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THE CENTRAL VALLEY PROJECT: FEDERAL OR STATE?

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This concise review is one of a series prepared at the request of California legislators. It is based upon extensive materials which could form the basis of a more detailed report if specifically requested. In order to maintain its value as an impartial fact-finding agency, the Bureau avoids definite recommendations on controversial subjects.

June 1955

FOREWORD

This report summarizes major portions of an extensive study written by Hugh G. Hansen, Public Administration Analyst in the Bureau of Public Administration, and accepted as his doctoral dissertation at the University of California. The full document, also entitled The Central Valley Project—Federal or State? will be issued by the California Assembly Interim Committee on Conservation, Planning and Public Works as Volume 13, Number 6, of the Committee's publications.

It is hoped that this report will assist California Legislators and other interested persons by providing a clear and relatively brief statement of the principal problems relating to Central Valley Project ownership and administration.

Samuel C. May
Director

Berkeley, California
June 2, 1955

TABLE OF CONTENTS

List of Tables

THE DECISION FOR FEDERAL CONSTRUCTION

The Central Valley Project has as its main purpose the equalization of water availability throughout the entire Central Valley of California. Plans to redistribute these water resources are at least eighty years old, although little practical attention was given to them until the twenties. By that time irrigation had increased to the point where it was using water diverted from local streams and pumped from underground sand and gravels. Individuals and organizations dependent upon this water supply soon realized that the end result would be the depletion of ground water resources, with an accompanying loss of economic value in the irrigated areas. All the suggested solutions, however, involved comprehensive planning and development of the valley's water resources. The problem then as now was "how" and "by whom" should the needed facilities be built and how should they be used.

State Water Plan of 1930

Ground water supplies over fifty percent of the Central Valley's irrigation water. The water level in the San Joaquin Valley dropped in the twenties because of pumping, and it became apparent that something would have to be done. The State Water Plan of 1930[1] provided a workable, intelligent solution.

This plan was prepared by the California Division of Water Resources under the direction of the State Engineer. It provided the basis for long range planning and squarely faced one of the basic problems of the Central Valley: two thirds of the usable land is in the San Joaquin Valley while two thirds of the water supply is in the Sacramento Valley. In order to transfer water from north to south, the plan set up twenty-four major storage reservoirs with a system of canals. The originators of the plan maintained that the units would be more useful if they were operated together rather than separately, an idea later used by the Bureau of Reclamation. Underground sources of water were also to be tapped and distributed from one watershed to another as the need arose.

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1. California. Department of Public Works. Division of Water Resources, Report to Legislature of 1931 of State Water Plan (Bulletin no. 25, 1930)

The plan was so conceived that the most economical and most urgently needed units could be built immediately, while others could be added as required. The initial units selected were essentially the same as those which have since been completed by the Bureau of Reclamation. They are listed in Table 1, together with a comparison of the capacities of the various units.

In 1933, after a series of campaigns, the state Legislature passed the CVP Act of 1933, which authorized the initial units of the State Water Plan of 1930. Two issues of this period relate to the history of the Central Valley as a federal project. The first dealt with the sale of electric power, for the CVP Act of 1933 offered power to public agencies not in preference but "in case of equal or equivalent offers."[1] This differs from federal policy of selling power at minimum price to cover costs with preference to public agencies. A second issue dealt with financing the project. The 1933 act authorized revenue bonds only, not general obligation bonds, a restriction which avoided placing the state taxpayer behind the bill, but which entails a higher interest rate.

The Water Project Authority

The CVP Act of 1933[2] established the Water Project Authority in order to develop the state water plan. The authority is one of the agencies at present representing the interests of California in the federally-operated CVP. The act also contained organizational, financial and other provisions under which the state could either operate existing units of the CVP or build additional ones.

The Water Project Authority consists of five ex officio members: three elective officials—the Attorney General, State Controller, and State Treasurer—and two officials appointed by the Governor—the Director of Finance and the Director of Public Works, who is also the chairman of the authority. The State Engineer serves as executive officer and his staff is available to do the authority's work.

If necessary, the authority has the right to condemn and take property, including water rights. Acquisition is to be "planned in a manner which will be most compatible with the greatest public good and the least private injury."[3]

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1. Cal. Water Code, sec. 11626
2. Cal. Water Code, Division 6, pt. 3
3. Cal. Water Code, sec. 11582

TABLE 1. INITIAL UNITS OF THE STATE WATER PLAN OF 1930 AND OF THE FEDERAL CENTRAL VALLEY PROJECT

	Units[1]	State Water Plan of 1930		Present CVP under Bureau of Reclamation
		Proposed initial capacity	Recommended ultimate capacity	
Reservoirs				
Shasta (known as Kennett in 1930)	ac ft.	2,940,000	5,967,000	4,500,000
Friant	ac ft.	400,000	400,000	520,000
Power plants				
Shasta (including associated after-bay plant)	kva	325,000	450,000	450,000
Friant	kva	30,000	10,000	None
Canals				
Delta-Mendota (canal and pumping system)	cfs	3,000	8,000	4,600
Friant-Kern	cfs	3,000	3,000	5,000
Madera	cfs	1,500	1,500	1,000
Contra Costa	cfs	120	Not specified	350
Power Transmission Systems	——	Not included	Not included	3 - 230,000 v circuits Shasta to Tracy

1. Units of measure are:
   - ac ft. = acre feet. One acre foot is an acre of water one foot deep.
   - kva = kilovolt ampere. Comparable to kilowatts. One kva of capacity will supply the average domestic iron.
   - cfs = cubic feet per second. Canal capacities are given at beginning of each canal.

Sources:
State Water Plan data from California. Department of Public Works. Division of Water Resources, Report to Legislature of 1931 of State Water Plan (Bulletin no. 25, 1930), p. 44-47, 94-97, 131
Present CVP data from California. Water Project Authority, Feasibility of State Ownership and Operation--CVP (March 1952), p. 25-29

Provisions of the Authority

There were certain provisions which would facilitate the sale of project power and water to public agencies. For example the authority was authorized to grant preference in awarding contracts to state agencies or other organizations not organized or doing business for profit, if their offers were equal or equivalent of others. Also a contract for water or power for resale with any person other than a state agency was made subject to cancellation upon five years notice if a state agency should apply for the same service at an equal price. The construction of transmission lines and a steam-electric generating plant was authorized in order to make practical the sale of power.

Financial Powers of the Authority

Although the legal basis for a state-administered valley development was thus firmly established, attempts at financing the project were not so successful. No effort was made to finance the construction of the project by the direct sale of bonds on the private investment market, nor does there appear to have been any move to borrow money from the Reconstruction Finance Corporation which was lending money for self-liquidating public works at this time. The idea of federal assistance appears to have been involved in the passage of the act itself since a delegation was sent to Washington to confer with federal officials while the bill was being debated in the California Legislature, "in order that the provisions of [the bill] should be satisfactory to the federal authorities who would be required to pass upon any application by the California state agency for federal financial aid in constructing the project."[1]

Once the authority was established, its first act was to submit, on January 24, 1934, an amended application to the Federal Emergency Administration of Public Works for a combined loan and grant in order to finance the construction of initial units. The loan was to be secured by project revenue alone. When federal funds for the support of the proposed state project were not forthcoming, it was requested that the CVP be adopted as a federal project. The State Water Project Authority successfully urged federal construction and the receipt of Presidential approval on December 2, 1935 officially established the CVP as a federal reclamation project.

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1. California. Department of Public Works. Division of Water Resources, Review of History of Legislation and Policy Formation of the CVP by Mary Montgomery and Marion Clawson; by Henry Holsinger (March 7, 1947), p. 14

Federal Approval of Construction of CVP

The following year the Central Valley Project was authorized by act of Congress (Sec. 2, Act of August 26, 1937; 50 Stat. 850). The units which were authorized at this time included Shasta and Keswick Dams and power plants, the Delta-Mendota Canal and Friant Dam, Friant-Kern Canal and Madera Canal in the San Joaquin Valley. Also authorized were transmission lines adequate to convey the output of the Shasta and Keswick plants to the vicinity of Tracy. All of these units are now complete and in operation.

Although reclamation law required repayment contracts in advance of the delivery of water, the President waived this requirement in order to get construction under way as soon as possible. As a matter of record, in 1954, negotiations of contracts for the full output had not yet been completed.

The State of California offered no financial support of the project, either as a direct contribution or as a guarantee against the risk of insufficient revenue. The federal government has on several occasions expressed the view that the project was of sufficient value to California to justify the state underwriting part of the project. This was never done.

Bureau of Reclamation Policies

Once the CVP was given federal sponsorship, the traditional United States reclamation policies applied as established by law and history. These policies, under which the CVP has been developed and operated by the Bureau of Reclamation, may be summarized briefly:

1. The full development of available resources has been a major objective. No single purpose has been allowed to dominate either in physical operation or in economic policy.

2. The Bureau of Reclamation has emphasized the unity of basin-wide, multiple purpose water development and has been a strong advocate of coordinated operation of all major water facilities. Integrated financial accounting and unified administration have been used to promote such coordination.

3. The project is financed from federal funds provided on an equity basis with repayment governed by Congressional policy. These policies include no repayment for flood control, navigation and fish and wild life benefits; power rates are to return interest on the power investment at 3 percent and municipal and industrial water rates at two and one half percent;

irrigation water rates, with the aid of power and municipal water revenues, are to repay irrigation investment interest free. Time limit for repayment is not specified by law, but the rates established have been designed to return federal investment within fifty years from completion of the project.

4. Irrigation water is delivered on a semi-utility basis. Provision is made for downward adjustment of irrigation water payments in times of financial hardships.

5. Permanent supply of project irrigation water is limited to 160 acres for each individual (320 for man and wife). This acreage limitation has been a part of reclamation law throughout its history. Its purpose is to promote a desirable form of rural society by providing opportunity for future farmers of the west. It restricts the benefits of federal subsidy which may be received by any one individual and is, thereby, a justification for federal expenditure.

6. In order to spread the benefits of financial aid as widely as possible, the Bureau has established generally low rates for both power and water.

7. The sale of electric power at low rates, with preference to public agencies, in purchase but not in price, has been promoted as a stimulus to agriculture and industry and a direct benefit to the domestic consumer. Over the long run, power rates are geared to the average costs of the project.

To what extent would California have adopted these policies on its own if the project had been built by the state, with the help of federal funds? Although this question cannot be answered, in the light of possible state purchase it is an interesting point on which to speculate.

THE CVP IN 1954 - OPERATION AND PLANS

The CVP was originally conceived by the state as the initial portion of a coordinated basin-wide plan, designed for future expansion, so that eventually all water requirements of the Central Valley would be met. This was clearly set forth in the State Water Plan of 1930,[1] which was officially adopted by the state Legislature of 1941. The Bureau of Reclamation has taken a similar point of view, preparing its comprehensive plan for the basin as a whole to serve as a guide for further expansion.[2] The state and bureau agree that the construction of additional units, either reservoirs or canals, should be timed in accordance with future needs and that the units should be integrated into the project as a whole.

Additional Units of CVP

The additional units are added gradually as needs become acute and funds are made available. For example reservoirs may be constructed and operated to meet growing local requirements before the canals are constructed and water agreements arranged.

By 1954 four units had been added to those originally authorized in order to increase capacity of the project. The question of present and future development of the project is of great importance in considering questions of state proposals of purchase, since it must be decided just what part of the project is complete and for sale. So far only one of these additional units, Folsom Reservoir, has been included in the proposals.

1. Folsom Reservoir: Folsom receives its importance from the fact that it will help protect Sacramento and vicinity from American River floods. The reservoir will be operated in coordination with Shasta Reservoir to prevent floods and will also maintain summer water flows in the Sacramento and Delta areas. This in turn will make more water available for export to the San Joaquin Valley.

When canals are constructed, Folsom will also supply irrigation and municipal water to the valley areas both to the north and south. The reservoir has been projected for completion in 1955.

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1. California. Department of Public Works. Division of Water Resources, Report to Legislature of 1931 of State Water Plan (Bulletin no. 25, 1930)
2. U.S. Bureau of Reclamation, Central Valley Basin, a Comprehensive Report... (81:1, S. doc. no. 113, August 1949)

2. The Sly Park Unit: This unit is to supply irrigation and municipal water to the vicinity of Placerville. Construction began July 1953 following the signing of a contract which permits the El Dorado Irrigation District to operate the project upon its completion.

3. Sacramento Canals: These canals will carry irrigation water to areas on both sides of the upper Sacramento Valley now inadequately supplied. Similar canals may be found authorized by the California Legislature in 1941 as part of the Central Valley Project legally constituted under state law. The canals were authorized by Congress in 1950, but appropriations for construction did not follow until the fiscal year ending June 30, 1954.

The Sacramento canals are considered to be interdependent with the Trinity River Division. In 1953 the President, in reporting the project for further consideration by Congress, said, "I find that the Sacramento canals unit has engineering feasibility on the basis that the Trinity River Division, upon which the canals unit is dependent for a firm water supply as discussed herein, will be authorized and constructed."[1]

4. Trinity River Division: According to recent plans, this unit includes a 2,500,000 acre-foot reservoir on the Upper Trinity River with gravity flow tunnels and conduits to carry the water into the Sacramento River. In combination with other Central Valley waters now wasted for lack of dependability, the project will increase water supplies by about 1,000,000 acre feet annually. This project was found by the State Water Plan of 1930 to be the third most economical source of water for the Sacramento Basin, after Shasta and the American River.[2]

Power Facilities of the CVP

These additional units will also effect the output of electric power which is one of the important products of CVP, as well as its largest source of revenue. Power is also one of the focal points of a controversy raging around the project. As of 1954 the power generating facilities of the CVP consisted of the large hydroelectric plant at Shasta dam and the smaller plant at Keswick Reservoir. The two plants have a rated capacity of 454,000kw. without serious overheating.

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1. U.S. Department of the Interior, Sacramento Canals Unit, California; Report and Findings (83:1, H. doc. no. 73, January 29, 1953), p. xi
2. California. Department of Public Works. Division of Water Resources, Sacramento Water Basin (Bulletin no. 26, 1931), Table 136

Amount of Production

High voltage (230,000 v.) transmission lines have now been completed from Shasta dam to Tracy and an extension connecting Folsom power facilities into the system near Sacramento is under construction. The only other existing high voltage transmission line supplies power at 69,000 v. from the project substation adjoining the Tracy pumping plant to project pumping plants on the Contra Costa Canal and to the Port Chicago Naval Depot. These facilities gave CVP 13 percent of northern California's generating capacity at the end of 1951, and produced an average of 14 percent of northern California's electric energy in the years 1950 through 1952.

Upstream Power Plants

Like the State Water Plan of 1930, the comprehensive plan for the Central Valley basin, published by the the Bureau of Reclamation in 1949, provided for power generation only at multiple purpose reservoirs designed primarily for water conservation purposes.

Most of these reservoirs are at low elevations, just above the floor of the valley. Most of the available water power, however, is found in higher elevations where the elevation drop is greater. The construction of these reservoirs increases the economy and potential usefulness of an upstream power development which might otherwise interfere with irrigation requirements.

These planned upstream power facilities have been hotly disputed by private power companies. At present no comprehensive plan for the exploitation of hydroelectric power potentials in northern California is in existence. The present administration does not appear to be pushing this type of development.

FINANCE AND REPAYMENT OF AN EXPANDING PROJECT

The availability of funds and the terms of repayment may well go far toward determining who is to build and operate water resource projects. The favorable financial provisions of the United States reclamation laws were dominant factors in California's decision to have the CVP constructed as a federal undertaking. Finance and repayment terms will be equally important to a decision on state purchase of the existing units and state construction of future ones.

Since the greater part of the expenditure required for full water and water and power development of the Central Valley is still to be made, it is probable that the limits of future growth depend not on physical resources but on economic ability expressed through political channels.

Construction Funds

At present the CVP funds for construction are directly appropriated by Congress. The people of the United States are actually financing the entire project on an equity basis. With this type of financial responsibility, Congress can establish terms of project repayment out of considerations of public policy rather than of security and interest rates as required by private investors. While a great advantage to project beneficiaries of finance, this also has a drawback in that construction on the project can proceed only as rapidly as Congress is willing to appropriate money, since unlike the California Water Project Authority or a private utility company, the Bureau of Reclamation has no independent power to raise funds.

Federal Repayment Policies

The policies of Congress for the pricing of services and the repayment of construction costs of Bureau of Reclamation projects are set forth in the Reclamation Project Act of 1939. These policies include non-reimbursable costs such as navigation and flood control benefits and expenditures for the preservation and propagation of fish and wildlife. All other investment costs are to be paid back to the federal government out of project revenues.

Part of these revenues are derived from the sale of commercial power. It has been the policy of the federal government to sell power at the lowest rates which will cover costs rather than at the maximum rates obtainable on the open market. A statement of this policy is to be found in the Flood Control Act of 1944 which provides that the Secretary of the Interior shall transmit and dispose of power and energy "in such manner as to encourage the most widespread use thereof at the lowest possible rates to consumers consistent with sound business principles."[1]

Irrigation Costs

Since passage of the Reclamation Act of 1902, it has been the practice to have project revenues repay irrigation costs to the government without interest. At present repayment is scheduled to take place over a forty year period after allowing ten years for development. Repayment of interest-free irrigation costs not covered by charges to water users is made up from net project revenues from power and municipal water sales over and above capital costs charged to those functions.

Results of Federal Financial Policies

The practical effect of federal standards of finance and repayment under reclamation law is summarized in Tables 2a and 2b on the following page. Table 2a applies to the units completed and under construction by the end of 1953. Table 2b includes the as yet unconstructed Trinity River Division and the Sacramento canals. Net operating revenues shown are those available for payment of principle and interest, and represent those revenues anticipated from the beginning of project operation until fifty years after the last unit has been completed.

A glance at the individual reimbursable functions shows that commercial power is actually the principal source of revenue. Commercial power represents 25.9 percent of total investment and is expected to return 62.5 percent of net operating revenues. Irrigation, on the other hand, will leave an $80,033,700 deficit, which will be offset for the most part by commercial power revenues.

Integrated Financial Accounts

It has been the polity of the Bureau of Reclamation to emphasize the value of unified and coordinated planning and operation of water

1. Flood Control Act of 1944, sec. 5 (58 Stat. 887)

TABLE 2. CVP CAPITAL COSTS AND NET REVENUES

	CAPITAL COST		NET OPERATING REVENUE			
	(Thousands)	As % of total cost	(Thousands)	As % of total revenue	Excess of revenue over cost (thousands)	Ratio of revenue to construction cost
	(1)	(2)	(3)	(4)	(5)	(6)
A: CVP Excluding Trinity River Division and Sacramento Canals (Thru Fiscal Year 2005)						
CONSTRUCTION COST	$477,493	100.0				
Non-reimbursable						
Navigation	8,055	1.7				
Flood control	44,999	9.4				
Fish & wildlife	1,010	.2				
Subtotal	54,064	11.3				
Reimbursable						
Commercial power	123,683	25.9	$403,334.1	62.5	$279,651.1	3.26:1
M & I water	20,392	4.3	42,394.4	6.6	22,002.4	2.08:1
Irrigation	279,354	58.5	199,320.3	30.9	-80,033.7	.71:1
Subtotal	423,429	88.7	645,048.8	100.0	221,619.8	1.52:1
INTEREST COMPONENT	41,691.9					
TOTAL REPAYMENT OBLIGATION, NET REVENUE, AND EARNED SURPLUS	465,320.9		645,048.8		179,727.9	1.39:1
B: CVP Including Trinity River Division and Sacramento Canals (Thru Fiscal Year 2013)						
CONSTRUCTION COST						
Project Total	754,913	100.0				
Non-reimbursable						
Navigation	8,055	1.1				
Flood control	44,999	6.0				
Fish and wildlife	1,478	0.2				
Subtotal	54,532	7.2				
Reimbursable						
Commercial power	280,221	37.1	819,043.1	62.3	338,822.1	2.21:1
M & I water	20,782	2.8	50,458.4	5.1	29,676.4	2.43:1
Irrigation	399,378	52.9	324,392.5	32.6	-74,985.5	.81:1
Subtotal	700,381	92.8	993,894.0	100.0	293,513.0	1.32:1
INTEREST COMPONENT	122,834.8					
TOTAL REPAYMENT OBLIGATION, NET REVENUE, AND EARNED SURPLUS	823,215.8		993,894.0		170,678.2	1.21:1

facilities on a multiple purpose basis for entire watershed areas. Financial accounts are similarly integrated. Thus the more remunerative functions assist in paying the cost of less remunerative functions. Whether the service is to be provided by the project is not determined by whether or not it can pay its own way, rather the decision is made on the basis of estimated benefits and costs, both public and private. If so justified, the service is included, provided funds can be foreseen from somewhere—nonreimbursable federal appropriations or prospective project revenues—to pay total cost.

An example is salinity control, classified by the bureau as a supplementary irrigation function. Salinity control is needed and provided although neither Congress nor the beneficiaries have committed themselves to paying the bill. Power revenues, too, assist in irrigation development.

This concept was expressed by Richard L. Boke, former regional director for northern California in an address made in Seattle in 1948:

> One thing is perfectly clear, if the elements (that is, the dams, power plants, canals) are planned and built separately, each more or less a unit or project in itself, the whole can never be paid for. In other words the Basin plan for the Central Valley is feasible only where the more profitable elements of the plan contribute to the less profitable elements....We must get used to the idea that an upstream power plant on one river, though only a single-purpose structure in itself, can perfectly well contribute to the building of a canal 100 or 200 miles away though there is no physical connection between the two.[1]

Financing Additional Units

As new units are added to the project, repayment is not separated but combined as a new total repayment to be expected from the enlarged project. A new unit which would not pay for itself can thus be added if there is the possibility of surplus revenues from the existing units.

This principle has obvious importance in the light of future water development in the valley. If both public and private benefits from additional units are found to exceed the cost, the units are considered to be economically justified. It remains only to determine if the project would be financially feasible under terms set by reclamation law. That is, it

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1. Richard L. Boke, "Water Resources for Irrigation in California," Pacific Northwest Industry 8: 113-114, March 1949

must be shown that project revenues, including those from the proposed additional units, can be expected to return the appropriate reimbursable cost within the accepted time limit. For an example of how units are financially integrated into the CVP system see Table 2b. This table includes the proposed Trinity River Division and the Sacramento canals and shows them to be feasible under integrated financing. If the state were to purchase present units of CVP and then ask the federal government to construct the Trinity River Division and the Sacramento canals as a separate project, the financial picture would be different (see Table 3). To make these units financially feasible as a separate project, the Bureau of Reclamation would be forced to increase power and water rates in order to cover the deficit which would occur when surplus revenue from other CVP units is denied the proposed additional units.

TABLE 3. TRINITY RIVER DIVISION AND SACRAMENTO VALLEY CANALS CAPITAL COSTS AND NET REVENUES (in 50 years after completion--1964-2013)

A. If Financially Separated from CVP

	CAPITAL COST (Thousands) (1)	CAPITAL COST As % of total cost (2)	NET OPERATING REVENUE (Thousands) (3)	NET OPERATING REVENUE As % of total cost (4)
CONSTRUCTION COST	$277,420	100.0		
Non-Reimbursable				
Navigation	—			
Flood Control	—			
Fish & wildlife	468	0.2		
Subtotal	468			
Reimbursable				
Commercial power	156,538	56.4	$161,925.0	63.6
M & I Water	390	0.1	0.0	--
Irrigation	120,024	43.3	92,565.8	36.4
Subtotal	276,952	99.8	254,490.8	100.0
INTEREST COMPONENT	148,019			
TOTAL REPAYMENT OBLIGATION, NET REVENUE, AND DEFICIT	454,971		254,490.8	

B. If Financially Integrated with CVP, as Planned

REPAYMENT OBLIGATION ADDED TO CVP BY CONSTRUCTION OF TRINITY RIVER DIVISION AND SACRAMENTO CANALS:			
Reimbursable construction costs added:			$276,952.0
Interest component added			80,942.9
Total repayment obligation added			357,894.9
REPAYMENT AS PART OF THE CVP:			
Net Operating Revenues, Trinity River Div. and Sacramento Canals as financially separate project			254,490.8
Net Operating Revenues, CVP excluding Trinity Div. and Sacramento canals, years 2006-2013 inclusive	Per Year	8 Years	
Commercial power	6,723.0	53,784.0	
M & I water	1,008.0	8,064.0	
Irrigation	4,063.3	32,506.4	
Total	11,794.3	94,354.4	
Total 8 years			94,354.4
Reduction of estimated CVP surplus			
Year 2005 without Trinity-Sacramento		179,727.9	
Year 2013 with Trinity-Sacramento		170,678.2	9,049.7
Total repayment			357,894.9

WATER AND POWER MARKETING

The problem of CVP eventually resolves itself in the basic question of who benefits and who pays for the project. Services in the form of flood protection, maintenance of navigation, protection of fish and wild life, and the provision of recreational activities are all free to those who care to use them. Power and water services, however, are not free and are available only through contracts.

Water Contracts

CVP water is delivered at main canal side or river bank mainly to public districts. In negotiating water contracts the bureau attempts to make maximum use of available resources of the area by committing to each district just enough water to meet all requirements, assuming the local water resources are fully utilized. Project water is typed as class I, regular and dependable, and class II, undependable and varying according to the wetness of the season. Depending on local conditions, different districts are allotted various amounts of class I and II water.

Long term contracts usually run for forty years. Such contracts specify only maximum rates established by service areas and vary from area to area. The actual rate paid is announced by the Bureau of Reclamation by February 15 of each year. The purpose of this flexibility is to permit rate reductions in times of financial hardship.

9(d) Contracts

If the district elects to have a distribution system constructed by the bureau, it must maintain and operate the system at its own expense and repay construction costs, without interest, in forty equal annual installments beginning at the end of a development period of up to ten years, as specified in the contract. These are known as 9(d) type contracts.

9(e) Contracts

CVP water contracts known as 9(e) contracts provide merely for the delivery of water for a fixed period at a set maximum rate per acre-foot. The rates are established for the purpose of covering operating and some portion of construction costs. These rates are fixed for forty years, with no escalator clause provided.

Power Contracts

Power generation and delivery have been dominated by two federal reclamation law policies: first, preference in the purchase of power is given to public agencies or non-profit organizations; and second, prices are established on the basis of cost rather than in consideration of what the market will bear.

Power Contracts and Public Agencies

Preference to public agencies in the sale of federal power has been stated in the Reclamation Project Act of 1939:

> ...preference shall be given to municipalities and other public corporations or agencies; and also to cooperative and other non-profit organizations financed in whole or in part by loans made pursuant to the Rural Electrification Act of 1936 and any amendments thereof.[1]

Project power is sold only at wholesale rates. Rate schedules for general wholesale and for irrigation pumping service have been established, and equal rates are basically applicable to private and public consumers for equivalent service. The preference to public agencies is in the right to purchase power, not in the price.

Sacramento Municipal Utility District

The largest single contract is with the Sacramento Municipal Utility District (SMUD). This district will absorb about 62 percent of the estimated Shasta-Folsom dependable capacity. The contract has resulted in an extended controversy bearing directly on proposals for state purchase of the CVP.

The SMUD was legally established in 1923. It includes the city of Sacramento and surrounding suburban territory. As early as 1934 it took first steps toward the future purchase of CVP power. The district now owns its own distribution system and until recently was buying power from the Pacific Gas and Electric company at a special rate of 5.62 mills per kilowatt hour offered in competition with CVP.

In 1952 the district was faced with expiration of its power supply contract and began negotiations with both the company and the Bureau of Reclamation. The company offered a ten year extension of its previous rate, but offered no assurances that the rate would not be increased during

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1. 53 Stat. 1187, sec. 9(c)

this period. The CVP contract, on the other hand, offered a lower initial rate of about 4.39 mills per kilowatt hour and a greater future assurance of low-cost supply. The district and the bureau therefore signed a contract to become effective upon expiration of the present contract on June 30, 1954.

Controversial Points of the Contract

This CVP-SMUD contract has aroused controversy in hearings before the Joint Committee on Water Problems of the California Legislature, the interior appropriations sub-committees of both the House and Senate of the United States, and the task force on water resources and power of the Commission on Organization of the Executive Branch of the Government (second Hoover commission). The objectors, numbering among them the California State Chamber of Commerce and the State-Wide Committee for California Ownership of the Central Valley Project have argued that the power rate established is too low. At the request of House and Senate appropriations committees, the contract was reviewed by the Department of the Interior officials appointed by President Eisenhower.

Negotiated in January 26, 1954 and now in effect, the revised contract carries the approval of the Eisenhower administration. After comparing versions of the contract, the California Water Project Authority concluded, "in general the revision constitutes no great change from the original contract and a majority of such changes as were made appear to favor SMUD."[1]

The SMUD contract is effective for forty years and states that the CVP will supply the power requirements of the district up to a maximum of 290,000 kilowatts. This is expected to be sufficient through 1958 or 1959. Initial delivery is to be made by transmission or "wheeling" over Pacific Gas and Electric lines, but by July 1, 1957 the district is to construct transformer facilities to connect directly to the 230,000 volt CVP transmission system independently of company facilities.

Under direct service SMUD expects CVP power to cost 4.39 mills per kilowatt hour, including its own expense for the construction and operation of these 230,000 volt facilities. The rate is subject to change in accord with changes in CVP power costs and in other costs which the Secretary of

1. California. Water Project Authority, Reference Summary of Power Contracts Between U. S. Bureau of Reclamation and Power Customers of the CVP, California (March 1954), Item 10c, p. 5

the Interior decides should be covered by power revenues. It is presumably, however, not subject to change merely as a matter of policy.

Importance of the Contract to CVP

The importance of the SMUD-CVP contract to CVP revenues is readily shown. With increasing loads during the first six years and full purchase of the contracted 290,000 kilowatts thereafter, the district estimates that it will pay to the project $298,500,000 in fifty years at present rates, assuming that the contract is extended for an additional ten years.[1] During the same period (fiscal 1955 through 2004) gross payments by irrigators to the CVP including the Shasta-Folsom-Sly Park units are estimated as $328,900,000.[2] In other words the SMUD will pay 87 percent as much as all irrigation water users.

1. Information supplied by the Sacramento Municipal Utility District.
2. U.S. Bureau of Reclamation, Region 2, Supplementary Report, Trinity River Division, California (March 1954), Table 4

PROPOSALS FOR STATE TAKE-OVER OF CVP

By the end of 1953, discussion of state take-over had focused on three alternative arrangements under which the project might be governed and future federal-state relations established. As formulated by the subcommittee on the CVP of the Assembly Interim Committee on Conservation, Planning and Public Works and presented for public discussion at hearings held in Visalia, California on January 15, 1954, the alternative proposals are:

> 1. That the State of California under agreements with the federal government assume the operation of the Central Valley Project as an agency for the United States and that this operation be in accordance with general reclamation law and contracts thereunder. This proposition assumes no additional expense to the State of California. Its purpose is to change the operating agency from the Bureau of Reclamation to an appropriate agency.
>
> 2. That the State of California operate the Central Valley Project as a lease-purchaser under state law, with the state guaranteeing payments equivalent to those anticipated under present contracts. The lease purchase agreement would transfer ownership at the end of the repayment period, specified in the present and contemplated contractual arrangements with water and power purchasers. This proposition assumes no bond issuances and no increase in existing water or power rates during the repayment period.
>
> 3. That the State of California purchase the Central Valley Project from the United States at a negotiated price with funds secured through issuance of revenue bonds or such other methods of credit financing as may appear more appropriate at the time of purchase. This proposition assumes that the project thereafter will be operated under state law and that all interest of the United States with respect to the project works purchased will be terminated at the time of exchange. It further assumes that current contracts negotiated after the purchase will be in line with state policy.[1]

These proposals differ in legal, financial and policy implication but any one of them would set a new pattern of federal-state relations in major

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1. California. Legislature. Assembly. Committee on Conservation, Planning, and Public Works. Subcommittee on the Central Valley Project, State Ownership and/or State Operation of the Central Valley Project: hearings in Visalia, Calif. (January 15, 1954), p. 190-191

water resource projects. Thus state acquisition under either proposal no. 2 or proposal no. 3 would require an act of Congress. Such an act might also be necessary or desirable for state operation under proposal no. 1.[1] The Water Project Authority probably has the legal authority to handle any one of the three proposals although supplementary state legislation might also be needed.[2]

The Engle Bill

The first proposal differs from the other two in that it accepts federal law and policy whereas a main objective of proposal no. 2 and no. 3 is to make the operation of the project independent of federal policy. Each proposal has its supporters.

Current proposals for operation of the CVP by the State of California acting as an agent of the federal government have most clearly been set forth in the bills introduced by Congressman Clair Engle. The principal provisions of these bills are given below, condensed for the sake of brevity:

> Whereas the CVP has been authorized by Congress...
>
> Whereas the State of California (not the Federal government) holds title to the project water...
>
> Whereas Congress believes that local management operation and maintenance of the project would best serve the interests of the people of California...
>
> Whereas local control and responsibility would promote the most efficient and economical operation of the project...and would be a logical step toward the transfer of ownership to the State of California...
>
> The State of California shall agree: to operate and maintain the project as an agent of the United States; to return the reimbursable costs of the project; to honor all outstanding project contracts; that all contracts for sale of available water and power shall be made in accordance with Federal Reclamation Laws; to report in full to the Secretary of the Interior at least once per annum on all phases of its operation....[3]

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1. California. Department of Public Works. Division of Water Resources, Statement of Mr. Norman Sturm before the Sub-committee of the Assembly Interim Committee on Conservation, Planning and Public Works (November 20, 1953), p. 3
2. California. Water Project Authority, Feasibility of State Ownership (March 1952), p. 111-12
3. U.S. Congress. House. A Bill to Authorize the Secretary of the Interior to Transfer the Operation and Maintenance of the Central Valley Project, California to the State of California or an Agency Thereof (83:1, H.R. 1716, January 14, 1953), p. 2-5

With this type of arrangement, the state of California would in fact be taking over the responsibilities of the regional office of the Bureau of Reclamation. Construction of additional units by the federal government as part of the CVP could continue as at present with unified repayment for the enlarged project as a whole under the terms of reclamation law, and with operation management of each unit turned over to the state agency as completed.

Many of the details of the Engle Bill remain to be worked out. For instance some arrangement would have to be made for the payment of operation and maintenance costs on the one hand and repayment of construction costs on the other.

Under present California law as established in the CVP Act of 1933, the California Water Project Authority would be the administering agency for the state. It would find itself, if this should happen, in the position of being jointly responsible to the California Legislature and to the Secretary of the Interior. Smooth working relationships in such a situation would depend upon the existence of a large area of agreement between the federal government and the state.

Support of the Engle Bill

In voicing support of the bill, Congressman Engle said:

> I oppose the outright purchase of the Central Valley Project. But I do urge and support a large measure of local and state management of the Project. I would not attempt to define the precise line where Federal management should stop and State management begin....The objective from our point of view should be to secure a maximum of local participation without terminating the federal interest and financial participation.[1]

In general the supporters of state operation of CVP take the position that purchase of the project would bring more problems than it solved. They point out that if the purchase price is raised by revenue bonds alone, interest at 3 percent over a period of fifty years would about double the cost.

The supporters of the Engle Bill also believe that future additions to the project would be built at state expense, and they estimate that the state alone could not carry the financial burden of finishing the dams and canals which remain to be built in order to satisfy the needs of the Central Valley.

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1. Clair Engle, The Central Valley Project - Operate, Not Buy It, a speech delivered at Chico, California, September 24, 1952

Opposition to the Engle Bill

Opposition to this proposal has been expressed by proponents of purchase of CVP and to a certain extent by irrigation districts, which have generally supported neither state purchase nor state operation. Representing the California Farm Bureau Federation, which supports cash purchase, Mr. O. W. Fillerup observed, "Leaving aside the legal and constitutional objections to the state or some other agency of the state acting as an agency of the federal government, all that would happen in such case would be that the state would accumulate all of the grief and obtain no advantages whatsoever. The water users of the state would still be at the mercy of the water rights interpretations made by the Bureau of Reclamation."[1]

The irrigation districts have expressed a belief that only duplication would result from the Engle Bill. This belief is in line with the views expressed by the American Municipal Association, which has stated that relations between local and federal governments should be conducted directly rather than through state agencies.

State Purchase of CVP

In 1944 and 1945 state purchase of CVP was promoted under the leadership of the State Chamber of Commerce. Support for the idea continued throughout the years, presented particularly before the California Joint Legislative Committee on Water Problems. Finally on June 20, 1952 the leading organizations supporting state purchase formed the Statewide Committee for California Ownership of the Central Valley Project. The committee is composed of six representatives each from the sponsoring organizations:

California State Chamber of Commerce
Irrigations Districts Association
California Farm Bureau Federation
California Central Valleys Flood Control Association
Agricultural Council of California
Los Angeles Chamber of Commerce

In 1951 the California Legislature requested the Water Project Authority to renew earlier studies and report on the legal and financial feasibility of state purchase.[2] The California Budget Act of 1952 appropriated

1. California. Assembly. Committee on Conservation, Planning, and Public Works. Subcommittee on the Central Valley Project, State Ownership and/or State Operation of the Central Valley Project; hearings in Visalia, Calif. (January 15, 1954), p. 46
2. Cal. Stats. 1951, v. 2, ch. 135

$10,000,000 to the authority "for surveys and studies preliminary to state acquisition of the project upon a self-liquidating basis, and to pay the initial installments upon any agreement between the United States and the state for such purchase."[1]

The Water Project Authority Reports

Accordingly, the Water Project Authority presented in March 1952 a major report, Feasibility of State Ownership and Operation of the Central Valley Project of California, and followed it in 1953 with three additional reports.[2] These reports contain the most specific information concerning the purchase proposals.

The proposed purchase price for the project in these reports is shown in Table 4. This price is estimated on the basis of minimum repayment requirements for federal projects under reclamation law. It is assumed that flood control and navigation expenditures will be paid by the federal government and that power and municipal water investment will be repaid with interest at 2 and 3 percent respectively. Under installment purchase the irrigation investment would be repaid without interest, while under cash purchase it is assumed that the purchase price for irrigation investment would be discounted in return for cash payment.

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1. California. Water Project Authority, Preliminary Report...Relative to the Acquisition of the CVP (May 19, 1953), p. 4
2. California. Water Project Authority, Progress Report on Study of Disposal of Electric Power Generated at Shasta Dam Power Plant (February 19, 1953); and Preliminary Report to the California Legislature ...Relative to the Acquisition of the Central Valley Project by the State of California (May 19, 1953); and Report on a Complete Management Survey in Connection with State Acquisition or Operation of the Central Valley Project of California (November 1953). As this summary is going to press, another report has just been issued by the Water Project Authority: Report of the Executive Officer on Status of State Acquisition of the Central Valley Project (February 1955). This new report is based on the developments which occurred at a meeting held in Washington, D.C., November 1954. The meeting brought together representatives of the Department of the Interior, Treasury Department, Corps of Engineers, Bureau of the Budget and the Water Project Authority.

   In the body of the report are two plans for state take-over of the Central Valley Project. Plan A provides for a total payment to the United States of $215,000,000. This payment is to be approximately one half in cash and one half in 2-1/2 percent second lien bonds. Cash for payment to the United States and to establish an initial project reserve fund, which would be used to finance additional units of the Central Valley Project, would result from the sale of $115,000,000 first lien revenue bonds bearing an assumed interest rate of 3 percent. The project would be acquired July 1, 1956, bond amortization would begin July 1, 1961 and be completed July 1, 2006. Costs allocated to non-reimbursable functions are set at $107,007,000 (practically the same

When comparing the two methods of purchase which were studied, installment and cash purchase, the 1953 report of the Water Project Authority concluded:

> Under both purchase plans the eventual cost of the project would be practically the same. While interest would be paid annually on revenue bonds issued to accomplish cash purchase, and the installment payments on the irrigation allocation would be interest free under a deferred payment plan, the reduction of the irrigation allocation to a present value figure under the proposed cash purchase plan practically achieves equality between the two methods of purchase. It may be noted that under both purchase plans all costs would be paid by the users of project water and power.[1]

Financial Problems Involved in Purchase by the State

The financial problems of the proposed purchase contain four elements: prospective revenues, operating costs, credit terms, and the price at which the federal government may be willing to sell.

Prospective Revenues

Prospective revenues would come mainly from the sale of power and water. Of these two services, the authority considered increasing the rate of electric

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as the figure previously set by the Water Project Authority).

Under Plan B, total payment to the United States would be $262,000,000. Approximately one half would be in cash and one half in 2-1/2 percent second lien revenue bonds. Cash for payment to the United States and for an initial project reserve fund would be provided by sale of $137,000,000 first lien revenue bonds, assuming 3-1/2 percent interest instead of the 3 percent used in Plan A. Costs allocated to nonreimbursable functions are set at $54,064,000 (a figure previously set by the Department of the Interior). The rest of Plan B follows the general outline of Plan A.

The two plans represent the limits between which the actual terms of acquisition are expected to fall. The report considers state acquisition to be financially feasible over the entire range of conditions represented by Plan A and Plan B.

Previous contracts made with water users are to be taken over by the state, and while the rights of the users under existing contracts would be respected, the state considers it necessary that such contracts be re-negotiated. This would do away with the controversial 9(e) contracts used at present by the Bureau of Reclamation. Power users would continue present contracts until the problem of renewal arose. At that time new contracts could be made setting fair rates, and an assurance of preference to public agencies in the negotiation of the contracts.

The report concludes by recommending that current negotiations with the appropriate federal departments and agencies be continued during the 1955-56 fiscal year, and that adequate funds are made available.

1. California. Water Project Authority, Report on a Complete Management Survey in Connection with State Acquisition or Operation of the Central Valley Project of California (November 1953), p. 33

TABLE 4. CALCULATION OF PROPOSED CVP PURCHASE PRICE BY CALIFORNIA WATER PROJECT AUTHORITY

(Note: Includes initial features and Folsom; excludes Sly Park, Delta steam plant, Sacramento canals. Assumed purchase date, January 1, 1955.)

Total CVP Construction Cost	$456,156,000
Less accumulated net CVP revenues thru 1954	-48,312,000
Equals unrepaid construction cost	$407,844,000
Less non-reimbursable costs for flood control and navigation	-100,087,000
Equals unrepaid reimbursable cost (proposed installment purchase price)	$307,757,000
Less discount at 3% for cash payment of interest-free irrigation allocation	-96,276,000
Equals proposed cash purchase price	$211,481,000

Source: California. Water Project Authority, Preliminary Report...Relative to the Acquisition of the Central Valley Project (May 19, 1953), p. 30-34

power, having decided that irrigation water rates were about right. The authority estimated the rate of power should stand around 7 mills rather than 3.59 mills which is the present bureau rate. This would represent an increase of 95 percent above present rates and accounts for most of the differences in revenue estimates of the two agencies.

In the estimates of revenues from irrigation water, no mention is made by the authority of possible reduction of rates in times of financial hardship for farmers as is permissible under present water contracts.

Operating Costs

Operating costs as estimated by the Water Project Authority are almost identically the same as those estimated by the Bureau of Reclamation, indicating that no operating economies are foreseen by state operation.

Credit Terms

Under the cash payment plan, the estimates assume that state CVP revenue bonds could be sold on the bond market at an interest rate of 3 percent. Subsequent information developed by the California Assembly Interim Committee on Conservation, Planning and Public Works shows that this assumption may be over-optimistic. Interest rates of 3-1/2 to 4 percent may be

required, with the further proviso that advance contracts for the entire output of project water and power should be signed. This would in turn make purchase of the project more costly and would slow down construction of the needed additional units, providing similar terms of finance were applied to future units.

Installment purchase would not offer the same difficulty since credit terms would be established by the federal government not by the bond market.

Federal Price Set on the CVP

The price on which the federal government might be willing to sell is still unknown. Four factors are involved in determining the amount.

1. One question is whether or not the President and Congress will grant to California the benefits of federal reclamation financing without requiring the enforcement of federal reclamation policies. Specifically the question is whether the irrigation investment is to be interest-free. If not, purchase of the project would not be feasible without either an increase in rates for project services or use of other sources of state revenue.

2. If these interest-free reclamation financing benefits are granted, there remains the question of the interest rates to be used for the discount of irrigation investment under the cash purchase plan, or to be paid by the state on power and municipal water investment under the installment plan.

3. There is the question of how much the federal government will agree to allocate to nonreimbursable costs on behalf of benefits to flood control and navigation. A high allocation would result in a reduction of the proposed purchase price of the project.

There has recently been a dispute between the Department of the Interior and the Water Project Authority on this matter, with the authority attempting to increase the allocation made by the Department of the Interior.

Such allocations had previously been based on the principle of charging to nonreimbursable functions the maximum that could be justified. In 1954, however, a new national inter-agency cost allocation policy was adopted based on the principle that the economies of multiple purpose units should be distributed equitably among all functions. This new policy resulted in a substantial reduction of the allocation for the CVP which, if maintained, would in turn increase the tentative purchase price of the project.

In 1953 the reports of the Water Project Authority had made its own cost allocation increasing nonreimbursable items to $100,087,000 for the

CVP including Folsom. The new national cost allocation policy of the Department of the Interior produced an allocation of only $54,064,000 to nonreimbursables.

On July 23, 1954, in connection with revised proposals for state acquisition, the authority changed its allocation to $105,113,000. The grounds for this increase were two: (1) The fact that the final construction cost of Shasta Reservoir exceeded by 2.44 percent the estimated cost; (2) flood control allocation for Folsom Reservoir was increased by $20,735,000 based on higher flood control benefits computed by the Corps of Engineers on December 31, 1953.

4. There is also the question of what is to be done with possible surplus revenues which can be earned by continuation of water and power charges, over and above operating costs. Whether this potential surplus is in fact realized and if so whether it accrues to the federal or state government has meaning in terms of the financial feasibility and responsibility of future construction.

It has been estimated that the initial units of CVP plus Folsom and Sly Park will return their capital costs in less than 50 years after completion. Revenues thereafter would provide a net income of $11,794,000 per year. Under federal ownership any surplus realizable from the initial units could contribute to repayment of the enlarged project as a whole.

Additional units are being added whose financial feasibility depends on their financial as well as operating integration with the lower cost existing units. This is illustrated in the discussion of the financial analysis of the Trinity and Sacramento canals (see Table 3), and the same is true of the proposed San Luis Unit. Without the availability of potential surplus revenues from the low-cost units, expansion of the CVP is severely limited.

Under state purchase, as presented by the Water Project Authority, surplus revenues over and above negotiated repayment to the federal government would accure to the state. The state might use them to support new units or it might reduce rates to users of water and power from the low-cost units as soon as capital costs of those units had been returned. The reports of the Water Project Authority do not state what course is to be followed.

If the federal government is expected to have any responsibility for the financing of additional units or projects in the Central Valley, it may well consider that the factor of possible surplus revenues should be taken into account in the determination of a sale price.

Excess Land Provision and State Take-Over

Although the Water Project Authority reports have been concerned chiefly with the legal and financial feasibility of state purchase, certain of the more controversial issues relating to operating policies are also discussed.

One of these controversial issues concerns the marketing of water. The 9(e) contracts used by the Bureau of Reclamation are of the utility type providing for the sale of irrigation water for a forty-year period without permanent legal water rights. The authority's feasibility report states that such contracts would naturally be assigned to the state. The district would then be given the opportunity to substitute contracts if it so desired.

To provide for this possibility an alternative financial arrangement was suggested for state purchase wherein part of the purchase sum would be raised by local irrigation districts to cover their share of capital costs of the project. Thereafter the district would only pay an annual charge for operation and maintenance.

Another of these issues is the famous excess land provision of the reclamation law. Under this law, irrigation water service from reclamation projects is limited to 160 acres for each individual (320 for a man and wife). The acreage limitation has been part of federal reclamation law throughout its history and represents a continuation of federal farm policy previously expressed in the Homestead Act. It is defended as promoting a desirable form of rural society, providing opportunity for future farmers of the west, and restricting the amount of benefits of federal subsidy which may be enjoyed by any one individual. The acreage limitation in this way helps to justify federal reclamation expenditures.

The authority's reports seem to indicate that the excess land provisions would not be applied unless required by Congress as a condition of state take-over. The authority assumes also that only the central units of the project, those already constructed, would be purchased. Under this arrangement, the excess land provisions would still apply to districts for which a local water distribution system has been constructed by interest free federal funds. This is one reason why the authority believes that an act of Congress would be required to authorize transference of the project.

Terms under which the state would be willing to reduce irrigation water rates in times of farm financial hardships, as permitted at the discretion of the Secretary of the Interior under federal reclamation law and the present CVP irrigation water contracts, are not discussed.

On the controversial issue of power marketing, the Water Project Authority financial analyses assume the sale of commercial power at full market

value rather than at a price based upon project power costs as is presently the case.

Construction of Additional Units of CVP

Any discussion of state take-over must consider who is to be responsible for future construction and coordination of additional units with the existing project, both in physical operation and in finance. The Water Project Authority does not feel that state acquisition of existing units will bar future federal assistance for construction of additional units. No proposal, however, is found in the report as to whether, or how, additional units might be financially integrated into the existing system.

Current Negotiations With the Federal Government

Recent negotiations with the federal government for state purchase of CVP were opened by the California Water Project Authority in a letter of September 11, 1952 to Secretary of the Interior Oscar L. Chapman. The letter requested a conference for the purpose of discussing the authority's feasibility report. On November 10, 1952 Mr. Chapman indicated his interest. A change of secretaries occurred the following month and negotiations were not resumed until May 1953 when the new Secretary of the Interior, Douglas McKay, met with Governor Warren and representatives of the California Water Project Authority.

In a letter following the discussion, Secretary McKay wrote Governor Warren discussing some of the problems involved:

> Before a sale and transfer of this kind could be consumated, Congressional authorization and approval would be necessary. You at once recognize the amount of work and the time that will be involved in taking those steps. We must take as our starting premise that the Federal Government must be saved free from any financial loss, which means that the payment must be at least equal to the amount of the Federal investment plus any liquidation that might have taken place up to the time of the sale. Also the authorizing legislation would in all probability have to be general and broad enough so that it would provide for similar sale and transfer anywhere in the United States.[1]

Further memoranda from the Department of the Interior indicated the department's belief that the project should not be broken up either physically or financially, since to do so might create administrative and operational difficulties which would disrupt the entire financial basis of the project. The department also gave some indication that arrangements could be made to enable the federal government and the state to cooperate in the future development of the Central Valley's natural resources.

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1. California. Water Project Authority, Preliminary Report...Relative to the Acquisition of the Central Valley Project (May 19, 1953), Appendix

PROBLEMS AND ISSUES OF STATE TAKE-OVER

Issues of project policy are important to the problem of state take-over. Debate is basically concerned with acceptability to California of present federal policy, and the possibility of federal assistance in the future development of the state's water resources. Federal and state policy must be correlated if both levels of government are to participate.

The analyses of the California Water Project Authority have attempted to determine whether or not it is financially feasible for the state to take over the CVP. The authority's affirmative answer is based on estimates of future revenues from the sale of water and power, and one of the most important assumptions made was that power rates would be increased.

One of the major financial factors in the state purchase is the amount and reliability of future revenue. A problem emerges here in the form of long term contracts which limit the ability of the state to raise project prices. The SMUD, for example, has a forty year contract which takes roughly two-thirds of the dependable project power. The remainder of project water and power services offer uncertain revenue since not all the long term contracts for them have been signed. This is partly the result of uncertainty regarding water rights, which are still under litigation.

Power Policies and State Take-Over

Public power policies are another important issue in the state take-over debate. In general, those proposing that the state act as an agency for the federal government (the Engle Bill) have accepted federal power policies, while those who prefer direct state purchase have not. Only two months had elapsed after the signing of the contract between the Bureau of Reclamation and the SMUD when the Statewide Committee for California Ownership of the Central Valley Project and two of it constituent organizations, the Irrigation Districts Association and the California Farm Bureau Federation, protested in hearings before the California Joint Legislative Committee on Water Problems that CVP power rates were too low.

The problem of power policies will probably continue even if the state does purchase the project. The issues involved are (1) the price at which power should be sold, (2) whether preference should be given public agencies, (3) whether publicly owned transmission lines and supplementary steam

generating facilities should be constructed, and (4) whether hydroelectric generation by the publicly owned project should be extended beyond that which has been developed at the major downstream reservoirs.

On the question of high vs. low power rates, the bureau has compromised, establishing rates sufficient to provide considerable assistance to repayment of irrigation costs, but still keeping them below full market value in accordance with policies set by federal reclamation law. The bureau has actively sought to construct independent transmission and steam-generating facilities which, together with preference to public agencies, would reduce the cost of power to public agencies. This would offer competition to the private utility companies, who have opposed construction of the facilities.

Proposed Power Policies

Power policies for the CVP under state ownership would be determined by the California Water Project Authority. Such policies have not yet been fully expounded. In general, however, on the question of independent transmission lines and steam-generating plants, the state has consistently sought Congressional appropriations for construction of such facilities from Congress as part of the federal CVP.

On the question of power rate policy, state reports have called for sale of project power at full market value rather than at a price determined by cost to the project. They have not proposed the development of upstream power by either the state or the federal government. As a matter of fact, the Water Project Authority and the State Engineer opposed the suit of the Department of the Interior, which was seeking to reserve power sites on the upper north fork of the Kings River for development by the CVP take-over.

Excess Land Provisions and State Take-Over

The excess land provisions have stirred up some of the most violent controversies involving federal ownership of CVP. One of the objectives of state purchase is to abolish these provisions. Attitudes toward state take-over are influenced by attitudes towards the excess land policy.

A strong statement of the case against acreage limitation may be found in Sheridan Downey's They Would Rule the Valley (1947), and the defense of acreage limitation is concisely stated by Paul S. Taylor in an

article entitled "Central Valley Project: Water and Land" in the Western Political Science Quarterly, Volume 2, No. 2, June 1949.

Since 1944 various efforts have been made to remove these provisions from the CVP. In 1944 and 1947 hearings were held on bills to exempt CVP from such a restriction but the proposals were turned down by Congress. Attempts have also been made to have the Corps of Engineers construct multiple purpose projects, but this too has failed to remove the acreage limitation.

The following list shows the division of opinion existing within California. It lists organizations which in 1944 or 1947 supported or opposed continuation of the provisions as part of federal policy:

Supporters of Excess Land Provisions

Farm organizations
- State Grange
- Farmers' Union
- Western Cooperative Dairymen's Union
- California Farm Research and Legislative Committee
- Some local irrigation districts

Veterans' organizations
- Veterans of Foreign Wars
- American Veterans' Committee
- American Legion
- Disabled American Veterans

Labor organizations
- American Federation of Labor
- Congress of Industrial Organizations

Religious Groups
- Federal Council of Churches
- Catholic Rural Life Service
- Council for Social Action of the Congregational Christian Churches
- Protestant Home Missions Council

Other
- League of Women Voters
- Some local chambers of commerce

Opponents of Excess Land Provisions

Farm organizations
- California Farm Bureau Federation and a number of local farm bureaus
- Irrigation Districts Association and a number of local irrigation and similar districts

California Central Valleys Flood Control Association
Agricultural Council for California
Central Valley Project Association
San Joaquin Valley Water Protective Association

Business organizations
California State Chamber of Commerce and local chambers of commerce
Kern County Land Company
Miller and Lux, Inc.
De Georgio Fruit Corporation
California State Agencies, California Water Project Authority
Agricultural Extension Service, University of California

For years the legality of such limitation has been challenged in the courts, the now famous Ivanhoe case offering perhaps the best example of legal action. In this instance the Superior Court of Tulare County found the acreage limitation to be illegal. This decision is being appealed.

It is important to bear in mind the effect that rejection of these policies would have on Congress and its desire to support further reclamation projects in California. It might be asked what Congress will think of putting further federal funds into a region that has rejected part of the philosophy underlying the offer of funds. One point of view is expressed by Congressman Oakley Hunter when he says:

> As a member of the House Appropriations committee, it is my opinion state purchase of the Central Valley Project would not place California in the position of surrendering any future federal appropriations for water and power resource development.[1]

Opposing this point of view, California Senator Oliver J. Carter and Assemblyman S. L. Heisinger wrote:

> It is inconceivable to us that people of the other states will condone the expenditure of federal funds in California on the project unless there is some guarantee in the law providing for the expenditures that the benefits of the federal money will be widely distributed and the principle of free, economic opportunity for all will be preserved.[2]

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1. California. Legislature. Assembly. Committee on Conservation, Planning, and Public Works. Subcommittee on the Central Valley Project, State Ownership and/or State Operation of the Central Valley Project: Hearings in Visalia, Transcript of Proceedings (January 15, 1954), p. 161
2. California. Legislature. Joint Legislative Committee on Water Problems, Report...on Water Problems of the State of California (April 1, 1947), p. 98

Irrigation Contracts and State Take-Over

Irrigation districts receiving or hoping to receive CVP water are primarily interested in whether the state could offer better irrigation water contracts than the Bureau of Reclamation.

The present 9(e) utility contracts have controversial aspects in the similarity they present to the sale of water by a public utility system. These utility type contracts provide for the delivery of water for a forty year period at a fixed maximum price. They neither grant nor deny the right to permanent water service or the ownership of water rights.

Opponents of these contracts argue that each district should receive a permanent right to a specified amount of water in return for the payment by each district of a fixed sum as repayment of construction costs, plus its appropriate share of annual operation and maintenance costs. After the construction obligation had been fully repaid, the district would be entitled to permanent water service in return for payment of only annual operation and maintenance costs. Support for state purchase of CVP has been urged on the grounds that the Bureau of Reclamation has declined to offer such repayment contracts for water supplied by the project (in contrast to the construction of irrigation distribution systems). State take-over itself, however, would be complicated by the forty year contracts already in existence.

It is interesting to note that in 1935, when the Water Project Authority was seeking to negotiate contracts in support of its application for a federal grant and loan for construction of the CVP by the state, the authority offered a utility type contract which specifically denied permanent water rights.

The two types of contracts, utility 9(e), and repayment 9(d), have as their objective the recovering of construction and operating costs which are to be paid by water users. Differences in the two types of contracts are as follows: (1) Under a utility type contract, the price per acre-foot is fixed. The project assumes the risk that costs of operation and maintenance may rise, whereas under a repayment contract the district would assume the burden of any increase in operating costs and repayment would be recovered by the project on schedule in absence of default. (2) Under the utility type contract the district knows the total price it must pay for water, but does not know what its share of the construction cost repayment

is. (3) Under a utility type contract it is not necessary to know total construction costs before long term contracts are executed. This is not true of repayment contracts.

Definition of Water Rights

On neither the Sacramento nor the San Joaquin Rivers have the water rights of the CVP been adequately defined. On the San Joaquin River the water rights of the project—or the project users—are being contested in the case of Rank v. Krug. On the Sacramento River, investigations are being conducted by the state, financed by the Bureau of Reclamation, in an effort to define the water rights of the various diverters from the river, in order to reach agreement by negotiation without resort to the courts. Similar problems may arise in connection with the American River. The final determination of water rights will effect the revenues of the project, since it may become impossible for the CVP to supply water which has already been contracted for without construction of additional facilities at additional cost to the project. Until these matters are settled the financial status of the entire project will be uncertain, whether it is owned by the federal government or purchased by the state.

Salinity Control and State Take-Over

When the State Water Plan of 1930 was being formulated, one of its most important objectives was to prevent further encroachment of salt water into the delta channels, a phenomenon that had already occurred in certain dry years. Since then the question has been asked from time to time, who should pay for salinity control, whether effected by release of fresh water or by salt water barriers.

Although salinity control is not nonreimbursable under federal reclamation law, the Bureau of Reclamation has not indicated that any definite measures would be taken on the subject of payments for salinity control or for water used in the delta due to the complexity of the legal situation. The federal government cannot terminate the benefits for lack of payment because the project itself would lose its supply of fresh water for the Delta-Mendota canal. Unlike the state, the federal government lacks legal power to tax beneficiaries. In analyzing the revenues which might be available to meet the financial obligations of the project if purchased by the state, however, the Water Project Authority in its 1952 report suggested an annual charge of $.50 per acre against the delta land for salinity control.

The problem of payment for the benefits of the CVP on the Sacramento River and the Delta bear on the state acquisition of CVP in two ways. First: there is the question of revenues available to meet the obligations of state purchase; second: there is the fact that increasing development of water resources will bring in water which had once seemed independent and make it interdependent. In dealing with these complexities, the state government can assess direct taxes and has to this extent greater powers than the federal government. The state could use these powers in support of either state or federal projects.

Management of the CVP if Acquired

Official negotiations for acquisition of the CVP have assumed that under state ownership the project would be managed by the existing state agency established for that purpose in 1933. Others, however, have suggested that control of the project should be confined to water users—and perhaps power users—of the project. Whichever approach is taken, serious problems arise as to the most appropriate body not only for management of existing units of the CVP but also for the development of additional units for which the existing project forms a nucleus.

State Control and State Organizations

If operated by the state under present law, the management agency of the project would be the Water Project Authority, an ex officio board of five members all chosen primarily for other responsibilities, three elected and two appointed by the Governor. The State Engineer is Executive Officer by law rather than by choice of the members of the authority and therefore has divided responsibility. While membership on the authority by high officials of the state government may lend prestige, and may also provide a certain amount of coordination with the departments thus represented, this type of ex officio control has been severely criticized by students of public administration, particularly where executive functions are involved. Members of the authority are necessarily chosen primarily for their fitness for other tasks to which they must devote most of their energies. Groups most interested in water development, either on a state-wide or on a local level, are not necessarily represented.

The Water Project Authority, moreover, is but one of many California state agencies among whom responsibility for related water development is divided.

In the field of water resources, the power of the state is very loosely organized, being characterized mainly by a large number of boards, commissions, and departments. These organizations have resulted from a tendency on the part of the state to create separate agencies with limited jurisdiction to solve individual problems. Among these numerous agencies, no agency or individual official, including the Governor, can be held clearly responsible for leadership in policy or the formulation of a coordinated program. This dispersal of authority and responsibility effects the state's relations with the federal government as well as the formulation and execution of its own policy and progress in the field of water development. The proposals for acquisition of the CVP increase the importance of good organization for water project management and planning, particularly if state acquisition implies that the state is to play an increased role in future water development.

In recent years the reorganization of California water agencies has been recommended by the Governor, the Legislative Auditor and several committees of the Legislature. Two principal recommendations have been offered: one, to create a unified department of natural resources, and the other, to create a department of water and power.

If responsibility is to be clarified, either approach contemplates reduction in the number of independent boards and commissions, establishment of those retained as advisory rather than as decision-making bodies, and the placing of primary responsibility in a department chief accountable to the Governor and provided with sufficient authority to carry out his responsibilities.

Local Control of the CVP

Some water user organizations feel that if the CVP is taken over from the federal government, it should be managed by an agency representing the service area of the project rather than the state as a whole. They fear domination by metropolitan areas who possess a majority in the Assembly and who would not want to help finance something so remote from their regions. Local control could be provided by having the project managed by a state body similar to the Water Project Authority but with its membership appointed or elected from the project service area, or by the creation of a super-district.

Either method would raise questions as to the areas to be included and the interests to be represented. Not only water users but power users would expect to be represented in view of their financial stake in the project. Sacramento Municipal Utility District alone expects to pay the CVP the sum of $287,500,000 in 50 years. This amounts to 86.7 percent of the total gross payments expected from all irrigation water users in the same period. During this period power users (including SMUD) would pay 10 percent more than irrigation water users.

There are also other interests concerned with municipal water, salinity control, navigation, flood control, fish and wildlife and recreational opportunities. In addition there is the problem of the limits of the areas from which water and power is obtained and to which it is delivered. The prospective addition of the Trinity River Division clearly involves north coast counties, and if, in the future, water is to be supplied via the Central Valley to coastal valleys and southern California, these areas would be vitally concerned.

In 1948 the statewide water resources committee of the California State Chamber of Commerce considered the alternatives and expressed preference for state management as follows:

> The committee also repeats its former conclusion that the interests of the Federal, state and local groups will be best served by the operation of the Valley project by a State Agency....The available forms of local agencies which might be used include a state-wide board representing the entire State in all similar matters.... In planning on the form of management under any local control a decision will also have to be made in regard to whether the irrigation features will be transferred to a separate group than those handling the power features, particularly the sale of power produced by the project not used for project operation.[1]

Irrigation Districts and State Take-Over

In the absence of the prospect of local control or of financial support from the state, and with no assurance that the price of water would be as favorable as at present, nearly all the irrigation districts represented at the recent hearings at Visalia opposed state operation or acquisition.

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1. Irrigation Districts Association of California, Water Economics Committee, State Control of the Central Valley Project (No. 12, December 3, 1948)

These views were stated by the Board of Directors of the El Dorado Irrigation District:

> Before the Federal government came to our aid, the El Dorado Irrigation District tried for over twenty years to get aid from the State in securing a water supply and entirely without success. Mr. Ed Hyatt who during this time was State Engineer finally asked the Bureau of Reclamation if they could not help us and finally the Federal government did come to our aid....We are very fearful in the light of past experience that we could secure help from the State.[1]

Conclusion

Various aspects of the problem of federal and state politics in relation to CVP have been discussed. To go any further would be beyond the scope of this paper. In general the problem revolves around a debate on the merits of the present policies of the federal government as against those which are anticipated under state control and around the financing of and the responsibility for future expansion of the CVP.

The picture of water development in California has grown in complexity since the State Water Plan of 1930. Water rights must somehow be adjusted; ground water pumping must be geared to the design and operation of surface reservoirs; requirements of fish life in the Trinity River affect the availability of water to the San Joaquin Valley; downstream reservoirs increase the potentiality of upstream power sites; in turn the way in which the upstream power sites are developed and operated affects the yield from downstream reservoirs; etc. Institutions and policies adequate to deal with these many problems are needed, based on a recognition of common benefits and sharing of costs.

It is possible that the role which the federal government has played has retarded the development of adequate institutions within the state level of government. Federal subsidy has allowed water development to proceed within the state without reconciliation of common but also conflicting interests. If California acquired the project and assumed sole responsibility for finance, construction, and operation of further water development, such reconciliation might be necessary, with results which

1. California. Legislature. Assembly. Committee on Conservation, Planning, and Public Works. Subcommittee on the Central Valley Project, State Ownership and/or State Operation of the Central Valley Project: Hearings in Visalia (January 15, 1954), p. 66-67

in the long run might prove to be of more value than a federal aid which is limited by the willingness of Congress to appropriate funds.

On the other hand it has also been contended that the needed adjustments can be made more easily through federal control because it is more removed from the scenes of local controversy. Federal subsidy is desirable, from this point of view, not only from the obvious economic advantage, but also because it eases the problem of deciding how the costs of such large water developments projects are to be shared.

Whether or not management and perhaps ownership of the CVP is transferred to the state, it appears that both state and federal governments will continue to be involved in the development of California's water resources, unless the state wishes to assume the full financial and administrative responsibility itself. If it does not, then it may be willing to consider under what arrangement the respective powers of the two units of government might best be mobilized for the solution of water development problems.

Through the investment of trust funds, the use of general obligation bonds, and direct contribution from taxation, the state of California could finance adequate water development, but the necessary public approval is not apparent. The federal government has relatively greater borrowing capacity and can determine the terms of credit to itself; political support for national resource development is a well established tradition.

On the other hand the powers of the state to collect from local and regional beneficiaries and to regulate all private and public water projects in accord with a comprehensive plan exceed those of the federal government. While the federal government is limited to voluntary contracts for repayment or for the sale of project water and power, the state can tax statewide benefits through general state taxation and establish special tax districts for local benefits conferred by the project. These important powers of the state might be used either to support state water development, or to support and coordinate both federal and local projects.

SELECTED BIBLIOGRAPHY

California. Governor, Proceedings of California Water Conference, Sacramento, December 6 and 7, 1945. 510p Sacramento, 1945

California. Legislature. Assembly. Committee on Conservation, Planning and Public Works. Subcommittee on the Central Valley Project, State Ownership and/or State Operation of the Central Valley Project; hearings in Visalia, California, January 15, 1954. 196p (process) Sacramento, 1954

____. ____. Joint Committee on Water Problems, Report to the Legislature. 233p Sacramento, June 1949

California. Water Project Authority, Feasibility of State Ownership and Operation of the Central Valley Project of California. 288p Sacramento, March 1952

____. ____, Progress Report on Staff Activities Relating to State Acquisition of the Central Valley Project. 41p (mim) Sacramento, November 1954

____. ____, Report on a Complete Management Survey in Connection with State Acquisition or Operation of the Central Valley Project of California. 165p Sacramento, November 1953

"The Central Valley Project and Related Problems," California Law Review 38: entire issue, October 1950

de Roos, Robert, The Thirsty Land. 265p Stanford, Calif., Stanford University Press, 1948

Downey, Sheridan, They Would Rule the Valley. 256p San Francisco, c. author, 1947

Packard, Walter E., The Economic Implications of the Central Valley Project. 91p Los Angeles, c. author, 1942

U.S. Bureau of Agricultural Economics, History of Legislation and Policy Formation of the Central Valley Project; by Mary Montgomery and Marion Clawson. 276p (process) Berkeley, Calif., March 1946

U.S. Bureau of Reclamation, The Central Valley Basin. 431p (81:1, S. Doc. 113) Washington, D.C., August 1949

U.S. President's Water Resources Policy Commission, The Central Valley of California; Report. 78p (v. 2, no. 2) Washington, D.C., 1950