

Natural Resources

Israel, the oil producer, is about to have the last laugh

Ian King

March 21 2011 12:01 AM

The joke has been told by generations of Jews, most famously Golda Meir, the former Prime Minister of Israel. Why did Moses lead us to the one place in the Middle East without oil?

But an updated version may be required if Harold Vinegar and his colleagues get their way. Dr Vinegar, the former chief scientist of Royal Dutch Shell, is at the centre of an ambitious project to turn Israel into one of the world's leading oil producers.

Israel Energy Initiatives, where Dr Vinegar is chief scientist, is working on projects to extract oil and natural gas from oil shale from a 238 sq km area of the Shfela Basin, to the south and west of Jerusalem.

Oil shale mining is often frowned upon, not least by the environmental lobby, as a dirty process that is both energy and water intensive. IEI believes that its technique will be cleaner than that of other operators because the oil will be separated from the shale rock up to 300 metres beneath the ground. Water will be a byproduct of the process rather than being consumed by it in large volumes.

According to Dr Vinegar, Israel has the second-biggest oil shale deposits in the world, outside the United States: "We estimate that there are the equivalent of 250 billion barrels of oil here. To put that in context, there are proven reserves of 260 billion barrels of oil in Saudi Arabia."

The marginal cost of production, IEI estimates, will be between \$35 and \$40 per barrel. This, Dr Vinegar points out, is cheaper than the \$60 or so per barrel that it costs to extract crude from inhospitable locations such as the Arctic, and compares with \$30-\$40 per barrel in some of the deepwater oilfields off the coast of Brazil.

"These Israeli deposits have been known about, but have never been listed before. It was previously assumed there was not the technology to deal with it."

According to Dr Vinegar, IEI, which is owned by the American telecoms group IDT Corporation, hopes to begin production on a commercial basis by the end of the decade, with a view to producing 50,000 barrels per day at the outset. This would be a fraction of the 270,000 barrels consumed daily by Israel but would be a significant step towards making the country energy-independent. He estimates that, with one barrel of oil comprising 42 gallons, each tonne of oil shale contains approximately 25 gallons.

The extraction process involves heating the rock underground, using electric heaters, to approximately 325C, the level at which the carbon-carbon bonds in the rock start to “crack”. The oil produced by the process is light and easily refined to a range of products, including naphtha, jet fuel and diesel.

The project is attracting serious interest from outside investors. In November last year, an 11 per cent stake in Genie Oil & Gas, the division of IDC that is the parent company of IEI, was acquired for \$11 million by Jacob Rothschild, the banker, and Rupert Murdoch, chairman of News Corporation, parent company of *The Times*. Genie’s advisory board includes heavyweight figures such as Michael Steinhardt, the hedge fund investor, and Dick Cheney, the former US Vice-President.

Dr Vinegar said that an appraisal currently under way would be followed by an 18-month pilot stage. Among the issues this will address will be concerns raised by environmental groups, including an examination of IEI’s claims that the process does not require excessive use of water or energy. Reassurance will also be sought that a local aquifer, which is several hundred metres below the shale deposits, will not be contaminated by the work.

Assuming that these early stages are completed successfully, a demonstration phase would then take place over three to four years, during which the work completed in the pilot phase would be continued on a larger scale. Only then would the commercial operations begin. Dr Vinegar said that, by this stage, up to 1,000 people would be employed on the project, many of them specialist engineers from outside Israel.

He added: “Funding is not needed for the pilot and demonstration, although once we were getting to 50,000 barrels per day, we would want to have a partner. We have been approached by all the majors.”

Dr Vinegar said that the project still faced a number of hurdles: “There is a geological risk: is the resource there? What is the risk to the aquifer? We have no doubts here, and in particular that the resource is there and is of good quality, but the pilot can prove these things.

“Then there is the technological risk: can we drill long horizontal wells and can the heaters be placed in them? And can they last?”

“And finally there is the economic risk, what the price of oil does. But I think the price is going to continue rising, to the extent that, by 2030, we will be at around \$200 per barrel.”

To that, there can be added a fourth potential risk for the project: whether it is capable of overcoming criticism from the environmental lobby to win popular support. This, perhaps, is the greatest challenge facing Dr Vinegar and his colleagues.

A game where many can win

Ian King Analysis

Last updated March 21 2011 12:01AM

Should Israel prove successful in extracting oil from a region where, it is said, the boy who became King David vanquished the Philistine Goliath with a slingshot and pebble, it will be a game-changer, in more ways than one.

For a start, it would make Israel energy-independent, making its position more secure. If Israel becomes a significant producer and exporter of oil, it will help to strengthen its trade ties with both Europe and Asia, bringing in more capital. Countries such as Greece are already talking to Israel about the possibility of building an interconnector to supply Israel's recently discovered natural gas to them.

Second, the emergence of Israel as a large oil producer would also reduce the rest of the world's dependence on traditional Middle Eastern producers in the Arabian Gulf, an issue troubling many Western leaders. This is important because, according to forecasts, 30 years from now the only "conventional" oil reserves left in the world will be in the Middle East and North Africa. About three quarters of the one trillion or so barrels of oil available in proven reserves is in countries such as Saudi Arabia, Iran and Iraq, with reserves from non-Middle Eastern producers, such as Norway, being used more rapidly.

In addition, Israel's oil shale production could also have implications for the peace process. Israel is not the only country in the region to be blessed with deposits: Jordan has a resource almost as large, while there are also significant deposits in the Palestinian territories.

While Jordan's plans to exploit its resources are as advanced as those of Israel, the Palestinians have done little so far on this front, which in future could provide an incentive to work more closely with Israel in terms of sharing technology.