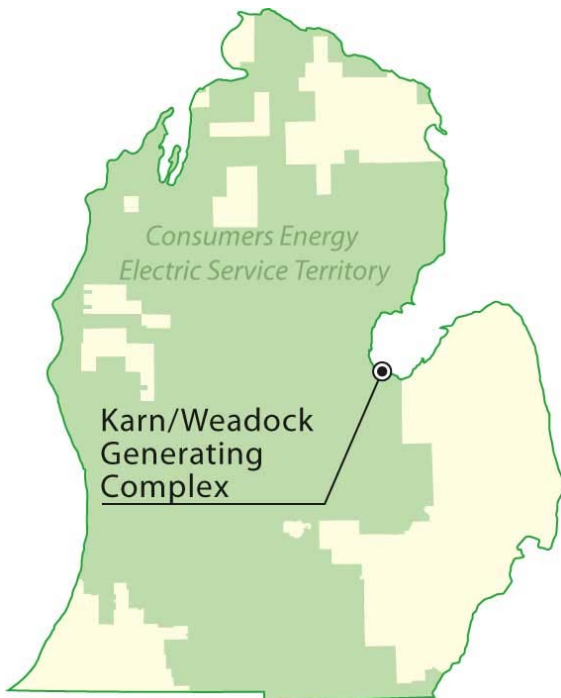
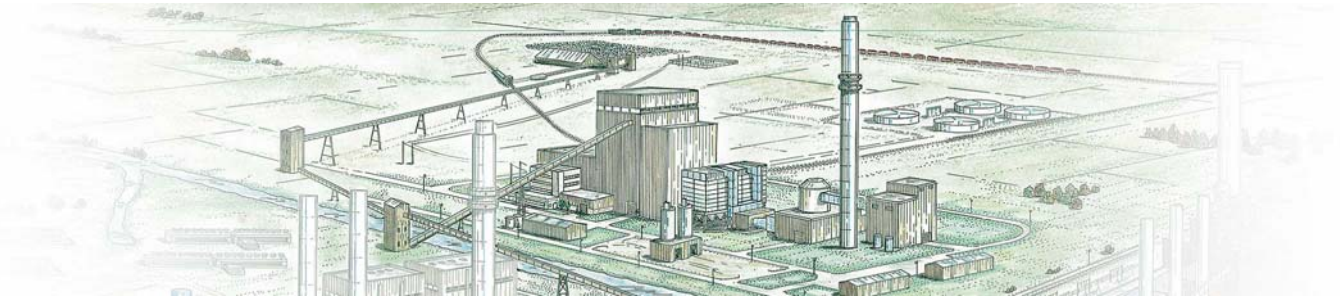


The Economic and Fiscal Impacts of an 800 MW Advanced Supercritical Clean Coal Power Facility at the Karn/Weadock Generating Complex in Michigan

Prepared For:





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*Impact Report for the
Tri-County Region and
the State of Michigan*

November 27, 2007



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GROWING FORWARD

Growing Forward with Michigan

On September 14, 2007, Consumers Energy announced a \$2 billion-plus investment for the construction of a new clean coal electric generating plant at its Karn/Weadock Generating Complex near Bay City, Michigan.

Utilizing state-of-the-art emissions control technologies, the proposed new plant is part of the company's response to Michigan's 21st Century Energy Plan, which predicts a critical shortfall in electric supply by 2015.

The company's Balanced Energy Initiative proposes a blend of existing resources with new energy options. The new options include an enhanced emphasis on energy efficiency, demand management, more renewable "green" energy, additional natural gas generation, and new clean coal baseload generation.

More energy efficiency, demand management, and renewable energy will help further diversify Michigan's response to its energy supply needs. New baseload generation, however, remains the most effective and reliable resource for bridging the predicted "capacity gap" that threatens Michigan's economic future.

An additional cautionary factor is the age of Consumers Energy's existing baseload generating fleet. Averaging 48 years, it is the second-oldest generating fleet in the country. Some units are nearing the end of their operational life.

The proposed plant represents a new generation in power plant design. Featuring advanced supercritical clean coal technology, it will be one of the lowest-emissions pulverized coal plants in the world.

As well as helping secure the energy future for Michigan residents and businesses, the total (direct and indirect) economic impact for the state from building the new plant is estimated at \$1.2 billion over the 2008 to 2015 period. For the Tri-County Region that includes Bay, Midland, and Saginaw counties, construction of the new plant represents nearly \$500 million in total economic impact in the same period. A typical year of operation will provide nearly \$68 million in total economic impact throughout the state, of which about \$46 million in total economic impact will flow to the Tri-County Region. About 1,800 workers will be involved in construction at its peak, with at least 80 permanent jobs created at the new plant at completion.

These short- and long-term economic benefits, combined with greater energy security provided by an advanced clean coal baseload plant, reflect Consumers Energy's commitment to "Growing Forward with Michigan."

Consumers Energy
November 2007

EXECUTIVE SUMMARY

This study reports the quantifiable economic and fiscal impacts of the new 800-megawatt advanced supercritical clean coal power facility at the Karn/Weadock Generating Complex in Hampton Township in Bay County, Michigan. Economic impacts measure the effect of spending of businesses and employees on other businesses whereas fiscal impacts measure the effect of this spending on the local government's budget. The economic and fiscal impacts combine impacts from construction activity, business operations, and employee spending.

The economic and fiscal impacts are evaluated for the construction period (2008-2015) and for a typical year of operation (2016). The impacts are estimated for the State of Michigan and for the three-county region including Bay, Midland, and Saginaw counties ("Tri-County Region"). The economic and fiscal impacts of the two geographic areas described in this report are to be treated as individual, non-additive reports.

State of Michigan

The direct economic and fiscal impact of construction of the power plant on Michigan over the 2008 to 2015 period is \$549.1 million in 2007 dollars, including:

- ◆ Total construction-related purchases from State vendors and suppliers of \$217.6 million.
- ◆ Total construction payroll of \$321.4 million for 2,310 work-years of construction activity for Michigan residents.
- ◆ State sales/use tax revenue on construction materials of \$10.1 million.
- ◆ When the multiplier impacts of the construction activity are considered, the total direct and indirect impact of construction activity totals \$1.2 billion.

The direct economic and fiscal impact on Michigan in a typical year of operation of the power plant is \$50.7 million in 2007 dollars, including:

- ◆ Total business purchases of \$16.4 million from Michigan vendors and suppliers.
- ◆ Total operating payroll of \$11.5 million for 80 state residents. In turn, these employees spend

\$1.5 million on taxable goods and services throughout the state.

- ◆ \$21.2 million in sales, use, and property tax revenue paid to the state government and other property taxing entities.
- ◆ When the multiplier impacts of business operations are considered, the annual total direct and indirect impact of the clean coal power plant totals \$67.6 million.

Tri-County Region

The direct economic and fiscal impact of construction of the power plant on the Tri-County Region over the 2008 to 2015 period is \$297.8 million in 2007 dollars, including:

- ◆ Total construction-related purchases from vendors and suppliers located in the Tri-County Region of \$62.1 million.
- ◆ Total construction payroll of \$235.7 million for 1,160 work-years of construction activity for Tri-County Region residents.
- ◆ When the multiplier impacts of the construction activity are considered, the total direct and indirect impact of construction activity totals \$499.7 million.

The direct economic and fiscal impact on the Tri-County Region in a typical year of operation of the power plant is \$38.9 million in 2007 dollars, including:

- ◆ Total business purchases of \$10.9 million from Tri-County Region vendors and suppliers.
- ◆ Total operating payroll of \$10.3 million for the 71 employees that are residents of the Tri-County Region. In turn, these employees spend \$1.3 million on goods and services throughout the region.
- ◆ \$16.4 million in property tax revenue paid to the taxing entities in the Tri-County Region.
- ◆ When the multiplier impacts of business operations are considered, the annual total direct and indirect impact of the power plant totals \$45.6 million.

INTRODUCTION

Consumers Energy announced plans in September 2007 to construct a new 800-megawatt (MW) advanced supercritical clean coal power facility at the Karn/Weadock Generating Complex in Hampton Township in Bay County, Michigan. Consumers Energy provides natural gas and electricity to nearly 6.5 million people in all 68 Lower Peninsula counties in Michigan.

The new \$2.2 billion plant will be located on a 2,400-acre parcel that offers room for future expansion. Consumers Energy expects to use 500 MW of electricity to serve its customers. Other parties, which will be part owners of the new facility, will own 300 MW of output. The part owners may include municipalities that are exempt from property taxation.

This analysis assumes that the full value of the power plant is subject to property tax. Actual property tax revenue may be somewhat lower depending upon the final ownership structure of the facility. The plant is expected to be in operation by 2015.



Intent of the Study

The intent of this study is to report the quantifiable economic and fiscal impacts of the new 800 MW advanced supercritical clean coal power facility (“clean coal power plant” or “power plant”). The economic and fiscal impacts of the clean coal power

plant will be examined for the surrounding three-county region consisting of Bay, Midland, and Saginaw counties (“Tri-County Region”) and the State of Michigan.

What is Economic and Fiscal Impact Analysis?

The economic and fiscal impact analysis described in this report was completed using the SiteStats™ model, a proprietary impact model developed by Development Research Partners. Economic impact analysis is the analytical approach used to assess the measurable direct and indirect, public and private costs and benefits resulting from a project over a specific period. Only those costs and benefits that can be measured or quantified are included.

Intangible costs and benefits, such as enhancement of community character or diversification of the job base, are not included. Further, economic development benefits such as enhanced quality of life and greater business attraction potential due to the region having a more reliable power supply are not included.

Fiscal impact analysis is a narrower concept that measures only the direct, public (governmental) costs and public revenues associated with the project over a specific period. This report includes a limited analysis of the fiscal impacts on the two geographic areas, including only the capture of sales/use and property tax revenue.

Simply stated, economic impacts measure the effect of spending of businesses and employees on other businesses whereas fiscal impacts measure the effect of this spending on the local government’s budget.

The economic and fiscal impacts are calculated within the framework of three impact categories: on-going business operations, employee spending, and construction activity.

Construction impacts are transitory, in that the impact of construction activity accrues only in the years in which construction activity occurs. If there is no construction activity, there are no associated economic and fiscal benefits. Further, the direct

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economic impact from construction activity includes only the spending that occurs within the specified geographic area.

The business operations section analyzes the economic impacts of operating the clean coal power plant in terms of local spending on employees, materials purchases, capital investment, and real property expenditures. These impacts are not intended to replicate any single year of business operations. Rather, the impact is based on “typical” annual operating patterns.

Employee spending impacts are based on local spending patterns of the power plant employees. Employees spend their paychecks on a variety of goods and services, both within the region and out of the state. The employee economic impact includes only the spending that occurs within the specified geographic area. Employee impacts also include sales and property taxes paid to local governments.

The local spending patterns associated with the project have multiplicative impacts on the community as the initial dollar spent by the power plant on either purchases or payroll circulates throughout the economy. Therefore, multiplier analysis is used to trace the impacts on businesses, organizations, and individuals affected by the direct spending as the impacts work their way through the economy. Multiplier analysis recognizes the interdependence of various sectors of the economy as activities in one sector spill over into other sectors, stimulating business activity. Multiplier analysis is conducted for both the State of Michigan and the Tri-County Region.

The multiplicative impacts are discussed in terms of “indirect” and “induced” economic impacts. For example, when the clean coal power plant purchases supplies from a local vendor, that local vendor in turn provides payroll to its employees and makes purchases from other vendors. These other vendors in turn compensate their employees, and so on, providing the indirect impact of the power plant.

On a separate but similar spending track, when a power plant employee spends his or her paycheck at

local businesses, these local businesses provide payroll to their employees, make purchases from other vendors, and so on, creating the induced impact of the power plant. In other words, the initial dollar spent by the power plant on either purchases or payroll is circulated throughout the economy a number of times.

The indirect and induced jobs and income flows generated by the direct spending patterns are estimated using the Regional Input-Output Modeling System (RIMS II) multipliers developed by the U.S. Bureau of Economic Analysis for the State of Michigan and the Tri-County Region. The RIMS II multipliers are the most widely used and respected for economic impact analysis.

Throughout this report, “direct” impact refers to the impact of the initial spending. “Total” impact refers to impacts that include both the direct or initial spending as well as the multiplicative spending.

Methodology

Geographic Interpretation

The economic and fiscal impacts of the two geographic areas described in this report are individual, non-additive reports. In other words, the economic and fiscal impacts reported for the Tri-County Region are not in addition to the State of Michigan but are a component of the State of Michigan economic impacts. Thus, the economic impacts produced from this study should be specified for the particular geography when reported.

Development Assumptions

The construction and operation estimates of the clean coal power plant provided by Consumers Energy are current as of November 2007. These estimates may be revised as new information becomes available and more detailed facility planning occurs. If project specifics were unknown, Development Research Partners included reasonable estimates based on current Consumers Energy operating patterns or typical utility industry

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operating standards. These assumptions are noted in the study.

Development Research Partners believes that the information used in this report is from sources deemed reliable but is not guaranteed.

Analysis Time Period

All construction costs are in nominal values for the 2008-2015 period. These nominal values are then deflated to 2007, such that all economic and fiscal impact values are reported in 2007 dollars. The business operations and employee spending economic and fiscal impacts are presented as annual impacts in a “typical” year of operation at full buildout, assumed to be 2016. The 2016 nominal values are also deflated to 2007, such that all economic and fiscal impact values are reported in 2007 dollars. The direct economic impacts and the total (or multiplicative) impacts are presented separately.

This section analyzes the impact of the clean coal power plant on the State of Michigan. This analysis represents the largest geographic level presented in this report, including impacts on suppliers and employees located throughout the state.

Direct Economic and Fiscal Impacts

The direct economic and fiscal impact combines impacts from construction activity, business operations, and employee spending.

The direct economic and fiscal impact realized in the State of Michigan from the clean coal power plant is evaluated for the construction period (2008-2015) and for a typical year of operation, defined to be 2016. The impact of constructing the power plant is \$549.1 million, including \$10.1 million in sales/use tax revenue for the state, expressed in 2007 dollars. During a typical year of operation at the power plant, the impact on the state is estimated to be \$50.7 million, which includes an estimated \$21.2 million of sales and property tax revenue for the state and other property taxing entities per year, in 2007 dollars. The following sections provide a detailed look at these estimates.

Construction Activity

Construction of the clean coal power plant will impact the state by generating tax revenue for the state government, providing payroll for state construction workers, and boosting sales for state construction goods and services vendors. From the preliminary design stages in 2008 to the completion of the facility in early 2015, Consumers Energy estimates that the clean coal power facility will cost \$2.2 billion. This value includes all labor, design and engineering, construction materials, capital investment, contingency, and fees.

The project will be located on land already owned by Consumers Energy at or near the Karn/Weadock Generating Complex. The construction will result in a facility capable of higher efficiency and lower emissions. In addition, the size of the existing site will allow Consumers Energy to expand in the future

if necessary and achieve even greater economies of scale.

Construction activity will occur over a 52-month period beginning in late 2010 and ending in early 2015. Construction will require an estimated 4,625 work years, with one full-time worker for one year equaling one work year. Employment will peak at nearly 1,800 workers during the end of 2012 and beginning of 2013.

Direct construction payroll over the entire construction period will be approximately \$700.9 million, including all salary, wages, benefits, and payroll taxes. As some of the construction jobs are highly specialized positions requiring workers from outside of the state, an estimated 50% of the total construction workers will be Michigan residents. As a result, 2,310 construction work years on the project will be filled by Michigan residents. Adjusting for the value of benefits, payroll taxes, and payroll earned by out-of-state workers but not spent within the state, the clean coal power plant project provides a \$399.5 million direct impact to the state from construction payroll.

Design, engineering, fees, contingency, and other soft costs associated with the project account for nearly 24% of the construction cost, or \$361.4 million. Based on prior company spending patterns, Consumers Energy estimates that about 20% of these expenditures will be transacted with companies located in Michigan, resulting in a direct impact of about \$72.3 million over the construction period.

Construction materials for the power plant, including steel, concrete, tools, and other materials, are estimated to cost about \$458.1 million. Based on prior company spending patterns, an estimated 25% of the construction materials will be purchased from Michigan vendors and suppliers, resulting in a direct impact of about \$114.5 million. While the construction contractors are responsible for the payment of the sales tax on these materials, it is assumed that this cost will be passed on to Consumers Energy. As the \$458.1 million in construction materials includes some items that are

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not taxable, an estimated \$12.1 million in state sales tax revenue is likely to be generated from the construction of the power plant.

The initial capital investment in the power plant is estimated to be about \$680.6 million. Although most of the equipment comes from suppliers from outside of the state or even from outside of the United States, this analysis assumes that about 10% of the equipment is purchased from Michigan-based suppliers based on prior company purchasing patterns. Therefore, about \$68.1 million in capital equipment will be purchased from Michigan suppliers. While there is no sales tax associated with equipment purchases as it qualifies for the industrial

process exemption, this equipment is subject to property taxation.

The direct economic and fiscal benefit to the State of Michigan from construction activity at the proposed power plant is estimated at \$666.4 million over the 2008 to 2015 construction period, which includes payroll, construction materials, engineering and design services, capital investment, and taxes. Deflating all values to 2007 dollars yields a direct economic and fiscal impact of \$549.1 million for the State of Michigan.

Summary of Direct Construction Impacts State of Michigan, 2008 - 2015			
	Project Total 2008-2015	State Direct Impact 2008-2015	State Direct Impact 2007 Value
State Government Revenue			
Sales/Use Tax on Construction Materials	\$12,065,000	\$12,065,000	\$10,060,000
Total State Government Revenues	\$12,065,000	\$12,065,000	\$10,060,000
Construction Spending			
Construction Materials	\$458,138,000	\$114,535,000	\$97,061,000
Design, Engineering, Fees, Contingency	\$361,364,000	\$72,273,000	\$67,734,000
Construction Employment (work years)	4,625	2,310	2,310
Construction Payroll	\$700,865,000	\$399,493,000	\$321,453,000
Total Construction Spending	\$1,520,367,000	\$586,300,000	\$486,247,000
Capital Investment	\$680,567,000	\$68,057,000	\$52,756,000
Construction Economic Impact	\$2,212,999,000	\$666,422,000	\$549,063,000
Construction Fiscal Impact	\$12,065,000	\$12,065,000	\$10,060,000

Business Operations

The direct economic and fiscal impacts of the business operations of the clean coal power plant are estimated based on payroll and employment, the value of the property, and operations and maintenance (O&M) purchases.

During a typical year of operations at the power plant, which is assumed to be 2016 in this analysis, total annual payroll including benefits for 80 full-

time employees will equal \$15.7 million. All employees of the power plant are Michigan residents.

Given the large initial capital investment in machinery and equipment described in the construction section, replacement capital purchases will be minimal in the first five years of operation, totaling about \$2.8 million per year during 2015-2020. Based on prior company purchasing patterns,

only about 10% of the power plant equipment is purchased in Michigan, or about \$285,000. Most equipment comes from suppliers from outside of the state or even from outside of the United States. While there is no sales tax associated with equipment purchases as it qualifies for the industrial process exemption, this equipment is subject to property taxation.

Consumers Energy purchases operational materials, equipment, and maintenance as part of its on-going operations. These purchases generate sales tax revenue for Michigan and revenue for vendors and suppliers throughout the state. Excluding fuel and payroll, operating and maintenance (O&M) expenditures for an 800-megawatt power plant will total about \$43.1 million per year in 2016 dollars. Based on current expenditure patterns at the Karn/Weadock Generating Complex, nearly 50% of the O&M purchases are transacted with businesses located in Michigan, resulting in a \$21.1 million direct economic impact. Fuel, on the other hand, will be purchased outside of the state so the value of fuel purchases is not included in the economic impact for the state.

These O&M purchases are a combination of goods and services, hence only a portion of the purchases are subject to sales tax. Based on current purchasing patterns at the existing Karn/Weadock Generating Complex, it is expected that about 20% of the expenditures are subject to the 6% state sales tax. The State of Michigan therefore will receive about \$253,000 in sales tax revenue annually from the power plant.

The bulk of the estimated state revenues from typical business operations will be from property taxes. The total value of the property is \$2.2 billion. However, this value includes about \$280 million of pollution control equipment that is exempt from property tax.

Based on the total mill levy for the property of 49.48 mills, the estimated annual property tax payment for the clean coal power plant is \$26.8 million.

The potential part owners of the power plant may include municipalities that are exempt from property taxation. This analysis assumes that the full value of the power plant is subject to property tax. Actual property tax revenue may be somewhat lower depending upon the final ownership structure of the facility.

Total Property Value	\$2,212,999,000			
Less: Pollution Control Equipment	\$280,000,000			
Total Property Value	\$1,932,999,000			
Assessed Value	\$966,499,500			
	Mill Levy	Property Tax Revenue	Abatement	Net Property Tax Revenue
State Education Tax	6.00	\$5,798,997	\$0	\$5,798,997
County, Township, School	43.48	\$42,023,398	\$21,011,699	\$21,011,699
Total	49.48	\$47,822,395	\$21,011,699	\$26,810,696

The total property tax estimate includes a 50% abatement of the power plant's local property taxes. The abatement has been granted for an 18-year period from 2009-2027. Consumers Energy had not yet applied for an abatement of the State Education Tax at the time of this report. The power plant generates \$5.8 million annually in property tax revenue based on the State Education Tax of six mills.

In a typical year, business operations at the proposed clean coal power plant will generate \$64.2 million in direct economic and fiscal impacts for the state, including \$27.1 million in state sales and property tax revenue. Deflating all values to 2007 dollars yields an annual economic and fiscal impact of the power plant during a typical year of operation of \$48.6 million for the State of Michigan.

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Summary of Direct Business Operations Impacts for a Typical Operating Year (2016)			
	Project Total 2016	State Direct Impact 2016	State Direct Impact 2007 Value
State Government Revenue			
Property Tax Revenue	\$26,811,000	\$26,811,000	\$20,548,000
Sales/Use Tax Revenue	\$253,000	\$253,000	\$194,000
Total State Government Revenues	\$27,064,000	\$27,064,000	\$20,742,000
Employment & Earnings			
Direct Employment	80	80	80
Employee Payroll	\$15,722,000	\$15,722,000	\$11,535,000
Business Activity			
Capital Equipment Purchases	\$2,847,000	\$285,000	\$200,000
Operating & Maintenance Purchases	\$43,057,000	\$21,098,000	\$16,170,000
Total Business Activity	\$45,903,000	\$21,382,000	\$16,370,000
Business Operations Economic Impact	\$88,689,000	\$64,168,000	\$48,647,000
Business Operations Fiscal Impact	\$27,064,000	\$27,064,000	\$20,742,000

Employee Spending

Employees of the proposed clean coal power plant purchase goods and services to support their households. Retail purchases at businesses throughout the state provide increased sales tax revenue and generate revenue for state goods and services vendors.

Based on data from the Consumer Expenditure Survey from the U.S. Bureau of Labor Statistics, consumers in the Midwest region of the United States typically spend about 29.3% of their income on taxable goods. Subtracting the value of the payroll taxes and benefits from the employee payroll figure yields the total spending power of the employees. Assuming that the spending patterns of the employees of the power plant resemble the regional norm, and that about 80% of the employees' taxable dollars are spent within the state, the 80 employees will spend about \$2.0 million in taxable retail sales in Michigan each year. This level

of retail activity will generate about \$121,000 annually in sales tax revenue.

In addition, the 80 employees occupy residential real estate valued at about \$25.9 million. Based on an average mill levy of 39.96 throughout the state, total residential property taxes on these homes equals about \$518,000. Property tax revenue generated from the State Education Tax of six mills alone totals about \$78,000 per year.

In a typical year, spending by the clean coal power plant employees will generate \$2.6 million in direct economic and fiscal impacts for the state, including \$639,000 in state sales and property tax revenue. Deflating all values to 2007 dollars yields an annual economic and fiscal impact from the spending by the power plant employees of \$2.0 million for the State of Michigan.

	Project Total 2016	State Direct Impact 2016	State Direct Impact 2007 Value
State Government Revenue			
Property Tax Revenue	\$518,000	\$518,000	\$397,000
Sales Tax Revenue	\$121,000	\$121,000	\$93,000
Total State Government Revenues	\$639,000	\$639,000	\$490,000
Business Activity			
Employee to Business Purchases	\$2,517,000	\$2,014,000	\$1,543,000
Total Business Activity	\$2,517,000	\$2,014,000	\$1,543,000
Employee Spending Economic Impact	\$3,156,000	\$2,653,000	\$2,033,000
Employee Spending Fiscal Impact	\$639,000	\$639,000	\$490,000

Total (Multiplier) Impacts

Construction activity and business operations at the proposed clean coal power plant will have multiplicative impacts throughout the State of Michigan economy. This analysis uses the Regional Input-Output Modeling System (RIMS II) multipliers from the Regional Economic Analysis Division, Bureau of Economic Analysis. Multipliers are based on the 2005 Annual Input-Output Table for the Nation and 2005 regional data. These multiplier impacts are described in terms of local spending, earnings, and employment. The multipliers are applied to the direct impact values in 2007 dollars to determine the total (multiplier) impacts.

Construction Activity

Construction activity at the clean coal power plant would result in a total direct and indirect economic impact of \$1.2 billion for Michigan over the 2008 to 2015 period, based on the RIMS II multiplier for the construction industry. This value includes \$614.5 million in payroll to the 2,313 directly supported state construction workers and the additional 2,679 indirectly supported Michigan workers, with employment expressed in work years.

Total (Multiplier) Economic Impacts State of Michigan, (millions of 2007 dollars)

Local Spending	Direct Impact	Multiplier	Indirect & Induced	Total Impact
<u>Construction Activity (2008-2015)</u>				
Local Spending	\$549.1	2.1798	\$647.8	\$1,196.8
Payroll	\$321.5	1.9116	\$293.0	\$614.5
Employment (work years)	2,313	2.1585	2,679	4,992
<u>Business Operations (Typical Year)</u>				
Local Spending	\$48.6	1.3887	\$18.9	\$67.6
Payroll	\$11.5	1.7715	\$8.9	\$20.4
Employment (work years)	80	3.1004	168	248

Business Operations

Business operations at the proposed clean coal power plant would result in a total direct and indirect economic impact of \$67.6 million in a typical year of operations for the State of Michigan, based on the RIMS II multiplier for the utility industry. This impact includes \$20.4 million in payroll to the 80 direct workers and the 168 indirectly supported Michigan workers.

It should be noted that the employee spending impacts described in the prior section are included in the business operations multiplier impacts. To avoid double counting, no further multipliers are applied to the employee spending impacts.

Impact Summary

The direct economic and fiscal impact of construction of the proposed 800-megawatt clean coal power plant on Michigan over the 2008 to 2015 period is \$549.1 million in 2007 dollars. The economic and fiscal impacts of the construction activity include:

- ◆ Total construction-related purchases from State vendors and suppliers of \$217.6 million.
- ◆ Total construction payroll of \$321.4 million for 2,310 work years of construction activity for Michigan residents.
- ◆ State sales/use tax revenue on construction materials of \$10.1 million.

When the multiplier impacts of the construction activity are considered, the total direct and indirect impact of construction activity totals \$1.2 billion, which includes total payroll of \$614.5 million for 4,992 direct and indirect state workers (in work years).

The direct economic and fiscal impact in a typical year of operation of the proposed 800-megawatt clean coal power plant on Michigan is \$50.7 million in 2007 dollars. The economic and fiscal impacts of the business operations and employee spending include:

- ◆ Total business purchases of \$16.4 million from Michigan vendors and suppliers.
- ◆ Total Consumers Energy operating payroll of \$11.5 million for 80 state residents. In turn, these employees spend \$1.5 million on taxable goods and services throughout the state. This spending becomes part of the business operations multiplier effect.
- ◆ \$21.2 million in sales, use, and property tax revenue paid to the state government and other property taxing entities throughout the state from business operations and employee spending.

When the multiplier impacts of business operations are considered, the annual total direct and indirect impact of the clean coal power plant totals \$67.6 million, which includes total payroll of \$20.4 million for 248 direct and indirect Michigan workers.

TRI-COUNTY REGION

This section isolates the economic and fiscal impacts of the proposed 800-megawatt advanced supercritical clean coal power facility at the Karn/Weadock Generating Complex on the Tri-County Region of Bay, Midland, and Saginaw Counties. All of the economic and fiscal impact values described in this section are included in the state totals; these values are not in addition to the values described in the State of Michigan section.

Many of the project descriptions and assumptions discussed in the State of Michigan section are repeated here for clarity.

Direct Economic and Fiscal Impacts

The direct economic and fiscal impact combines impacts from construction activity, business operations, and employee spending.

The direct economic and fiscal benefit realized in the Tri-County Region from the proposed clean coal power plant is evaluated for the construction period (2008-2015) and for a typical year of operation (2016). The impact of constructing the power plant is \$297.8 million in 2007 dollars. During a typical year of operations at the power plant, the impact on the Tri-County Region is estimated to be \$38.9 million, which includes an estimated \$16.4 million of property tax revenue for all regional taxing entities based on the value of the power plant and the residential property of its workers living throughout the three counties. It should be noted that counties, cities, and townships in Michigan do not levy sales tax; sales tax is only assessed at the state level.

Construction Activity

Construction of the clean coal power plant will impact the Tri-County Region by providing payroll for construction workers living in the region and boosting sales for construction goods and services vendors.

Following planning and design work in 2008 and 2009, construction on the \$2.2 billion clean coal power plant is proposed to begin in late 2010 with completion in early 2015. Construction over the 52-

month period will require an estimated 4,625 work years, with one full-time worker for one year equaling one work year. Employment will peak at nearly 1,800 workers during the end of 2012 and beginning of 2013.

An estimated 25% of the construction workers will be from the Tri-County Region. As a result, 1,160 construction work years on the project will be filled by residents of the Tri-County Region.

Further, the area is expected to benefit from the temporary residence of the out-of-state construction workers that will be on site throughout the construction period. Total payroll over the construction period will be approximately \$700.9 million. Adjusting for the value of benefits, payroll taxes, and payroll earned by out-of-state workers but not spent within the region, the clean coal power plant project provides a \$293.0 million direct impact to the Tri-County Region from construction payroll.

Design, engineering, fees, contingency, and other soft costs associated with the project account for nearly 24% of the construction cost, or \$361.4 million. Based on prior company spending patterns, Consumers Energy estimates that a negligible amount of these expenditures will be transacted with companies located in the Tri-County Region.

Construction materials for the power plant, including steel, concrete, and other materials, are estimated to cost about \$458.1 million. Based on prior company spending patterns and the availability of local suppliers, it is expected that about 16% of the construction materials will be purchased from Tri-County Region vendors and suppliers, resulting in a direct impact of about \$73.3 million.

The initial capital investment in the power plant is estimated to be about \$680.6 million. Although all of the equipment comes from suppliers from outside of the Tri-County Region, this equipment is subject to property taxation and therefore provides a benefit to the region as discussed in the business operations section that follows.

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The direct economic and fiscal benefit to the Tri-County Region from construction activity at the proposed power plant is estimated at \$366.3 million over the 2008 to 2015 construction period, which includes payroll, construction materials, engineering and design services, capital investment, and taxes.

Deflating all values to 2007 dollars yields a direct economic and fiscal impact of \$297.9 million for the Tri-County Region.

Summary of Direct Construction Impacts Tri-County Region, 2008 - 2015			
	Project Total 2008-2015	Tri-County Direct Impact 2008-2015	Tri-County Direct Impact 2007 Value
State Government Revenue			
Sales/Use Tax on Construction Materials	\$12,065,000	\$0	\$0
Total State Government Revenues	\$12,065,000	\$0	\$0
Construction Spending			
Construction Materials	\$458,138,000	\$73,302,000	\$62,119,000
Design, Engineering, Fees, Contingency	\$361,364,000	\$0	\$0
Construction Employment (work years)	4,625	1,160	1,160
Construction Payroll	\$700,865,000	\$292,962,000	\$235,732,000
Total Construction Spending	\$1,520,367,000	\$366,264,000	\$297,851,000
Capital Investment	\$680,567,000	\$0	\$0
Construction Economic Impact	\$2,212,999,000	\$366,264,000	\$297,851,000
Construction Fiscal Impact	\$12,065,000	\$0	\$0

Business Operations

The direct economic and fiscal impacts of the business operations of the clean coal power plant are estimated based on payroll and employment, the value of the property, and operations and maintenance (O&M) purchases.

During a typical year of operations at the power plant, which is assumed to be 2016 in this analysis, total annual payroll including benefits for 80 full-time employees will equal \$15.7 million. Based on the distribution of employees at the existing power facilities at the Karn/Weadock Generating Complex, it is assumed that 89% of the employees of the power plant are residents of the Tri-County Region. Therefore, the payroll earned by the 71 employees that are residents of the Tri-County Region totals \$14.0 million.

Replacement capital purchases will be minimal in the first five years of operation, totaling about \$2.8 million per year during 2015-2020. This analysis assumes that none of the power plant equipment is purchased in the Tri-County Region as most equipment comes from suppliers from outside of the state or even from outside of the United States. While there is no economic impact from this equipment, it does generate a fiscal impact as this equipment is subject to personal property taxation.

Consumers Energy purchases operational materials, equipment, and maintenance as part of its on-going operations. These purchases generate revenue for vendors and suppliers throughout the Tri-County Region. Excluding fuel and payroll, operating and maintenance (O&M) expenditures for an 800-megawatt power plant total about \$43.1 million per

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year in 2016 dollars. Based on current expenditure patterns at the Karn/Weadock Generating Complex, about 33% of the O&M purchases are transacted with businesses located in the Tri-County Region, resulting in a \$14.2 million direct economic impact. Fuel, on the other hand, will be purchased outside of the state so the value of fuel purchases is not included in the economic impact.

The high property value of the clean coal power plant generates a large amount of property tax revenue for Bay County, Hampton Township, the Essexville Hampton School District, and other special districts. The total value of the property is \$2.2 billion. However, this value includes about \$280 million of pollution control equipment that is exempt from property tax. Based on the total mill levy for the property of 49.48 mills, the estimated annual property tax payment for the clean coal power plant is \$26.8 million.

Of this amount, six mills or \$5.8 million represents the State Education Tax. The remaining property tax of \$21.0 million will go to the local taxing entities that service the power plant. The potential part owners of the power plant may include

municipalities that are exempt from property taxation. This analysis assumes that the full value of the power plant is subject to property tax. Actual property tax revenue may be somewhat lower depending upon the final ownership structure of the facility.

The property tax value includes a 50% abatement of the power plant's local property taxes. The abatement has been granted for an 18-year period from 2009-2027. Consumers Energy had not applied for an abatement of the State Education Tax at the time of this report.

In a typical year, business operations at the proposed clean coal power plant would generate \$49.2 million in direct economic and fiscal impacts for the Tri-County Region, including \$21.0 million in property tax revenue. Deflating all values to 2007 dollars yields a typical annual economic and fiscal impact of the power plant of \$37.3 million for the Tri-County Region.

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Summary of Direct Business Operations Impacts for a Typical Operating Year (2016)			
	Project Total 2016	Tri-County Direct Impact 2016	Tri-County Direct Impact 2007 Value
State Government Revenue			
Property Tax Revenue	\$26,811,000	\$21,012,000	\$16,104,000
Sales/Use Tax Revenue	\$253,000	\$0	\$0
Total State Government Revenues	\$27,064,000	\$21,012,000	\$16,104,000
Employment & Earnings			
Direct Employment	80	71	71
Employee Payroll	\$15,722,000	\$13,992,000	\$10,267,000
Business Activity			
Capital Equipment Purchases	\$2,847,000	\$0	\$0
Operating & Maintenance Purchases	\$43,057,000	\$14,209,000	\$10,890,000
Total Business Activity	\$45,903,000	\$14,209,000	\$10,890,000
Business Operations Economic Impact	\$88,689,000	\$49,213,000	\$37,260,000
Business Operations Fiscal Impact	\$27,064,000	\$21,012,000	\$16,104,000

Employee Spending

Employees of the proposed clean coal power plant purchase goods and services to support their households. Retail purchases at businesses throughout the Tri-County Region generate revenue for goods and services vendors.

Based on data from the Consumer Expenditure Survey from the U.S. Bureau of Labor Statistics, consumers in the Midwest region of the United States typically spend about 29.3% of their income on taxable goods. Subtracting the value of the payroll taxes and benefits from the employee payroll figure yields the total spending power of the employees. Assuming that the spending patterns of the employees of the power plant resemble the regional norm, and that about 78% of the local employees' taxable dollars are spent within the region, the 71 employees that are residents of the Tri-County Region will spend about \$1.8 million in

taxable retail sales in the Tri-County Region each year.

In addition, the 71 employees occupy residential real estate valued at about \$23.1 million. Based on an average mill levy of 37.139 throughout the Tri-County Region, total residential property taxes on these homes equals about \$429,000. Excluding the property tax revenue generated from the State Education Tax of six mills leaves a total of \$359,000 for all of the local taxing entities throughout the Tri-County Region.

In a typical year, spending by the clean coal power plant employees will generate \$2.1 million in direct economic and fiscal impacts for the Tri-County Region, including \$359,000 in property tax revenue. Deflating all values to 2007 dollars yields an annual economic and fiscal impact from the spending by the power plant employees of \$1.6 million for the Tri-County Region.

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	Project Total 2016	Tri-County Direct Impact 2016	Tri-County Direct Impact 2007 Value
State Government Revenue			
Property Tax Revenue	\$518,000	\$359,000	\$275,000
Sales Tax Revenue	\$121,000	\$0	\$0
Total State Government Revenues	\$639,000	\$359,000	\$275,000
Business Activity			
Employee to Business Purchases	\$2,517,000	\$1,757,000	\$1,346,000
Total Business Activity	\$2,517,000	\$1,757,000	\$1,346,000
Employee Spending Economic Impact	\$3,156,000	\$2,116,000	\$1,622,000
Employee Spending Fiscal Impact	\$639,000	\$359,000	\$275,000

Total (Multiplier) Impacts

Construction activity and business operations at the proposed clean coal power plant will have multiplicative impacts throughout the Tri-County Region economy. This analysis uses the Regional Input-Output Modeling System (RIMS II) multipliers from the Regional Economic Analysis Division, Bureau of Economic Analysis. Multipliers are based on the 2005 Annual Input-Output Table for the Nation and 2005 regional data. These multiplier impacts are described in terms of local spending, earnings, and employment. The multipliers are applied to the direct impact values in 2007 dollars to determine the total (multiplier) impacts.

Construction Activity

Construction activity at the clean coal power plant would result in a total direct and indirect economic impact of \$499.7 million for the Tri-County Region over the 2008 to 2015 period, based on the RIMS II multiplier for the construction industry. This value includes \$366.1 million in payroll to the 1,156 directly supported local construction workers and the additional 853 indirectly supported local workers, with employment expressed in work years.

Total (Multiplier) Economic Impacts Tri-County Region, (millions of 2007 dollars)

Local Spending	Direct Impact	Multiplier	Indirect & Induced	Total Impact
Construction Activity (2008-2015)				
Local Spending	\$297.8	1.6777	\$201.9	\$499.7
Payroll	\$235.7	1.5531	\$130.4	\$366.1
Employment (work years)	1,156	1.7378	853	2,009
Business Operations (Typical Year)				
Local Spending	\$37.3	1.2232	\$8.3	\$45.6
Payroll	\$10.3	1.4405	\$4.5	\$14.8
Employment (work years)	71	2.2771	91	162

Business Operations

Business operations at the proposed clean coal power plant would result in a total direct and indirect economic impact of \$45.6 million in a typical year of operations for the Tri-County Region, based on the RIMS II multiplier for the utility industry. This impact includes \$14.8 million in payroll to the 71 direct local workers and additional 91 indirectly supported local workers.

It should be noted that the employee spending impacts described in the prior section are included in the business operations multiplier impacts. To avoid double counting, no further multipliers are applied to the employee spending impacts.

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Impact Summary

The direct economic and fiscal impact of construction of the proposed 800-megawatt clean coal power plant on the Tri-County Region over the 2008 to 2015 period is \$297.8 million in 2007 dollars. The economic and fiscal impacts of the construction activity include:

- ◆ Total construction-related purchases from vendors and suppliers located in the Tri-County Region of \$62.1 million.
- ◆ Total construction payroll of \$235.7 million for 1,160 work years of construction activity for Tri-County Region residents.

When the multiplier impacts of the construction activity are considered, the total direct and indirect impact of construction activity totals \$499.7 million, which includes total payroll of \$366.1 million for 2,009 direct and indirect workers (in work years).

The direct economic and fiscal impact in a typical year of operation of the proposed 800-megawatt clean coal power plant on the Tri-County Region is \$38.9 million in 2007 dollars. The economic and fiscal impacts of the business operations and employee spending include:

- ◆ Total business purchases of \$10.9 million from vendors and suppliers located in the Tri-County Region.
- ◆ Total Consumers Energy operating payroll of \$10.3 million for the 71 employees that are residents of the Tri-County Region. In turn, these employees spend \$1.3 million on goods and services throughout the region. This spending becomes part of the business operations multiplier effect.
- ◆ \$16.4 million in property tax revenue paid to the taxing entities in the Tri-County Region from business operations and employee spending.

When the multiplier impacts of business operations are considered, the annual total direct and indirect impact of the clean coal power plant totals \$45.6 million, which includes total payroll of \$14.8 million for 162 direct and indirect workers.

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