

ENTERGY NEW ORLEANS, INC.  
CITY OF NEW ORLEANS  
Docket No. UD-16-02

Response of: Entergy New Orleans, Inc.  
to the Sixth Set of Data Requests  
of Requesting Party: Alliance for Affordable  
Energy

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Question No.: AAE 6-9

Part No.:

Addendum: 1

Question:

Refer to Exhibit 2017 07 06 UD-16-02 ENO Supplemental and Amended App PUBLIC, page 9: “The Company has engaged Loren C. Scott & Associates, Inc. to perform an analysis of the impacts of the Alternative Peaker, and its economic impact is expected to be similar to the CT’s.”

- a. Please provide the final written narrative of these analyses and any background papers related to it.
- 

Response:

The requested report will be provided once it has been completed.

**Addendum 1:**

Please see the attached report.

**ECONOMIC IMPACT ON THE ORLEANS PARISH AND LOUISIANA ECONOMIES  
OF ENTERGY'S PROPOSED NEW ORLEANS POWER STATION**

**PREPARED BY**

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**October 2017**

## Executive Summary

Entergy New Orleans, Inc. (“ENOI”) plans to construct a new power plant called the New Orleans Power Station (NOPS) that will be located within the boundary of the property on which the existing Michoud Generating Plant in New Orleans, Louisiana is located. The company is proposing to install seven reciprocating internal combustion engines (RICE) and ancillary equipment. This plant will use natural gas as its sole fuel source. The NOPS has a predicted output capacity of a nominal 128 megawatt (MW). The proposed RICE project will be connected to a new switchyard with new 115-kilovolt (kv) main bus in a simple bus configuration to support one 115-kv transmission line position and three 115-kv line terminations coming from three Generator Step Up (GSU) transformers.

The purpose of this report is to estimate the impact of constructing and then operating this new plant on the (1) Orleans Parish and (2) State of Louisiana economies, using input-output tables produced by the U.S. Bureau of Economic Analysis. Our findings can be summarized as follows:

The impacts of spending \$134.2 million in-state to both **plan** (2015-17) and **construct** (2018-20) the NOPS are:

- Impacts on **Orleans Parish** economy:
  - \$180,230,600 in new sales at companies in the parish;
  - \$24,612,280 in new earnings for parish residents;
  - An average of 80 jobs a year, and;
  - \$861,430 in new sales tax collections for the parish treasury.
- Impacts on the **Louisiana** economy:
  - \$266,427,260 in new sales at companies in the state;
  - \$89,726,120 in new earnings for state residents;
  - An average of 306 jobs a year in the state, and;
  - \$6,280,828 in new revenue collections for the state treasury.

Table E-1 summarizes the annual impacts on the parish and state economies of **operating** this plant once it is built. While the construction impacts bulleted above are temporary and vanish once construction ends, the impacts in Table E-1 are on-going and indeed, will likely grow over time due to inflation.

**Table E-1**  
**Impacts of Operating the NOPS on the Orleans Parish & Louisiana Economies**

Category	Orleans Parish Impacts	State Impacts
New Business Sales	\$12,778,008	\$18,961,224
New Household Earnings	\$5,974,928	\$10,385,789
New Permanent Jobs	59	153
Taxes	\$209,122	\$727,005

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## I. Introduction

Entergy New Orleans, Inc. (“ENOI”) plans to construct a new power plant called the New Orleans Power Station (NOPS) that will be located within the boundary of the property on which the existing Michoud Generating Plant in New Orleans, Louisiana is located. The company is proposing to install seven reciprocating internal combustion engines (RICE) and ancillary equipment. This plant will use natural gas as its sole fuel source. The NOPS has a predicted output capacity of a nominal 128 megawatt (MW). The proposed RICE project will be connected to a new switchyard with new 115-kilovolt (kv) main bus in a simple bus configuration to support one 115-kv transmission line position and three 115-kv line terminations coming from three Generator Step Up (GSU) transformers.

Expenditures on planning the construction will occur over 2015-17 and actual construction will take place over 2018-20. The middle column of Table 1 shows the pattern of these expenditures over these six years. Of the total construction cost of \$210.0 million, it is estimated that \$75.8 million will be spent on equipment and materials purchased out-of-state. The last column of Table 1 shows the in-state expenditures after deducting this \$75.8 million. The total in-state construction spending will be \$134.2 million.

**Table 1**  
**Schedule for Construction of the New Orleans Power Station**  
**(Millions of Dollars)**

<b>Year</b>	<b>Total Construction Cost</b>	<b>In-State Construction Spending</b>
2015	\$1.6	\$1.6
2016	\$2.5	\$2.5
2017	\$8.3	\$8.3
2018	\$107.7	\$58.4
2019	\$77.3	\$57.8
2020	\$12.6	\$5.6
<b>Total</b>	<b>\$210.0</b>	<b>\$134.2</b>

This report is focused on estimating the impact of both constructing and operating the NOPS on the economies of Orleans Parish and the State of Louisiana. In each region impacts will be estimated on (1) business sales, (2) household earnings, (3) jobs, and (4) tax collections. Section II describes the methodology used to estimate the multiplier effect of this new spending. Section III is devoted to the impacts of constructing and operating the NOPS on the Orleans Parish economy, while Section IV examines the impact of this spending on the State's economy. Finally, Section V contains a summary and conclusions.

## **II. Methodology**

It is a well-established principle that business investment decisions have both direct and indirect (secondary) impacts on the economy. The direct impact of a particular company or establishment on income and employment can be measured by its revenue and payroll. However, these impacts would significantly understate the role of the company in the economy. The reason is that the company also buys from, and sells to, many other companies in the economy. The interactions caused by these purchases and expenditures are magnified by the spending of employees who earn income from the company and the affected businesses.

Thus, any change in the activity of a particular company **indirectly** affects these buyers and sellers, which in turn affects companies that buy from and sell to these buyers and sellers, etc. For example, when a decision is made by a company that creates a new job, a chain-reaction is started which works its way throughout the economy. This chain-reaction (multiplier effect) causes even more jobs to be created. The analogy is of a rock being tossed into a pond. Not only is there an initial splash, but ripples are also created that spread throughout the pond.

The major difficulty lies in attempting to quantify these indirect or multiplier effects. Fortunately, a technique has been developed for precisely this purpose---an input-output (I/O) table. An I/O table is a matrix of numbers that describes the interactions between all industries in a geographical area (in this case, the state and the region). The I/O table provides a complete picture of the flows of products and services in the economy for a given year, illustrating the relationship between producers and consumers and the interdependencies of industries in the state. I/O tables for Orleans Parish and the State of Louisiana have been constructed by the Bureau of Economic Analysis (BEA) in the U.S. Department of Commerce. The BEA is the government agency responsible for measuring the nation's gross domestic product each quarter. An I/O table can be used to estimate three separate impacts generated by the capital outlays and operational expenditures by ENOI on the NOPS: (1) *new sales* for companies in the parish and the state, (2) *new household earnings* for residents in the parish and the state, and (3) *new jobs* in the parish and the state.

### **III. Impact of NOPS Capital & Operational Spending on Orleans Parish**

In this section the impact of the new NOPS project is assessed on the economy of Orleans Parish. The impact of constructing the facility is discussed first, followed by the impact of operating the plant once construction is completed.

#### **Impact of Constructing the NOPS on Orleans Parish**

As shown in Table 1, the NOPS will be planned and constructed over the 6-year period from 2015 to 2020. The last column of that table shows how the total of \$134.2 million of in-state spending will be allocated over the six years. The majority of this in-state spending will occur over 2018-19, with the peak spending year being 2018 (\$58.4 million).

These in-state construction data were plugged into the I/O table for Orleans Parish to determine the multiplier effects of this spending on the parish's economy. The results are shown in Table 2.

**Table 2**  
**Impacts of Planning & Construction of the NOPS on Orleans Parish**

<b>Years</b>	<b>Sales</b>	<b>Earnings</b>	<b>Jobs</b>	<b>Taxes</b>
2015	\$2,148,800	\$293,440	6	\$10,270
2016	\$3,357,500	\$458,500	9	\$16,048
2017	\$11,146,900	\$1,522,220	30	\$53,278
2018	\$78,431,200	\$10,710,560	209	\$374,870
2019	\$77,625,400	\$10,600,520	205	\$371,018
2020	\$7,520,800	\$1,027,040	20	\$35,946
<b>Total</b>	<b>\$180,230,600</b>	<b>\$24,612,280</b>	<b>80*</b>	<b>\$861,430</b>

\*Average over 5-year construction cycle

According to the parish I/O table, spending to plan and construct the NOPS over 2015-20 will create (1) \$180.2 million in new business sales in the parish, (2) \$24.6 million in new household earnings for parish residents, and (3) an average of 80 jobs a year. Not surprisingly, the largest impacts are in the years of greatest construction spending---2018 and 2019. In the peak year of spending (2018), construction activity will create \$78.4 million in new business sales in the parish and \$10.7 million in new household earnings for parish residents and 209 temporary jobs parish.

It is also possible to estimate how much new sales taxes the parish will collect due to the planning and construction of the NOPS. For example, in 2012 the parish collected just over \$324 million in sales tax collections.<sup>1</sup> In that same year parish residents made \$9,745.2 million in earnings.<sup>2</sup> Thus, it is estimated that for every dollar of earnings, the parish collects 3.5 cents (\$324 million/\$9,745.2 million) in sales taxes.

<sup>1</sup> [www.nola.gov/revenue-sales-tax/sales-tax/](http://www.nola.gov/revenue-sales-tax/sales-tax/)

<sup>2</sup> [www.bea.gov](http://www.bea.gov)



By multiplying the new earnings numbers in column two of Table 2 by 3.5% we arrive at the new sales tax estimates in the last column of Table 2. **It is estimated that the planning and construction of the NOPS will pump an additional \$861,430 in new sales taxes into the parish treasury.**

### **Impact of Operating the NOPS on Orleans Parish**

Once the NOPS construction is completed, new monies will be injected into the parish economy to operate the plant. ENOI estimates it will spend just under \$6.6 million a year to operate the facility. Of this \$6.6 million, over \$3.6 million will be spent on payroll. The new plant is expected to employ 20 new full time employees.

Table 3 provides the I/O table estimates of the total impact on the parish of the new operating expenditures. **It is estimated that operating the NOPS will generate (1) nearly \$12.8 million in new sales for businesses in the parish, (2) about \$6 million in new earnings for parish residents, (3) 59 new permanent jobs in the parish, and (4) \$209,122 a year in new sales tax collections for the parish treasury.** There are two important points to note about the numbers in Table 3. First, unlike the construction benefits documented in Table 2 which will vanish once construction is completed, the benefits in Table 3 are recurring or permanent as long as the NOPS remains operational. Secondly, the sales, earnings and sales tax numbers in Table 3 will tend to grow over time with inflation.

**Table 3**  
**Impacts of Operations of the NOPS on Orleans Parish: First Year of Operation**

<b>Category</b>	<b>Impacts</b>
New Business Sales	\$12,778,008
New Household Earnings	\$5,974,928
New Permanent Jobs	59
Taxes	\$209,122

## Operational Impacts on Industries in the Parish

Decision-makers may be interested in how the indirect (multiplier) effects of operating the NOPS are allocated among all the industries in the parish. Table 4 provides the I/O table estimates of this distribution.

**Table 4**  
**Indirect Impacts of NOPS Operations Spending on**  
**Orleans Parish by Industry: First Year of Operation**

<b>Category</b>	<b>Sales</b>	<b>Earnings</b>	<b>Jobs</b>
Agriculture, Forestry, Fishing, and Hunting	\$0	\$0	0
Mining	\$123,902	\$7,428	0
Utilities	\$83,077	\$5,579	0
Construction	\$6,606,222	\$921,015	15
Durable Goods Manufacturing	\$298,830	\$15,457	0
Nondurable Goods Manufacturing	\$788,152	\$48,014	1
Wholesale Trade	\$252,451	\$31,056	0
Retail Trade	\$588,709	\$101,475	4
Transportation and Warehousing	\$211,075	\$23,140	0
Information	\$122,661	\$15,002	0
Finance and Insurance	\$517,194	\$55,413	1
Real Estate and Rental and Leasing	\$942,628	\$83,911	4
Professional, Scientific, and Technical Services	\$403,056	\$91,255	1
Management of Companies and Enterprises	\$90,789	\$14,834	0
Administrative and Waste Management Services	\$145,312	\$28,385	1
Educational Services	\$103,142	\$28,698	1
Health Care and Social Assistance	\$537,649	\$108,543	3
Arts, Entertainment, and Recreation	\$72,961	\$13,964	1
Accommodation	\$93,417	\$14,956	0
Food Services and Drinking Places	\$229,919	\$44,265	2
Other Services	\$567,258	\$89,416	2
Households	\$0	\$4,558	0
<b>Total</b>	<b>\$12,778,404</b>	<b>\$1,746,363</b>	<b>39</b>

The industry that gains the most sales increase from the operation of the power station is the construction sector. Companies in this sector should see their sales increase by \$6.6 million due to the NOPS operations. Companies in six other industries should see their sales increase in

excess of \$500,000: (1) Nondurable Goods (\$788,152); (2) Retail Trade (\$588,709); (3) Finance and Insurance (\$517,194); (4) Real Estate and Rentals (\$942,628); (5) Health Care (\$537,649); and (6) Other Services (\$567,258).

Note in column two of Table 4 that it will be workers in the construction industry that will receive the largest increase in household earnings (\$921,015), followed by workers in the Health Care (\$108,543) and Retail Trade (\$101,475). Thirty nine jobs will be created via the multiplier effect.

#### **IV. Impact of NOPS Capital & Operational Spending on Louisiana**

In this section of the report, the impact of both planning/constructing and operating the new NOPS on the state economy is examined. Note that all the impact results should be larger than in the case of the parish impacts, because the economic “pond” into which this new unit will be dropped is much larger.

##### **Impact of Constructing the NOPS on Louisiana**

Table 5 contains the I/O table estimates of the impact of planning and constructing the new NOPS on the Louisiana economy. Again, these numbers are noticeably larger than those in Table 2 because the economic pond is now larger and the ripple effects of the spending reaches further into the economy.

**Over the 6-year planning/construction cycle it is estimated this capital spending will create (1) over \$266.4 million in new sales at businesses in Louisiana, (2) over \$89.7 million in household earnings for citizens of the state, and (3) an average of 306 jobs a year.** Impacts are the greatest in the years of the greatest construction spending---2018-19. In the year of the largest spending (2018), construction spending at the site will generate (1) over \$115.9

million in new business sales, (2) over \$39.0 million in new household earnings, and (3) 803 jobs.

**Table 5**  
**Impacts of Planning & Constructing the NOPS on the Louisiana Economy**

<b>Years</b>	<b>Sales</b>	<b>Earnings</b>	<b>Jobs</b>	<b>Taxes</b>
2015	\$3,176,480	\$1,069,760	23	\$74,883
2016	\$4,963,250	\$1,671,500	35	\$117,005
2017	\$16,477,990	\$5,549,380	115	\$388,457
2018	\$115,941,520	\$39,046,240	803	\$2,733,237
2019	\$114,750,340	\$38,645,080	787	\$2,705,156
2020	\$11,117,680	\$3,744,160	75	\$262,091
<b>Total</b>	<b>\$266,427,260</b>	<b>\$89,726,120</b>	<b>306*</b>	<b>\$6,280,828</b>

\*Average yearly jobs created.

The last column of Table 5 provides estimates of the impact of building this plant on state revenues. Officials with Louisiana's Legislative Fiscal Office have estimated that for every new dollar of earnings generated in the state, the treasury collects seven cents in sales taxes, income taxes, gasoline taxes and other fees. The numbers in the last column of Table 5 are produced by multiplying the earnings figures in column two by 7%. Using this calculus, it is estimated that **over the 6-year planning/construction cycle, almost \$6.3 million in new revenues will be generated for the state treasury.**

### **Impacts of Operating the NOPS on the Louisiana Economy**

The benefits to the state from the construction of the NOPS project are temporary as shown in Table 5. That is, as soon as construction is completed, these benefits go away. This is not the case for the benefits from operating the plant, which are shown in Table 6. As long as the plant remains operational, the benefits shown in Table 6 below will accrue to Louisiana. In fact, the sales, earnings and tax benefits are very likely to grow with inflation.

**Table 6**  
**Impacts of Operating the NOPS on the Louisiana Economy**

<b>Category</b>	<b>Impacts</b>
New Business Sales	\$18,961,224
New Household Earnings	\$10,385,789
New Permanent Jobs	153
Taxes	\$727,005

According to the I/O table, **operation of the new NOPS facility will annually support (1) nearly \$19 million in new sales at businesses in the state, (2) nearly \$10.4 million in new household earnings for state citizens, (3) 153 new jobs, and (4) \$727,005 in new revenues for the state treasury.** The 153 new jobs in the state implies a job multiplier of 7.7 (153 total jobs divided by 20 direct jobs at the NOPS). That is, for every new job created at the facility, another 6.7 jobs are created elsewhere in Louisiana via the multiplier effect.

### **Operations Impacts across Industries in Louisiana**

Readers may be interested in learning in which industries are these multiplier effects concentrated. Table 7 provides estimates from the Louisiana I/O table. The biggest **sales** increases are projected for companies in the construction sector (\$6.7 million) followed by companies in the nondurable goods manufacturing sector (\$1.7 million), retail trade (\$1.3 million) and healthcare (\$1.3 million).

**Table 7**  
**Indirect Impacts of Operating the NOPS**  
**on Louisiana by Industry: 2020**

<b>Category</b>	<b>Sales</b>	<b>Earnings</b>	<b>Jobs</b>
Agriculture, Forestry, Fishing, and Hunting	\$100,507	\$26,605	1
Mining	\$273,406	\$46,674	1
Utilities	\$343,790	\$52,433	1
Construction	\$6,682,167	\$2,573,489	43
Durable Goods Manufacturing	\$1,002,161	\$202,536	4
Nondurable Goods Manufacturing	\$1,658,642	\$256,061	3
Wholesale Trade	\$766,539	\$242,864	4
Retail Trade	\$1,348,136	\$481,101	16
Transportation and Warehousing	\$566,037	\$172,439	3
Information	\$343,839	\$74,032	1
Finance and Insurance	\$667,178	\$174,112	4
Real Estate and Rental and Leasing	\$1,207,976	\$200,359	8
Professional, Scientific, and Technical Services	\$554,494	\$248,825	4
Management of Companies and Enterprises	\$159,635	\$66,921	1
Administrative and Waste Management Services	\$290,688	\$126,102	4
Educational Services	\$155,077	\$72,508	2
Health Care and Social Assistance	\$1,312,426	\$601,688	13
Arts, Entertainment, and Recreation	\$121,287	\$36,554	1
Accommodation	\$159,796	\$44,998	1
Food Services and Drinking Places	\$427,687	\$138,825	7
Other Services	\$819,340	\$303,698	8
Households	\$0	\$14,465	1
<b>Total</b>	<b>\$18,960,808</b>	<b>\$6,157,290</b>	<b>133</b>

When it comes to **household earnings**, it is workers in the construction sector that have the most to gain---almost \$2.6 million. Over \$300,000 in new earnings will be enjoyed by workers in Health Care (\$601,688), Retail Trade (\$481,101), and Other Services (\$303,698). One hundred thirty three **jobs** will be created via the multiplier effect (Table 7).

## V. Summary & Conclusions

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