

PACIFIC NORTHWEST-PACIFIC SOUTHWEST INTERTIE PROJECT

Project History and Description

The Pacific Northwest-Pacific Southwest Intertie Project (Intertie) was authorized by Section 8 of the Pacific Northwest Power Marketing Act of August 31, 1964. As authorized, the Intertie was to be a cooperative construction venture by Federal and non-Federal entities, incorporating the capability for both AC and DC transmission components and providing a transmission connection among certain Federal and non-Federal power systems.

The basic purpose of the Intertie was to provide, through power transmission system interconnections, maximum utilization of the total power resources to meet the nation's growing demands. This purpose was to be accomplished through: (1) the exchange of summer-winter surplus peaking capacity between the Northwest and Southwest to reduce capital expenditures for new generating capacity; (2) the sale of Northwest secondary energy to the Southwest; (3) the sale of Southwest energy to the Northwest to "firm" peaking hydroelectric sources during critical water years; (4) conservation of significant amounts of fuel through the use of surplus hydroelectric energy; and (5) increased efficiency in the operation of hydroelectric and thermal resources.

However, due to several delays in congressional construction funding for the DC line the estimated in-service date was extended to the point that interest by potential users diminished. The combination of delays and reduction of user interest resulted in the indefinite postponement of the DC line construction. Consequently, the facilities constructed provide only AC transmission service.

Western's portion of the Intertie consists of two parts, a Northwest portion and a Southwest portion. The Northwest portion is administered by Western's Sierra Nevada Regional Office and is incorporated, for repayment and operation, within the Central Valley Project. The northern portion consists of a 94-mile (151 km) 500-kV transmission line from Malin Substation in Oregon through Round Mountain to Cottonwood Substation in California. By agreement, the Central Valley Project has transmission rights for 400 MW of Northwest Intertie capacity.

The Southwest portion is administered by Western's Desert Southwest Regional Office and is treated as a separate project for repayment and operational purposes. It consists of a 238 mile (383 km) 345-kV transmission line from Mead Substation in southern Nevada to Liberty Substation in Arizona; a 19 mile (31 km) 230-kV transmission line from Liberty Substation to Westwing Substation in Arizona; a 22 mile (35 km) 230-kV transmission line from Westwing Substation to Pinnacle Peak Substation in Arizona; and two new segments which were brought on-line in April 1996: the 260 mile (419 km) 500-kV Mead-Phoenix Project transmission line between Perkins Switchyard in Arizona and Marketplace Substation in Nevada, including an interconnection to Mead Substation at 230-kV; and a 202 mile (325 km) 500-kV Mead-Adelanto Project

transmission line between Marketplace Substation and the existing Adelanto Switching Station in southern California.

POWER REPAYMENT STUDY (PRS)

The proposed annual revenue requirement for firm and nonfirm transmission service are based on the data outlined in this Brochure. Repayment criteria are based on law and policies established by DOE Order R.A. 6120.2 (RA 6120,2). According to RA 6120.2 project revenues are required to repay investment costs including interest.

Generally, the repayment criteria formula is that total annual revenues should equal total annual expenses plus debt repayment. Annual revenues are first used to pay the annual operating expenses. These annual operating expenses include all costs for operation, maintenance, and interest on investments and capitalized deficits. Secondly, all required payments due on capitalized investments are paid. In the event the total annual revenues are insufficient to meet the annual expenses plus the annual debt repayment, these deferred annual expense are amortized to be repaid over a specified time frame. These deferred annual expense are referred to as "capitalized deficits". When the total annual revenues are sufficient to meet the annual operating expenses plus the debt repayment, any remaining annual revenue is used to repay capitalized deficits and investments based upon a hierarchy of repayment. The hierarchy of repayment requires that all capitalized deficits are repaid first followed by capitalized investments, with the highest interest-bearing investments being repaid first.

The AC Intertie uses the fifty-year (50) Interest Amortization (IA) methodology. Under this methodology, revenue requirements are determined for the next 50 years.

The PRS on which this brochure is based may be updated with certain technical adjustments prior to final submittal to DOE for approval.

Transmission Sales

Firm Transmission Service

Historical firm transmission service sales are based on actual sales as reported in the Yearly Report of Energy Deliveries and Income. Future firm transmission service sales are based on the anticipated contractual obligations with existing and future contractors. The 230/345-kV system contractual commitments are 1,239 megawatts (MW). The existing 500-kV system contractual commitments are 564 megawatts (MW). The total combined firm transmission sales in FY 2005 is projected to be 2000 MW.

Nonfirm Transmission Service

Historical nonfirm transmission sales are based upon actual sales reported on the Yearly Report of Energy Deliveries and Income. Revenues from future nonfirm

transmission sales are included as “Other Revenue” and are projected based on a five year historical average.

Revenues

Firm Transmission Revenue

Historical firm transmission service revenues are based on actual firm transmission service revenue reported on the Yearly Report of Energy Deliveries and Income Report, and the financial statements. Projections for future firm transmission service revenues are based on the projected future firm contractual sales multiplied by the proposed firm transmission service rate.

Other Revenue

Other revenues include receipts from sources not otherwise addressed. Historically, the sources included have been nonfirm transmission sales, fuel replacement and interchange sales and settlements, rental of electric property, facility charges, multiproject facilities revenue, and miscellaneous operating income.

Annual Expenses

Operation and Maintenance (O&M)

The O&M costs are for maintaining and operating AC Intertie substations, switchyards, transmission lines, and administrative and general expenses.

While historical O&M data has been obtained from Western’s financial statements, the O&M projections for future years of the cost evaluation period (2005 – 2009) are taken from Western’s current budget documents. O&M costs for the out years (2005 – 2052) of the PRS are based on the last budget year (2004) costs, less any non-recurring costs. The total O&M expense over the repayment period (1970 – 2052) of the PRS is equal to \$ 407,490,132.

The following table displays the elements that make up the total O&M expenses as shown in the PRS.

**OPERATIONS AND MAINTENANCE EXPENSES
AC INTERTIE PROJECT**

RETIREMENTS, REPLACEMENTS, & ADDITIONS (RR&A):

ITEMS	2005	2006	2007	2008	2009-EOS
230/345/500-kV	\$381,888	\$393,364	\$0.00	\$0.00	\$0.00

FACILITY EXPENSES:

ITEMS	2005	2006	2007	2008	2009-EOS
230/345/500-kV Transmission Lines	\$3,168,725	\$3,373,130	\$3,373,130	\$3,373,130	\$3,373,130

SYSTEM WIDE EXPESES:

ITEMS	2005	2006	2007	2008	2009-EOS
230/345/500-kV Transmission Lines	\$2,547,970	\$2,823,656	\$2,823,656	\$2,823,656	\$2,823,656

TOTAL OPERATION AND MAINTENANCE EXPENSES:

ITEMS	2005	2006	2007	2008	2009-EOS
230/345/500-kV Transmission Lines	\$5,716,695	\$6,196,786	\$6,196,786	\$6,196,786	\$6,196,786

Interest

Interest expense on the unpaid balance of the federal investments is calculated annually and incorporated into the proposed PRS. The proposed 230/345/500-kV system PRS shows a total interest expense of \$487,265,897 over the repayment period (1970 – 2052). Interest is calculated each fiscal year on the interest-bearing investments remaining to be repaid at the end of the previous year and plant placed in service during the current year. All interest rates are in accordance with RA 6120.2. A 3 percent rate was used to compute the interest for the initial AC Intertie investment. Interest on historical capitalized deficits, additions and replacements are calculated at the RA 6120.2 rate for the year in which the dollar is spent or deficit was incurred. Interest on future additions and replacements is calculated at the current annual interest rate of 4.875%.

Capitalized Deficits

Capitalized Deficits occur when the total annual revenues are insufficient to meet the annual expenses plus the annual debt repayment. All deficits for the AC Intertie are estimated to be paid by FY 2012.

Investments

Investment costs are comprised investments budgeted and managed through Western's and Reclamation's construction. For the investments thru Western, investments are planned in an Engineering Ten-Year Planning process which involves working with the customers to plan replacements and addition activities included in the Engineering & Construction Ten Year Plan (Ten Year Plan). The Ten Year Plan is an outline of construction activities and is the source document for the construction additions and replacements in the proposed PRS.

Additions

Additions are projected through the cost evaluation period (2005-2009) and are derived from the FY 2006 Ten-Year Plan. The interest during construction (IDC) calculation for each addition is determined by the interest rate in the year the first dollar is spent. The capitalized costs for future additions also include IDC. The annual interest expense for each addition is based on the same interest rate used to calculate IDC. Additions are amortized over a 50 year period and the annual payments are part of the scheduled principal payments in the PRS.

Replacements

Replacements are projected through the cost evaluation period (2005-2009) and are derived from the FY 2006 Ten-Year Plan. The capitalized costs for future replacements in the cost evaluation period include IDC. The IDC calculation for each replacement is determined by the interest rate in the year the first dollar is

spent. The annual interest expense for replacements is based on the interest rate used to calculate IDC. Replacements are amortized over the service life of the specific asset and the annual payments are part of the scheduled principal payments in the PRS.

Capitalized Movable Equipment

CME is capitalized in the existing PRS. It has two components. The first component is the annual cost of depreciation and the second component is the interest expense on the unamortized balance. CME expense currently being used in the PRS is an estimate, but Western is continuing to refine the number and is subject to a minor change upon completion of the research.