Irrigation—Hydroelectric’s Expensive Partner

The fiscal procedures of the Federal government are such that because of past commitments to spend, achieving a balanced budget currently is often considered impossible. These past commitments represent a substantial portion of each year’s expenditures. Officials have suggested that the time to reduce expenditure commitments is when program authorizations or commitments are made. This statement by Raymond Moley challenges two proposed commitments for future spending. It suggests that the issues involved be deferred until the Hoover Commission which is now exploring the problem, has reported.

by Raymond Moley

With great urgency the Department of the Interior has presented to Congress for authorization two very large reclamation projects, the Upper Colorado storage, power and irrigation plan, and the Fryingpan transmountain diversion project. This has been a considerable shock to the Hoover commission and its task force charged with the field of government into which these fall. The task force, headed by Admiral Ben Moreell, is a distinguished one composed of well-known engineers, lawyers, and others who are thoroughly familiar with the history and problems of reclamation. This group has already launched a broad review of the whole problem of reclamation—a review badly needed after 52 years of experience—and it feels definitely that the Administration should await its report before launching any further large enterprises of this sort.

The first notable achievement of Theodore Roosevelt’s Administration was the basic Reclamation Act of 1902. This was a recognition of the need for conserving our most precious natural resources and also for opening up new opportunities for settlers in the arid states of the West. In the beginning, irrigation was regarded as the major concern in the building of projects. But shortly after the act was passed, the hydroelectric plants built as incidental to the conservation and beneficial use of water began to assume some importance. A good many years passed, however, before the production and sale of electric power became anything more than incidental. In the 1920’s, largely because of the vision of Herbert Hoover, it was recognized that the production of power could, under proper planning of river basins, be a genuine national responsibility. Hoover Dam became the first of the great multiple-purpose projects. But again with the vision and common sense of Hoover as a guide, conditions were imposed which have proved this project to be not only a sound national investment but one which will pay for itself on schedule with interest. It was also proved that such an enterprise could be undertaken under conditions which would not put the Federal government into competition with private enterprise.

Such precautions, however, were not always taken in subsequent years, and while irrigation, as I shall
show, became more and more excessively expensive, the production of power became more and more an objective per se. Hydroelectric power became the overshadowing partner. Irrigation became a very expensive dependent.

The Reclamation Act of 1902 directed that the land benefited by Federal irrigation should, so far as possible, pay the cost thereof without interest. Since then, the cost of putting water on arid land has increased enormously, not only because of inflationary prices and wages, but because projects have become more and more remote from natural water supply. Some of them require long channels, tunnels, and water lifts. The construction cost of some of the older projects was $100 to pay interest on these investments. An easy way to illustrate that is to consider the E Bonds of the Second World War. In ten years the outlay by the government grows one third. (In ten years, the $75 paid for such a bond has accumulated interest of $25, or ⅜ of the original investment.) Then consider how it will grow in 20, and 30, and 40, and 50, and maybe more years. The investor’s dollar and the government debt will be more than four dollars in 50 years.

This dim account relates for the most part to experience with projects undertaken in the earlier years of reclamation—projects with vastly more justification than those undertaken recently or now proposed.

Subsidies Become Larger

But even with these liberal terms there has been a quite general failure to live up to the contracts. Hence, there have been renegotiations, some of which will extend repayment without interest for hundreds of years.

There has also been a rehabilitation program amounting to an additional subsidy.

Extensions of time have meant immense subsidies which have become larger because deficit financing has made it necessary for the government to borrow efforts to increase subsidies for irrigation projects have eagerly turned to the money from the sale of the hydropower. It has become a main support of the partnership.

In seeking economic justification for hydro-irrigation projects the Interior Department has persistently attempted to have Congress adopt a bookkeeping gimmick called a “benefit-cost ratio.” Thus, 2:1 means that the benefits are twice the cost. The trick is to fatten the “benefits” with intangibles and indirect items. Three years ago this practice was denounced by an Engineers Joint Council, a group of distinguished engineers representing the five big professional societies. The law as well as the judgment of engineers and accountants refuses to recognize any justification except repayment in dollars. Any other method would be subject to unlimited abuse.

It is therefore passing strange that in justifying the vast Upper Colorado project which is now before Congress, the Budget Bureau approved “benefits” other than repayment in dollars. In answer to a blunt letter from Congressman John P. Saylor of Pennsylvania, a sturdy critic of this project, the

RAYMOND MOLEY, educator, author, and Contributing Editor, Newsweek Magazine, originally published part of the material in this Tax Review as his regular contribution to the magazine. The basic facts herein constitute a plea for a reappraisal of the reclamation policies of the Federal government in the interests of economy and true conservation.
Bureau spokesman used the term “economic evaluation” three times without explaining what he meant. This vague term can mean only one thing, the “benefit-cost ratio.”

A masterpiece of ingenuity was created by the Solicitor of the Interior Department in 1941. Under the law, the rates charged for power should be large enough (a) to pay operation and maintenance expenses and to liquidate the capital cost and depreciation cost, and (b) to cover an additional amount known as the “interest component” to pay to the Treasury interest on the money advanced for construction. The Solicitor held that the “interest component” need not be repaid to the Treasury but could be applied to pay off that part of the capital cost of irrigation which was not paid by the irrigators. Thus, the power users would pay the irrigation subsidy while the taxpayers of the nation would pay the interest on the power investment. In fact, the taxpayer would pick up two tabs: (a) the interest on the power investment, and (b) the interest on the irrigation investment.

Despite every effort by the Interior Department, this scheme was not adopted as policy by Congress.

“A Vivid Example”

And so the Department went to work again and came up with a new formula for an irrigation subsidy. This is known as the Collbran formula because it was embodied in legislation in 1952 authorizing a small project at Collbran, Colo. However, Congress declared that this should not be regarded as a precedent.

Under the Collbran formula the “interest component” of the power revenues would be applied, as was intended by the law, to pay the Treasury interest on the diminishing power investment. Meanwhile, all repayment on the interest-free irrigation costs, except the fraction paid by the irrigators, would be suspended for the years during which the power investment would be liquidated. It is easy to see that the out-of-pocket cost to the taxpayers of the nation would be the same at the end of 50 or 60 years under either the 1944 Solicitor’s opinion or under the 1952 Collbran formula.

An officer of the Interior Department, in discussing the Upper Colorado project, said the thing that would make it “palatable” would be the promise that after the power investment is paid off with interest the proceeds from the sale of power should be used to pay the unpaid part of the irrigation investment. But with this sweetening in the pot there are also the bitter dregs of accumulated interest on the unpaid irrigation debt.

The Upper Colorado project is a vivid example of the manner in which a sound hydroelectric project has been loaded with several economically indefensible irrigation enterprises.

Only A Beginning

To visualize the magnitude of this project, get out your map and trace the Colorado River upward from Hoover Dam and the Grand Canyon. Close to the Arizona-Utah border, in Glen Canyon, it is proposed to build an immense power and storage dam. This would create a lake of 26 million acre feet of water and generate an estimated 800,000 kilowatts of electric power.

Then follow the Colorado northeast and turn left on the Green River. On the very border of Colorado, close to the Wyoming line, another dam is proposed. This would be in Echo Park in the Dinosaur National Monument. This would, according to the U.S. Park Service, “irreparably” impair one of the most gorgeous natural wonders in America—the canyon in Dinosaur National Monument. Tremendous opposition to this invasion of a national recreational area has come from lovers of wild life and friends of our national parks. Only once since Yellowstone was established 82 years ago has a park been thus invaded, and specific legislation by Congress would seem to forbid it. For once beauty is the handmaiden of economy.

The twelve “participating projects” are run-of-the-mill irrigation and storage affairs. One, Central Utah, would open the way to further plans in that state. A thirteenth, very expensive one—Shiprock in New Mexico—was deferred by the President.

This plan, it should be noted, is only the “initial phase” of a much greater series of projects in the Upper Colorado basin. This part alone will cost a billion dollars for construction. The ultimate would be an enlarged series costing for construction four billion more. Under the plans for repayment ad-
vanced for this, the final cost with interest subsidy would be a sum impossible to estimate now, but no doubt running to several times five billion.

Congressman Saylor pointed out in the hearings that only once in 50 years has the Bureau of Reclamation stayed within its estimates and that final costs over all have been twice the estimates.

**California Report Figures**

A formal document entitled “Views of the State of California,” submitted by the State Engineer of California with the collaboration of the Colorado River Board of that state, shows by an analysis of the Interior Department’s figures that not more than an average of 15 percent of the irrigation costs would be repaid by the irrigators and that for the largest project the return would be only 12 percent. Considering the long period of something like 50 years during which the repayment of 85 percent of the irrigation costs would be postponed (with interest accumulating), the power projects would never be able to pay them off as planned by the department.

The California report also makes the point that even if we assume that high power rates could be maintained for 75 or 100 years in order to pay for irrigation costs, any legislative authorization for such a doubtful repayment would in effect constitute an advance obligation to pay for projects of unknown costs and engineering soundness laid out in the master plan. It occurs to me that this binding of the future to maintain high hydroelectric rates is to assume that there will never be competition with power produced from the vast deposits of coal and oil shale known to be in the region or from gas or from some new form of energy.

In Congressman Saylor’s statement in the Congressional Record which accompanied his insertion of the letter from the Budget Bureau he offered some amazing figures. He stated that the construction costs alone of the participating irrigation projects would range from $200 to nearly $800 an acre and would average $545 per acre benefited. The Federal subsidy, which the Budget Bureau admitted would be two-thirds of the construction cost, would average $365 for every acre benefited. That would mean about $50,000 for the average farm. That would be two and a half times the average value of fully developed irrigated land in the region.

But this sum, huge as it is, is only the initial cost of the subsidy. The accumulated interest subsidy at the end of the over-all period of “repayment” would amount to about $1 billion, or more than $2,700 an acre. That would be about $370,000 per farm.

The story of the ultimate cost cannot end with these estimates and calculations. For they are based upon the certainty of things working out as the planners have planned. If the history of 52 years of reclamation can throw any light upon the future, these incredible figures may prove to be optimism rampant. The real costs will no doubt be immeasurably greater.

Another loss is to be anticipated. Congressman Saylor has addressed a letter to the Secretary of the Interior asking for an estimate of the effect of the diversion of water upstream upon Hoover, Davis, and Parker Dams down the river.

**Taxpayers Will Pay Subsidy**

The Interior Department has also recommended to this Congress the so-called Fryingpan project. This one has received not even a mild approval of the Bureau of the Budget, which refrained from going beyond a mere statement that it would not object to having its doubts submitted to Congress. This project is a joint transmountain diversion, power, flood control, municipal water, and irrigation affair beginning high in the Rockies west of Leadville, Colorado. Far up there the thin fingers of a stream called the Fryingpan reach out and gather water from the melting snow. This water is then ordained by nature to join the parent Colorado on its long, life-giving journey to Mexico.

But the planners of the Reclamation Bureau, spurred by thirsty interests on the east slope, have a scheme to gather that water by channels and ditches and to take it through a tunnel to the Arkansas. The plan is one of those curious, complicated Rube Goldberg contraptions similar to the $170 million Big Thompson diversion just to the north. There would also be a dam and reservoir on the Roaring Fork, near Aspen. This would be
a means of supplying water downstream at times when the normal supply is headed east through the tunnel.

The water thus collected and tunneled would enlarge the Arkansas and make it possible to build a series of power dams and municipal works at Pueblo and other towns on the way down. Still farther down, it would be used in a long series of irrigation projects clear to the Kansas border.

There have been strenuous objections to this diversion of their water by dwellers on the west slope. The claim of the Western folks is that this foreclosure of a part of their water supply will pinch their operating irrigation projects and vitally injure the prospects of a substantial industrial development in the future. For it should be remembered that in that Western territory is the outlet to the most immense shale oil deposits in the United States. And at Rifle the same Interior Department that wants to take away the water upstream is conducting a most promising pilot plant looking to the development of those great resources.

It is the cost to the nation, however, that should arrest the attention of the taxpayers of the 47 states that will pay the subsidy. And that ultimate cost is to be found only by diligent search in a mass of the Reclamation Bureau's bookkeeping tricks, gimmicks, guesses, and conjectures. Even after that is done, the resultant figure may be far below the final cost, for the history of estimates of the Bureau shows that they are on an average one half of the final cost.

There have been a number of estimates of construction cost the 1953 edition of which is, in round numbers, $172 million over all. Of this amount, $20 million is allocated to flood control and $3 million to fish and wild life. These are "nonreimbursable" items. Then $42 million is allocated to power developments and $32 million to municipal water facilities. These are theoretically self-liquidating. Then $75 million is allocated to irrigation. Of this, 35 percent is supposed to be paid back by irrigators, while the taxpayers pick up the check for 65 percent. Again, if past experience is any guide, the allocations for nonreimbursables are rated high in order to make the returns from reimbursables look better.

The construction costs alone on the total of 309,000 irrigated acres would be $250 an acre, and 65 percent of this would be a subsidy of $162.50 an acre. The government also foots the bill for interest over a period of 69 years. A fair estimate would be not less than $1,000 an acre worth not more than $225. Since the flood control item is probably exaggerated, the cost will really be considerably larger.

It is exceedingly difficult if not impossible to predict that the revenues from power and municipal water, after their costs are paid off with interest, can ever pay this subsidy. For in 50 years there may be other and cheaper forms of power. Gas, oil, and coal are in great quantities in the Colorado Basin. And in the realm of probability there is atomic power.

Whenever you discuss these subsidies with an advocate of irrigation you are confronted with the assertion that "by 1975 we shall need a lot more food for a lot more mouths to feed." This is a highly debatable subject. There are reliable opinions that we shall then be raising a lot more food on land already under cultivation without need for new water supplies. Congress may well find it in the national interest to measure the cost of this vast subsidy for irrigation against a more modest subsidy for soil conservation in non-arid regions. There are also those who ask why we need to provide subsidies for new cultivation and at the same time subsidies for food surpluses which we are already producing.