

Oil, Peace and Palestine: Energy Key to Holy Land's Past, Future

by Robert Bryce

Few people consider Ramallah a key locale when it comes to the future of the energy business in the Middle East. The home of the Palestinian Authority and the de facto capital of the still-nonexistent independent state of Palestine, Ramallah is a cramped, somewhat disheveled city of 60,000 or so. The city, which traces its roots back to the 16th century, lies about 10 miles north of Jerusalem. Like other towns on the West Bank, it has plenty of poverty and plenty of dashed dreams, yet plenty of hope that someday, somehow, Palestine will become an independent country. If statehood does occur – and even if it doesn't – energy will continue to be the key driver of Palestine's economy. It may also be the flashpoint that leads to more conflict between the Israelis and the Palestinians.

Ever since the Six-Day War in 1967, the fitful peace negotiations between the Israelis and the Palestinians have focused on land, water, Jewish settlements in the occupied territories and, more recently, on the "separation wall" Israel is building, much of it on land claimed by the Palestinians.

All of those issues are vitally important, and alas, largely unresolved. But the matter of adequate energy supplies at reasonable prices is also a key, yet often overlooked, element in the peace equation.

The Palestinians have one of the fastest-growing populations on Earth. The Israeli population is growing more slowly. But the city's economy, despite the ongoing violence in the occupied territories, is growing at about 2.5 percent per year. The combination of these factors means demand for all types of energy is booming in both Palestine and Israel. As with everything in the Holy Land, the politics of energy are complicated. This article will focus on three points: the current state of energy politics in the region, the ties between energy and water and, finally, the problems posed by the separation wall.



This power plant in Gaza, operational since March 2004, has the capacity to produce 140 megawatts of electricity. However, it produces only about half that amount due to lack of transportation infrastructure.

Booming Demand in Israel and Palestine

Over the next 15 years, the Palestinian Authority's Ministry of Energy and Natural Resources expects electricity demand in the West Bank and Gaza Strip to quadruple. Motor fuel and liquefied petroleum gas (LPG) demand, which has been flat for several years largely due to the Israeli occupation, is also expected to rise. In Israel, natural gas demand is expected to increase 14-fold over the next two decades. Electricity demand will increase by 25 percent by 2010.

These energy demands mean that the Arabs and the Jews must live together (however unhappily) in order to keep the lights burning. Currently, Israeli companies supply all of Palestine's energy: motor fuel, LPG and electricity. But the Palestinians are eager to break their dependence on Israel. And given the right conditions, that could happen: The Palestinians are, in aggregate, energy rich. For the past six years, the Palestinian Authority has been sitting on a major gas field that contains at least 1.4 trillion cubic feet (Tcf) of gas.

In 1999, BG Group, in partnership with the Palestinians, drilled the wildcat Gaza Marine-1 off the coast of the Gaza Strip, where they discovered the Gaza gas field. And sometime this summer, BG will drill another well in Palestinian territorial waters in an effort to find more gas. Determining who gets the Palestinian gas, and at what price, will be a key to the future of Palestine. But right now, the gas might as well be fictional. "It's their land and their water. The gas is worth \$4 billion," says Amit Mor, an Israeli energy consultant. "It's the only natural resource they have. They can't sell it. They can't develop it for their own needs because their own needs are too small to allow economic development of the field. So they are very frustrated."

The Israelis are the cause of that frustration. In 2003, Israeli Prime Minister Ariel Sharon blocked a proposal that would have allowed the Palestinians to sell their Gaza gas to electric power plants in Israel. BG had proposed a pipeline to carry the Gaza gas ashore, where most of it would be used by the Israelis. The pipe would also have carried gas to the Palestinians and meant \$50 million per year in revenue to the Palestinian Authority.

Dr. Omar Kittaneh, deputy minister of energy and natural resources for the Palestinian Energy Authority, told me that "like any country, we want to have energy independence." But the Palestinians will never have energy independence without statehood.

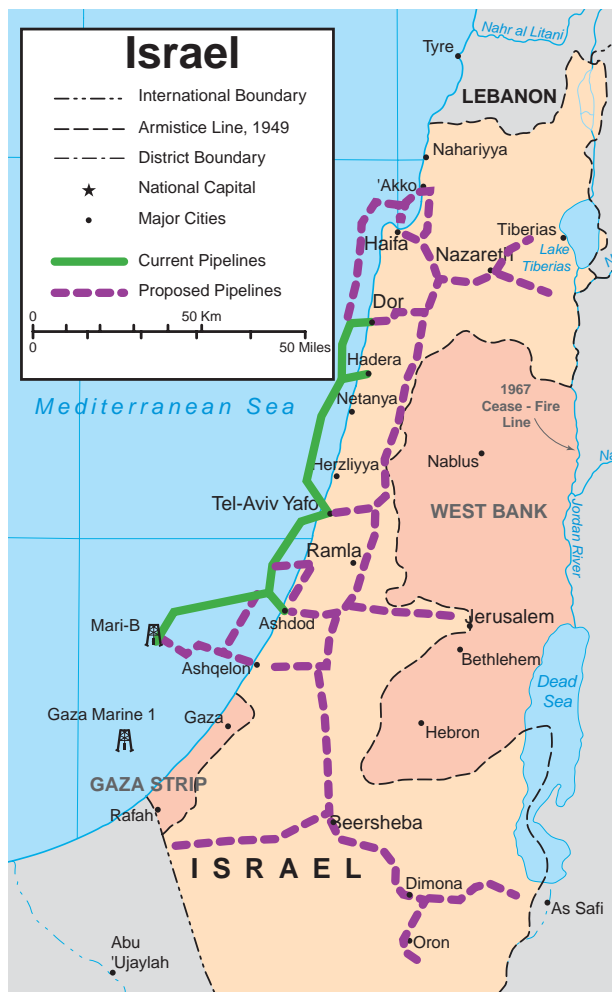
Adding to the frustration in the West Bank and Gaza is the disparity in the levels of energy consumption between Israel and Palestine. According to Nationmaster.com, which publishes statistics on countries around the world, the Israelis are the most imported-oil-dependent people in the world (the Japanese rank second). They are also among the most energy intensive, ranking number eight among the world's



economies in per capita oil consumption of 1.87 gallons, or 7 liters per day per person. Meanwhile, the Palestinians are among the most energy impoverished. The average Israeli consumes about 13 times more motor fuel and seven times more electricity than the average Palestinian. The figures are even worse in the Gaza Strip, where the average Peruvian consumes more electricity than a Palestinian living in Gaza.

The energy consumption figures are reflective of the disparate living standards between the two neighbors. The annual per capita income in Israel is about \$22,000. In Palestine, it's between \$600 and \$800.

While the Palestinians need more energy to raise their standards of living, the Israelis are having remarkable success in offshore drilling. About the same time that BG hit gas in Gaza in 1999, Houston-based Noble Energy hit a big gas deposit at the Mari-B field, located in Israeli territorial waters about 20 kilometers west of Ashqelon. Noble sits on about 1.4 Tcf of gas and can deliver far more product than it can sell into the Israeli market. Now selling about 160 million cubic feet of gas per day (all of it for electricity production), Noble's



An Energy Timeline

Oil has long been the key commodity in the ongoing conflict between Israel and its neighbors. It has also been the commodity that drives America's relationships in the Persian Gulf. Here are a few of the key events in Israel's energy history:

1935 An eight-inch pipeline from Kirkuk, Iraq, to Haifa begins carrying crude. The cost of the \$75 million pipeline, which also had a terminal at Banias, Syria, was split among several partners including the Iraq Petroleum Co., BP, Shell, Total, Exxon and Mobil. C.S. Gulbenkian, the famous dealmaker, had a 5 percent interest.

1940 As World War II begins, the British fleet in the Mediterranean Sea depends heavily on fuel from the Haifa refinery while protecting the Egyptian coast from attack.

1948 The Kirkuk-to-Haifa pipeline is shut down by the Arab states to protest the creation of the state of Israel.

1956 The Suez Crisis: The Arab oil-producing countries declare an embargo, which failed because they didn't control enough of the world's oil supplies.

1961 The Rothschild family provides financing for Israel's first major oil pipeline, from Eilat to Ashkelon, which carries crude oil from Iran to Israel's refinery in Haifa.

1967 Egypt blocks the Straits of Tiran, preventing Iranian oil (provided by the Shah of Iran) from reaching Israel. Within a few days of the blockade, Israel attacks Egypt. As the Six-Day War continues, the Arab oil producers announce an embargo on oil sales to Israel and the West, but they do not control the world oil market and the embargo is ineffective.

1973 Israel and its Arab neighbors go to war again. Israel whips them all, again. The Arab oil producers declare embargo, again. But this time, an OPEC price hike and embargo cause immediate spasms in the world oil market. Within months, the price of oil quintuples.

1978 The Sinai oilfields, which Israel captured from Egypt in the Six-Day War, are a key part of the Camp David peace accords. In exchange for Israel's agreement to return the oilfields to Egypt, the United States promises to supply oil to Israel in case of any embargoes or emergencies. Israel had been getting up to one-fifth of its oil from the Sinai fields.

1999 Houston-based Noble Energy discovers gas in Israeli territorial waters, a few miles offshore Ashqelon. At about the same time, BG Group finds a gas field offshore Gaza.

2003 Shortly after America launches the Second Iraq War, Israel's Ministry of National Infrastructure begins analyzing the cost of reviving the Kirkuk-to-Haifa pipeline. They estimate that a 1,000-kilometer, 42-inch pipe would cost about \$1 billion.

2005 The Overseas Private Investment Corporation provides political risk insurance for a \$250 million marine pipeline that will carry natural gas from Israel's new offshore gas fields to power plants onshore. Israel begins building hundreds of kilometers of pipelines to distribute gas to power plants and industrial facilities.

CEO Charles Davidson says Israel differs from the normal market: "Most of the time I'm worried about supply. In Israel, the market is the challenge." But, he adds, "the infrastructure is coming together."

Indeed, over the next decade or so, Israel will have a booming pipeline construction business as the country extends gas lines to industrial and electric power plants around the country. This gas will help Israel reduce the amount of pollution coming from its power plants. It will also help its balance of trade by reducing the amount of oil and coal it imports. But while the new gas supplies will provide big benefits to Israel's environment and economy, those benefits are unlikely to reach the Palestinians.

Key Energy Statistics for Israel and Palestine

Electricity consumption

- Israelis use 6,183 kWh/capita/year. That makes them 27th among world countries.
- Palestinians use 854 kWh/capita/year, making them 127th among world countries, right behind Egypt.
- In the Gaza Strip, electric consumption is just 654 kWh/capita/year, which makes that region 136th in the world, behind Peru. (For comparison, the U.S. per capita electric consumption is 12,406 kWh/year.)

Installed electric generation capacity

- Palestine: 140 MW* /3.92 million = 35 watts capacity
- Israel: 10,000 mw/6.1 million = 1,639 watts of generating capacity per capita

**While the rated output of the Gaza Power Plant is 140 MW, the plant is able to put out about only 70 MW due to a lack of transmission infrastructure.*

Motor fuel consumption

- Israelis use 12 million tons per year. Divided by 6.1 million people = 2,251.6 liters/capita/year
- Palestinians use 175.5 liters/capita/year

LPG consumption

- Israel: 86.8 kilograms/capita/year
- Palestine: 41.05

Natural gas reserves

- Israel: 1.5 Tcf
- Palestine: 1.4 Tcf.

Oil reserves

- Israel: 3.8 million barrels
- Palestine: nil

Sources: Israel's Ministry of National Infrastructure, Palestinian Ministry of Energy and Natural Resources, Nationmaster.com, Energy Information Administration

Water and Energy

Israel and Palestine are dry lands. The Jordan River, a key supplier of fresh water, is being tapped by Syria, Jordan and Israel for drinking water. And those countries are leaving no water in the river itself. The Dead Sea, which used to be fed by the Jordan, is shrinking by three feet or more per year. Both Israel and Palestine depend largely on aquifers for their drinking-water supplies. Those resources are also diminishing. The only option for the region is large-scale desalination, a process requiring huge amounts of energy. According to Ishai Menuchin, a researcher for Oxfam who works in Jerusalem, in Israel "the issues of water and energy go hand in hand."

The desalination question is particularly critical for the Palestinians who live in the Gaza Strip. The territory, which lies on the Mediterranean Coast, has been fought over for decades and desperately needs more potable water. Providing that water was one of the original goals of the only electric power plant located on Palestinian land – the Palestinian Electric Corporation's Gaza City plant. Rated at 140 megawatts (MW), the project was launched about six years ago in a partnership that included the Palestinian Authority, a Greek firm called CCC and Enron Corp. The project was jump-started by the Clinton administration, which encouraged Enron to get involved and also assured that some of the funding for the project came from the federally backed Overseas Private Investment Corporation, an export credit agency. The project was derailed for many months due to the collapse of Enron and the violence of the second Intifada. Finally, in March 2004 the plant, which cost \$100 million to build, began operating commercially.

A former Enron official who helped develop the Gaza power plant says that one of the original aims of the plant was to connect it to a desalination facility that could then provide water to Gaza. Furthermore, says the former Enroner, a key premise of the power plants was to "make it gas friendly." Indeed, while the project terms were being negotiated, the Gaza Marine-1 well hit gas. But today, nearly six years later, the Palestinians still cannot bring that gas ashore to fuel the power plant or to provide energy for a water desalination plant.

While Gaza remains stuck, the Israelis will soon begin operating one of the world's largest desalination plants. The plant, located in Ashkelon, will have a capacity of 100 million cubic meters (26.4 billion gallons) per year. The project, a joint venture between French water giant Vivendi and Israeli interests, includes a gas-fired power plant with 80 MW of capacity.

But the power needed for the desalination projects is only a fraction of the power Israel will need in the coming years. Over the next five years, according to Jacob Karni, a professor at the Weizmann Institute of Science, the country's electric power needs will increase by 25 percent to 12,500 MW of installed capacity. An expert on solar energy, Karni is part

of a team involved in building a 100-MW solar plant in the Negev Desert, in the southern region of Israel. Further, Karni says that while the gas finds in the Mediterranean will help Israel in the short term, they will provide only a fraction of the gas needed. Thus, Israel will have to deal with gas-rich Egypt, import LNG from the Persian Gulf or, possibly, build a pipeline north that will carry gas from Russia. Further, it's no secret that the Israelis are also interested in Kurdish oil. As Karni summed up: "Israel's energy problems can't be isolated from the neighborhood. They are isolated from the Arab states, but not the Palestinians."

The Wall

Walls are bad for pipelines. They are also bad for roads, traffic, communications and, of course, power lines. Given those facts, the effect of the separation wall now being constructed by the Israeli government between Israel and Palestine is obvious: Energy infrastructure costs in Palestine will increase dramatically. Dr. Kittaneh said the separation wall, which is nine meters high in places, will require the Israelis and Palestinians to build taller towers to get power lines over the concrete monoliths. "You have to have a special permit to go over the separation wall. And it's more expensive because the safety distance has to be higher," said Dr. Kittaneh.

Despite the costs, the Israeli government is building some 600 kilometers of fences and walls. (About half of that distance has already been built.) And the political and religious barriers that have prevented peace in the region for centuries will be supplemented by a concrete-and-steel curtain that varies from 6 meters to 9 meters in height and in thickness from a few millimeters of steel mesh to more than a foot of slabbed concrete and steel.

The wall imposes, in effect, a major tax on commerce in Palestine. It will also restrict the ability of the Palestinians to



The separation wall just south of the city of Ramallah near the Qalandiya checkpoint. The wall, sections of which are nine meters high, will make the construction of new energy infrastructure (pipelines, power lines, etc.) more difficult and more expensive.



Key Companies

Palestinian Electric Corporation

- 2003 revenues: \$22.3 million
- Market capitalization: \$134.4 million
- Its first and only generator, a 140-megawatt power plant, began commercial operation on March 15, 2004. Its stock began trading on the Palestinian Securities Exchange on March 28, 2004 at a price of \$1 per share. The stock now trades at about \$2.24.

Alon Israel Oil Company

- 2004 revenues: \$3.32 billion
- Market capitalization: n/a
- The Alon conglomerate owns supermarkets, fast-food outlets and a wide range of midstream and downstream energy assets. It is the biggest fuel retailer in Israel. It also has substantial operations in the United States, including the Fina gas station chain and a refinery in Big Spring, Texas. The privately held company's most famous shareholder is diamond mogul Lev Leviev, who owns about 26 percent of Alon through his company, Africa-Israel Investments. An Alon subsidiary, Dor Energy, has the sole source contract for delivery of motor fuel and LPG into Palestine. The terms of the contract are not public.

get enough electricity and motor fuel to keep their economy going. But, as usual, energy issues are getting short shrift in the broader discussion of peace and development in the region. This is particularly true in Gaza, now largely encircled by the wall.

Mahmoud El Kozendar's family operates a number of service stations in Gaza, which has one of the highest population densities of any region on Earth. Kozendar says the key issues for the Palestinians in Gaza are energy availability and energy pricing. Residents of Gaza now pay about 10 times more for LPG than residents of Egypt, he told me. Further, Gazans must pay market prices for electricity (about 9 cents per kilowatt hour) even though the average Palestinian makes a fraction of the amount earned by the average Israeli. In addition to the cost, "There is always a shortage of electricity," Kozendar said. "And without electricity, we can't have industry."

Without industry, Gaza and the rest of Palestine will not be able to create jobs. Without jobs, the region will continue to be impoverished. And if there is one thing that has proven true during the decades of the Palestinian-Israeli conflict, it is that poverty breeds violence. Alas, unless or until the energy questions are addressed in the Holy Land, it appears the cycle of poverty and violence will continue. And that means continued conflict not only for Israel, but for America as well. ♦