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ISRAEL

PLAN FOR MAJOR DESALINATION EFFORT BEING DRAFTED

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[Text]

Proposals for a large scale national plan, toward the creation of a major sea water desalination capability, are now being drafted by the engineers of Israel Desalination Engineering (IDE) Ltd. According to press reports, their proposal will aim at the annual production of nearly 250 million cubic meters (on the order of 50 billion gallons) of potable water from the sea, by the end of this century. That would enhance the national fresh water supply by perhaps 15% from its present level.

IDE is an internationally known leader in its field of expertise. The company's proprietary low temperature process produces fresh water at a lower cost - and at a lower expenditure of energy - than any equipment available from its competitors. Some 200 IDE desalinators have been set up at sites all over the world; most recently, the firm sold two major installations to an oil refinery and to a public utility in Curacao (see *INNOVATION* 129, August 1986).

One of the most severe constraints on the Israel economy's long range growth is the perennial shortage of fresh water. It restricts agricultural development severely even in years of better than average rainfall; large areas in the Negev remain uncultivated because there just is not enough water for their irrigation. The shortage also puts definite limits on the possible progress of certain branches of industry, and ultimately it may even affect the quality of life in the country's towns and cities.

Now made more acute than ever before by several years of consecutive drought, the problem has recently moved government agencies to begin the search for a technologically and economically feasible long term solution. As part of that investigation, the Ministries of Finance, Energy and

Agriculture are said to have requested a detailed proposal from IDE.

Although much work still remains to be done, the general outline of that company's submission already seems clear. In order to keep costs as low as possible, it will propose that large desalination plants be built in conjunction with new electric power stations. IDE systems work on low grade heat — their operating temperatures need never go above 70°C — which allows them to utilize the exhaust energy which modern generating facilities discard as waste.

On that basis, the company's experts suggest that four desalination plants be built over the next 15 years, each with an annual productive capacity of sixty million cubic meters of fresh water. Two of those units can still be attached to the power station now under construction near Ashkelon, which is scheduled for completion in the late 1980s; two more are then to be made part of the next generating facility which the Israel Electric Corporation will put up during the 1990s, at a site which has not yet been chosen. In that manner, the annual desalination capacity could approach 250 million cubic meters by the year 2000.

The investment in each unit, projected at \$120m., does not seem excessive, compared with the price of other "unconventional" sources of water, such as sewage recycling plants. What does pose difficulties is that the water produced undoubtedly will be expensive. Its estimated cost of about \$0.50 per cubic meter compares well with other desalination systems, but still prices it out of the reach of virtually all agricultural uses.

Desalination is not the only possibility, and scientists and researchers here are following different lines of attack on the problem. One team already has had far-reaching success with the enhancement of precipitation; others have made progress with the use of brackish and saline water in irrigation. Great efforts are also devoted to conservation and the extraction of the greatest possible benefits from any available quantity of water.

Thus it is not certain that the proposals now being drafted by IDE ever will be implemented. Still, there is little doubt that seawater desalination will be one of the technologies used to solve this problem, as Israel authorities come to allocate greater resources to the creation of a much more extensive water supply system than the country now has.

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