

COVER SHEET

**DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR
AMENDMENT TO LICENSE
HOLTWOOD HYDROELECTRIC PROJECT
Docket No. P-1881-050**

Section 4
Developmental Analysis
Pages 125 through 128

DEIS

4.0 DEVELOPMENTAL ANALYSIS

In this section, we estimate the economic benefits of the project and estimate the cost of various environmental measures and the effects of these measures on project operations.

Under its approach to evaluating the economics of hydropower projects, as articulated in Mead Corporation, Publishing Paper Division (72 FERC ¶ 61,027, July 13, 1995), the Commission employs an analysis that uses current costs to compare the costs of the proposed project and likely alternative power, with no consideration for potential future inflation, escalation, or deflation beyond the order issuance date. This economic analysis provides a general estimate of the potential power benefits and costs of the project and reasonable alternatives to project-generated power.

For our economic analysis of the Holtwood Project, we used the assumptions, values, and sources shown in table 23. All dollars are year 2008 unless specified otherwise.

Table 23. Assumptions for the economic analysis of the Holtwood Project.
(Source: PPL, staff)

Parameter	Value
Energy value	64.00 mills/kWh ^a
Capacity value	\$110/MW-day ^b
Period of analysis	16 years ^c
Discount rate	7.75 percent ^d
Federal tax rate	35.0 percent ^e
Local tax rate	6.5 percent ^e
Insurance rate	0.25 percent
Term of financing	20 years
O&M costs	\$4,500,000 ^f
Net investment	\$13,393,000 ^g

^a Value taken from PJM web site for Aggregate Locational Marginal Price.

^b Value taken from PJM news release dated May 15, 2008, citing capacity auction results for the period June 2011 through May 2012.

^c Given that PPL has requested a 16-year extension to the current license term, we have set the analysis period equal to 16 years.

^d Discount rate based on interest rate provided by PPL in exhibit D of its application.

- ^e PPL provided a combined federal and state tax rate of 41.5 percent in exhibit D of its application. We divided this into a typical federal tax rate of 35.0 percent and a state tax rate of 6.5 percent.
- ^f PPL provided a value for the O&M cost in exhibit D of its application in 2007 dollars. We escalated this value by 2.5 percent per year to adjust to 2008 dollars.
- ^g PPL provided a value for the net investment in exhibit D of its application as of September 1, 2007. We escalated this value by 2.5 percent per year to adjust to 2008 dollars.

4.1 ECONOMICS OF THE NO-ACTION ALTERNATIVE

Based on the information in table 23, the existing project produces approximately 594,849 MWh of energy per year, which we value at approximately \$42,374,420. The existing project provides a net annual benefit of \$35,499,540 (59.68 mills/kWh).

4.2 ECONOMICS OF THE PROPOSED ALTERNATIVE

The proposed project modifications, including license application costs, all construction costs associated with the existing and proposed generating equipment and the fishway modifications, and environmental enhancement measures, would result in a capital expenditure of approximately \$285,126,300 (excluding interest during construction) with an incremental increase in annual O&M costs of approximately \$717,500.

The resulting project would produce an additional 360,834 MWh of energy per year valued at \$26,638,620. The annual costs would increase by approximately \$53,260,340. The expanded project would provide a net annual benefit of \$8,877,820 (9.29 mills/kWh), which is \$26,621,720 lower than the no-action alternative.

4.3 ECONOMICS OF THE STAFF-RECOMMENDED ALTERNATIVE

Staff reviewed the proposed project, including the proposed environmental measures and identified a few minor additions that would increase the total cost by \$21,750. Thus, the completed project, as proposed by PPL with minor staff recommendations, would provide a net annual benefit of \$8,856,070 (9.26 mills/kWh), which is \$26,643,470 lower than the no-action alternative.

4.4 COMPARISON OF ALTERNATIVES

Table 24 summarizes the benefits, costs, and annual net power benefits of the alternatives.

Table 24. Summary of developmental costs, benefits, and annual net power benefits for the Holtwood Project alternatives. (Source: staff)

	No-Action	Proposed Action	Staff-Recommended Alternative
Installed capacity (MW)	107.2	195.5	195.5
Annual generation (MWh)	594,849	955,683	955,683
Annual power value (mills/kWh)	\$42,374,420 (71.24)	\$69,013,040 (72.21)	\$69,013,040 (72.21)
Annual cost (mills/kWh)	\$6,874,880 (11.56)	\$60,135,220 (62.92)	\$60,156,970 (62.95)
Annual net benefit (mills/kWh)	\$35,499,540 (59.68)	\$8,877,820 (9.29)	\$8,856,070 (9.26)

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