slowed considerably.

There is also evidence that even primary trade partner Canada is weakening. The public sector will remain a drag on growth into 2013 as state and local governments correct fiscal imbalances. Government employment in the Toledo MSA declined by 3.8 percent over the past year, the largest loss of any major Ohio metro area.

Economic Trends Will Produce Fiscal Stress For Local Governments

Because taxes on real property are the primary source of revenue of local government in the U.S., low levels of new residential and commercial construction activity and declines in home values affect the fiscal health of local government across the country. The fiscal health of most state governments was badly strained by the recent recession and increases in state aid are unlikely to provide relief to strapped local governments. The temporary assistance provided to local government by a variety of initiatives included in the American Recovery and Reinvestment Act (the so-called “stimulus”) has also run its course.

In general, commercial and industrial property values are subject to less fluctuation than residential property, and communities with a higher percentage of commercial property have generally fared better in maintaining their property tax base since the recession. Utility property is unique and difficult to characterize. Although generally stable in value, across the nation some utilities have challenged assessments in recent years in response to what they see as a tendency of government to overvalue utility property in order to shift property tax burdens away from residential property. Nevertheless, the presence of utility property absorbs much of the property tax burden in areas where it is located.

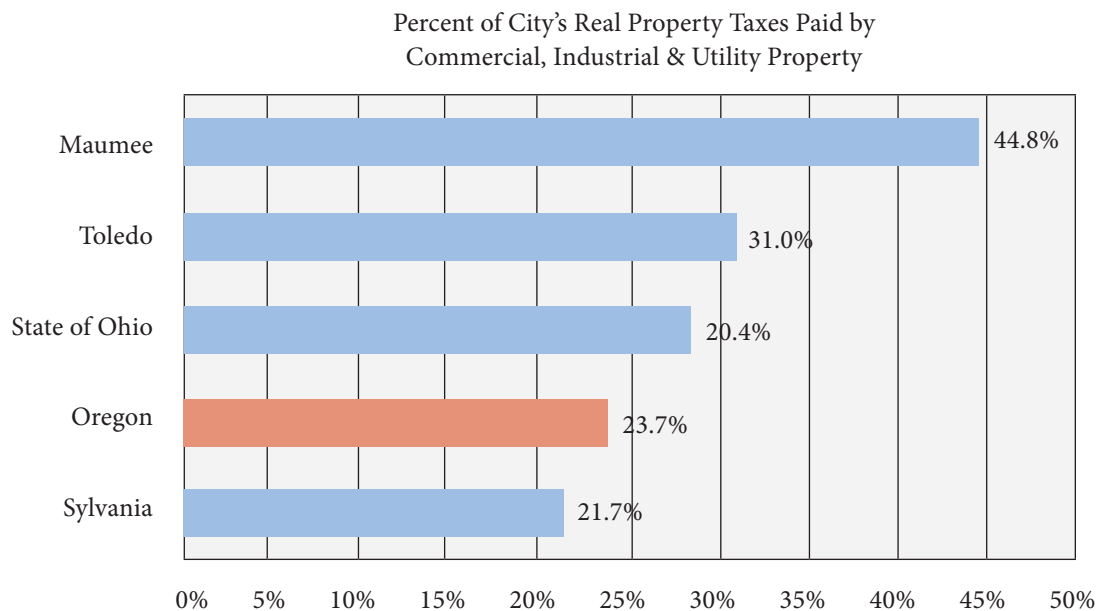
Local governments in Lucas County and the Toledo region will not be able to rely much on increased residential property values or increased residential development for increased revenues. It follows that towns that are more reliant on residential property to fund local government and schools will experience relatively more fiscal stress. Based on above average reductions in government employment, this appears to be the case in Lucas County.

Figure 8 highlights how the City of Oregon compares with other cities and towns in Lucas County on the percentage of its property taxes paid by non-residential (commercial, industrial, and utility) property.

According to the Ohio Department of Taxation, less than 24 percent of the property taxes in the City of Oregon are paid by commercial, industrial, or utility property owners—lower than the average for all of Ohio and lower than other cities in Lucas County (Figure 8).

Figure 8

Commercial, Industrial & Utility Property are a Smaller Share of Oregon's Tax Base.
The Oregon Clean Energy Center Would Significantly Change That



This report does not attempt to estimate what the assessed value of the OCEC would be, but it does estimate the total increase in state and local property taxes associated with all of the economic activity related to both construction and operation of the facility. The property tax and other revenue impacts of the Project will be positive contributions to the region.

IV. The Regional Supply of Industry and Labor Inputs

The size of the local and regional job impacts from the Oregon Clean Energy Center is dependent on the level of participation by the region's businesses and workers among the contractors and suppliers to the Project. In general, the construction industry serves local and regional markets and, when possible, materials used on construction are sourced locally to minimize transportation costs. In large part, the regional job impacts of the OCEC will be a function of the supply and availability of local contractors and workers with capabilities required to complete the Project. To determine the potential for the proposed Project to use regional and in-state businesses, we:

- Examined data on the number of businesses and current employment levels in the region for key industries that can serve or provide inputs to the electric power construction industry.
- Reviewed labor market data for the Toledo MSA on the current availability of workers in occupations in industries used in the construction of electric power facilities, transmission lines, and supporting infrastructure.

Industry Availability

Lucas County's construction industry shrank by almost 30 percent during the recent recession. While residential construction was hardest hit, the recession also resulted in lower levels of commercial, industrial, and other non-residential construction activity.

This report does not attempt to document all of the business and industries that will work on the construction of the OCEC. However, we can reasonably estimate the volume of Project construction expenditures that will go to Lucas County or Toledo MSA regional businesses based in part on the information gained via the construction of the nearby Fremont Energy Center that was developed by the principals of Oregon Clean Energy, LLC.

What is clear, however, is that unlike more rural, less populated regions, Lucas County has a large and diversified construction industry, suggesting that the region is well positioned to capture a significant portion of the OCEC's construction expenditures. In addition, Lucas County and the Toledo MSA are in a region that has a number of businesses and industries that support the electric-power generating, natural gas pipeline, refinery, and other energy-related industries. The capabilities, skills, and workforces in these industries are many of the same that would be utilized in the construction, operation, and maintenance of the OCEC.

Table 4 presents a partial listing of some the types of construction and manufacturing firms that are most likely to work on power plant construction projects, along with the number of firms in those industries that are located in the Toledo MSA.

The table is not an exhaustive listing of industries that will work on the Project, but it does provide some indication of the availability of key industries in the region. As the table shows, Lucas County and the larger Toledo MSA region have a large supply of firms in key industries, and the regional economy is well positioned to capture much of the Project-related construction expenditures.

Table 4

Number of Construction and Manufacturing Firms Located in Lucas County that are Employed in Power Plant Construction (Partial Industry List Only)		
NAICS*	Industry Description	Lucas County
2362	Nonresidential building construction	42
237	Heavy and civil engineering construction	51
2371	Utility system construction	19
237130	Power and communication line and related structures construction	5
23812	Structural steel and precast concrete contractors	4
23814	Masonry contractors	34
2382	Building equipment contractors	312
23820	Painting Contractors	42
23891	Site preparation contractors	86
3273	Cement and concrete product manufacturing	9
3323	Architectural and structural metals manufacturing	15
424720	Fuel Oil Merchant Wholesalers	77
532412	Heavy Construction Equipment Rental	109
541310	Landscaping Services (with 50 or more employees)	51
561612	Security Services	279
*NAICS = North American Industrial Classification System Source: U.S. Census Bureau, <i>County Business Patterns in Ohio, 2010</i> .		

Availability of Workers

Unemployment and underemployment among occupations in construction industries remains above normal in Lucas County as it does in much of the nation. One result of the recent recession that left no area in the country unaffected (as well as the sharp decline in the housing market that accompanied the recession), is that fewer households moved from one area of the country to another in order to find work in their chosen occupations.

Such movement typically helps alleviate unemployment as workers move to areas with greater demand for their services. With construction activity down across the country and many workers facing “housing lock” (unable to move or sell homes because of declines in equity or greater difficulty in obtaining financing), there is a large supply of workers in the region in occupations that will be hired by contractors constructing the OCEC.

Because this supply includes “latent workers” who may be temporarily working in other industries outside of construction because of economic conditions, it is necessary to look beyond simple construction industry employment numbers in assessing the supply of potential workers.

Examining the most recent data on occupational employment available from the Ohio Bureau of Labor Market Information shows there is a likely to be a large supply of job seekers in Lucas County, and the larger Toledo MSA, in occupations that would be employed in the construction of the OCEC.

Table 5 presents only a sample of the occupations that would be hired by contractors to work on the OCEC, but it does highlight the large supply of workers in some occupations other than construction that are skilled and available for hire by Project contractors.

Table 5

Estimated Number of Engineering and Construction Workers in Key Occupations in the Toledo MSA	
Occupation	Toledo MSA
Brickmasons and Blockmasons	210
Cement Masons and Concrete Finishers	330
Construction Laborers	2,000
Electricians	1,120
Plumber, Pipefitters, Pipelayers and Steamfitters	590
Structural Iron and Steel Workers	170
Operating Engineers and Construction Equipment Operators	690
Architectural and Engineering Occupations	5,330
Electrical Power-Line Installers and Repairers (Statewide – Toledo MSA Data Not Available)	3,900 (Statewide)
Source: Ohio Department of Labor	

V. Economic Impacts

Final construction costs and contract details were not available at the time of this analysis. These details will be determined in February 2013 and April 2013, when Oregon Clean Energy, LLC selects the Project's power generation equipment supplier and the eventual engineering, procurement, and construction (EPC) contractor for the Oregon Clean Energy Center. However, Oregon Clean Energy, LLC has developed detailed cost estimates and breakdowns that are based on current engineering estimates for equipment and services as well as costs for similar generating projects. We have conservatively estimated that 30 percent of Project⁵ expenditures will go to firms in Lucas County.

We believe that the 30 percent of construction cost to be a conservative estimate for local content in that OCEC has provided preliminary cost estimates for local construction content that exceed the 30 percent factor. The OCEC has some unique capital costs including: (i) significant costs to electrically connect to First Energy's high voltage (325 kv) lines and (ii) a new 24 inch diameter gas lateral to connect from the Project site to the Maumee Gas Hub.

These unique costs, when added to traditional local construction costs for a power project, will in all likelihood increase the local construction content from the \$225 million included in this analysis to a high of \$350 million. A higher local construction content of \$125 million (\$350 million - \$225 million) would also have regional and State-wide benefits, thereby increasing the total Ohio economic impact by an additional approximately \$200 million.

Without more definitive information, we have opted to use a more conservative estimate of the construction expenditures that will go to regional businesses. Thus, in analyzing the Oregon Clean Energy Center's impact on Lucas County and the state of Ohio, we estimate approximately \$225 million of the \$750 million of project construction-related expenditures (\$860 million total project expenditures) will occur in the Lucas County region.

Expenditures for specialized equipment and machinery used in the generation and transmission of power (gas turbines are typically the largest single category of expenditures of these projects), as well as project financing, some engineering, design, and other project costs, will not be captured by businesses in the Lucas County region or in the state of Ohio.

In fact, some expenditures related to engineering, financing, and other project activities may well benefit the region or the state of Ohio, but again, without some level of certainty, we have excluded any impacts from these expenditures from our assessment of the projects impact in Ohio.

⁵ This percentage reflects the exclusion of the costs of manufactured power block components, turbines, boilers, and equipment to transform and transmit electricity, but includes costs for construction labor and materials and equipment available locally.

Table 6 presents the impacts from the Project on both an annual and total impact basis. In addition to the direct spending required to produce a dollar amount of a given product or service, economic impacts occur as a result of “indirect” purchases that businesses, organizations, and government make among one another in the study region with their revenue from direct spending.

For example, a direct expenditure for OCEC construction that goes to a construction firm that specializes in site preparation may result in indirect expenditures in the region to a business that rents heavy equipment. Induced spending includes the purchases made by individuals and households within the region as a result of the income they receive from the businesses and organizations in response to the direct and indirect spending in the region.

Table 6

Impact of OCEC Construction (Millions of 2012 Dollars)		
Lucas County Impacts	Annual	Total Output
Direct	\$ 82.7	\$ 206.9 ⁶
Indirect	\$ 29.0	\$ 72.5
Induced	<u>\$ 32.6</u>	<u>\$ 81.6</u>
Total	\$ 144.3	\$ 361.0
Remainder of Ohio	\$20.4	\$50.9
Total Impacts in Ohio	\$164.7	\$411.9⁷

⁶ This amount differs from the \$225 of direct project expenditures because of the need to first convert direct project expenditures that will occur each year between 2013 until 2016 to dollars in the model year (2011) and then convert them again to express resulting impacts in 2012 dollars.

⁷ We report impacts on both an annual and total impact basis. Our annual estimates assume that construction expenditures are divided equally in each of the two-plus years during construction. In reality, expenditures are unlikely to be evenly divided, but at the time this analysis was completed a schedule of construction expenditures (construction “draw”) was not available.

Our analysis indicates that the \$225 million in direct construction project expenditures, occurring over an approximately two-and-one-half-year period, will result in total output of \$411.9 million in the state of Ohio, of which \$361 million will occur within Lucas County. Another \$50.9 million will occur in other areas of Ohio beyond Lucas County. Construction phase impacts will be spread over the two-and-one-half-year construction phase of the Project.

The annual operations of the OCEC will result in an increase in reoccurring regional economic activity of \$14.5 million per year and will have another \$5.5 million per year impact throughout the rest of Ohio. The impacts that occur as a result of the operation of the OCEC will occur annually and will increase over time, producing over \$400 million in economic activity throughout Ohio over the first 20 years of operation, of which \$300 million will occur in Lucas County.

The annual impact of operations is presented in Table 7.

Table 7

Annual Impact of OCEC Operations (Millions of 2012 Dollars/Year)	
Lucas County	Total
Direct	\$11.6
Indirect	\$0.8
Induced	<u>\$2.1</u>
Total	\$14.5
Other Ohio Counties	\$5.5
Total Economic Impact	\$20.0

VI. Job Impacts

The job impacts from construction activity will be large and, with indirect and induced (multiplier) impacts, will occur across many industries. An estimated 532 construction industry and construction industry-related jobs will be supported as a result of direct project expenditures in each year of the two-and-one-half-year construction phases. The full impact across Ohio will be a total of 1,356 jobs.

This estimate of construction employment impacts is derived using standard methodologies with input-output models. The dollar value of the Project's construction expenditures occurring in the region is divided by the average productivity (the value of what each worker produces in one year) of workers employed in non-residential construction industries (commercial, industrial, and utility structures) in the region.

Data used in calculating the average productivity of construction workers is reported by the U.S. Census Bureau's "Census of Construction Industries" for Ohio. Data on industry earnings and employment at the county level is used to calculate the productivity of construction workers in the region and is reported by the U.S. Bureau of Economic Analysis (BEA) of the Department of Commerce.

With a base estimate of the number of construction industry workers needed to construct the OCEC, we adjusted original job estimates, which include both full and part-time employment, to full-time equivalent jobs.

Our model-based estimates of the employment impacts of the construction phase, adjusted to reflect full-time equivalent jobs, are presented in Table 8.

Table 8

Job Impacts of OCEC Construction (Each Year of Construction Phase)⁸	
Lucas County	Annual
Direct	532
Indirect	188
Induced	266
Total in Lucas Co.	986
Other Ohio Counties	370
Total Job Impacts	1,356

⁸ Because we present estimated job impacts on a full-time equivalent basis, our estimates of job impacts may be somewhat lower than other estimates produced by economic models, but are consistent with our efforts to avoid overstating project impacts.

The productivity, practices, and staffing patterns of individual companies differ; these employment estimates are based on industry averages in the region and are not specific to any individual company; thus, they are likely to differ from the estimates of any individual construction company. We believe, however, they represent an empirically sound and conservative estimate of the employment impacts of the construction phase of the Project.

The number of on-site construction workers will vary during the construction phase. Our estimate is that 532 full-time jobs in construction industries will be supported annually during the Project's construction phase, but some of these jobs will be in administration and support occupations of the construction industry and are not likely to be on the Project site.

A review of occupational patterns in the construction industry in Ohio indicates that at least 80 percent of workers in the industry are in occupations that would be "on-site," and perhaps more. Our best estimate of the number of workers "on-site" at the Project is between 430 and 490.

In addition to the direct construction employment impacts from Project expenditures, the indirect and induced expenditures related to the Project will support another 454 jobs annually in the region. Finally, another 370 jobs will be created outside of Lucas County region but within other areas of Ohio for a total job impact of 1,356 jobs in each year of the construction phase of the OCEC.

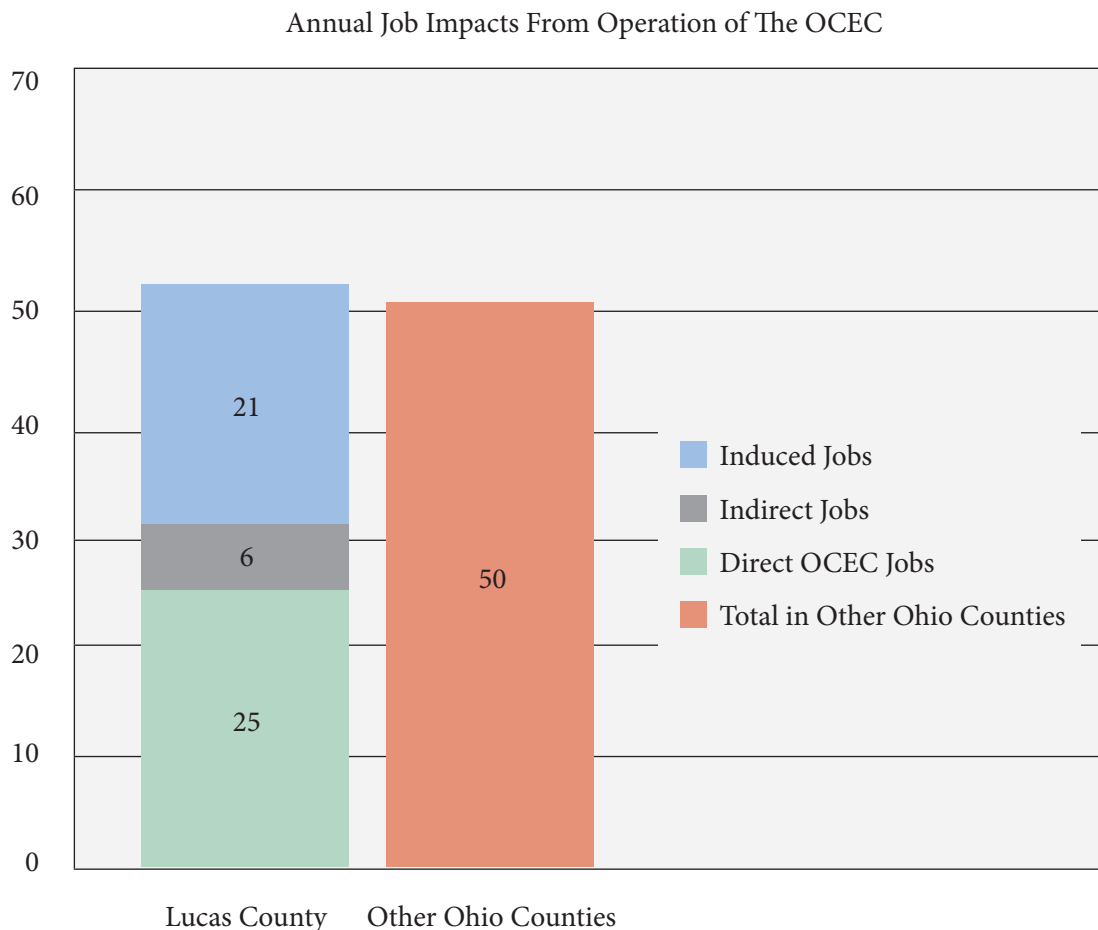
Once constructed, the facility is expected to require approximately twenty-five (25) permanent, higher-wage, full-time jobs to operate. In addition, another six (6) indirect jobs will result from spending by the OCEC on goods and services in the region. Induced jobs created in the region as a result of operation of the facility and the income earned from the direct and indirect employment impacts will add another twenty-one (21) jobs, for a total annual impact of fifty-three (52) jobs in the region.

Finally, fifty (50) jobs will be created or “leak” from the region in other areas of Ohio as a result of OCEC annual operations. Total job impacts in Ohio resulting from annual OCEC operations are estimated to be one hundred and two (102) jobs.

Figure 9 presents total annual job impacts from the OCEC’s operations. The job impacts in Lucas County resulting from the OCEC will create jobs in a number of well-paying industries and increase demand for labor, especially skilled labor, in the county.

Figure 9

The Oregon Clean Energy Center Will Increase Annual Employment by a Total of fifty-two (52) Jobs in Lucas County and another fifty (50) Jobs throughout Ohio



VII. Impacts on the Forecast of Regional Employment Growth

Employment Outlook Summary

Lucas County and the Toledo MSA face potential challenges over the long term that may impact growth. The region, like the Nation as a whole, is likely to experience a slowing of population growth. Two factors impact this trend: a slowing of the birth rate and dynamics of the population in/out migration.

The net result in NW Ohio will likely be income growth that lags behind Ohio and U.S. averages. Public sector fiscal challenges will continue to weigh on the recovery. Manufacturing will hold steady and shows signs of positive growth, as demonstrated by Jeep. Employment is not expected to fully recover to its pre-recession peak during the forecast period, and at least one forecast expects full recovery to be delayed until 2021.

The Lucas County Employment Forecast

To place the job impacts of the OCEC into context, we forecast annual private sector employment growth in the Toledo MSA using two separate econometric methods that limit the data required and the number of statistical processes needed to produce accurate forecasts⁹.

One key variable affecting employment growth trends in the region is the trend in automobile sales throughout the country. Figure 10 shows how job growth can be modeled accurately if reasonably accurate forecasts of key national and state economic variables are available as inputs to the model.

⁹ One technique uses statistical regression modeling that uses forecasts of key national economic variables as model inputs. A second (ARIMA) technique requires no inputs from national models and relies only on available historical regional data. The final regional forecast presented in this report is a result of the convergence of both forecast models.

Figure 10

Employment Growth in the Toledo MSA is Highly Sensitive to Automobile Production

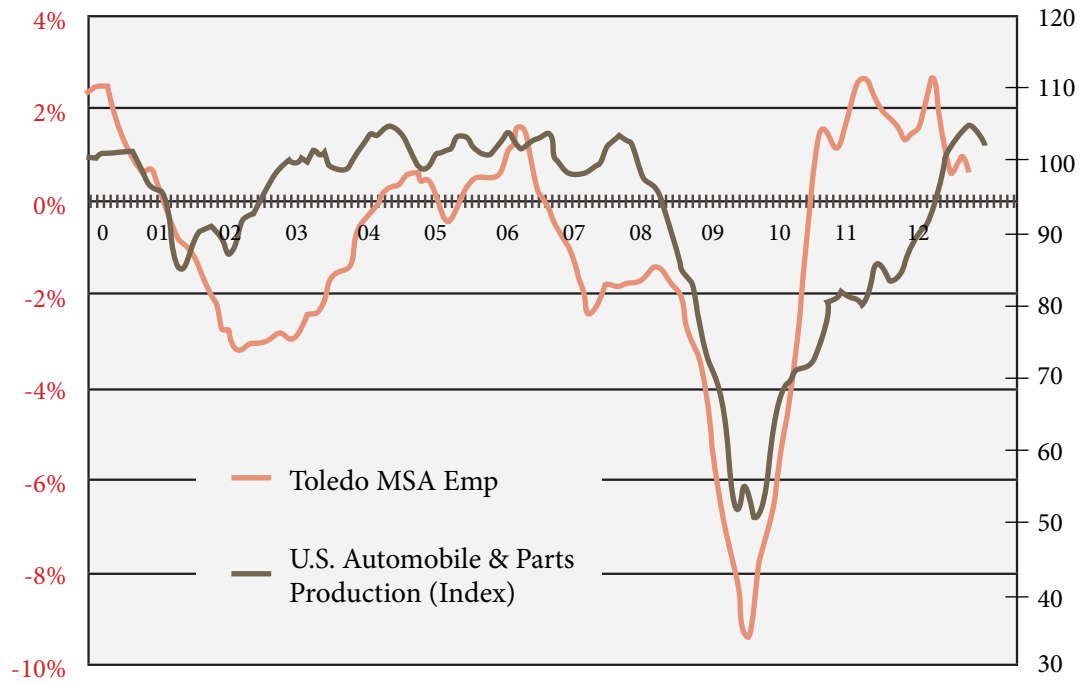
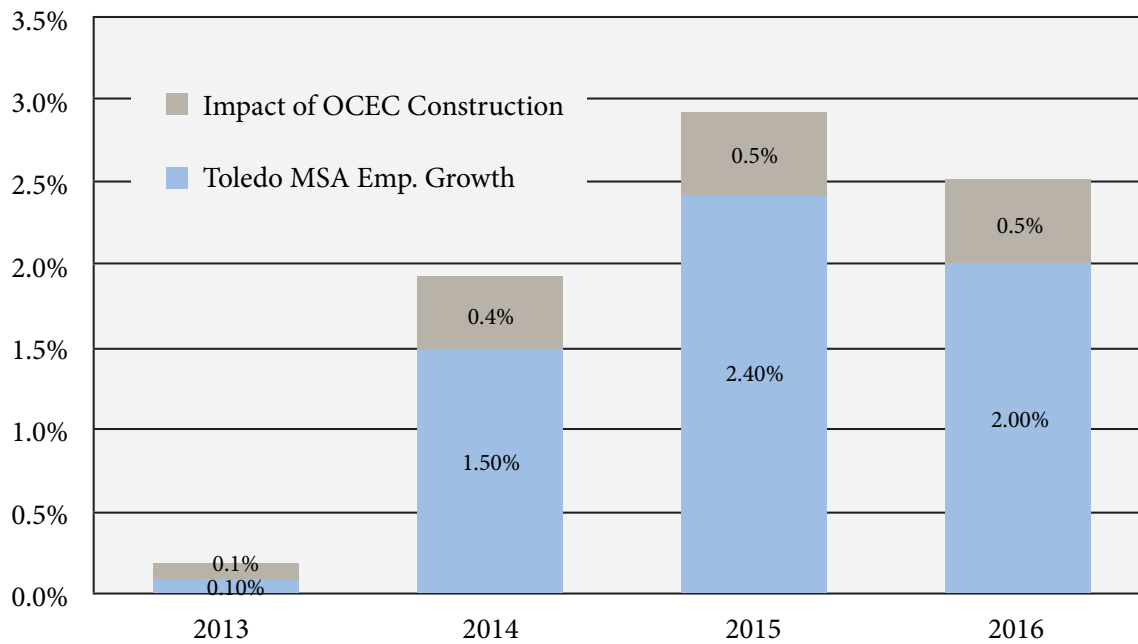


Figure 11

The Oregon Clean Energy Center Will Account for More Than 20% of Forecast Job Growth in the Toledo MSA During



Forecast assumes project construction begins in Q1V of 2013

Our baseline forecast for employment growth in the Toledo MSA is for an increase of 0.1 percent in 2013, 1.5 percent in 2014, 2.4 percent in 2015, and 2.0 percent in 2016. This is a more optimistic forecast than that of IHS Global presented at the National Conference of Mayors and a somewhat less optimistic forecast than that of Moody's Analytics.

Figure 11 shows that construction of the OCEC is expected to increase the employment forecast for the Toledo MSA by more than 20 percent during the construction phase of the Project.

VIII. Labor Income Impacts

The direct, indirect, and induced employment impacts resulting from the construction of the OCEC will increase labor income in Lucas County by \$134.9 million over the two-and-one-half-year construction phase. In addition, indirect and induced employment impacts from construction that leak out of the county but which remain in Ohio will increase labor income in other regions of Ohio by \$29.3 million, for a total labor income impact from OCEC construction of \$164.2 million in Ohio.

Table 9 presents the impact of the OCEC construction on labor income in Ohio.

Table 9

Labor Income Impacts of OCEC Construction (Millions of 2012 Dollars)		
Lucas County	Annual	Total
Direct	\$31.6	\$79.0
Indirect	\$11.2	\$28.0
Induced	\$11.1	\$27.9
Total in Lucas Co.	\$53.9	\$134.9
Other Ohio Counties	\$11.7	\$29.3
Total Labor Income		
Impacts	\$65.6	\$164.2

The annual operating impacts of the OCEC will have a lasting impact on the region. Once fully operational, the OCEC is expected to employ approximately twenty-five (25) workers at the facility. The labor income impacts of the OCEC operations are presented in Table 10.

The total direct, indirect, and induced income impacts (including all non-wage salary and benefits) in the region are estimated to be \$3.9 million per year, with another \$1.6 million per year of labor income increases occurring in other Ohio counties, for a total impact of \$5.5 million per year in 2012 dollars.

The direct and indirect labor income impacts suggest the average annual wages resulting from facility operations will be significantly higher than the current average annual wages in the region.

Table 10

Annual Labor Income Impacts From OCEC Operations (Millions of 2012 Dollars/Year)	
Lucas County	Total
Direct ¹⁰	\$2.8
Indirect	\$0.3
Induced	\$0.8
Total	\$3.9
Other Ohio Counties	\$1.6
Total Labor Income Impacts	\$5.5

¹⁰ This is a model-based estimate that is based on the wage rates for the electric generation industry in the Lucas County region. Oregon Clean Energy, LLC has indicated that total wages and salaries may be higher (about \$3.6 million) than this estimate. However, without a definitive wage and salary amount from Oregon Clean Energy, LLC we are using the lower, model-based estimate.

IX. Impact on Electricity Markets and Regional Development

The region's electricity market will be affected by a planned closing of several regional coal-fired generating plants, including units 2-4 at the Bay Shore facility in Oregon. Unit 1 of Bay Shore (141MW-1955) will remain operational to combust petroleum coke produced by neighboring BP/Husky. Bay Shore's steam is then returned to BP/Husky for use within its refinery.

The addition of the 800MW OCEC will provide the region's industrial base with assurance of a local, competitively priced supplier of electricity in the face of the planned elimination of 1,611MW of generating capacity in coming years, namely Bay Shore 500MW, 2012; Avon Lake 766 MW, 2015 and J.R. Whiting 345 MW, 2015.

The economy of the Toledo MSA is relatively more energy intensive, requiring more energy per dollar of gross regional product than most metropolitan areas of the country. The regional economy would be more sensitive to changes in the market (prices) for electricity resulting from changes in the supply of electricity.

The region is also looking to develop as a center for innovation in energy production technologies. Construction and operation of the state-of-the-art OCEC can help the region develop a new image or "brand" for its industrial base and energy production. The Toledo MSA has an industrial and manufacturing base that is transitioning toward more technological and advanced manufacturing. Evidence of this success is the recent expansion of the Jeep manufacturing facility.

The direct impacts of the OCEC in creating well-paying jobs in the region that can help retain and attract younger and skilled workers is important, but may not be the most significant impact of the Project. The OCEC's use of clean, environmentally sensitive technologies helps enhance the quality of life in the region while supporting the efforts of the regional economy to build a reputation for innovation in energy production. These efforts are manifested in the establishment of the Center of Excellence in Advanced Renewable Energy and the Environment at the University of Toledo.

The University has invested heavily in faculty and research infrastructure in the area of alternative energy and recently created a School of Solar and Advanced Renewable Energy, dedicated the Scott Park Campus of Energy and Innovation, as well as the Clean and Alternative Energy Incubator to help nurture businesses that want to access and partner with the resources and talents in advanced energy technologies located in the region.

¹¹ Measured as million BTUs per dollar of gross regional product. Energy costs for Ohio by energy source from the U.S. Energy Information Agency. Regional energy expenditures and gross regional product by industry data obtained from U.S. Census Bureau's "Census of Industry" and "County Business Patterns" as well as the U.S. Bureau of Economic Analysis.

Moving Forward: Regional Challenges and Opportunities

The region has a number of assets that are reasons for optimism in the future. A rejuvenated automobile industry, an exceptional manufacturing infrastructure, a location that facilitates exporting to world markets, and a modest cost structure that position the region well to move into the next era of a rejuvenated U.S. manufacturing that appears high on the economic agenda of the nation. At the same time, a regional economy that is more manufacturing and export dependent than the U.S. average, and that has a greater concentration of manufacturing in fewer sectors, will always be somewhat more susceptible to changes in business cycles and U.S. and world economic conditions. Lucas County and the Toledo MSA have come through a “perfect storm” over the past two decades of industry and economic conditions that resulted in a weak economic performance.

But the worst is over, the job growth outlook is better now than at any time over the past decade, and opportunities exist to build on the existing industry and infrastructure assets, and as importantly, use them to begin to develop assets that the region currently has in shorter supply. The region knows what went wrong, now it must demonstrate it knows what it takes to succeed and that it has or is developing the assets to allow it to do so. Helping individuals and businesses understand that the best returns are made when an investment is made before everyone realizes the market (or in this case the region) has turned will be important to the Toledo MSA's development.

The biggest challenges facing the region are related: an image of a region in decline, with old-technology, that will disappear as U.S. manufacturing declines, and a region where there is limited opportunity for younger, skilled workers (in all industries), with higher-levels of educational attainment.

Access to the Great Lakes, natural amenities, and a relatively lower cost of living are attractive assets, especially for younger, more mobile, and high-skill individuals and families, that can help overcome those challenges. Cultural amenities are also important to younger, skilled and mobile individuals. A strong regional commitment by businesses in the area, however, will be required to develop cultural resources, in an era of government fiscal restraint. The OCEC is just one event that can demonstrate a changing industrial and environmental era for the region, one that is about using newer, more sophisticated, and cleaner technologies. Industries in the region should look reinforce that evolution in the region by expressing their efforts and commitment to more advanced and cleaner technologies.

The region would also benefit from greater integration of its higher-education institutions into its marketing image and development efforts. This is occurring in alternative, clean and advanced energy industries but university connections in more industries are needed. There is no more important reputation for a region to develop than that of being one that is constantly learning, adapting, evolving, and capable of capturing or adopting the latest technologies, industries, and practices. Regional businesses that stress there, and their workers commitment and opportunities for learning, and connections to universities can help the region develop that reputation.

As stated earlier, ultimately the Toledo MSA, and many other regions around in the Great Lakes, will become the centers of the greatest economic and population growth in the country. The Nation is resolving its energy supply issues but a larger and even greater challenge will be solving the water supply issues in a country where large and growing segments of the population do not have ready access to the only invaluable resource of all, water. It won't happen soon but when it does the region will again become a booming region.

But until that time, the region will still see improving economic conditions (although still more cyclically sensitive) and it can improve those prospects even more by enhancing the natural, environmental, cultural and civic, educational and technology assets in the region.

X. Tax Impacts

Data available with the IMPLAN model includes information on non-market monetary flows between households and government and between businesses and governments. These flows are in the form of tax payments, and expenditures can be used to estimate payments that will be made to governments as a result of changes in economic activity in a region. The data used to construct these flows comes from the federal government's "Annual Survey of Government Finances."

Economic models can be used to determine the changes in value added in the region in response to the proposed Project. This information can then be applied to the information on non-market monetary flows in the region (a social accounts matrix or SAM) to derive an estimate of the revenue impact on various levels of government due to changes in economic activity.

In addition to large employment and income impacts from construction and operation, the OCEC will also yield millions of dollars of tax revenue. The construction phase is expected to yield approximately \$15.4 million as a result of the direct construction activity, the indirect effects on other businesses in Ohio, and the income earned and the expenditures of Ohio residents who benefit from the Project. The timing of these tax revenues will depend on the schedule of construction activities, but the total of \$15.4 million will be spread over the two-and-one-half-year construction period and for a short time following its completion (Table 11).

Table 11

Tax Impacts of the Oregon Clean Energy Center Construction Phase (2012 Dollars)	
Corporate Profits Tax	\$403,016
Dividends	\$321,601
Indirect Bus Tax: Motor Vehicle License	\$90,006
Indirect Bus Tax: Other Taxes	\$507,794
Indirect Bus Tax: Non-Tax Fees/Charges	\$377,612
Indirect Bus Tax: Sales Tax	\$4,370,402
Indirect Bus Tax: Severance Tax	\$4,689
Personal Income Tax	\$7,767,367
Personal Tax: Motor Vehicle License	\$116,916
Personal Tax: Non-Taxes Fees/Charges	\$1,312,362
Personal Tax: Property Taxes	\$103,611
Total	\$15,375,378

The tax impact estimates produced in Table 11 are ratio-based estimates based on the overall volume of economic activity in the region that will result from both construction and operation of the Oregon Clean Energy Center. This table does not include the contribution of property tax this OCEC will pay during the construction phase; this is now subject to negotiation by OCEC, The City of Oregon and the School District.

The economic impacts that occur outside of Lucas County but within the state of Ohio are included with Lucas County impacts for purposes of the tax analysis. Income tax payments by individuals will be the largest source of new revenues, with a total of \$7.8 million paid over the construction period. Sales taxes (\$4.4 million) will also increase substantially as a result of the construction of the OCEC.

The economic activity created by the annual operations of the OCEC, as well as the indirect and induced economic activity that results from the OCEC, will increase state and local government revenue by an estimated \$1.45 million annually, including \$802,169 in sales taxes, and \$217,389 in personal income taxes.

Potential property tax impacts from the ongoing operations of the OCEC facility are not included in these estimates. Valuation of utility property is a complex and difficult process and beyond the scope of this report. As of the writing of this report, it is our understanding that negotiations regarding valuation and property tax payments are ongoing between the OCEC and the City of Oregon.

Purchase of City of Oregon Services

The OCEC will also make substantial payments to the City of Oregon as a result of its on-going need to purchase certain services from the City of Oregon. In particular, OCEC will purchase: raw water; treated potable water; and wastewater collection/treatment services.

These water and wastewater service needs will occur whenever the Project is operating, which is projected to be 65-75 percent of the year. Oregon Clean Energy, LLC and the City are now engaged in discussions about the magnitude of these services that are required. The expected cost to purchase such services may be as much as \$1 million annually.

XI. Conclusions

The Oregon Clean Energy Center in Lucas County, Ohio, will lead to significant increases in jobs, output, and income in the City of Oregon, Lucas County, the Toledo metropolitan statistical area and other portions of Ohio.

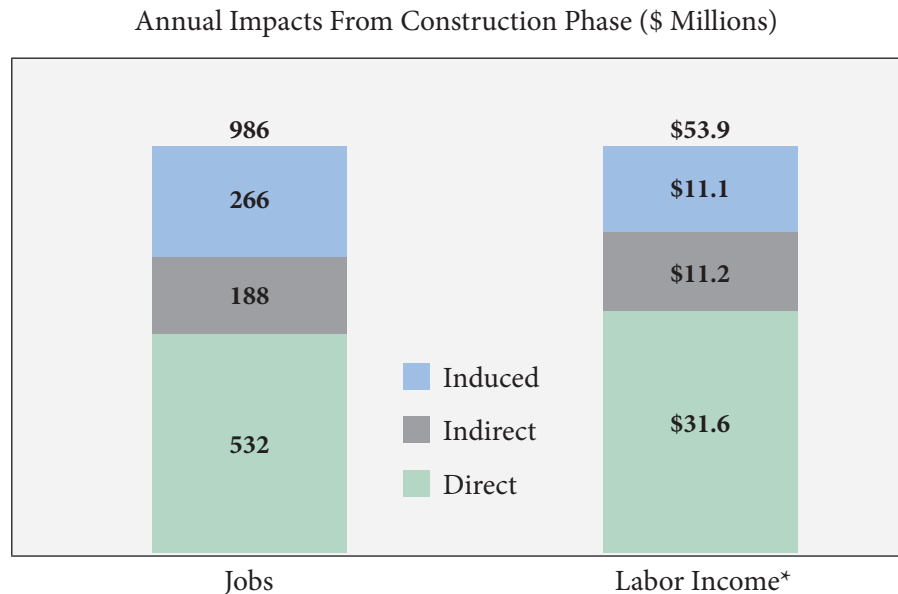
The impact from construction activity will provide a much-needed lift to the regional economy that will support the addition of more than 986 jobs and \$53.9 million in labor income annually over the two-and-one-half-year construction period, and another 370 jobs and \$11.3 million throughout other regions of the state of Ohio. The OCEC will account for over 20 percent of all projected job growth in the Toledo MSA during its construction.

Once constructed, the operation of the facility will employ 25 people directly in high-skill and high-wage jobs and generate secondary and tertiary regional economic activity (so-called economic multipliers) that will result in the addition of more than 27 jobs in Lucas County and another fifty-one jobs in other counties in Ohio. In total, the annual operations of the OCEC will result in 102 jobs and increase labor income by \$5.5 million in Lucas County and the State of Ohio.

Finally, the increased economic activity in Oregon and Ohio in response to the OCEC will result in estimated annual tax revenues of \$15.4 million during the construction phase of the Project and \$1.5 million annually once the facility begins operation. In addition, OCEC will purchase City of Oregon water and wastewater services that will result in revenue of approximately \$1 million per year to the City.

Figure 12

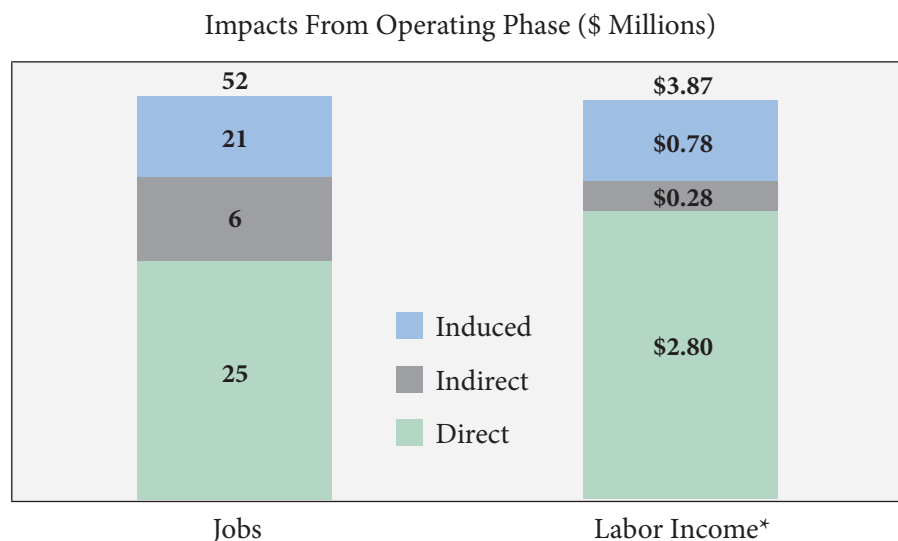
A Total of 986 Jobs and \$53.9 Million in Labor Income Will Result in Lucas County During Each Year of the Construction Phase



* Includes all labor compensation: wages and salaries, benefits and proprietors income

Figure 13

52 Jobs and \$3.9 Million in Labor Will Result in Lucas County From the Annual Operations of the OCEC



* Includes all labor compensation: wages and salaries, benefits and proprietors income

Appendix A: Defining the Study Region

Selecting a geographic area for analysis is a critical aspect of any economic impact study. Depending on how the area of study is defined, economic impacts will be included or excluded from the calculation of project impacts. Defining a large area for study will capture a larger portion of the economic impacts of a project, while a small geographic area captures a more limited portion of economic impacts.

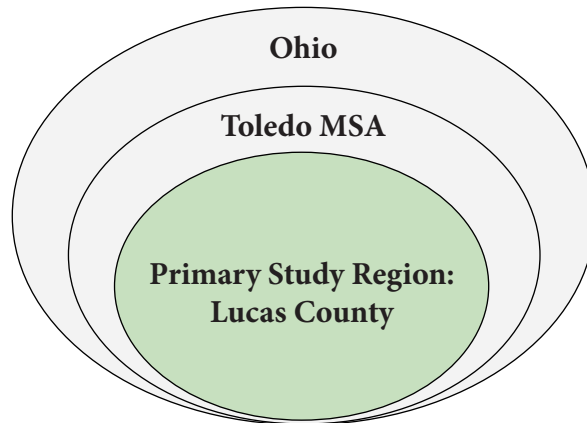
The availability of economic data influences the selection of a geographic area for study. For geographic areas smaller than the state level, with the exception of major cities, the richest and most complete economic data required to accurately calculate economic impacts is available at the county or metropolitan statistical area (MSA) level. In general, it is best to choose the smallest area for study as is feasible in order to avoid overstating the economic impacts of a project.

This study uses county level data in analyzing the economic impacts of the proposed OCEC, although we include an analysis of the characteristics and performance of the larger Toledo MSA to put the impact of the OCEC into a larger economic context and to take advantage of additional economic data that is available at the MSA level but not at the county level. Construction industries serve primarily local markets and, by definition, on-site construction activity must occur in Lucas County. However, a significant portion of Project expenditures for equipment, materials, and specialized services will go to firms outside of the Lucas County and Toledo MSA. In addition, some of the “indirect” (business to business) and “induced” (spending by individuals with the income earned from working on the Project), or so called “multiplier” impacts will “leak” from, or occur outside, the Lucas County and MSA regions. Because of the size and breadth of the Ohio state economy, some of the economic activity that occurs outside the Lucas County region will be captured within the remainder of the state.

The structure of the economic models used in this report will factor “leakage” from the region in producing estimated economic impacts; but to minimize the potential for overestimating impacts on the region, where it is known that project expenditures will go to firms outside the region, they are excluded from the impact analysis. Expenditures related to project financing, insurance, and some costs related to project development (such as engineering, along with the acquisition of specialized industrial machinery manufactured outside of the region and outside of Ohio), are example of project expenditures that are excluded from consideration as regional and state economic impacts.

Figure 14

Project Impacts are Concentrated in Lucas County But Extend Well Beyond the County



The City of Oregon, with a population of just over 20,000, has a relatively small employment base with fewer of the industries that will supply the products and services required to construct and operate the OCEC. In addition to the impacts on the City of Oregon, construction of the facility will draw on the labor, goods, and services of Lucas County and the four-county region that composes the Toledo MSA.

With a population of more than 440,000 and private sector employment of more than 170,000, the county will provide much of the products, services, and labor required for construction and operation of the facility. Our review of regional data suggests Lucas County is a net importer of labor, meaning that more workers commute into the county to work (more than 50,000, representing about 23 percent of the jobs located in Lucas County) than commute from Lucas County to work in other counties (more than 32,000).

Net in-commuting to a county with a larger city such as Toledo can be expected and is common. But Lucas County's slow population growth and net out-migration at the same time it is a significant importer of labor is an indication that the county may be viewed as a less attractive place to live—despite having jobs that can attract commuting workers from outside the county.

It may also be a sign that the demographics, especially the educational and skill levels of the county's labor force are not currently capable of meeting industry demands for some types of workers. Lucas County and the Toledo MSA have a low percentage of the workforce with a bachelor's degree or higher, which will constrain future jobs.

Even if job growth is not constrained because the region is able to import more commuting labor with necessary skills (a less likely scenario), the region does not benefit to the same degree when higher skill workers with high levels of educational attainment leave the county each evening with the income they have earned from jobs located in Lucas County—as it would if those jobs were held by residents of Lucas County.

This report uses Lucas County as the primary region for analysis of Project impacts. Oregon and Lucas County are part of a larger economic region known as the Toledo metropolitan statistical area (MSA) that also includes Fulton, Ottawa, and Wood Counties. Lucas County dominates the metropolitan economy, however. Using an economic model that incorporates additional, surrounding counties in the analysis would result in more of the overall economic activity associated with the Project falling within the study region.

We believe, however, that using a larger area for economic modeling risks overstating the Project's impact on the City of Oregon and Lucas County. A review of the number of businesses and industry mix in Fulton, Wood, and Ottawa Counties shows a relatively small number of businesses in industries likely to participate in the construction of the OCEC.

Although we consider the Project's economic impacts to be those that occur within Lucas County, additional impacts will occur in neighboring areas and throughout the state of Ohio, as well as in neighboring states and other areas of the country. We report the additional economic impacts that will occur outside of Lucas County but which will remain within the state of Ohio.

Appendix B: Analytical Approach and Impact Methodology

This study uses an input-output (I/O) methodology to determine the economic and fiscal impacts of the Project on the regional economy. Input-output models trace the linkages of inter-industry purchases and output within a given county, region, state, or country. These models use information on the inputs required from all industries in order to produce a dollar of output for a specified industry, and the models provide information on how much of the required inputs from industries can be supplied locally within the study area.

In addition to the direct spending required to produce a dollar amount of a given product or service, economic impacts occur as a result of “indirect” purchases that businesses, organizations, and government make among one another in the study region with their revenue from direct spending. Induced spending includes the purchases made by individuals and households within the study area as a result of the income they receive from the businesses and organizations in response to the direct and indirect sales in the region. Input-output models yield “multipliers” that are used to calculate the total direct, indirect, and induced effect on jobs, income, and output resulting from a dollar of spending on goods and services in the study area. The “IMPLAN” input-output model developed by the U.S. government and the University of Minnesota (available from the Minnesota IMPLAN Group, Inc.) was used in this analysis to calculate economic impacts.¹²

The IMPLAN model was chosen because of its ability to construct a model using data unique to Lucas County while maintaining rich detail on impacts for hundreds of industry sectors. In addition to being widely used in regional economic analysis, the model and its methodology have been extensively reviewed in professional and economic journals.

Data from the U.S. Bureau of Economic Analysis, U.S. Census Bureau, and other sources, along with the IMPLAN model, were used to determine the inter-industry transactions in the region required for calculating the impact of the Oregon Clean Energy Center. Analytical results are reported for the economic measures of greatest interest to policy makers, elected and appointed officials, and the general public.

Impacts were modeled for both the construction and operating phase of the Project. Project impacts were modeled first for Lucas County. A second analysis was performed by modeling Project expenditures in the entire state of Ohio. This analysis was used to determine the additional economic impacts that will occur outside of Lucas County but that remain within the state of Ohio.

¹²A description of the IMPLAN model and technical references is available to readers at www.Implan.com.

Substantial additional impacts will also occur outside of the state of Ohio (as a result of manufacture and purchase of the industrial machinery and equipment used for the generation of power at the OCEC, as a result of the manufacturing of construction machinery, or as some business revenues or wage and salary income earned as a result of the Project is spent outside of the state of Ohio).

Because the City of Oregon's economy is small and less self-sufficient than either the Lucas County, Ohio, or U.S. economies, more of the labor, goods, and services required to construct and operate the OCEC must be purchased or imported from surrounding regions and beyond and as indirect and induced economic impacts "leak" from the region and are captured by other regions in the state or the nation. "Leakage" of the economic impacts to outside the region occurs for several reasons.

These reasons include the inability of the region to supply the needed products and services required by the Project because wages and salaries are paid to residents outside of the region or because income earned as a result of the Project is used to make purchases outside of the region.

Timing and Location of Impacts

Input-output models calculate the total economic impacts associated with a project, but determining the timing of project impacts requires a timetable of project expenditures. OCE's Oregon Clean Energy Center is expected to take approximately two and one-half years to construct.

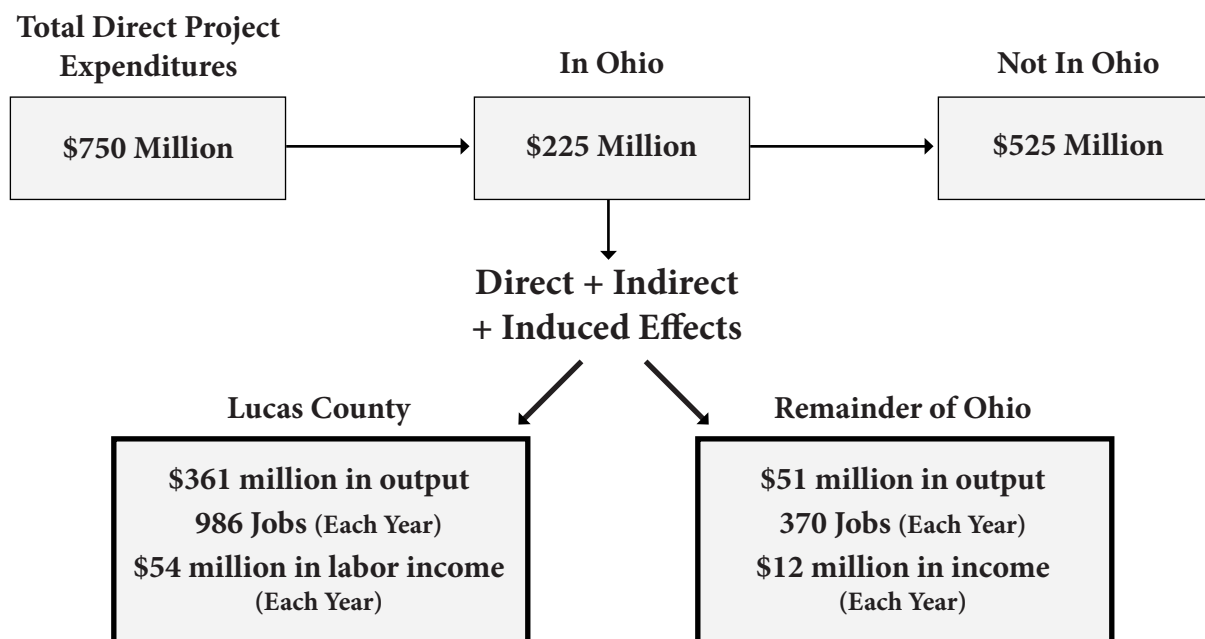
OCE provided a listing of Center expenditures but a "construction draw" schedule (breakdown of expenditures by time period) was not available at the time of this analysis; thus, our report does not include a detailed estimate of the timing of the construction impacts over the two-year construction period.

Rather, the report calculates total economic impacts and also reports them on an annualized basis which assumes that construction expenditures are distributed equally across each year of the two-and-one-half-year construction phase. In reality, expenditures are likely to increase and "peak" during the middle of the construction phase.

Although some leakage of Project impacts from the region will occur, results of the analysis suggest that the construction of OCE's proposed Project would yield large economic benefits to the region. Based on our analysis of OCE's approximately \$750 million construction and development budget (\$860 million total Project budget), we estimate that approximately \$225 million in expenditures will occur within Lucas County during the development and construction phase of the Project. The impact of these expenditures will be an increase in overall economic activity in Lucas County of \$361 million and an increase economic activity in other areas of Ohio by another \$51 million.

Figure 15 presents an overview of the construction impacts from the Oregon Clean Energy Center.

Figure 15
Economic Impact of OCEC Construction: Flowchart



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Summary: Application Appendix E: Economic and Fiscal Impact Report electronically filed by
Teresa Orahod on behalf of Oregon Clean Energy, LLC