Merwin Hydroelectric Project
FERC Project No. 935

FINAL LICENSE APPLICATION

Exhibit D – Statement of Costs and Financing

PacifiCorp
Portland, Oregon

April 2004

TABLE OF CONTENTS

LIST OF TABLES

This page left intentionally blank.

D.1.0 INTRODUCTION

In compliance with the Code of Federal Regulations (18 CFR, Parts 4 and 16), PacifiCorp is applying to the Federal Energy Regulatory Commission (FERC) to relicense the Merwin Hydroelectric Project (FERC Project No. 935) on the North Fork Lewis River, in the State of Washington. The current license for the Merwin Project, which PacifiCorp currently owns and operates, was issued on October 6, 1983 and expires on May 1, 2006.

PacifiCorp is applying for a new license to continue operation of the project. This Exhibit D is a statement of costs and financing. It is organized into eight sections which generally parallel the sequence of information requested in 18 Code of Federal Regulations (CFR) Section 4.51(e). Following this introduction, Section D.2.0 discusses the capital and operations and maintenance (O&M) costs associated with project modifications. Section D.3.0 describes the estimated amount if the project were taken over pursuant to Section 14 of the Federal Power Act. Section D.4.0 presents data on annual costs. Section D.5.0 provides estimates of the value of the project power, including identification of on-peak and off-peak values of project power. Section D.6.0 presents a discussion of alternative or replacement sources for project power. The consequences of license denial to PacifiCorp customers are discussed in Section D.7.0. PacifiCorp's financial resources are summarized in Section D.8.0.

D.2.0 CAPITAL AND O&M COSTS OF PROPOSED PROJECT MODIFICATIONS AND RESOURCE ENHANCEMENT MEASURES

As part of the Final License Application for the Merwin Hydroelectric Project, PacifiCorp is proposing certain non-power resource enhancements as a result of detailed technical studies and consultation with state and federal agencies, tribes, and the public. The enhancements affect fisheries, recreation, wildlife, water quality, cultural resources and others. The Preliminary Draft Environmental Assessment (PDEA), submitted as volume 2 of this license application, contains detailed information on PacifiCorp's proposed environmental and social enhancements.

Based on the results of numerous studies and consultations, PacifiCorp expects that the proposed measures will represent a cost-effective, efficient, and environmentally and socially balanced use of water resources for the Merwin Hydroelectric Project.

The estimated capital and O&M cost of the non-power resource enhancements is $18.9 million (see Table D.2.0-1).

Table D.2.0-1. Capital and O&M Cost Estimates for Project Modifications and Enhancements

Project Costs (Current Dollars in thousands)	
Category	**Costs [1]**
Aquatics	$13,804
Terrestrial	$430
Cultural	$508
Recreation	$3,103
Socioeconomics	$0
Flood Operations	$1,100
TOTAL	**$18,945**

[1] Based on 30-year analysis period beginning in fiscal year 2004.

D.3.0 ESTIMATED AMOUNT IF THE PROJECT WERE TAKEN OVER PURSUANT TO SECTION 14 OF THE FEDERAL POWER ACT

According to Section 14 of the Federal Power Act, if the Merwin Hydroelectric Project were to be taken over by another entity, PacifiCorp would be entitled to its net investment in the project plus severance damages.

D.3.1 ESTIMATE OF FAIR VALUE

The fair value of the Merwin Hydroelectric Project is $92.1 million based on the Net Present Value of the 30-year after-tax cash flow analysis of the project. In the assumptions of our analysis, no inflation was assumed in the future capital and O&M costs of the project. In addition, we based our future constant price forecast of $37 per MWh on Mid-Columbia prices for 12 months ending March 31, 2004 per Bloomberg.

D.3.2 NET INVESTMENT

The net investment in the Merwin Hydroelectric Project as of March 31, 2003 is $36.2 million. In addition to the net investment, $5.3 million has been spent on the current relicensing process.

D.3.3 ESTIMATE OF SEVERANCE DAMAGES

Severance damages are difficult to quantify. There are many factors affecting the fair value of the project such as the future cost of replacement power, the cost of replacing old equipment, future operations and maintenance costs in addition to the environmental and social measures costs associated with relicensing.

Based on our estimate of the fair value above, which does not include new license implementation, estimated severance damages would be $50.7 million.

D.4.0 ANNUAL COSTS OF THE PROJECT

The estimated levelized annual cost of operating the Merwin Hydroelectric Project is presented in Table D.4.0-1.

Table D.4.0-1. Estimated Annual Cost of Future Project Operations for a 30-year License beginning in 2007.

Description	Levelized Annual Cost (in thousands)*
CONTINUING OPERATIONS	
Sunk Costs	
Net Investment of $36.2 M	
Cost of Capital	$1,726
Income and Property Taxes	1,010
Depreciation and Amortization	1,322
Total Fixed Cost	$4,058
Capital	
Planned Investment of $60.3 M	
Cost of Capital	$1,782
Income and Property Taxes	805
Depreciation and Amortization	533
Total Fixed Cost	$3,120
O&M	
Operations and Maintenance	$3,153
Subtotal	$10,331
IMPLEMENTATION COSTS	
Capital	
Planned Investment of $19.9 M	
Cost of Capital	$358
Income and Property Taxes	169
Depreciation and Amortization	136
Total Fixed Cost	$663
O&M	
Operations and Maintenance	$273
Subtotal	$936
TOTAL	**$11,267**

* Based on a 30-year analysis with no inflation

D.5.0 ESTIMATED ANNUAL VALUE OF POWER

Our estimate of the future market value of energy is based on incremental power cost data as provided by internal market clearing price models. These represent the marginal opportunity cost (or market value) of power, using an average of California-Oregon-Border (COB) and Mid-Columbia values. The market value of energy is calculated using the on-peak and off-peak prices multiplied by the average on-peak and off-peak megawatt hours (MWh's) generated by the project.

The annual levelized value of power over the next 30 years under current license operation, using a discount rate of 7.5 percent, is estimated to be between $43 and $65.

More so than any other production facility in its portfolio, PacifiCorp, as the Lewis River operator, relies heavily on utilizing the project's generation flexibility in meeting its reliability obligations as the operator of two electrical control areas. The flexibility afforded by the projects on the Lewis River, when operated in a coordinated, safe, and environmentally prudent fashion, help enable PacifiCorp to: 1) meet moment-to-moment changes in load demand within two control areas of the North American Electric

Reliability Council (NERC); 2) provide operating reserve capacity to maintain electric grid voltage and frequency in the event of the loss of generation or critical transmission elsewhere on the grid; 3) manage inadvertent interchange with other electrical control areas; 4) minimize the exposure of its ratepayers to financial impacts of power price volatility; 5) maximize its ability to dispatch fossil fuel plant units at maximum economy to its ratepayers and to minimize fossil fuel consumption by running thermal units at maximum efficiency unit loadings; and 6) firm up and make useful the generation from intermittent resources such as wind turbines.

D.6.0 ALTERNATIVE POWER SOURCES

PacifiCorp could meet its energy and capacity needs in part by the project or by alternative sources of power. Reasonable alternative sources of power are discussed below. As a part of PacifiCorp's Integrated Resource Plan (IRP) analysis, a variety of alternative supply-side and demand-efficiency resource acquisitions were evaluated (see Exhibit H of this license application for additional IRP information). For comparative purposes, capital costs of alternative supply-side resources are presented in Table D.6.0-1. The replacement costs are specific to the Project and based on a future Project total generating capacity of 136 MW. The annual cost is based on an average annual Project generation of 506,642 MWh. This value is the total Project long-term (30-year) average generation. Costs are developed annually by the PacifiCorp Hydro Resources Department.

Table D.6.0-1. Capital cost of alternate supply-side resources.

Source	$/kW	Project Replacement Cost$ ($ Millions)[1]	Estimated Annual O&M Cost for Replaced Project Power ($ Million)[2]
Natural Gas	697	95	20
Cogeneration	917	125	23
Wind	1,067	141	20
Coal	1,754	238	16
[1] Cost estimates derived from January 2003 IRP Appendix C Table c.18.			
[2] Cost estimate includes the Project replacement costs			

If PacifiCorp were not able to generate power at the Merwin Hydroelectric Project, replacement power would likely be purchased, at least in the short-term, on the open power market. The market value of energy is based on incremental power cost estimates as provided by internal price projections that use a combination of market clearing price models and market data. These represent the marginal opportunity cost (or market value) of power, using an average of California-Oregon-Border (COB) and Mid-Columbia values. The market value of energy is calculated using the on-peak and off-peak prices multiplied by the long-term (30-year) average on-peak and off-peak megawatt hours (MWh) that may be generated by the proposed Project under normal conditions. The annual average value of power for the 30-year license period (starting in 2006) is estimated to be $70/MWh. The range around this estimate is from a low of $56/MWh to

a high of $83/MWh. Elements that influence the estimate include actual river flows through the Project and the value of power at any given time.

The Project operates during peak and off-peak demand periods. The average value of on-peak generation, assuming a 30-year average value of COB and Mid-Columbia values ($74 per MWh) and a future on-peak generation of 291,647 MWh (proposed Project), is $32.9 million per year. The average value of off-peak generation, assuming a 30-year average value of COB and Mid-Columbia values ($62 per MWh) and a future off-peak generation of 219,888 MW hours (proposed Project), is $15.6 million per year.

Market purchases, of course, would not replace the capabilities of the project with respect to helping PacifiCorp maintain the reliability and electrical integrity of the PacifiCorp control areas.

D.6.1 NATURAL GAS-FIRED RESOURCES

The most efficient available technology for utilizing natural gas is a combined-cycle combustion turbine (CCCT). CCCT technology is mature and commercially available. Construction lead times are about 2 years with another 1 year needed for the necessary permits. Environmental impact is low, with the greatest problem being nitrogen oxide (NOx) emissions, but control technologies are available.

The advantages of a CCCT are the relatively low capital cost. When comparing to a non-natural gas fueled resource, such as a coal plant, the disadvantage of a CCCT is its high fuel cost (the cost of fuel required for a CCCT to produce a kilowatt-hour (kWh) of electricity is greater than that of a coal plant). The estimated capital cost for a CCCT unit in Oregon is $697/kW. To meet the Project production using natural gas-fired resources would cost an estimated $95 million in capital to build a plant. Annual operations, including the cost of capital, would be an estimated $20 million per year.

D.6.2 COGENERATION

Cogeneration facilities require extraction steam from a factory or industrial plant. The technology is mature and commercially available. Siting a cogeneration plant should be relatively straightforward. The difficulty with this technology is partnering with an industrial user. The estimated capital cost for siting a cogeneration facility in Oregon is $917/kW. To meet the Project production using cogeneration facilities would cost $125 million in capital to build a plant. Annual operations, including the cost of capital, would be an estimated $23 million per year.

D.6.3 WIND

Wind turbine technology has changed significantly over the past decade and is now entering a third generation of development and testing. Units in the 50 to 500 kW range are a proven technology. Advantages of wind-based resources include project scalability, often a minimum environmental impact, no fuel cost, and a short lead time for construction.

Disadvantages of wind power include a low capacity factor and an intermittent energy source (i.e., energy gets produced only when the wind is blowing). Wind can also be a more difficult resource to schedule than hydroelectric plants in that it requires the accurate prediction of where and when the wind will blow. Thus, wind resources can be an important component to a diversified portfolio but should not be viewed as a viable replacement alternative for a flexible resource such as those located along the Lewis River. Indeed, PacifiCorp's IRP anticipates the significant addition of renewable resources such as wind over the planning horizon. However, this IRP conclusion was reached based on an underlying assumption that PacifiCorp would have continued access to flexible hydro resources in order to assist in the reliable integration of intermittent renewable resources such as wind.

Capital cost for wind resource development is estimated at $1,067/kW for the Oregon, Washington, and California region. To meet the Project production using wind facilities would cost an estimated $141 million in capital to build a plant. Annual operations including the cost of capital would be an estimated $20 million per year.

D.6.4 COAL

There are large coal reserves in western North America. While coal-fired generation has higher capital cost and longer lead time for construction, coal fuel operating costs can be much lower than the operating cost of a natural gas generator. This is especially true if the coal plant can be built near the coal reserve, thus avoiding the need to transport the coal great distances. Further, coal costs are historically less volatile than natural gas costs. Because coal reserves are not located close to large metropolitan areas (i.e., where the large blocks of retail load are located), it becomes necessary to carefully assess the capability of the transmission grid to move the electricity from a new coal-fired generating plant to the load it will be serving.

Integrated Gasification Combined Cycle (IGCC) is a coal technology that uses a coal gasification process to produce gas that can then be used to fuel a combined-cycle gas turbine. This technology can achieve slightly lower pollutant emission levels and higher efficiencies than a conventional coal-fired plant. However, IGCC is only now beginning to reach full commercialization. There are a half a dozen or so commercial plants in the world to date, and most of these are fueled by petroleum residuals. Work is being done to improve their operation on both coal and petroleum residuals, and progress in this area is expected. Capital and operating costs are now higher than those of traditional coal-fired plants, but these could decline as larger economies of scale are reached.

Because PacifiCorp needs future resources to meet forecasted customer demands, the company is currently reviewing Project economics of three possible coal projects in the Utah or Wyoming area. The capital cost of the projects range from $1,582/kW to $2,056/kW. The average of the three estimated capital costs for coal options is $1,754/kW (this number was used to estimate replacement costs and annual operations). To replace the Project production using coal resources would cost an estimated $238 million in capital. Annual operations, including the cost of capital, would be an estimated $16 million per year. However, the physical ability to directly transmit power

from these studied projects to PacifiCorp's western control area does not currently exist and would likely result in additional material expense.

D.7.0 CONSEQUENCES OF LICENSE DENIAL

Given the numerous influential variables, it is challenging to quantitatively evaluate the consequences of license denial. Two broad consequences are discussed below: the impact of license denial on PacifiCorp customers, and the impact of license denial on the local environment of the Merwin Hydroelectric Project site.

Power generated on the Lewis River goes into PacifiCorp's overall portfolio. Without the local generation, PacifiCorp would be required to acquire replacement power and integrate the new resource into PacifiCorp's system. Integration costs for a new resource would depend upon its location and connection to the electric grid. It would be highly unlikely that a new resource could be integrated without incurring transmission wheeling costs, which could be significant if interconnection is across congested paths.

Other benefits that would be lost are those resulting from the flexible nature of the resource. More so than any other production facility in its portfolio, PacifiCorp, as the Lewis River operator, relies heavily on utilizing the project's generation flexibility in meeting its reliability obligations as the operator of two electrical control areas. The flexibility afforded by the projects on the Lewis River, when operated in a coordinated, safe, and environmentally prudent fashion, help enable PacifiCorp to: 1) meet moment-to-moment changes in load demand within two control areas of the North American Electric Reliability Council (NERC); 2) provide operating reserve capacity to maintain electric grid voltage and frequency in the event of the loss of generation or critical transmission elsewhere on the grid; 3) manage inadvertent interchange with other electrical control areas; 4) minimize the exposure of its ratepayers to financial impacts of power price volatility; 5) maximize its ability to dispatch fossil fuel plant units at maximum economy to its ratepayers and to minimize fossil fuel consumption by running thermal units at maximum efficiency unit loadings; and 6) firm up and make useful the generation from intermittent resources such as wind turbines.

Additionally, in the event of license denial, PacifiCorp would be required to undertake transmission and distribution system reinforcement projects in the local area to compensate for the lost power supply and voltage control provided by the project.

Public use of project lands has resulted in potential resource conflicts and impacts on cultural, biological and other resources. PacifiCorp's license application includes a number of proposals to improve current conditions and provide a balanced use of resources in the project area. If PacifiCorp's license application is denied, or if operations are continued under current conditions (annual) license, none of these measures will be implemented, resulting in potential resource degradation.

License denial could result in competition for the license. Competition would delay licensing, thereby forestalling the proposed project improvements and enhancement measures. Finally, denial of the license application could lead to decommissioning of the

project. While this scenario is unlikely, such an action would have significant cost implications to PacifiCorp customers and investors.

D.8.0 SOURCES AND EXTENT OF FINANCING AND ANNUAL REVENUES

PacifiCorp has the resources for financing and sufficient annual revenues to provide for the current capital needs associated with the continued operation of the project. If additional financing is necessary, the capital will be financed using the company's traditional sources of debt and common equity.

Annual financial information is provided in our annual report to shareholders and in FERC Form 1.