
BY THE U.S. GENERAL ACCOUNTING OFFICE

Fact Sheet For
The Honorable Howard M. Metzenbaum
United States Senate

Additional Information Concerning
Irrigation Project Costs And
Pricing Federal Power



GAO/RCED-86-18FS
October 10, 1985

033774





UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

B-218903

The Honorable Howard M. Metzenbaum
United States Senate

Dear Senator Metzenbaum:

On July 26, 1985, we issued a report to you entitled Recovering a Portion of Federal Irrigation Project Construction Costs Through Department of Energy Electric Power Sales (RCED-85-128) and, on August 7, 1985, we briefed your office on our examination of the current basis that the Department of Energy Power Marketing Administrations (PMAs) use to price federal electric power and transmission services. Your office has requested additional information related to our work in these two areas.

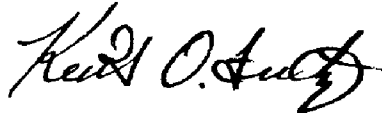
On the subject of irrigation assistance, you requested (1) a listing of irrigation assistance projects, their costs, and their construction status and (2) an estimate of the effect on the Treasury Department of the PMAs' current practice of repaying irrigation assistance costs on or near the end of the repayment period versus making annual payments over the entire repayment period. For federal power pricing, you requested additional information on the amount of federal investment in power generation and transmission facilities that the Bonneville Power Administration had projected to be repaid and that which has actually been repaid. This information is contained in appendixes I through III.

You also asked that we provide information on the basis for the PMAs' practice of (1) repaying the federal investment in power facilities within 50 years and (2) charging an interest penalty when interest payments on the federal investment are deferred. We have not completed our work with respect to these matters. However, because of your expressed interest in obtaining the results of all of our work as soon as possible, we are providing the information in the appendixes at this time and will provide information on the above two matters at a later date.

The information contained in the appendixes was obtained through discussions with officials from the Departments of Energy and the Interior and a review of pertinent documents and records of the Department of Energy's Bonneville and Western Area Power Administrations and the Department of the Interior's Bureau of Reclamation. We obtained financial data from the Bureau of Reclamation on the projects having irrigation assistance. We did not independently verify Reclamation's financial data, although we did compare the costs reported by Reclamation with the costs being accounted for by the PMAs. Additionally, we conducted a present-value analysis for five irrigation projects to compare the cost to the Treasury of current Bonneville and Western practices of repaying irrigation assistance costs on or near the due date versus making equal annual payments over the entire repayment period.

Our review was performed between August and September 1985, and except for not verifying the financial data, was in accordance with generally accepted government auditing standards.

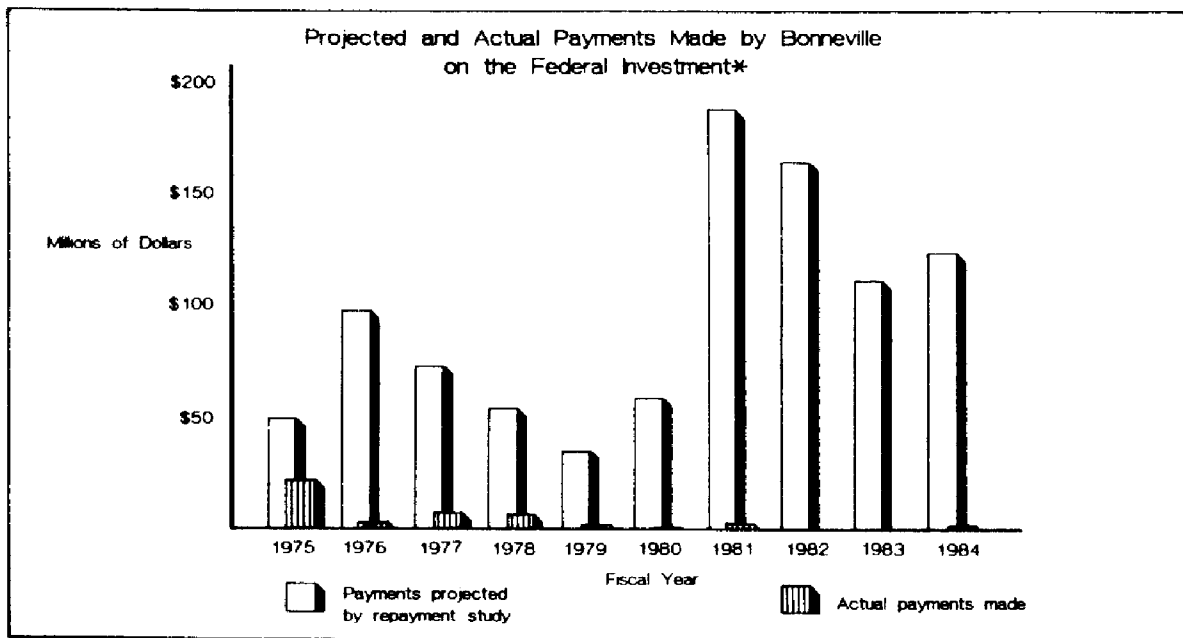
Sincerely yours,

A handwritten signature in black ink, appearing to read "Keith O. Fultz". The signature is written in a cursive style with a large, stylized initial "K".

Keith O. Fultz
Associate Director

REQUEST: For the data provided in your briefing document of August 7, 1985, pertaining to Bonneville's projected and actual repayment of federal investment,¹ what portion of those figures is for investment in transmission facilities and what portion is for investment in generation facilities?

RESPONSE: The chart on page 13 of the August 7 briefing document is reproduced below--it shows the Bonneville Power Administration's total projected and actual repayments of the federal investment in aggregate form (transmission and generation amounts are combined).



Source: Data from OMB and Bonneville

*includes payments of principal only

The table below shows Bonneville's projected and actual repayment of generation and transmission facilities for the years 1975-84 based on Bonneville data used in power rate cases

¹Pricing of Electric Power and Transmission Services by Department of Energy Power Marketing Administrations, a GAO briefing outline provided to Senator Metzenbaum on Aug. 7, 1985.

before the Federal Energy Regulatory Commission (FERC). However, since Bonneville did not separate repayment costs into generation and transmission components prior to its 1985 rate filing, the projected payments shown in the table are estimated values.

When comparing the chart and table data, significant differences in projected repayment amounts are evident. The projected payments in the chart are based on an Office of Management and Budget (OMB) analysis that used data from Bonneville's repayment studies for the years 1974, 1977, 1980, and 1981. Bonneville's Chief, Revenue Requirements and Modeling Branch, Financial Requirements Division, told us that rather than relying on the Bonneville repayment studies analyzed by OMB, more reliable data could be obtained from the Bonneville repayment studies that were used in Bonneville power rate cases before FERC.

Projected and Actual Amortization of Bonneville's
Generation and Transmission Facilities Debt

(amounts in \$000)

Year	Generation facilities		Transmission facilities		All facilities	
	Projected	Actual	Projected	Actual	Projected	Actual
1984	\$ 0	\$1,381	\$ 0	\$ 0	\$ 0	\$1,381
1983	0	0	6,191	0	6,191	0
1982	0	0	125,674	0	125,674	0
1981	0	1,853	77,559	(150)	77,559	1,703
1980	0	75	50,448	0	50,448	75
1979	0	940	63,333	0	63,333	940
1978	29	7,131	40,852	0	40,881	7,131
1977	11,452	6,679	61,779	128	73,231	6,807
1976	554	7,695	96,048	(4,348)	96,602	3,347
1975	11,640	(1,323)	38,255	23,198	49,895	21,875

Source: Projected amounts--Bonneville rate case repayment studies of 1974, 1979, 1981, and 1982, and revenue requirements study, September 1983.

Actual amounts--Draft, 1984 Bonneville Summary Financial Data, table 4a.

REQUEST: In the letter report on recovering a portion of irrigation construction costs through power revenues (GAO/RCED-85-128, July 26, 1985), you presented a table on the estimated amount of irrigation assistance to be repaid by Bonneville and Western. Provide, for each category in the table, a listing of the projects and the amounts of the irrigation assistance.

RESPONSE: The following table presents the information requested. The totals differ slightly from the data presented in the letter report because of mathematical rounding of amounts and because Reclamation has reduced its estimate of the amount of irrigation assistance on the Colorado-Big Thompson project by \$1.4 million.

Projects or Project Blocks With Irrigation
Construction Costs Assigned to Be
Recovered From Power Revenues
as of September 30, 1984

<u>Power Marketing Administration</u>	<u>Project status/name</u>	<u>Estimated irrigation costs to be recovered through power revenues</u>
		(000)
Bonneville	Completed:	
	Avondale	\$ 221
	Baker	4,092
	Boise	17,156
	Chief Joseph-Chelan	14,464
	Chief Joseph-Foster Creek	1,809
	Chief Joseph-Greater Wenatchee	3,968
	Chief Joseph-Whitestone Coulee	7,370
	Columbia Basin	543,250
	Crooked River	4,093
	Dalton Gardens	208
	Mann Creek	2,950
	Michaud Flats	4,170
	Palisades	10,293
	Rathdrum Prairie	7,668
	Spokane Valley	2,007
	The Dalles	4,206
	Yakima	<u>10,932</u>
	Subtotal	638,857
	Under construction:	
	Chief Joseph-Oroville Tonasket	57,721
	Columbia Basin	26,933
	Tualatin	<u>28,068</u>
	Subtotal	112,722
	Authorized--no construction:	
	Columbia Basin	1,789,590
	Upper Snake River	<u>123,201</u>
	Subtotal	1,912,791

<u>Power Marketing Administration</u>	<u>Project status/name</u>	<u>Estimated irrigation costs to be recovered through power revenues</u>
		(000)
Bonneville	Suspended: Teton	\$ 48,319
	Subtotal	<u>48,319</u>
	Bonneville total	\$ <u>2,712,689</u>
Western	Completed:	
	Central Utah Project-	
	Vernal	8,033
	Colbran	5,061
	Colorado-Big Thompson	72,146
	Colorado River Storage Project	
	Bostwick Park	5,483
	Eden	13,169
	Emery County	7,583
	Florida	7,797
	Hammond	6,712
	Lyman	24,025
	Paonia	5,196
	Seedskaelee	1,228
	Silt	5,742
	Smith Fork	3,199
	Storage Unit-Flaming Gorge	17,550
	Storage Unit-Glen Canyon	66,031
	Storage Unit-Navajo	29,944
	Storage Unit-Wayne N. Aspinall	3,070
	Kendrick	13,562
	Pick Sloan-Missouri River Basin	
	Ainsworth	15,699
	Almena	5,639
	Angostura	12,800
	Bostwick	40,379
	Cedar Bluff	7,180
	Crow Creek	2,882
	Dickinson	246
	East Bench	15,187
	Farwell	21,689
	Fort Clark	1,178
	Frenchman-Cambridge	49,710
	Glen Elder Dam and Reservoir	4,718
	Glendo	4,041

<u>Power Marketing Administration</u>	<u>Project status/name</u>	<u>Estimated irrigation costs to be recovered through power revenues</u>
		(000)
Western	Completed:	
	Hanover Bluff	\$ 6,607
	Heart Butte	1,129
	Helena Valley	14,270
	Keyhole	3,378
	Kirwin	9,800
	Lower Marias	16,582
	Owl Creek	8,147
	Rapid Valley	2,110
	Riverton	44,835
	Sargent	3,554
	Savage	857
	Shadehill	2,431
	Webster	8,366
	Rio Grande	<u>4,672</u>
	Subtotal	603,617
	Under construction:	
	Central Arizona Project	1,053,731
	Central Valley Project	476,343
	Central Utah Project	
	Bonneville Unit	843,047
	Jensen Unit	7,263
	Upalco Unit	32,626
	Colorado River Storage Project	
	Dallas Creek	21,231
	Dolores	260,630
	Pick Sloan-Missouri River Basin	
	Belle Fourche	40,579
	Garrison Diversion Unit	
	LaMoore	49,520
	Lincoln Valley	24,166
	New Rockford	77,655
	Warwick-McVile	92,733
	West Oakes	73,333
	Narrows	100,636
	North Loop #1	121,769
	North Loop #2	53,805
	North Loop #3	107,610
	O'Neill #1	154,287
	O'Neill #2	154,287

<u>Power Marketing Administration</u>	<u>Project status/name</u>	<u>Estimated irrigation costs to be recovered through power revenues</u>
		(000)
Western	Under construction:	
	San Juan-Chama	\$ 62,494
	Washoe	77,299
	Subtotal	3,885,044
	Authorized--no construction:	
	Central Utah Project-Uintah Colorado River Storage Project	76,336
	Animas-LaPlata	388,549
	Fruitland Mesa	142,973
	LaBarge	5,317
	San Miguel	89,680
	Savery-Pot Hook	128,291
	West Divide	180,132
	Pick Sloan-Missouri River Basin	
	Other units ^a	<u>5,472,492</u>
	Subtotal	6,483,770
	Suspended:	
	Pick Sloan-Oahe Unit	426,931
	Subtotal	<u>426,931</u>
	Western total	<u>\$11,399,362</u>
	Grand total	<u><u>\$14,112,051</u></u>

^aThe "Other units" figure represents future development projects. Information on the individual names and costs to be associated with these units was not available from the Upper and Lower Missouri regions of the Bureau of Reclamation.

Source: Bureau of Reclamation.

REQUEST: For a few projects with irrigation assistance costs, provide an estimate of the cost to the Treasury of the current practice of repaying irrigation assistance costs on or near the due date versus making equal annual payments over the entire repayment period.

RESPONSE: To estimate the impact on the Treasury of repaying irrigation assistance costs at or near the end of each project's repayment period versus annual payments throughout the project's repayment period, we selected five federal water projects and computed the present value of irrigation assistance repayments by using (1) current repayment methodology, (2) equal annual payments over the remaining life of each repayment period, and (3) equal annual payments over the entire repayment period. In general, since no interest is charged on the irrigation assistance principal, deferring repayment of irrigation assistance to some point in the future results in decreased revenues to the Treasury. This decreased revenue reflects the time value of money.

As shown in the table below, revenues could be increased if irrigation assistance were to be repaid in annual installments over the life of the repayment period instead of repaying the entire amount at or near the end of the repayment period.¹ For example, the present value of about \$57 million of irrigation assistance on the Chief Joseph project, Oroville-Tonasket Unit Extension, with a repayment period beginning after 1985, is about \$281,000 using current agency repayment methodology. If Bonneville repaid the irrigation assistance in equal annual installments over the entire repayment period, those payments would be worth approximately \$9 million. This would result in a net benefit to the federal Treasury of about \$8.7 million. Similarly, the present value of about \$843 million in irrigation assistance for the Central Utah project, Bonneville unit is about \$2.3 million, using current agency repayment methodology. If Western made equal annual payments over the remaining repayment period, these payments would be worth about \$54.7 million. This would result in a net benefit to the federal Treasury of about \$52.4 million.

¹Assumptions used in these computations include the following: (a) all irrigation costs are repaid to the Treasury at zero interest, (b) the base year is 1985 (all payments are either discounted or compounded to 1985), (c) actual (nominal) long-term interest rates for each year are used for compounding annual payments before 1985 (these range from 5.5 percent to 13.4 percent), (d) the nominal long-term interest rate of 10.9 percent is used for discounting annual payments in 1985 and all future years, and (e) annual payments are assumed to be made at the end of each year.

Since we did not use a statistically valid sampling method to select these example projects, the total amount that the Treasury could recover if Bonneville and Western changed their repayment methods cannot be projected from our work. However, the Treasury would benefit to some degree for each project where an annual incremental payment method replaces an end-of-the-repayment-period, lump-sum method. On the other hand, if Bonneville and Western deferred payments on the federal investment in generation and transmission facilities to compensate for the accelerated payments on irrigation assistance, then the potential benefits to the Treasury presented in this analysis may not be realized.

Present Value Analysis of Irrigation Assistance
Payments on Five Projects: Agencies' Planned Repayment Methods
Versus Equal Annual Installments Over the Repayment Periods

(amounts in \$000)

<u>Project name</u>	<u>Amount of irrigation assistance</u>	<u>Present value of irrigation assistance using current agency repayment methodology</u>	<u>Present value of equal annual payments over the entire repayment period</u>	<u>Present value of equal annual payments over the remaining repayment period</u>
	(1)	(2)	(3)	(4)
<u>Projects with a repayment period beginning after 1985:</u>				
Colorado River Storage Project, Dolores Unit	260,630	4,254	20,531	20,531
Chief Joseph ^a Project, Oroville-Tonasket Unit Extension	57,721	281	9,031	9,031
<u>Projects with a repayment period beginning prior to 1985:</u>				
Central Utah Project, Bonneville Unit	843,047	2,292	75,844	54,689
Colorado-Big Thompson Project	72,146	15,549	79,465	22,328
Chief Joseph ² Project, Greater Wenatchee Division	3,969	79	2,396	933

^aThe two Chief Joseph projects are in Bonneville's service area, the remaining three are in Western's service area.

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