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FILE

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of Duke Energy Ohio for an Increase in Gas Rates	)	Case No. 07-589-GA-AIR
In the Matter of the Application of Duke Energy Ohio for Approval of an Alternative Rate Plan for its Gas Distribution Service	)	Case No. 07-590-GA-ALT
In the Matter of the Application of Duke Energy Ohio for Approval to Change Accounting Methods	)	Case No. 07-591-GA-AAM

DIRECT TESTIMONY OF

DR. RICHARD G. STEVIE

ON BEHALF OF

DUKE ENERGY OHIO

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ATTACHMENTS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION WITH DUKE ENERGY CORPORATION.

A. My name is Richard G. Stevie. My business address is 139 E. Fourth Street, Cincinnati, Ohio.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY:

A. I am Managing Director of Customer Market Analytics for Duke Energy Business Services. Effective July 1, 2008, Duke Energy Business Services and Duke Energy Shared Services, Inc. merged into one service company known as Duke Energy Business Services. This company is a wholly-owned service company subsidiary of Duke Energy Corporation (Duke Energy). Duke Energy Business Services provides various administrative services to Duke Energy Ohio, Inc. (DE-Ohio or Company) and other Duke Energy affiliates including Duke Energy Indiana, Inc., Duke Energy Carolinas, and Duke Energy Kentucky, Inc.

Q. PLEASE BRIEFLY DESCRIBE YOUR DUTIES AND RESPONSIBILITIES AS MANAGING DIRECTOR OF THE CUSTOMER MARKET ANALYTICS DEPARTMENT.

A. I have responsibility for several functional areas including load forecasting, load research, demand side management (DSM) analysis, market research, load management analytics, and product development analytics. The Customer Market Analytics Department is responsible for providing functional analytical support to DE-Ohio as well as the other Duke Energy affiliates previously mentioned.

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I received a Bachelor's degree in Economics from Thomas More College in May 1971. In June 1973, I was awarded a Master of Arts degree in Economics from the University of Cincinnati. In August 1977, I received a Ph.D. in Economics from the University of Cincinnati.

My past employers include the Cincinnati Water Works where I was involved in developing a new rate schedule and forecasting revenues, the United States Environmental Protection Agency's Water Supply Research Division where I was involved in the research and development of a water utility simulation model and analysis of the economic impact of new drinking water standards, and the Economic Research Division of the Public Staff of the North Carolina Utilities Commission where I presented testimony in numerous utility rate cases involving natural gas, electric, telephone, and water and sewer utilities on several issues including rate of return, capital structure, and rate design. In addition, I was involved in the Public Staff's research effort and presentation of testimony regarding electric utility load forecasting. This included the development of electric load forecasts for the major electric utilities in North Carolina. I was also involved in research concerning cost curve estimation for electricity generation, rate setting and separation procedures in the telephone industry, and the implications of financial theory for capital structures, bond ratings, and dividend policy. In July 1981, I became the Director of the Economic Research Division of the Public Staff with the responsibility for the development and presentation of all testimony of the Division.

In November 1982, I joined the Load Forecast Section of The Cincinnati Gas & Electric Company (CG&E). My primary responsibility involved directing the development of CG&E's Electric and Gas Load Forecasts. I also participated in the economic evaluation of alternate load management plans and was involved in the development of CG&E's Integrated Resource Plan (IRP), which integrated the load forecast with generation options and demand-side options.

With the reorganization after the merger of CG&E and PSI in late 1994, I became Manager of Retail Market Analysis in the Corporate Planning Department of Cinergy Services and subsequently General Manager of Market Analysis with responsibility for the load forecasting, load research, DSM impact evaluation, and market research functions of the combined Cinergy company. After the merger of Cinergy Corp. and Duke Energy in 2006, I became the General Manager of the Market Analysis Department with responsibility for several areas, including load forecasting, load research, market research, DSM strategy and analysis, load management development, and business development analytics. Since then, I have become the Managing Director of the Customer Market Analytics Department.

Since 1990, I have chaired the Economic Advisory Committee for the Greater Cincinnati Chamber of Commerce. I have been a part-time faculty member of Thomas More College located in Northern Kentucky and the University of Cincinnati teaching undergraduate courses in economics. In addition, I am an outside adviser to the Applied Economics Research Institute in the Department of Economics at the University of Cincinnati as well as a member of an advisory committee to the Economics Department at Northern Kentucky University.

Q. ARE YOU A MEMBER OF ANY PROFESSIONAL ORGANIZATIONS?

A. Yes, I am a member of the American Economic Association, the National Association of Business Economists, and the Association of Energy Services Professionals.

Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY BEFORE ANY OTHER REGULATORY AGENCIES?

A. Yes. I have presented testimony on several occasions before the North Carolina Utilities Commission, the South Carolina Public Service Commission, the Indiana Utility Regulatory Commission, the Kentucky Public Service Commission, and the Public Utilities Commission of Ohio.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony provides estimates of the broader economic benefits from the installation of smart metering systems. These are often referred to as the macroeconomic benefits or multiplier effects that arise from investments. My testimony will provide background on the method used to estimate the broader economic benefits and then apply the method to the Company's proposed investments in smart meter installations.

II. METHOD FOR ESTIMATING ECONOMIC BENEFITS

Q. WHAT METHOD IS USED TO ESTIMATE THE ECONOMIC BENFITS FROM INVESTMENTS?

A. In general, investments made for a project have direct and indirect/induced types of impact. The direct impacts are measured by the installation phase of the project as well as on-going operational expenditures. The installation phase represents the capital equipment and the labor dollars to complete the construction phase of the project.

Beyond the initial completion of the construction phase, there is the direct spending from on-going operations.

The indirect economic impacts arise in the form of increased income generated due to the increase in economic activity from the direct spending. In other words, the direct spending creates a "ripple" effect or induced impact above and beyond the direct spending. The total economic impact will be some multiple of the direct spending.

One way to look at this is if a business spends an additional dollar on a project, that dollar is spent, in part, again by the person or business that received it. This process repeats itself again and again until the cycle of spending is exhausted. The total economic impact can sometimes be many multiples of the initial dollar spent.

The general method for conducting this analysis involves the use of Input-Output multipliers to estimate the total economic impact of increases in final demand for goods and services. Input-Output analysis was developed by Wassily Leontief in the late 1930's and early 1940's as a way to model the interrelationships among the components of the economy. Through an Input-Output, one can gain an understanding of the impact of a change in the level of activity in one industry on other supporting industries. Input-Output model coefficients provide the estimates of the impacts from these interrelationships. The approach has been used since the 1970's by the Bureau of Economic Analysis, Department of Commerce, to provide a structure for conducting estimates of the economic benefits from projects.

Q. HOW IS THE INPUT-OUTPUT METHOD APPLIED TO ESTIMATE ECONOMIC IMPACTS?

A. The Bureau of Economic Analysis (BEA) has developed a set of regional multipliers known as RIMS II (Regional Input-Output Modeling System). The BEA has created multipliers for the impact on final-demand output, final-demand earnings, final-demand value-added, direct-effect earnings, and direct-effect employment. The estimates of multipliers can be obtained for the nation as a whole as well as for specific regions. The BEA has developed a set of multipliers for the Greater Cincinnati region. The Company has obtained the set of multipliers in order to estimate the broader economic impacts from the smart meter project. Attachment RGS-1, provides the multipliers that represent the impacts on Final-Demand Output. The values represent the total dollar change in output that occurs across all industries for each dollar of output delivered to final demand by the row industry. These multipliers can be used with the projected level of direct spending to estimate the total economic impact.

From the multipliers in Attachment RGS-1, I selected four that are applicable to the installation of a smart meter system. These are Utilities, Computer and Electronic Product Manufacturing, Electrical Equipment and Appliance Manufacturing, and Information and Data Processing Services. The four selected multipliers are provided on Attachment RGS-2 along with the projected amounts of direct investments assigned to each of the four categories. The associated levels of on-going spending are also provided.

The present value total direct investment of the project is $507 million. Using the multipliers, this translates to a total economic impact of $1,010 million or an incremental benefit of $503 million. For on-going operations, the present value total direct spending

of the project is $147 million. Using the multipliers, this translates to a total economic impact of $292 million or an incremental benefit of $145 million.

From a total perspective, the present value total expenditure of the project is $654 million. Using the multipliers, this translates to a total economic impact of $1,302 million or an incremental benefit of $648 million.

Q. HOW REALISTIC ARE THESE VALUES OF INCREMENTAL BENEFIT?

A. In general, this translates into a multiplier that is close to two times. For manufacturing projects, I usually expect a higher multiplier. The level found here is not unexpected. However, if one wanted to take a more conservative view, one could examine the incremental value estimated using the lowest non-residential multiplier, which is approximately 1.36. Using that multiplier, I find a minimum estimate of incremental economic benefit of $235 million (0.36 times $653 million).

Q. PLEASE SUMMARIZE THE FINDINGS FORM YOUR ANALYSIS?

A. From the application of the Input-Output multipliers to the projected spending on the smart meter system, I estimate that the incremental economic benefits from the project are $648 million. I also find that under a very conservative approach, the value is $235 million.

III. CONCLUSION

Q. WERE EXHIBIT RGS-1 AND EXHIBIT RGS-2 PREPARED BY YOU OR UNDER YOUR DIRECTION?

A. Yes.

1 Q. **DOES THAT CONCLUDE YOUR PREPARED TESTIMONY AT THIS TIME?**

2 A. Yes.

Bureau of Economic Analysis RIMS II Multipliers
Cincinnati Metropolitan Statistical Area

Attachment RGS 1

Industry Group	Final-demand Output (dollars)
1. Crop and animal production	1.7424
2. Forestry, fishing, and related activities	1.6211
3. Oil and gas extraction	1.0000
4. Mining, except oil and gas	1.8457
5. Support activities for mining	2.0167
6. Utilities*	1.3618
7. Construction	2.1636
8. Wood product manufacturing	1.8244
9. Nonmetallic mineral product manufacturing	2.0004
10. Primary metal manufacturing	1.8650
11. Fabricated metal product manufacturing	2.0455
12. Machinery manufacturing	2.1372
13. Computer and electronic product manufacturing	2.1250
14. Electrical equipment and appliance manufacturing	1.9888
15. Motor vehicle, body, trailer, and parts manufacturing	2.3026
16. Other transportation equipment manufacturing	1.8558
17. Furniture and related product manufacturing	2.0978
18. Miscellaneous manufacturing	2.1575
19. Food, beverage, and tobacco product manufacturing	2.1870
20. Textile and textile product mills	1.9107
21. Apparel, leather, and allied product manufacturing	2.0319
22. Paper manufacturing	2.1961
23. Printing and related support activities	2.2681
24. Petroleum and coal products manufacturing	1.7621
25. Chemical manufacturing	1.9155
26. Plastics and rubber products manufacturing	2.1769
27. Wholesale trade	1.8930
28. Retail trade	1.9925
29. Air transportation	1.8299
30. Rail transportation	1.8676
31. Water transportation	2.0857
32. Truck transportation	2.1608

33. Transit and ground passenger transportation*	2.1503
34. Pipeline transportation	1.6567
35. Other transportation and support activities*	1.9219
36. Warehousing and storage	1.9605
37. Publishing including software	2.0462
38. Motion picture and sound recording industries	1.8378
39. Broadcasting and telecommunications	1.9421
40. Information and data processing services	2.0121
41. Federal Reserve banks, credit intermediation and related servic	1.7872
42. Securities, commodity contracts, investments	2.1890
43. Insurance carriers and related activities	2.1716
44. Funds, trusts, and other financial vehicles	2.2393
45. Real estate	1.4594
46. Rental and leasing services and lessors of intangible assets	2.1571
47. Professional, scientific, and technical services	2.0770
48. Management of companies and enterprises	2.0958
49. Administrative and support services	2.0726
50. Waste management and remediation services	2.0315
51. Educational services	2.1465
52. Ambulatory health care services	2.0891
53. Hospitals and nursing and residential care facilities	2.1764
54. Social assistance	2.1150
55. Performing arts, museums, and related activities	2.0897
56. Amusements, gambling, and recreation	1.9719
57. Accommodation	1.9339
58. Food services and drinking places	2.0710
59. Other services*	2.1112
60. Households	1.3257

Economic Impact of Smart Meter Project

Attachment RGS 2

Impact of Direct Investment

	Input-Output Multipliers Final-demand Output (dollars)	Components	Project Cost 20 Year Present Value	Total Economic Value	Incremental Value
Computer and electronic product manufacturing	2.1250	Hardware	$ 9,043,988	$ 19,218,475	$ 10,174,487
Electrical equipment and appliance manufacturin	1.9888	Equipment (1)	$ 471,500,339	$ 937,719,875	$ 466,219,535
Information and data processing services	2.0121	Software and IT labor	$ 26,333,978	$ 52,986,597	$ 26,652,619
Total			$ 506,878,305	$ 1,009,924,946	$ 503,046,641

Impact of Operational Direct Spending

	Input-Output Multipliers Final-demand Output (dollars)	Components	Project Cost 20 Year Present Value	Total Economic Value	Incremental Value
Utilities	1.3618	Power usage	$ 6,802,523	$ 9,263,676	$ 2,461,153
Computer and electronic product manufacturing	2.1250	Hardware and support	$ 13,408,335	$ 28,492,711	$ 15,084,377
Electrical equipment and appliance manufacturin	1.9888	Service contracts and maintenance	$ 33,359,642	$ 66,345,656	$ 32,986,014
Information and data processing services	2.0121	Software maintenance	$ 93,219,645	$ 187,567,248	$ 94,347,603
			$ 146,790,145	$ 291,669,292	$ 144,879,146

Total Project Costs, Economic Value and Incremental Value

	Project Cost 20 Year Present Value	Total Economic Value	Incremental Value
Capital	$ 506,878,305	$ 1,009,924,946	$ 503,046,641
Operation and Maintenance	$ 146,790,145	$ 291,669,292	$ 144,879,146
Total	$ 653,668,450	$ 1,301,594,238	$ 647,925,788

(1) Meters, communication equipment, distribution automation equipment, and installation