

Seismic Shift: Israel's Natural Gas Discoveries

by [Simon Henderson \(/experts/simon-henderson\)](/experts/simon-henderson)

Jan 4, 2011

ABOUT THE AUTHORS



[Simon Henderson \(/experts/simon-henderson\)](/experts/simon-henderson)

Simon Henderson is the Baker fellow and director of the Bernstein Program on Gulf and Energy Policy at The Washington Institute, specializing in energy matters and the conservative Arab states of the Persian Gulf.



Brief Analysis

On December 29, 2010, Houston-based Noble Energy announced a "significant natural gas discovery" in the Leviathan offshore license area eighty miles off the northern Israeli port of Haifa. According to the company, recent measurements confirmed initial estimates for the field of 16 trillion cubic feet (tcf) of gas, making it the world's largest deepwater gas discovery in ten years and increasing Israel's total natural gas reserves to as much as 26 tcf. Although the discovery adds less than 0.4 percent to the world's proven gas reserves, it is a significant boost for Israel's economy -- indeed, exploiting the field and other possible finds in the Eastern Mediterranean could dramatically change the economic fortunes of Israel and its neighbors.

Potential Impact on Israel

Two or three more wells will have to be drilled to fully appraise the Leviathan field, but it is already estimated to be nearly twice the size of the nearby Tamar field, itself the largest gas field discovered anywhere in the world in 2009. Leviathan's potential riches add further credibility to the March 2010 U.S. Geological Survey (USGS) report on the so-called Levant Basin Province. Using published geological information and commercial oil and gas data, the USGS predicted that the area from the Jordan River stretching westward out to sea from Israel, the West Bank, Gaza, Lebanon, and Syria might contain as much as 122 tcf of natural gas and 1.7 billion barrels of oil. (Although these figures may seem enormous, it should be pointed out that they represent, respectively, less than 2 percent of the world's proven gas reserves and slightly more than 0.1 percent of proven oil reserves.)

Currently, Israel imports coal for domestic electricity, supplemented since 2004 by natural gas from the offshore Mari-B field twenty-five miles from the southern port of Ashdod. More gas comes from Egypt, arriving near Ashdod via an undersea pipeline. Indeed, despite the excitement over the Leviathan field, Israel signed a new twenty-year gas purchase agreement with Egypt earlier in December to supply several industrial entities, including the Dead Sea Works and the Haifa refinery.

If the riches of the Leviathan field are confirmed, production could begin by 2016. In that scenario, Israel could eventually become a net energy exporter despite still needing to import oil to refine into gasoline and other products. Apart from notional energy independence, using natural gas from its own fields would save Israel \$4 billion in imports annually while boosting gross national product. Plentiful indigenous hydrocarbon supplies could also

prompt the development of new industries. For the time being, though, Israel must resolve a variety of problems before it can begin reaping the full benefits of the new discovery.

Debating Royalties and Taxes

Under current Israeli law, tax breaks and low royalties mean that the country receives, by international standards, relatively little revenue compared to the energy companies that own the gas fields. The partners developing the Tamar field are resisting Israeli government attempts to change the system, which could lead to delays in pumping the gas ashore. Among these partners is Noble Energy, which is supported on the issue by the U.S. government. The resulting commercial uncertainties are also impinging on the exploitation of other fields.

On January 3, an Israeli-government-appointed committee of experts recommended increasing the state's share of oil and gas revenue from 30 percent to between 52 and 62 percent. Royalties on production would be 12.5 percent. These recommendations, which must be approved by the Israeli parliament, include a concession to the Tamar field if it begins producing before 2014. Noble's Israeli partner, Delek Energy, has already criticized the committee's recommendations, saying they would cause "irreversible damage" to the country's energy sector.

Thorny Maritime Boundaries

To help countries exploit offshore riches, the UN Convention on the Law of the Sea permits them to extend an "exclusive economic zone" (EEZ) 200 nautical miles from their coasts. In cases where countries are separated by less than 400 nautical miles, they are expected to draw a boundary equidistant between them. For example, Israel signed a maritime agreement with Cyprus in December that included such a demarcation. Both the Leviathan and Tamar fields fall within Israel's EEZ, as do other license areas even more distant from its coast.

Yet Israel could face problems with Lebanon, where Hizballah factions in the government have claimed that the recently discovered fields stretch into Lebanese waters. Israel has denied the claim. To further complicate matters, Beirut previously brokered a maritime agreement with Cyprus, but the Lebanese parliament has yet to ratify it. The news of the Leviathan finding's size has also prompted protests from Cairo, which warned that it would closely follow the drawing of the field's boundaries to ensure they do not infringe on Egypt's EEZ or its own previously signed maritime agreement with Cyprus.

Meanwhile, Turkey has placed additional pressure on the Cyprus government by declaring the island's maritime agreement with Israel null and void. Ankara objects to any such agreement being signed until a solution is reached regarding future division of the island, which was split into Greek Cypriot and Turkish Cypriot parts in 1974. According to one Turkish official statement, "Turkish Cypriots also have rights and jurisdiction over the maritime areas of the island of Cyprus." (Noble Energy has a license to drill in one of the eleven exploration blocks of Cyprus's EEZ, although work has not yet begun.)

In the Palestinian arena, another gas field was discovered in 2000 off the coast of Gaza. Under former prime minister Ariel Sharon, however, Israel insisted that any gas in the sea off Gaza had to come ashore on Israeli territory, pending a full peace agreement. The situation was compounded by the 2007 Hamas takeover of Gaza, and as a result, any prospect of the field's development has been sidelined.

Difficult Markets, Continued Exploration

Even if Israel does in fact find itself in the fortuitous position of exploiting the Leviathan field and becoming a gas exporter, it will face other challenges. Given the global economic crisis (which has depressed gas demand) and the boom in U.S. shale gas production, there is a glut of gas worldwide. In addition, the major established natural gas producer in the Eastern Mediterranean is Egypt, which has proven reserves of 77 tcf, or three times Israel's estimated reserves. According to the USGS, Egypt might have as much as 223 tcf in its Nile Delta Basin Province.

Cairo is an established exporter as well. In 2009, it supplied gas to Jordan, Lebanon, and Syria via the same pipeline that branches to Israel. And using specially constructed port facilities and ships, Egypt supplied liquefied natural gas (LNG) to North and South America (including the United States), Europe, and Asia (including China and Japan).

Israel has several potential export options of its own, but all would pose technical and, often, political challenges. Greece has been mooted as a possible market, perhaps by undersea pipeline; India is another potential market; and the Russian giant Gazprom is currently proposing a joint venture. Israel's most commercially viable option might be to export surplus gas as LNG, converted via existing facilities in Egypt.

Israeli decisions regarding the most sensible tax regimes and commercial options will be all the more difficult because of the possibility of further discoveries in the area. Exploratory drilling continues in other zones, both adjacent to Leviathan and closer to shore. For example, Adira Energy of Canada is looking for oil deposits offshore while also drilling for gas in the Hula Valley in northern Israel, another part of the USGS-assessed Levant Basin Province.

Washington needs to pay careful attention, since these developments offer opportunities for U.S. companies as well as the potential for friction between U.S. allies. And although the amounts of gas discovered so far seem unlikely to change the world, they could certainly change the Eastern Mediterranean.

Simon Henderson is the Baker fellow and director of the Gulf and Energy Policy Program at The Washington Institute. ❖

RECOMMENDED

BRIEF ANALYSIS

[Unpacking the UAE F-35 Negotiations](#)

Feb 15, 2022



Grant Rumley

[\(/policy-analysis/unpacking-uae-f-35-negotiations\)](/policy-analysis/unpacking-uae-f-35-negotiations)



ARTICLES & TESTIMONY

[How to Make Russia Pay in Ukraine: Study Syria](#)

Feb 15, 2022



Anna Borshchevskaya

[\(/policy-analysis/how-make-russia-pay-ukraine-study-syria\)](/policy-analysis/how-make-russia-pay-ukraine-study-syria)



BRIEF ANALYSIS

[Bennett's Bahrain Visit Further Invigorates Israel-Gulf Diplomacy](#)

Feb 14, 2022



Simon Henderson

[\(/policy-analysis/bennetts-bahrain-visit-further-invigorates-israel-gulf-diplomacy\)](#)

TOPICS

[Arab-Israeli Relations \(/policy-analysis/arab-israeli-relations\)](#)

[Energy & Economics \(/policy-analysis/energy-economics\)](#)

[Gulf & Energy Policy \(/policy-analysis/gulf-energy-policy\)](#)

REGIONS & COUNTRIES

[Israel \(/policy-analysis/israel\)](#)

[Turkey \(/policy-analysis/turkey\)](#)