Projected Economic Impacts of Adding Electric Distribution Services to PUD #1 of Jefferson County

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Report by

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Executive Summary

Jefferson County PUD #1 is considering addition of electric distribution services to the utility, substituting a locally-based organization and capital facilities for those now provided by Puget Sound Energy. Since crews maintaining the current facilities and providing billing and other services to customers in Jefferson County cannot be confirmed as current residents of the county, the movement of the franchise from Puget Sound Energy to the local PUD could have a significant economic impact. This report does not consider the costs of either building a new distribution system or acquiring the existing capital facilities used by Puget Sound Energy to deliver electricity to customers in Jefferson County. However, based on an earlier consultant analysis that did attempt to estimate these costs and an updating of the organizational scheme proposed by that consultant to reflect growth in the county since the early report, this report provides an estimate of the payroll and purchases of an electric utility managed by the PUD. Information provided by neighboring Public Utility Districts was used to estimate probable salary levels of the organization the PUD would have to create, resulting in an estimate of the total payroll impact of the proposed electric utility. Local purchases were estimated using information in the input-output model and adjusting for the limited supplier base in Jefferson County. In addition to these direct impacts on the county economy, indirect or multiplier impacts are estimated using an input-output model. The table below summarizes the results of the analysis:

Projected Impacts of an Electric Distribution Utility in Jefferson County, 2005

	Employment	*Labor Earnings (millions $)*
Direct	36.2	1.907
Indirect	82.8	2.443
Total	119.0	4.351

The addition of over 36 new jobs at an average wage of nearly $52,700 would create a total direct payroll impact of over $1.9 million annually. Multiplier impacts resulting from this payroll and local purchases of goods and services by the electric utility would likely raise the total impacts to 119 jobs, 1.3 percent of total non-farm employment in the county as of February 2005, and increased labor earnings of $4.3 million, 1.07 percent of labor earnings of county residents in 2002 (the most recent figure available).

Scope of the Report

This report provides an assessment of the local economic impacts of adding electric distribution services to Jefferson County PUD #1. The proposed electric distribution utility would serve the eastern part of Jefferson County now served by Puget Sound Energy (PSE), excluding national park lands, the western portion of the county, and the several small areas in the eastern part of the county now served by other county PUDs. PSE is headquartered in Bellevue, Washington and serves much of the central Puget Sound region not served by municipal electric utilities (Seattle and Tacoma) or a PUD (Snohomish County). PSE has no staff known to be based in Jefferson County according to the Jefferson County PUD. Line and substation maintenance, hookups, and other activities involving PSE's equipment in Jefferson County are provided by crews based in Kitsap County; customer billing and other customer service activities are provided by the company's centralized staff, largely from its Bellevue headquarters. If the legal franchise for providing electric distribution services in part or all of the county were moved to the PUD, the PUD would then either acquire PSE's existing capital stock within the county (lines, substations, etc.) or it would have to build its own. The costs of the acquisition or construction are not considered in this report. This report analyses the personnel requirements for operating the new or acquired system with a locally based staff, the payroll required to compensate these personnel, and the economic impacts on Jefferson County of this added payroll.

On the assumption, not verified with PSE, that current crews maintaining the facilities in Jefferson County do not live in the county, and that the customer service functions are also provided entirely by PSE personnel living elsewhere, all of this new employment would add to the employment base in Jefferson County. In addition, the PUD would purchase various materials and services in order to operate the electric distribution utility and maintain the necessary capital equipment. Some of these purchased goods and services could be provided by local companies, extending the impact of the switch in utility provider. The payroll and any local purchases are called direct impacts. These direct impacts would have multiplier impacts on the local economy, contributing to a larger local impact. Employees of the utility living within the county would add to local demand for housing, groceries and other retail goods, and might attend a movie or concert or eat out at a local restaurant from time to time. Any local purchases by the PUD electric distribution utility would create additional payrolls at the local vendor companies, and a portion of those payrolls would also be spent within the county. These indirect or multiplier impacts expand the total impact of the potential utility operation.

Details on input-output methodology and the model used in this analysis are provided in the next section, after which data sources for the analysis are discussed. Finally, the results of the analysis and a discussion of the significance of these projected results are presented in the final sections of the report.

Analytic Methodology

The analysis below relies on an input-output model of the Washington State economy. The terms "direct" and "indirect" employment are used as they are defined in the input-output literature in the field of regional economics. Input-output models classify economic impacts as direct or indirect. *Direct impacts* are those directly due to a particular stimulus to the economy. Firms locating in a particular area such as Jefferson County provide a stimulus to the local area through their payrolls and purchases. From the local point of view new jobs are created. These directly impacted firms stimulate *indirect impacts* in two ways: (1) the payroll of the directly impacted firms results in consumption purchases by their workers, and (2) directly impacted firms buy goods or services to support their production increases. Employment is created *indirectly* at a variety of firms by these consumption increases and increased purchases to support production. Direct impacts are sorted into economic sectors or industries represented in the model, and the model calculates the indirect impacts. *Total impacts* are the sum of direct and indirect impacts.

The indirect impact estimates were generated using the 1997 version of the Washington State input-output model.[1] Input-output models estimate inter-industry production relationships, modeling inputs required from each industry to produce the outputs of any given industry. For example, if more cars are required, more output is required from the metal and rubber sectors, which in turn require more vehicles to haul their supplies, which necessitates further increases in metal and rubber output. The model also captures the impact of payroll spending by employees in impacted sectors for each round of impact. These backward linkages extend back infinitely, but in smaller and smaller quantities in each round, approaching zero as a limit. Input-output models capture this entire series of backward relationships through the concept of indirect impacts.

The Washington model used in this report has been used in a variety of economic impact studies, including several studies of advanced technology impacts,[2] as well as research on changes in traditional industries,[3] and estimates of the impacts of professional sports operations.[4] This analysis uses a special version of the 1997 model that generates county-specific as well as statewide impact estimates based on a technique suggested in Miller.[5] Using Miller's technique, indirect impacts in the county specific model are reduced for industries with a relatively small presence in the county as compared to the

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[1] R.A. Chase, P.J. Bourque, and R.S. Conway. Washington State Input Output 1987 Study. Report by the Graduate School of Business Administration, University of Washington for the Office of Financial Management, September 1993. An updated version based on 1997 data has been prepared by Conway for the Washington State Office of Financial Management (http://www.ofm.wa.gov/economy/io/default.htm).

[2] Conway, Richard S. Jr., *The Microsoft Economic Impact Study*, Seattle: Dick Conway & Associates, December 1996; Beyers, William B. and Peter B. Nelson, *The Economic Impact of Technology-Based Industries in Washington State*, Seattle: Report for the Technology Alliance, University of Washington, August 1998.

[3] Sommers, Paul, et al., *Revitalizing the timber dependent regions of Washington.* Report by the Northwest Policy Center for the Washington Department of Trade and Economic Development, February 1991.

[4] Conway, Richard S. Jr., and William B. Beyers, *Seattle Mariners Baseball Club Economic Impact*, Report by Conway and Associates and University of Washington, August 1994.

[5] Miller, Ronald E. *Input-output analysis: Foundations and extensions*. Englewood Cliffs, NJ: Prentice-Hall, 1985, pp. 296-7.

state. This county-specific version of the 1997 model has been used by the author in a report for the state on the impacts of the major military bases located in Washington.[6]

Data Sources and Estimation

This report builds on a pervious analysis of a potential electric distribution utility in Jefferson County prepared by Hittle & Associates in 2000.[7] Hittle's report recommends a specific organizational configuration for providing electric distribution services based on estimates of the number of residential customers (10,060 in 1998) and commercial/governmental customers (1006 in 1998) in the eastern portion of the county. Hittle estimates the number of miles of distribution line and the number of substations needed, as well as the number of customers. Based on this engineering analysis, the Hittle report recommends the following staffing plan[8] for the electric utility operation:

Table 1: New Electric Employees recommended by Hittle

Organizational Areas	*New FTEs*
Engineering	4
Customer Service	4
Conservation/Power Supply	1
Operations Supervisors	2
Vehicle Maintenance	2
Warehouse	1
Line Crew	14
Accounting/Billing	3
Meter Readers	3
Total	34

Source: Hittle report, 2000

The Jefferson County population base and economy have grown since 2000, the year of Hittle's report, and most of the growth has been in the eastern portion of the county that is the location of the potential PUD electric distribution utility. Therefore it is necessary to adjust the staffing plan for the growth that has taken place. Hittle uses population data from 1996, and concludes that there were 10,060 households in the portion of the county currently served by PSE. Based on the ratio of this household estimate to the population level in 1996, the 1996 household estimate can be escalated to 2005 levels. Hittle estimated 10,060 households in the PSE territory within Jefferson County in 1996. Population has grown from in 1996 24,400 to 27,000 in 2004l; projecting the last year's rate of growth forward suggests a population level of 27,700 in 2005. Using the ratio of population to estimated households within the service territory of the electric utility in 1996, the current estimate of 27,700 residents suggests a current household base for the

[6] Sommers, Paul. *Economic Impacts of the Military Bases in Washington.* Olympia: Office of Financial Management, July 2004 (http://www.ofm.wa.gov/economy/military/index.htm).

[7] D. Hittle & Assoc., Inc. *Service evaluation of East Jeffrson County.* Lynnwood: Report for Public utility District No. 1 of Jefferson Count y, September 15, 2000.

[8] See Hittle, 2000, Table 7, p. 12.

electric utility of approximately 10,600, an increase in potential residential customers of 5.4 percent since 1996. Using employment data from the U.S. Department of Labor Bureau of Labor Statistics, the 996 business establishments in 1996 can also be determined and compared to Hittle's estimate of 1,006 commercial/governmental hookups. Hittle estimated this number of commercial and governmental hookups at 10 percent of the number of households. There are an estimated 1196 business establishments operating in the county currently, an increase of 19 percent since 1996. Adding the residential and business hookups together yields an estimate of 11,800 for 2005, an increase of 6.6 percent since 1996.

The increase in the number of potential customers for the electric distribution utility may call for a larger staff size than Hittle recommended based on the 1996 data. If the staffing is increased in proportion to the increase in potential hookups, Hittle's recommended 34 person organization would grow to 36.2 FTEs. Since more hookups will mean more work for the line crew and either the meter readers or the customer service staff, the additional staff positions were allocated as follows for purposes of this report: 1.5 FTEs to line crew, and .35 FTEs each to meter readers and customer service. The small allocation for additional meter readers reflects changing technology that allows "drive by" meter reading, a much quicker procedure than the older technology requiring a meter reader to exit from a vehicle and walk to a position to directly view and record the meter data. The resulting estimates are show in a modified staffing plan in Table 2.

Table 2 provides additional information on potential salary levels for each personnel category and the annual payroll and benefits costs based on the postulated average salary levels for each personnel category. Annual salary level and benefit cost information was provided by three public utility districts operating in other counties on the Olympic Peninsula. Most of the cost of benefits provided in these neighboring jurisdictions is related to health care insurance. Based on those data, provided to the consultant on a confidential basis, probable average salary levels were estimated, and benefit costs were derived by looking at the average benefit costs experienced by the neighboring utilities, as shown at the bottom of the table.

Table 2: Projected Organizational Staffing for a New Electric Distribution Utility in Jefferson County in 2005

Organizational Areas	*New FTEs*	*Average Salary (Annual)*	*Payroll*
Engineering	4	$52,000	$208,000
Customer Service	4.35	41,000	178,350
Conservation/Power Supply	1	52,000	52,000
Operations Supervisors	2	75,000	150,000
Vehicle Maintenance	2	50,000	100,000
Warehouse	1	50,000	50,000
Line Crew	15.5	59,000	914,500
Accounting/Billing	3	43,000	129,000
Meter Readers	3.35	37,500	125,625

Total	36.2		$1,907,475
Average Wage		$52,693	
Benefits cost (health insurance(			$434,400

The estimated employment level, annual payroll, and health care insurance cost from Table 2 were used as inputs to the input-output model to estimate indirect or multiplier impacts. In addition, information in the model about the typical purchases of an electric utility was used to estimate purchases of goods and services required to operate an electric distribution utility. The payroll, health insurance costs, and other estimated purchases constitute direct impacts of the potential new electric distribution utility, and the model is then used to calculate indirect and total impacts.

The model projections are shown in Table 3. The new electric distribution utility, with a staff of 36.2 FTEs and a payroll of $1.9 million is projected to induce growth of other firms with indirect employment totaling 82.8 FTEs and an indirect payroll of $2.4 million. Adding direct and indirect impacts together, the total projected impact within Jefferson County is a 119 FTE addition to the employment base and a total labor earnings impact of

Table 3: Direct, Indirect, and Total Impacts

	Employment	*Labor Earnings (millions $)*
Direct	36.2	1.907
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Discussion of Results

There were only 47 business establishments operating in Jefferson County with 20-49 employees in 2002, according to the Census Bureau's County Business Patterns. The industry with the most units of this size was Accommodation and Food Service, a relatively low wage industry with an annual average wage (across business establishments of all sizes in this industry) of $11,487. Among all non-governmental businesses in Jefferson County in 2002, this same source indicates an average annual wage of $33,769.[9] Adding a 48th medium-sized business, and one that clearly pays "family wages" averaging $52,692 would be a significant contribution to the business base in the county.

The total labor earnings increase including the multiplier impacts would add a projected $4.351 million to labor earnings in the county. In 2002, the most recent year for which

[9] U.S. Department of Commerce, County Business Patterns, on-line at http://censtats.census.gov/, data from the on-line report for Washington counties, 2002.

personal income data at the county level have been published by the U.S. Department of Commerce, total personal income in Jefferson County was $858.962 million, including labor earnings of 407,763.[10] The estimated total earnings impact of an electric distribution utility is $4.351 million, or about 1.07 percent of the 2002 total earnings figure for persons living in the county. Given expansion of the economy from 2002 to 2005, the projected impact of the proposed electric distribution utility would be an increase of about 1 percent in labor earnings of county residents.

[10] U.S. Department of Commerce, Bureau of Ecnoomic Analysis personal income statistics, on-line at http://www.bea.doc.gov/bea/regional/reis/default.cfm#a.