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The Energy Island:
Israel Deals with its Natural Gas Discoveries

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Introduction

In recent years, major natural gas fields were found in Israel's exclusive economic zone (EEZ). These discoveries have the potential to transform the Israeli energy outlook, enabling the country to diversify its energy sources. Moreover, the discovered volumes of natural gas could theoretically enable regional energy cooperation in the Eastern Mediterranean. Yet, it is still uncertain whether these gas finds can effectively benefit Israeli and regional stakeholders. Since the initial discovery of the gas fields, Israel has revised its royalty and energy export policies and continues to debate regulation of the energy market. The length and tenor of this process has been detrimental to investment. The substance of these debates, however, reflects valid concerns, and suggests a need for robust regulation by Israeli authorities.

One major challenge confronting Israeli policymakers is that the country's energy sector is not a perfect market, subject to normal market forces. Natural gas production is dominated by one consortium, and electricity generation is dominated by one mostly state-owned company. Market domination, on both the supply and demand sides, can be dealt with, so long as there is effective and strong regulation. Currently, however, the consortium that discovered the offshore gas fields and the regulatory authorities continue to negotiate over how best to design safeguards against market power abuse. In our view, an effective monopoly requires robust regulation, even while investors require certainty and regulatory predictability, assuring that they can earn a reasonable rate of return for a sustained period of time.

This paper will discuss the policy dilemmas Israeli policymakers faced—and continue to face—in dealing with the large discoveries of natural gas in its EEZ. In each stage of this process, Israeli policymakers have faced a challenge of balancing energy security (both in terms of maintaining adequate national reserves and in terms of the accessibility of these reserves), public and private interests in taxation, pricing, environmental well-being, potential export, and the long-term reputational effects of changes to the business environment for foreign investment. In addition, a country like Israel must prepare for emergency scenarios, including crises where energy supplies could be cut off.

The process tells a story of a country overwhelmed, at times, by the complexity and relative magnitude of the policy challenges it faced. The outcome has been a healthy debate over difficult policy dilemmas, often carried out in an unhealthy way.

In this paper, after outlining the political context of the energy finds, we discuss five related challenges that Israeli policymakers confronted in dealing with the new energy discoveries. First, we turn to the overhaul of the tax environment enacted by the Israeli authorities after some of the discoveries were made. Second, we discuss the debate in Israel over limits to the export of natural gas and the considerations of energy security in this debate. Third, we discuss the issue of monopoly and monopolistic pricing that plagues the Israeli market today in a yet-unresolved debate. Fourth, we turn to security concerns and, fifth, the environmental considerations that still require concerted attention from policymakers. We then conclude by discussing the regional context of the process in which Israel is dealing with its energy finds.

Background

A MOMENT OF CRISIS

In the summer of 2012, three developments converged to force Israel to overhaul its long-term energy strategy. The first development came from Egypt, to Israel's south, where repeated attacks on a pipeline in the Sinai halted the supply of gas to Israel and Jordan.[1] The future resumption of supply seemed unlikely; after the collapse of the regime of Hosni Mubarak the previous year, and faced with an increasing gas shortage in the Egyptian domestic market, the deal to provide gas to Israel had become a focal point of popular criticism against the old regime.[2] The deal, critics claimed, was a corrupt pact to sell the country's strategic energy reserves cheaply to Israel.

Thus, in the summer of 2012, Israel faced an immediate energy shortage. Israeli energy consumption peaks during the hot summer months and the Egyptian gas supplies failed to make it to the market. The Israeli government was forced to scramble to stave off a crisis and the potential of having to severely overpay for substitute fuels. The government officials in charge also faced a daunting specter of repeated energy shortages in the future, with no prospect of a return of Egyptian gas.

A second development seemed to offer the perfect solution. Beginning in 1999, a partnership of private companies, notably Houston-based Noble Energy and members of the Israeli Delek Group, found significant deposits of natural gas in Israeli economic waters with the initial discovery of the Noa and then Mari gas fields in 1999 and 2000 respectively, the latter with some 1,100 billion cubic feet (bcf) of natural gas. More importantly, in 2009 significant gas reserves were found in the Tamar field, with proven reserves of at least 11 trillion cubic feet (tcf), enough to sustain the Israeli domestic market for decades.[3] The following year, the Leviathan (Hebrew for "whale") field, with perhaps twice as much gas as Tamar, was discovered by the same partnership farther offshore.

Israel's lack of energy security has long troubled the country's strategic planners. With very little domestic production, Israel has always been dependent on energy imports. In 2012, only 13.4 percent of the Israeli energy balance (24,277 thousand tons of oils equivalent ktoe) was domestically produced, while imports included primarily crude oil (49.3 percent of the total energy balance), and coal (35.4 percent).[4] An "energy island" with no diplomatic relations with any of its immediate neighbors until 1979, these imports

[1] See Bruce Riedel, "Al Qaeda's New Sinai Front," *The Daily Beast*, August 21, 2011, http://www.brookings.edu/research/opinions/2011/08/22-sinai-riedel; Zack Gold, *Sinai Security: Opportunities for Unlikely Cooperation Among Egypt, Israel, and Hamas* (Washington, DC: Saban Center for Middle East Policy at the Brookings Institution, 2013), Vol. 30.

[2] Other factors that had contributed to the increasing shortage of Egypt's natural gas were heavy domestic price subsidies, and exports of natural gas to higher value markets.

[3] In 2010 the Israeli market consumed some 187 billion cubic feet (bcf) per annum, usually denoted in metric measurements as 5.3 billion cubic meters (bcm).

[4] According to International Energy Agency data, domestic production in 2012 consisted primarily of natural gas, geothermal and solar. "Israel: Balances for 2012," International Energy Agency, (accessed January 16, 2015), http://www.iea.org/statistics/statisticssearch/report/?year=2012&country=ISRAEL&product=Balances.

had to come from farther afield, including oil from Iran—prior to the Islamic revolution of 1979—and coal from South Africa, Australia, the United States and Poland,[5] circumventing the comprehensive Arab League boycott of Israel that was implemented in response to the establishment of the state.[6] With the discovery of massive reserves (by local standards), the future of the country's energy demands seemed assured, with much to spare. Israelis began preparing a major shift of their economy toward reliance on natural gas. Energy independence, cheap power, and even a windfall of income from lucrative exports captured the public's imagination.

The discovery of natural gas reserves in Israel, however, does not guarantee that the resources will reach the market. For actual production to take place there must be sufficient demand to justify investment and available infrastructure to transport the commodity. In addition, for private actors to invest, a stable and predictable regulatory framework and investment climate is required, in particular on matters pertaining to taxation, export licenses, the possibility of antitrust action or price controls, and environmental requirements. These terms had never been seriously debated in Israel, where large energy finds had long seemed like speculative fantasies. The Petroleum Law that first regulated exploration and production, and offered very favorable terms for exploration, dates back to 1952, shortly after the establishment of the state, and was amended in 1965 in an effort to encourage further foreign investment in exploration activities.[7] Following the discoveries in the Eastern Mediterranean, a heated public debate over these terms ensued, as we discuss below.

The economic and strategic stakes in this debate were—and remain—high. However, in the summer of 2011, a third dramatic development heightened the political stakes further. Just one year before the energy supply crisis of 2012, a massive wave of public protests swept the streets of Israel with demands for social reform. Hundreds of thousands of people—in a country of eight million—gathered in cities across Israel in disciplined, peaceful but impassioned demonstrations, chanting, most famously, "The people demand social justice!"[8] Demonstrators came from all walks of life, with a high representation of middle- and upper middle-class Israelis representing the Israeli mainstream; and a majority of Israelis, well beyond the ranks of demonstrators, supported their demands. In a polity that traditionally focused on national security issues, domestic concerns and issues of equitable distribution suddenly took center stage. Politicians, facing policy decisions on the energy finds, quickly took note.

One consequence of this sea change in Israeli politics was that seemingly technical, bureaucratic decisions on taxation, regulation, and export, were subject to unprecedented public scrutiny and popular pressure. Decisions over the terms of business became a public battle over the private use of publically owned natural resources. The public mood had turned, in particular, against the "tycoons" of the Israeli economy, a small number of wealthy families that some felt held a disproportionate share of Israeli industry. The partnership behind the gas discoveries now attracted public anger, focused in no small part on the owner of Delek, Yitzhak Tshuva, one of the so-called tycoons.

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[5] "About National Coal Supply Corporation," The National Coal Supply Corporation LTD, [in Hebrew], (accessed January 28, 2015), http://ncsc.co.il/?page_id=5.

[6] After the State of Israel was established, the Arab League—which viewed Israel as illegitimate—imposed a comprehensive trade boycott on Israel, both direct and indirect, threatening a boycott of companies in any industry that traded with Israel. The indirect boycott—the more effective element—largely dissipated in the 1990s, after the Oslo Accords between Israel and the P.L.O. were signed. See, for example Martin A. Weiss, "Arab League Boycott of Israel," *Congressional Research Service* (RL33961), December 19, 2013, http://fpc.state.gov/documents/organization/219630.pdf.

[7] Petroleum Law, 5712-1952, *Sefer Ha-Chukkim* 5712, No. 109, 332, [in Hebrew], (accessed January 15, 2015), http://main.knesset.gov.il/Activity/Legislation/Laws/Pages/LawSecondary.aspx?lawitemid=150155.

[8] "*HaAm Doresh Tzedek Hevrati!*"

NO MERE POPULISM

This paper outlines the complex debate that ensued in Israel over how the country should deal with, and regulate, its energy market in light of the gas finds, a debate still ongoing at the time of this writing. Much criticism has been levied at Israel for this process by outsiders and insiders alike. In particular, the lengthy, convoluted process has been described by critics as obstructionist populism that will doom the Israeli gas market to underinvestment and under-production.[9] In one extreme formulation, by a representative of small shareholders of Delek, it was argued that "communist"[10] approaches have allowed for the robbing of private property. Moreover, many in Washington worry that stalling production and creating an inhospitable business environment will hinder regional cooperation over gas production which depends on the large Israeli finds.

To be sure, populism has influenced this debate, especially in public sentiment regarding the "tycoons"[11] who have supposedly robbed[12] Israel of its natural resources. We argue, however, that the stakes for Israel—in determining the availability and price of its main source of energy for decades to come—are too high to be dismissed offhand. At times contrary to the interests of private business, Israel faces acute challenges of energy security, and of being a small market in a monopolistic environment—issues that must be addressed by policymakers even at a cost to the business environment and the reputation of the state.

With this necessary debate, the possibility exists of a slowdown in energy production, to the detriment of the Israeli economy and of the potential for using the gas finds to foster regional cooperation. Reputational damage has indeed already been done to Israeli business in the process of regulatory and legislative revamping of the energy industry, but should not be overstated.[13]

ISRAEL DEBATES ITS ENERGY POLICY, AT LENGTH

Debating its energy policy, Israel faces a special combination of national interests requiring a careful balancing act between energy security, the business viability of energy supply, the general public good, and the long-term reputation and predictability of the Israeli economy for foreign investment. With the discovery of natural gas off Israel's coast, critics played an important balancing role to the lobbying prowess of private business and forced a mostly vibrant, if costly, public debate on issues that were hitherto ignored. Indeed, few national policy decisions mixed such an array of long-term strategic interests in such a short period of time.

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9 Amiram Barkat, "No Foreign Investor Will Put a Cent into Israeli Gas," *Globes*, January 5, 2015, http://www.globes.co.il/en/article.aspx?did=1000998545&from=iglobes.

10 Amiram Barkat, "Gas-Oil Investors Go to War Against Sheshinski: Hired Attorney Ressler," *Globes*, November 16, 2010, [in Hebrew], http://www.globes.co.il/news/article.aspx?did=1000601507.

11 During the summer of 2013, many Israelis took to the streets, protesting the Government's decision to allow for 40% of Israel's natural gas to be exported. Among the popular sentiment expressed by the protesters included the slogans: "The government is with the tycoons, the people are with the gas," and "Gas exports = national suicide." See for instance, "Hundreds in Jerusalem Protest Against Gas Exports," *Times of Israel*, June 22, 2013. For additional examples, see Aviel Magnezi and Noam (Devol) Dvir, "Orly Weinerman at the Gas Protests: They Think Only of Tycoons," *Yediot Aharonot*, June 23, 2013, [in Hebrew], http://www.ynet.co.il/articles/0,7340,L-4395698,00.html; Itai Trilnick, "Shelly Yachimovich: 'The Government Surrenders to Pressure from the Gas Tycoons'," *The Marker*, June 7, 2012, [in Hebrew] http://www.themarker.com/markets/oil-and-gas-exploration/1.1726238.

12 On June 19, 2013, Member of Knesset Dov Khenin addressed the Knesset, referring to the Government's decision to set natural gas exports at 40% as the "great gas robbery." See remarks from MK Dov Khenin, "The Truth About the Great Gas Robbery," *Hadash – Official Party Website*, June 19, 2003, [in Hebrew], http://hadash.org.il/%D7%97%D7%9B-%D7%97%D7%A0%D7%99%D7%9F-%D7%A2%D7%9C-%D7%A9%D7%95%D7%93-%D7%94%D7%92%D7%96-%D7%9E%D7%A2%D7%95%D7%9C%D7%9D-%D7%9C%D7%90-%D7%94%D7-%AA%D7%A7%D7%91%D7%9C%D7%94-%D7%94%D7%97%D7%9C%D7%98/; "Yachimovich: 'Gas Exports – Robbing the Public and Selling the Future'," Walla!, June 19, 2013, [in Hebrew], http://news.walla.co.il/item/2652915.

13 Sharon Udasin and Niv Elis, "Taking the Mask Off Leviathan Gas Negotiations," *Jerusalem Post*, January 29, 2015, http://www.jpost.com/Israel-News/Taking-the-mask-off-Leviathan-gas-negotiations-389370.

With the discovery of natural gas, and especially the Tamar and Leviathan fields, Israel faced the possibility of a dramatic increase in state revenue, depending on the tax and royalties regimes enacted. In June 2013, after a highly contentious revision of the revenue regime, Prime Minister Benjamin Netanyahu claimed that the state expected to receive as much as $60 billion over the following two decades[14,15] (Israel's gross domestic product in 2013 stood at some $290 billion.)[16] Stanley Fischer, then the outgoing governor of the Bank of Israel, estimated at the time that the revenue from domestic gas sales from the Tamar field alone would be over $24 billion by 2027.[17]

These revisions to the revenue regime pitted the immediate interests of the Israeli treasury against the interests of private investors, both local and foreign. Israel had to balance the potential for lucrative revenue with the potential reputational damage to the state as a target for foreign direct investment (FDI). Throughout the lengthy process, moreover, the United States—Israel's major ally and backer—has been actively involved, as we discuss below. In part, U.S. policymakers have, understandably, defended the interests of Noble, a U.S. firm.[18]

Decisions about export licensing were similarly dramatic. Given Israel's effective isolation, many in Israel hoped to retain the natural gas reserves for domestic consumption for many decades to come, and to limit the export of gas from the Israeli reserves. However, such limitations—which would directly impact the monetization of the gas finds—risked hurting the potential for future exploration in Israeli waters or even for full exploitation of the existing finds, further eroding the country's reputation for FDI. The security of long-term Israeli reserves had to be weighed against the availability of supply to the market. The idea to keep the natural gas exclusively in Israel is, given the limited size of the domestic market, not an attractive proposition for any investor.

Moreover, the Israeli finds raised the possibility of Israeli energy facilitating diplomatic ties with other countries in the region, including Egypt, Turkey, and Cyprus, as well as Jordan and the Palestinian Authority (PA).[19] In this too, the United States was heavily involved, providing much needed diplomatic assistance in the regional context of the Eastern Mediterranean.[20] Curtailing the export of Israeli gas would naturally risk the possibility for regional cooperation.

No less difficult—or economically consequential—was (and remains) the issue of domestic pricing. The Israeli market is shifting rapidly toward reliance on gas. In one projection by the Israeli Ministry of Energy and Water's Natural Gas Authority, by 2030 over 70 percent of Israeli electricity production, and nearly half of all energy consumption, is to be fueled with natural gas, replacing coal as the main source.[21] With natural gas set to become a dominant component of the Israeli

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14 Zeev Klein and Hezi Sternlicht, "PM: Gas Exports Will Yield $60 Billion in Revenue over 20 Years," *Israel Hayom*, June 20, 2013, http://www.israelhayom.com/site/newsletter_article.php?id=10121.

15 These revenue figures take into account the changes to legislation we describe below.

16 "World Development Indicators: Israel," *World DataBank*, The World Bank, (accessed January 14, 2015), http://databank.worldbank.org/data/views/reports/tableview.aspx.

17 Lior Guttman, "Fischer Estimates: By 2017 Revenues from Sales of Natural Gas Will Reach $2.9 Billion," *Calcalist*, June 3, 2013, [in Hebrew], http://www.calcalist.co.il/local/articles/0,7340,L-3604125,00.html.

18 See, for example: "Kerry presses Netanyahu to solve gas monopoly crisis," *Globes*, December 31, 2014, http://www.globes.co.il/en/article-kerry-presses-netanyahu-to-solve-gas-monopoly-crisis-1000997281.

19 On Turkish-Israeli relations, see Dan Arbell, *The U.S.-Turkey-Israel Triangle* (Washington, DC: Center for Middle East Policy at the Brookings Institution, 2014, (Vol. 34); For a critical view, see Brenda Shaffer, "Can New Energy Supplies Bring Peace?" *The German Marshall Fund of the United States*, March 2014, http://www.gmfus.org/wp-content/blogs.dir/1/files_mf/1394551538Shaffer_NewEnergySupplies_Mar14.pdf.

20 Amiram Barkat, "US Special Envoy: Gas Fields Must Be Developed Quickly," *Globes*, January 4, 2015, http://www.globes.co.il/en/article-us-energy-envoy-gas-fields-must-be-developed-quickly-1000998337. Among other difficult tasks, the U.S. was (and is) engaged in attempts to delineate the maritime border between the Israeli and Lebanese Exclusive Economic Zones. See Helmi Moussa, "US Tries to Mediate Lebanon-Israel Maritime Border Dispute," *Al Monitor*, October 2, 2013, http://www.al-monitor.com/pulse/business/2013/10/lebanon-israel-gas-maritime-dispute.html.

economy, its price will be a paramount consideration for all economic activity.

In this context, the attention of policymakers and the public has focused on the market share of the partnerships holding the licenses to Tamar and Leviathan. At present, members of the Israeli Delek Group own over 31 percent of Tamar and over 45 percent of Leviathan, and Noble Energy owns 36 percent and nearly 40 percent, respectively. Together, the Noble/Delek Partnership is firmly in control of the vast majority of the supply of gas to the Israeli market. As we discuss below, the Israeli Antitrust Authority (ATA) found itself, after the discovery of the fields, dealing with a reality of a clear monopoly.

One way to curtail monopoly power would be to regulate prices, allowing recovery of costs made for exploration, extraction, and a reasonable rate of return. This option met with fierce opposition from the energy companies. Alternatively, market participants' market share could be capped to a certain share. This, however, would effectively mean breaking up the existing monopoly, creating a precedent of which private investors are naturally wary;[22] again, the partners objected strongly. Though antitrust action of any kind does bear a considerable cost in possibly delaying energy development and regional cooperation, the stakes involved were the cost of the majority of the energy supply to the entire domestic Israeli market for decades. For public officials entrusted with the interests of the Israeli citizenry, few economic decisions were as consequential as those of pricing. The challenge for the ATA is to find a balance that limits the chances of possible abuse of market power, while at the same time providing a sufficient incentive and long-term stability and predictability for investment.

AN ENERGY ISLAND

The natural gas discoveries offshore Israel could potentially benefit the entire region. Natural gas demand in the area is growing rapidly, while production is nonexistent in some countries, and in decline in most others. However, Israel's complicated relations with nearly all its neighbors render it an "energy island," severely limiting the potential for regional cooperation.

Egypt, Israel's immediate neighbor, and once a supplier to Israel, now faces acute shortages. Liquefaction plants in the country are standing idle, in need of supply.[23] Jordan, to Israel's east, is likewise hungry for energy sources. Next to attracting more natural gas, it has also considered developing a nuclear capacity to meet the country's growing electricity demand. The Palestinian Authority, too, is in dire need of energy, and would benefit from development of its own gas fields, very near the Israeli coast and its existing infrastructure, as we discuss in an accompanying report.[24] Cyprus, in whose waters natural gas was found by the same partnership as Israel's, needs to either find additional reserves or partner with a country like Israel to reach the scale required to make exports economically feasible. Farther afield, the Turkish market is growing rapidly. The country needs to diversify its supply, and is currently considering supplies from Turkmenistan, Azerbaijan, or possibly Kurdistan, Iraq, and Iran. In the wake of the

[21] Natural Gas Authority, "The Natural Gas Industry in Israel," Ministry of National Infrastructures, Energy and Water Resources, State of Israel, May 2013, [in Hebrew], http://energy.gov.il/Subjects/NG/Documents/NGpresentation.pdf. These projections are likely optimistic about the transition to natural gas, but the transfer has nonetheless been very rapid and gas will indeed be the dominant Israeli energy source for many years to come. Interviews with Constantine Blyuz, Deputy Director for Economic & Strategic Issues, Israeli Ministry of National Infrastructures, Energy and Water Resources; and Nurit Gal, Director, Regulation and Electricity Division, Public Utilities Authority of Israel.

[22] For instance, the partial renationalization of YPF by Argentine President Cristina Fernández de Kirchner in 2012, which—though not an identical case—similarly entailed very significant distortion of the existing division of labor, has made private sector investors wary to enter the country since.

[23] "Energy in Egypt: Fuelling Unhappiness," *The Economist*, May 24, 2014, http://www.economist.com/news/business/21602720-heavy-subsidies-are-undermining-foreign-investment-gas-industry-fuelling-unhappiness.

[24] Tim Boersma and Natan Sachs, *Gaza Marine: Natural Gas Extraction in Tumultuous Times?* (Washington, DC: Foreign Policy at Brookings, February 2015), Vol. 36.

crisis in the Ukraine, there are outcries for supply diversity in Europe as well, though gas demand in Europe has substantially declined due to the overall economic situation, increased energy efficiency, and to fierce competition from subsidized renewables and cheap coal.

Yet despite all of these opportunities, energy cooperation has been hindered by severe political difficulties of varying degrees.[25] Turkish-Israeli relations have soured in recent years,[26] hampering both the Turkish and the Cypriot export options. Israeli-Palestinian relations remain mired in intermittent conflict, with a growing sense of despair with the peace process on both sides, leading to less cooperation rather than more. Given the lack of resolution of the Israeli-Palestinian conflict, and with the recurrence of violence, as was the case in the summer of 2014, public opinion throughout the Arab world remains vehemently opposed to relations with Israel, such that even Egypt and Jordan, which have diplomatic relations with the country, find it politically difficult to deal with Israel in the open.[27]

Thus, although private sector actors see opportunities for trade and enhanced cooperation, politics have so far trumped them, as is often the case in this part of the world.[28]

THE ISRAELI GAS FINDS IN CONTEXT

After the ATA had reached a tentative agreement with the companies over their market share, the Israeli cabinet initially decided against price controls, as is indicated by a November 2014 ministerial panel vote, which we discuss below. This contributed to the ATA reversing course and, in December 2014, declaring the Tamar-Leviathan ownership a cartel, which would allow the authority to force its breakup. Negotiations are now underway to determine what remedy to pursue, including the possibility of a compromise that would either address pricing directly or limit the effect of the partnership's market share.

The Israeli case, despite its specifics, tells a wider story. Though Israel faces some special circumstances, the Israeli case encapsulates issues that many countries face—namely finding the right balance between energy security, affordable prices, and sustainable development, often in the context of market functioning.

This paper now turns to the five related challenges that Israeli authorities are dealing with in relation to the new energy discoveries.

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[25] Shaffer, "Can New Energy Supplies Bring Peace?"
[26] Arbell, "The U.S.-Turkey-Israel Triangle."
[27] Osama Al Sharif, "Jordanian MPs Fume at Israeli Gas Deal, Nationality Law," *Al Monitor*, December 15, 2014, http://www.al-monitor.com/pulse/originals/2014/12/jordan-natural-gas-deal-israel.html.
[28] See also our earlier impressions from the situation in Cyprus, along with our colleagues, Dan Arbell and Kemal Kirisci: Dan Arbell, Tim Boersma, Kemal Kirisci and Natan B. Sachs, "Politics Trump Economics in the Complex Game of Eastern Mediterranean Hydrocarbons," The Brookings Institution, December 20, 2013, http://www.brookings.edu/research/opinions/2013/12/20-politics-trump-economics-eastern-mediterranean-hydrocarbons.

Ownership and Revenue: "The People's Gas" vs. "Retroactive Taxation"

The discovery of the Tamar and then the Leviathan fields galvanized social activists and politicians in Israel to call for an overhaul of the energy tax and royalties regime, in what has become a heated and publicly salient debate. Under the previous tax regime, critics, including former opposition leader Shelly Yachimovich, argued that the state would be giving away huge amounts of wealth to private actors.[29] The existing law, from 1952, set royalties of 12.5 percent[30] and allowed for tax write-offs that seemed to exclude the public from the benefits of such large energy finds.

Activists who criticized the government, such as the Israel Energy Forum,[31] told us that the government and the companies forgot who owned the gas and who was thus entitled to benefit from its transformational potential.[32] Even when licensed to extract and sell the gas, private companies did not become its legal owners; until sale, ownership remains vested with the public at large. The starting point for any discussion, they argue, should therefore be public ownership, for which royalties were due and which might be compromised over, reasonably but minimally, to incentivize private involvement.[33] Instead, many in Israel claimed[34] government officials approached the issues as if the gas were privately owned and taxed—rather than levied royalties—by the government.

Yet, could royalties or taxation be changed so late in the game? After all, large amounts of gas had already been discovered at great private expense and risk. In fact, the companies involved argued, it was only due to private, not public, enterprise that the gas reserves were proven at all.[35] Left to the public alone, the gas reserves might still be unknown or unproven today. Moreover, these discoveries were done under a specific tax regime; private investment, financing, and undertaking of risk all factored in the expected revenue that could be garnered from potential finds, revenue that depended to a large degree on the tax regime in place.

[29] Recently, Yachimovich said of the of the gas partnership: "You are neither socialists nor capitalists, you are simply [ravenous] pigs." Roni Zinger, "Yachimovich on Delek and Noble: 'You Are Neither Socialists Nor Capitalists, You Are Pigs'," *Calcalist*, December 29, 2014, [in Hebrew], http://www.calcalist.co.il/local/articles/0,7340,L-3648589,00.html.

[30] Petroleum Law, 5712-1952, *Sefer Ha-Chukkim* 5712, No. 109, 332, [in Hebrew]; See also Ministry of Finance, State of Israel, "Conclusions of the Committee for the Examination of the Fiscal Policy With Respect to Oil and Gas Resources in Israel," (the Sheshinski Committee Report), January 2011, http://www.financeisrael.mof.gov.il/financeisrael/Docs/En/publications/02_Full_Report_Nonincluding_Appendixes.pdf (hereinafter cited as "the Sheshinski Committee Report").

[31] The Israel Energy Forum is a civil advocacy group in Israel. In 2012-2013, while the government debated export policy, the IEF actively led a public campaign against export of the country's natural gas. See, "About: Israel Energy Forum," http://www.energia.org.il/#!english/ci3z. See also David Shamah, "Keep Israel's Gas at Home, Urge a Growing Body of Experts," *Times of Israel*, May 28, 2013, http://www.timesofisrael.com/keep-israels-gas-at-home-urge-a-growing-body-of-experts/.

[32] Interview with Yael Cohen Paran, CEO, and Noam Segal, Head of Policy, Israel Energy Forum, Tel Aviv, June 12, 2014.

[33] Ibid.

[34] For a lengthy discussion of the question of export from a critical standpoint, see Idan Landau, "The Israeli gas and its devouring by the capital-government-security nexus," *Lo Lamut Tipesh* (Don't die a fool), *the Blog of Idan Landau,* September 24, 2012, [in Hebrew], http://idanlandau.com/2012/09/24/how-israeli-gas-was-swallowed-up/.

[35] Interview with Gideon Tadmor, CEO Avner Oil and Chairman, Delek Drilling, and Yossi Abu, CEO Delek Drilling, Herzliya, June 12, 2014.

It is in fact wrong to view a proven gas field in isolation. The Tamar discovery, for instance, represented only the successful end of a long process fraught with failure. Energy exploration is an inherently risky business where risk must be hedged through multiple attempts and through careful planning of finances and returns. Change the rules of the game after the fact, and only on the successful finds, and the private companies, in their view, are "cheated" out of their investments, unable to return the capital invested for risky drilling before a successful well has been found. Had the companies known in advance that successful finds might be taxed at unknown rates they may well not have undertaken the exploration at all.

Furthermore, the companies argued, the worth and benefits of the gas discoveries derive not from their discovery but from the ability to extract and use them.[36] Public officials worried that if the incentives were changed to the severe detriment of private interests, the companies, beholden to their shareholders, might either delay the development of the fields or walk away from at least part of their investment.[37] Unless another investor took their place—despite the damage to the reputation of the business environment in the country—Israel might then be endowed with large reserves of natural gas that would remain untapped beneath the Mediterranean.

In 2010, the Israeli government decided to look again at the state revenue from energy discoveries. To find a balance between the different interests, it appointed a committee chaired by a professor of economics, Eytan Sheshinski, to review state revenue from natural resources and to recommend legislation that would balance the desire for public revenue with the need to incentivize private enterprise.[38] This, of course, was only after both of the major gas fields had been discovered. "The government woke up late," Sheshinski told us.[39] The committee therefore needed, simultaneously, to minimize the "retroactivity" of new demands on the companies involved while maximizing the public benefit.[40]

With so much at stake, lobbying and political pressure were intense. An anonymously funded campaign, led by a hitherto unknown student organization—"The Forum for the Land of Israel"—targeted the committee and Sheshinski personally. Criticizing the demand to extract more revenue from the gas finds, it questioned his patriotism, accusing him of working to benefit "Arab gas" (meaning the Egyptian suppliers) and purposely damaging Israeli economic independence.[41]

The lobbying was not solely domestic. With an American partner, the companies naturally enjoyed—and still enjoy—the active support of the U.S. government. According to Yuval Steinitz, then the Israeli minister of finance, even former President Bill Clinton joined the effort, and made calls and penned a letter urging the Israeli government to favor the business interests.[42]

The committee's work showed that Israel was, indeed, a clear global outlier in low effective state revenue from energy extraction.[43] The committee's recommendations left intact the 12.5 percent royalties, but eliminated a 27 percent depletion allowance and introduced a progressive excess profit

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[36] Ibid.

[37] Interview with and Shaul Tzemach, former Director General of the Israeli Ministry of National Infrastructures, Energy and Water Resources, Chair, Tzemach Committee, Tel Aviv, June 15, 2014.

[38] The Sheshinski Committee Report," pp. 9-12.

[39] Interview with Eytan Sheshinski, Jerusalem, June 16, 2014.

[40] Ibid.

[41] Tani Goldstein, "Gas Royalties: 'The New Fund is Working to Destroy Israel'," *Yediot Aharonot*, August 10, 2010, [in Hebrew], http://www.ynet.co.il/articles/0,7340,L-3932657,00.html.

[42] Sari Makover-Belikov, "Yuval Steinitz Reveals: I Was Afraid They Would Destroy Me," *Maariv*, April 5, 2013, [in Hebrew], http://www.nrg.co.il/online/1/ART2/457/784.html; Interview with Eytan Sheshinski, Jerusalem, June 16, 2014.

[43] "The Sheshinski Committee Report," pp. 81-86; Interview with Eytan Sheshinski, Jerusalem, June 16, 2014.

tax, that took effect only after 150 percent of exploration and exploitation costs were returned, and grew progressively from 20 percent to 50 percent.[44]

The issue of retroactivity garnered a great deal of attention. While it is certainly true that much of the exploration was done under a more favorable tax regime, none of the taxation applied to revenue earned before the legislation changed, and was thus not technically "retroactive". Moreover, changes in taxation post-investment are commonplace in all realms of economic activity. (Consider, for example, a hike of local property taxes affecting previously purchased homes.) To be clear, changing the state revenue scheme after the discoveries was ill-timed and adversely affected the business environment, but it was neither unprecedented nor illegal.[45]

Several years after the Sheshinski Committee issued its recommendations, leaders of the Delek partnership described to us how they objected strongly to the retroactive nature of the process and to the changes in the rules of the game midway. They also acknowledged that these things "happen all over the world" and that now, "This is behind us."[46] The question remains though, how will this affect the investment climate in Israel going forward?

What was not yet behind them, the Delek partnership stressed, was a continued, lengthy process of bureaucratic adjustments in other policy realms. The business leaders complained of a seemingly never-ending process; after the Sheshinski Committee on revenue, followed the Tzemach Committee on, among other things, export licenses, and then the lengthy processes of antitrust and price regulation decisions.[47] In their view, this showed a lack of political leadership capable of cutting through the red tape, which has left the industry in a state of limbo for years.

[44] "The Sheshinski Committee Report," pp. 97-119; Interview with Eytan Sheshinski, Jerusalem, June 16, 2014.

[45] In August 2012, the Israeli Supreme Court, in its function as High Court of Justice, rejected petitions against the Sheshinski Committee's findings, asserting the legality of the remedies it recommended. Hila Raz, "Rejected Petitions Against Sheshinski Law; 'There is no retroactive taxation,'" *The Marker*, August 15, 2012, [in Hebrew], http://www.themarker.com/law/1.1801962.

[46] Interview with Gideon Tadmor, CEO Avner Oil and Chairman, Delek Drilling, and Yossi Abu, CEO Delek Drilling, Herzliya, June 12, 2014.

[47] Ibid.

Energy Security and Export

For Israelis on their "energy island," the discovery of a vast supply of energy evoked not only the possibility of a windfall of revenue but the possibility of freedom from the threat of an energy shortage. In the summer of 2012, the Egyptian gas crisis echoed longstanding fears in Israel of shortages of energy. Throughout the country's history, securing the energy supply has been a central concern of Israeli policymakers who, over the years, turned to a variety of sources, including notably the Shah of Iran in the 1970s.

Now, Israelis felt that a fundamental national security weakness was solved; Israel had finally found its own energy supply and was freed—in this respect—from the threats of the volatile region that surrounded it.

The companies involved, however, pointed out that it was not "Israel" that had found the gas, but rather private enterprise, acting with full license from the Israeli government. For them to monetize their discoveries and return their investments and make a profit, they would need to sell the gas to a diverse set of clients beyond the domestic Israeli market, which—in terms of electricity generation—is dominated by the Israel Electric Corporation (IEC). Not only would a single buyer limit their ability to negotiate prices, but the Israeli market also did not require substantial enough volumes of natural gas in the near future.

Should Israel limit exports? Or not? This became the next contentious debate in Israel, with considerable public demand to limit exports in favor of the domestic market, over the strong objections of the companies. In October 2011, the Israeli government appointed the Tzemach Committee, headed by Shaul Tzemach, then the director general of the Ministry of National Infrastructures (later renamed the Ministry of National Infrastructures, Energy and Water Resources).[48] The committee was tasked with providing an overall assessment of the government's policy on energy, including export licenses.

As with taxation, the committee had to balance not only domestic needs versus those of business, but also the domestic Israeli interest *in* the interests of business. Energy security, the committee felt, was not merely the existence of energy supplies, but the ability to use them when needed.[49] Gas under the Mediterranean offered little security for those on shore; in other words, the gas needed to be extracted by the companies. Whereas opponents of export claimed that Israel should retain its gas reserves for many decades to come, for the sake of energy security, the committee felt that

[48] "Report of the Inter-Ministerial Committee to Examine the Government's Policy Regarding Natural Gas in Israel," [in Hebrew], September 2012, http://energy.gov.il/Subjects/NG/Documents/NGReportSep12.pdf (hereinafter cited as "the Tzemach Committee Report"); For an English translation of the executive summary see "The Recommendations of the Inter-Ministerial Committee to Examine the Government's Policy Regarding Natural Gas in Israel: Executive Summary," September 2012, http://energy.gov.il/English/PublicationsLibraryE/pa3161ed-BREV%20main%20recommendations%20Tzemach%20report.pdf.
[49] "The Tzemach Committee Report," pp. 58-59, 82-83.

Israel should push for at least some utilization of the gas fields in the foreseeable future, after which Israel would return to the international market for gas purchases.

The Egyptian gas crisis, which developed during the committee's deliberations, added another consideration. Israel desperately needed the flow of gas from Tamar, the smaller of the big fields. Furthermore, Tamar was to be operated by the same partnership that had discovered Leviathan. Limit the export from Leviathan and you might risk the development of Tamar. The business partnership thus had valuable leverage before the committee.

Critics of (what they see as) the government's largesse with the private companies repeatedly argued—in our interviews as well as in daily media reports in Israel—that the companies bluffed and the government folded.[50] The companies warned that if the terms of business were not favorable, it would simply not be economical for them to develop Leviathan, or even Tamar. As with taxation, the government feared that the companies would walk away, leaving the gas in the ground.

This, activists such as the Israel Energy Forum claim, was bluster.[51] Self-interest would drive the companies to operate the fields even with a great deal of limitations, as they do in countries with far more onerous conditions for private energy companies. Moreover, under the terms of the license, the Israeli government can compel the companies to develop the field, or take away the license, leaving the companies with the choice of losing their total investment.

In truth, the key was finding the break-even point at which the companies would be financially indifferent between operating and walking away. Incentivize them a bit further and they would have, at least, a financial self-interest to develop the fields. Incentivize them any less and they would, indeed, walk away. This break-even point, however, was, of course, unknown to the government. The companies themselves could only estimate their risk and returns but they at least had an informational advantage over the government in terms of their own opportunity costs, financing opportunities and risk acceptance.

Moreover, the companies involved also had an advantage in terms of expertise in the gas market. The Israeli government had very little experience with large energy projects. The officials involved had to master a great deal of information in a short period of time, during periods of crisis, while determining the national energy policy for decades.

Outgunned, in a sense, by the private companies, the committee felt that a central interest of the state was for diversification of the energy supply and the entry of new players, and especially a "major" energy producer, into the market.[52] This entry would allow for further exploration and possibly new gas supplies and a crucial source of competition—a central aim of the committee—that would mitigate the position of the Noble/Delek (and Ratio) partnership that controlled both Tamar and Leviathan.

Interestingly, both sides to the argument over export evoked the experience of neighboring Egypt. Critics argued that the Egyptian decision to export contributed to the eventual public outcry over exports, as part of the dramatic events of 2011 in Tahrir Square and elsewhere in Egypt.[53] This exact same example was cited by the Tzemach Committee to make the opposite point. They correctly pointed out that the Egyptian decision to keep 66 percent of the gas reserves for local consumption

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[50] Interview with Yael Cohen Paran, CEO, and Noam Segal, Head of Policy, Israel Energy Forum, Tel Aviv, June 12, 2014.
Interview with Dana Tabachnik, Director of Economy & Environment Department, *Adam Teva Vadin* (Israel Union for Environmental Defense), Tel Aviv, June 11, 2014.

[51] Ibid.

[52] "The Tzemach Committee Report," p. 19.

[53] Interview with Yael Cohen Paran, CEO, and Noam Segal, Head of Policy, Israel Energy Forum, Tel Aviv, June 12, 2014.

and national reserves disincentivized further exploration and contributed to the gas shortage in Egypt, indirectly exacerbating the same public dissatisfaction that critics mention.[54]

After a lengthy review process, the committee recommended keeping 450 billion cubic meters (bcm) (nearly 16,000 bcf or 40 percent of expected reserves) for domestic use, which it calculated would suffice for about 25 years of domestic consumption, and allow export of 500 bcm (about 17,650 bcf). In the amount reserved for domestic consumption, Israeli policymakers planned to include small amounts potentially exported to Jordan and the PA, which could be supplied through the existing domestic Israeli energy infrastructure.

In June 2013, under considerable public pressure, the Israeli government decided to further limit the export of gas, keeping 540 bcm (about 19,000 bcf or 60 percent of estimated reserves) for domestic consumption, lengthening the expected supply for 29 years. It further decided to exclude exports to Jordan and the PA from the domestic quota.[55] From our conversations, domestic consumption appears lower than the estimates used by the Tzemach Committee, which would suggest that supplies could last 30 years or more.[56]

Despite the warnings from the companies involved that they may walk away, the Tamar field is currently in production. However, as of late 2014, no major company has yet to enter the market and, at this point, none are expected to do so. The effective monopoly in the Israeli energy market thus remains intact.

[54] "The Tzemach Committee Report," p. 91.
[55] Avi Bar-Eli and Moti Bassok, "Israeli Cabinet Votes Yea on Natural Gas Export," *Haaretz*, June 23, 2013, http://www.haaretz.com/business/.premium-1.531561.
[56] Interviews with Constantine Blyuz, Deputy Director for Economic & Strategic Issues, Israeli Ministry of National Infrastructures, Energy and Water Resources; and Nurit Gal, Director, Regulation and Electricity Division, Public Utilities Authority of Israel.

Monopoly and Pricing

The rationale for export was, in part, that Israel should treat its energy market as such—a market—at least partially integrated to the regional and international energy markets. When domestic supply ran out, Israel would purchase more in the open market. Yet, as noted, Israel's energy market remains far from a perfect market; it is at present, in fact, dominated by the partnership of the Delek Group and Noble Energy. Without proper regulation, the monopoly creates a severe problem for the Israeli market.

Given the dominant role of natural gas in the Israeli energy market in the coming decades, this market dominance by the Noble/Delek partnership could have a dramatic effect on the Israeli energy market, and through it, on the economy as a whole. With one major supplier, the IEC has very little leverage when negotiating the price of gas, and the resulting price will directly affect both industry and consumers. Few decisions will have as long-lasting or widespread effect on the Israeli economy as the pricing of its major energy source.

The most effective way to address this issue would be to have the IEC negotiate prices with the natural gas producers under the close regulation of the Public Utilities Authority, the government entity legally tasked with this job. If the regulator then deems the agreement to be unfair to the public, it can, and should, intervene. Currently, however, the Israeli authorities, through the ATA, are focused primarily on breaking up the existing monopoly, despite the risk of scaring off future investors.

Prior to entering into a monopolistic arrangement, companies in Israel are legally required to approach the ATA themselves, as was done by the same private interests in the earlier gas finds. By the time the current director of the ATA, David Gilo, assumed his role, Leviathan was already being explored and the effective monopoly was under way. To deal with the lack of competition, public pressure mounted for the ATA to break up the Tamar/Leviathan cross ownership—to force the partnership to sell one of its major fields.[57] The ATA feared, however, that a sale of Leviathan would take years, during which Tamar would be the sole source of energy—an effective monopoly. By the time Leviathan was sold and operating (assuming there would be interest to do so), Tamar would be largely depleted, again resulting in a monopoly, this time of Leviathan's new operators. Any delays, furthermore, would be extremely costly, not only to the companies involved, but to the Israeli economy as well.[58]

[57] Israel Union for Environmental Defense *(Adam Teva Vadin)* was active in lobbying for antitrust action, pointing out, among other things, that the partners in Leviathan had already claimed before the Sheshinski Committee that they could market the gas separately, after its extraction. Itai Trilnick, "Adam Teva Vadin to the Antitrust Authority: Declare the Tamar Partnership as a Monopoly," *The Marker*, December 23, 2011, [in Hebrew], http://www.themarker.com/markets/oil-and-gas-exploration/1.1599264.

[58] One recent report has claimed that the resulting pricing was double the international standard and that the Israeli economy would lose anywhere between $50 billion and $100 billion dollars as a result. See David Shamah, "Natural Gas to Cost Israelis Double World Average, Report Says," *The Times of Israel*, December 19, 2014, http://www.timesofisrael.com/natural-gas-to-cost-israelis-double-world-average-report-says/. The analysis, however, did not take into account the dynamic nature of the pricing; at lower prices, extraction may be slower and the resulting savings could be significantly lower.

Given the late start for the ATA, it felt that the best remedies available were with smaller fields, namely Tanin and Karish (together about 2,500 to 2,800 bcf).[59] The partnership would sell its stake in these two reservoirs, taking their export quota with them, to be applied to Leviathan. The remainder would be devoted solely for the domestic market, providing some relief to the dominant position of Tamar. A further limited, but meaningful remedy might be the development of the Gaza Marine field in Palestinian waters, as we discuss in an accompanying paper.[60] Though the volumes are far smaller than those of Tamar or Leviathan, the gas from Gaza Marine, licensed to the BG Group rather than Noble or Delek, could then offer a small measure of competition in the Palestinian and Israeli markets.[61] Even taken together though, it seems unlikely that Israel can create a market without dominant actors, i.e. the Delek Group and Noble Energy.

The hope of some of the officials we spoke to at the time was that, given the insufficient antitrust remedies available to the Israeli government, some form of price control would be implemented through legislation. Leading the charge was Avishay Braverman, a member of Knesset from the opposition and former senior economist of the World Bank, who proposed legislation authorizing price control, with 34 co-sponsors from across the political spectrum.[62] Unsurprisingly, these proposals for price control were met with fierce resistance from the energy companies and raised concerns abroad for market freedom. In November 2014, a ministerial panel declined to adopt the bill, dooming it to parliamentary failure.[63]

By late 2014, not only did price regulation appear remote, but the arrangement on the sale of Tanin and Karish appeared doomed as well, with little interest in the two smaller fields from other buyers. In December, the director of the ATA announced that he had reconsidered the agreement and was declaring the Tamar/Leviathan ownership a cartel, opening the way for legal action to break up the partnership,[64] to loud cheers in the Israeli press and public, but much to the dismay of proponents of quick development of the gas market, including those in the Israeli[65] and U.S. [66] governments.

Following the ATA's decision, moreover, issues regarding pricing and contract regulation resurfaced. The Public Utilities Authority declared its intent to nullify three contracts between Tamar and the IEC, both on grounds of overpricing and on the grounds that the contracts guaranteed excessive levels of "take or pay," which would bind the IEC to purchase the contracted volumes of natural gas even in case of lower electricity demand.[67]

As of this writing, the ATA and the companies involved are expected to resume discussions on new remedies to the monopoly, with the newly energized pricing regulation now in play. In one scenario, the partners could be forced to sell the gas separately, or some form of price control might be

[59] Tanin and Karish are among the most recent gas finds in Israel's EEZ, in 2012 and 2013, respectively. See Kobi Yeshayahou, "Delek, Noble Energy Discover Gas at Tanin Well," *Globes*, February 5, 2012, http://www.globes.co.il/en/article-1000721723; "Israel's Karish Field Has Estimated 1.8 TCF of Natural Gas," *Reuters*. July 14, 2013, http://www.reuters.com/article/2013/07/14/israel-karish-idUSL6N0FK02F20130714.

[60] Boersma and Sachs, *Gaza Marine: Natural Gas Extraction in Tumultuous Times?*

[61] Ibid.

[62] Sharon Udasin, "Taking on the 'Robber Barons,'" *Jerusalem Post*, November 14, 2014, http://www.jpost.com/International/Taking-on-the-robber-barons-381783.

[63] Sharon Udasin, "Panel Votes Down Bill to Supervise Natural Gas Prices," *Jerusalem Post*, November 23, 2014, http://www.jpost.com/Israel-News/Ministerial-panel-votes-down-bill-to-supervise-natural-gas-prices-382618.

[64] The Associated Press, "Israel Challenges Natural Gas Developers Over Monopoly," *The New York Times*, December 23, 2014, http://www.nytimes.com/aponline/2014/12/23/world/middleeast/ap-ml-israel-natural-gas.html?_r=0.

[65] Sharon Udasin, "Energy Ministry Slams Antitrust Commissioner for Delaying Leviathan Development," *Jerusalem Post*, December 25, 2014, http://www.jpost.com/Israel-News/New-Tech/Energy-Ministry-slams-Antitrust-Commissioner-for-delaying-Leviathan-development-385779.

[66] Barkat, "US Special Envoy."

[67] Lior Guttman, "The Electrical Authority won't approve three gas contracts," *Calcalist*, January 26, 2015, [in Hebrew], http://www.calcalist.co.il/local/articles/0,7340,L-3650795,00.html.

introduced.[68] Noble Energy has threatened repeatedly to seek international arbitration should this occur.[69]

At the extreme, the ATA may request that the Israeli Antitrust Court order the sale of either Tamar or Leviathan by one or both of the major groups involved. By implementing this remedy, however, the authorities would be gambling that other private investors would be interested in entering the Israeli market once the monopoly has been broken up. It seems questionable, however, whether many serious investors would be attracted to the market after such a drastic move. Moreover, even if the Delek Group or Noble Energy would give up a share of their production, they would likely still be dominant players. If no major actors then join, the resulting duopoly would certainly not constitute a truly competitive market.[70]

The outcome of the ATA's decision has indeed cast a shadow over the development of Israeli gas and especially for prospects for regional cooperation over the gas.[71] At the same time, some of the outcry over the monopoly stems from populist sentiments among Israeli protectionists, the ATA's feeble actions and the search for a more effective source of competition in the Israeli market.

[68] Eytan Sheshinski, of the Sheshinski Committee, has proposed pegging the domestic price to an international index, for example. Ora Coren, "Sheshinski: Pin the Israeli Gas Prices to a Similar Global Index," *The Marker*, December 23, 2014, [in Hebrew], http://www.themarker.com/dynamo/1.2520116.

[69] Ari Rabinovich, "Israeli Gas Group May Seek Arbitration in Row with Regulator," *Reuters*, December 24, 2014, http://www.reuters.com/article/2014/12/24/natgas-israel-idUSL6N0U80W720141224.

[70] For Sheshinski's comments on the ramifications of a potential duopoly, see Amiram Barkat, "Sheshinski: Breaking Up Gas Monopoly Won't Solve Anything," *Globes*, December 12, 2014, http://www.globes.co.il/en/article-sheshinski-breaking-up-gas-monopoly-wont-solve-anything-1000996235.

[71] Jordan has already halted talks over the purchase of Leviathan gas, which was intended to be bought from Noble—rather than Delek or the joint partnership—to limit the direct dealings with Israel, a politically contentious issue even in Jordan, which has diplomatic relations with Israel. Mohammad Tayseer, "Jordan Halts Talks on $15 Billion Deal for Israeli Gas," *Bloomberg*, January 4, 2015, http://www.bloomberg.com/news/2015-01-04/jordan-halts-talks-on-15-billion-accord-to-import-israeli-gas.html.

Maritime Security and Environmental Concerns

MARITIME SECURITY

The construction of energy facilities in the Mediterranean has created a new challenge for Israel: securing the facilities both in the Mediterranean and along the Israeli coast. Of the branches of the Israeli military, Israel's navy has long been the smallest and least developed. While in recent years its submarine fleet has been upgraded, new platforms are now needed to guard the maritime facilities, along with adaptation of existing systems, including unmanned aerial vehicles, at considerable cost.[72]

As in the case of other debates described above, the cost of securing the energy facilities—borne by the state—has drawn criticism from activists. Given the hostilities in the region, advanced weaponry fired from Lebanon, to Israel's north, or from the Gaza Strip or the Sinai Peninsula, to its south, could threaten both offshore and onshore facilities. In recent years, as the civil war in Syria has raged, Israel has reportedly targeted the transfer of advanced weapons to the Lebanese Hezbollah,[73] including Russian-made surface-to-sea missiles,[74] and intelligence efforts have been refocused toward threats to the maritime facilities.

The existence of new facilities will necessarily also entail new risks for Israel in future regional conflicts. Some of the onshore facilities are located just north of the Hamas-controlled Gaza Strip, near the southern Israeli coastal city of Ashkelon, while in a future conflict, Hezbollah may well try to strike energy facilities near Lebanese waters, highlighting an ongoing dispute over the demarcation of the Lebanese and Israeli EEZs, much as it does with purported land disputes. Since 2011, Lebanese and Israeli authorities have disputed the precise demarcation of their respective EEZs, potentially holding other large reserves of natural gas. Both Lebanon and Israel filed their claims on the correct demarcation with the United Nations.[75] Though both the Leviathan and Tamar fields are not part of the contested area, the U.S. government has been wary that this disagreement could stall the development of new gas fields, especially in Lebanese waters. U.S. officials have played an active, and positive, role in mediating between the two countries, which do not maintain formal diplomatic relations. To date, however, the dispute has not been settled.[76]

[72] Gili Cohen and Itai Trilnick, "Israel Navy Demands NIS 3 Billion for Protection of Gas Rigs," *Haaretz*, July 9, 2012, [in Hebrew], http://www.haaretz.co.il/1.1751818.

[73] Itamar Rabinovich, *Israel's View of the Syrian Crisis* (Washington, DC: Saban Center for Middle East Policy at the Brookings Institution, 2012, Vol. 28), 7. For additional information on Israeli efforts to thwart the transfer of advanced weapons to Hezbollah, see for instance, Mark Landler, "Israel Hints at New Strikes, Warning Syria Not to Hit Back," *The New York Times*, May 15, 2013, http://www.nytimes.com/2013/05/16/world/middleeast/israeli-official-signals-possibility-of-more-syria-strikes.html?_r=0.

[74] J. Dana Stuster, "Why Hezbollah's New Missiles Are a Problem for Israel," *Foreign Policy*, January 3, 2014, http://foreignpolicy.com/2014/01/03/why-hezbollahs-new-missiles-are-a-problem-for-israel/.

[75] Ironically, neither Israel nor the United States have ratified the United Nations Convention on the Law of the Sea (UNCLOS), which could help settle this dispute.

[76] See for instance new complaints from Lebanese officials in January 2014 Karen Ayat, "Lebanon: Israel's Intent to Unilaterally Demarcate its Maritime Borders Violates International Law," *Natural Gas Europe*, January 6, 2014, http://www.naturalgaseurope.com/lebanon-israel-maritime-borders-international-law.

ENVIRONMENTAL CONCERNS

Less appreciated, perhaps, is the environmental risk involved with the new energy discoveries. Like much of the regulatory and legislative regime, the environmental aspects of the maritime activity are not currently regulated.[77] Indeed, environmental regulation has been a casualty of the speed with which Israel has had to deal with its gas finds and with the introduction of new types of infrastructure deep in the waters of the Mediterranean. While gas leaks tend to be less severe environmentally, than oil spills, an accident in, or sabotage to, the offshore facilities could have severe, and potentially long-term, environmental ramifications.[78]

The Noble/Delek partnership, according to the leaders of the Delek Group, is employing strict standards, compliant with U.S. regulatory requirements for the Gulf of Mexico.[79] The operators are further cooperating with the Israeli Ministry of the Environment, although the latter has, as of yet, no statutory jurisdiction. There is no reason to doubt the sincerity of the partners, and they certainly have a strong interest in avoiding an accident that would entail large-scale environmental damage. However, as with any regulation, there is an inherent conflict of interest between the operators of the business and the general interest in preserving the environment.

As with other aspects of the lack of regulation, the fault is not, in fact, with the companies. From the companies' perspective, the lack of clear regulation and the specter of changing regulations seriously hurt the predictability of their business environment. However, it is not from the companies that the remedy will be found; regulatory enforcement is clearly the purview of the government.

The Israeli government and its agencies, rather, should prioritize setting environmental regulations as soon as possible to clarify not only onshore activity, but offshore activity in the country's economic waters as well.

[77] Interview with Dana Tabachnik, Director of Economy & Environment Department, *Adam Teva Vadin* (Israel Union for Environmental Defense), Tel Aviv, June 11, 2014.

[78] At present, Israel is dealing with one of its most severe environmental disasters stemming from a large oil spill in the Arava Desert north of Eilat, in early December 2014. Stuart Winer, "Massive Oil Spill Almost Twice the Size Initially Thought," *Times of Israel*, December 8, 2014, http://www.timesofisrael.com/massive-oil-spill-almost-twice-the-size-initially-thought/#!.

[79] Interview with Gideon Tadmor, CEO Avner Oil and Chairman, Delek Drilling, and Yossi Abu, CEO Delek Drilling, Herzliya, June 12, 2014.

Conclusion: Regional Cooperation and Israeli Interests

From the outset, the discovery of large gas reserves in the Eastern Mediterranean raised the prospect of regional cooperation. The volume of natural gas discovered, and, after a lengthy process, the license to export, led to a new challenge—determining what the export destinations would be. As an "energy island," energy imports were traditionally a complicated political task for Israel; now, exporting from this island has proven equally complex. Surrounding Israel one can observe a significant growth in energy demand, creating opportunities for cooperation. Yet, as discussed, complex and sometimes strained political relations with countries in the region have so far prohibited effective cooperation.

These difficulties set the bar high for the export of Israeli gas and for regional cooperation on energy. The domestic process in Israel—in particular, the continued uncertainty in the Israeli business environment described in this paper—further complicates opportunities for export, cooperation, and gas development in general. Indeed, much criticism has been levied against the Israeli authorities for the regional ramifications of their actions.[80]

The criticism of this *process* is justified, we argue. Israel's regulatory environment has changed repeatedly since the main gas discoveries were made, creating uncertainty in the market and jeopardizing the future development of the Leviathan field, one of the largest gas discoveries in the last decade. Without development of Leviathan, many of the benefits to both the region and to the Israeli economy could be lost. Moreover, the lengthy and cumbersome way in which Israel has dealt with its gas discoveries risks reputational costs to Israel as a reliable destination for foreign direct investment in energy and in other arenas.

And yet, often lost in the justified criticism of the process is the legitimate concern of the Israeli public and government authorities over *substance*. Government revenue from Israel's gas finds was indeed very low, prior to its revision. Export had to be considered both in terms of the viability of the business of energy development and in terms of the long term availability of gas for the Israeli market. Finally, the companies that operate the Tamar field and hold the license to develop the Leviathan field effectively form a monopoly, which should be dealt with, in our view, with robust regulation.

Moving forward, more effective, transparent, and consistent regulation by the Israeli authorities is crucial, using tools already at their disposal. The regulatory authority can, and should, regulate prices, and by doing so ensure that the Delek Group and Noble Energy cannot abuse their market power. Breaking up the existing monopoly, however, though addressing valid concerns, would raise new challenges. First, should Israel expect new serious investors after such a drastic move? Second, if no major player enters and the regulatory authorities force a breakup of the Noble/Delek partnership, the resulting duopoly would not fun-

[80] Gal Luft, "Israel's Gas Dream," *Middle East Forum*, December 23, 2014, http://www.meforum.org/4939/israel-gas-dream-the-end-is-nigh.

damentally solve the problem of significant market concentration.

Resolution of the lengthy domestic debates in Israel over natural gas could in due time also allow for the possibility of regional cooperation on energy. As noted above, there is significant demand for natural gas—with expectations of increasing demand—to Israel's north, east, and south. Only in a predictable domestic environment, however, can Israel, its neighbors, and the United States overcome the formidable diplomatic challenges of fostering energy cooperation in a region rife with long-standing tensions, and allow Israel to cease being an "energy island."

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