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Western Energy

The nationwide energy crisis affects various regions differently, depending on such factors as climate, location of fuels, and types of fuels used. For example, both New England and the Middle West must contend with severe winter weather, but the former region may be more severely affected by the crisis because of its heavy dependence on Arab oil, while the latter may suffer less because of its reliance on domestic coal to meet a large share of its energy needs.

The situation in the West similarly varies, practically from state to state, reflecting the shifting importance of the various factors cited. At the same time, the West represents a major part of the eventual solution to the crisis, because it contains vast unexploited resources of energy fuels which promise to help bring about the national goal of self-sufficiency within the next several decades.

Part of the problem

The Pacific Northwest, which derives 42 percent of its energy from hydro power—ten times the national proportion—has already encountered a major crisis because of the impact of a severe drought on regional water resources. (One result: a 25-percent cut in available power, causing production cutbacks in the aluminum industry.) Although recent heavy rains have eased the drought problem somewhat, this region's foretaste of the now-widespread crisis has been bitter indeed.

California, the nation's largest state, is dependent on petroleum and natural gas for 89 percent of its energy requirements, compared with a 78-percent dependence for the nation as a whole. Moreover, California's consumption is concentrated in those uses which Administration planners consider relatively non-essential, such as private auto transportation. (Private autos consume 23 percent of California's total energy, roughly twice the national proportion.) California's longstanding dependence on auto transport, and particularly the long distances traveled in the average auto trip, underscore the state's vulnerability. The only saving point is the mild Mediterranean climate of the area, which makes possible sharp cutbacks in space heating without creating acute physical discomfort.

An immediate crisis has arisen because of Southern California utilities' heavy reliance on Arab oil. The Los Angeles Department of Water and Power reported last month that it might have to enforce a 35-percent reduction in electrical consumption within the next three months, because it can now count on daily deliveries of only 37,000 as against a normal 72,000 barrels.

To meet the crisis, Los Angeles imposed a major energy-conservation plan in late December, with limitations on the use of electric street lighting, business lighting (outdoors and indoors), office heating and cooling, and outdoor recreational activities. Under Phase I of this plan, residential and industrial customers must cut their electrical consumption by 10 percent, and commercial

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customers by 20 percent, of the average amounts used in the period September 1972-August 1973. Failure to comply may result in penalties ranging from a 50-percent surcharge for a first violation to power cutoffs lasting as long as 30 days.

Part of the solution

The Western states will play a major role in solving the energy crisis, although not necessarily immediately. Help in the short-term will come, however, from the coal fields on the eastern slopes of the Rockies, in Montana, Wyoming, North Dakota and New Mexico, which contain over one-half of the nation's proven coal reserves. These fields account today for less than 4 percent of U.S. production, but recent output gains have been on the order of 20 percent or more a year. The deposits in these fields are largely low-sulphur coal, which is in heavy demand by utility firms for electricity production. As energy needs increase, the exploitation of Western coal fields will grow apace, although with heavy reliance on strip-mining techniques, with serious ecological consequences.

Further short-term help will come from increased development of oil fields in California, which is the nation's third-largest producing state. (Texas leads the nation with daily output of 3.6 million barrels, followed by Louisiana with 2.1 million barrels and California with 0.9 million barrels.) One possibility is to open up the Elk Hills Naval Reserve, at the southern end of California's Central Valley. This field could probably produce about 160,000 barrels a day within a relatively short period of time, but development may be delayed by Congressional opposition to use of the field for non-defense purposes.

More oil will be forthcoming soon from California's offshore wells, which already account for about one-fourth of the state's total production. The State Lands Commission recently permitted drilling to be resumed on existing platforms on state lands, which extend up to three miles offshore. This decision ended the moratorium declared in early 1969, after the disastrous blow-out in the Santa Barbara Channel. (However, the decision did not authorize new leases of state lands, and did not authorize the building of new platforms.) Development is also likely for Federal land lying further offshore, about 20 miles from the site of the 1969 blow-out.

Long term: Arctic oil

As for Alaskan oil, the North Slope discovery occurred almost six years ago, and yet the ten billion barrels

of proven reserves in that area still remain untouched. (These reserves amount to roughly one-fourth of the nation's total proven reserves.) Assuming that project construction begins this spring, three years might be required to bring the first shipment to market, and several more years before production reaches its target level of two million barrels a day. Bringing the oil to market involves not only construction of the 789-mile pipeline between the Prudhoe Bay field and the ice-free port of Valdez, but port and terminal facilities also.

Some estimates of the total cost of the Alaska pipeline project run as high as $9 billion, beginning with roughly $3 billion for the crude-oil pipeline, plus perhaps $6 billion more for an associated natural-gas line, a tanker fleet, and terminal facilities at both Valdez and destination points in Puget Sound and California. But this may be only the first instalment in the development of Arctic oil resources. Exploration in the Alaska and Canadian Arctic has indicated the presence not only of the 10 billion barrels in the Prudhoe Bay field, but in addition, 10 billion barrels in the nearby Naval Petroleum Reserve, plus 20 billion barrels in the Mackenzie Delta and 30-40 billion barrels east of the delta in Canada.

Long term: shale oil

Farther away in time is the exploitation of the shale-oil deposits covering 11 million acres in the Green River Basin, where Utah, Colorado and Wyoming meet. The ancient lake beds in this now-arid region contain the world's largest concentration of hydrocarbons—about 590 billion barrels of higher-grade shale, yielding over 25 gallons per ton in deposits at least 10 feet thick, plus 1,150 billion barrels of lower-grade shale. Total reserves in this region amount to over one-half of the world's shale resources and roughly 40 times present U.S. crude-oil reserves.

The Federal role in respect to exploitation is crucial, since the Federal Government owns three-fourths of the oil-bearing lands; thus, Secretary Morton's announcement last month regarding the leasing of several parcels of land for development has special significance. If small-scale development efforts lead to large-scale production, the shale deposits could provide one million barrels a day of petroleum within a decade. Production could also lead to a massive environmental problem, since once the oil is removed from the rock, what remains is pulverized rock with at least 12 percent more volume than the original volume of shale.

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