

ISRAEL'S ENERGY RESOURCE MANAGEMENT POLICY: LESSONS FOR SMALL MARKETS

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Synopsis: This article examines the process by which Israel established a management strategy for its major natural gas resources, discovered in 2009-2010. The article claims that Israel's initial approach of establishing several inter-ministerial committees to examine policy options and attempt to resolve competing public interests prior to the commencement of gas production and export was useful and unique: most states, after discovering large energy resources, embark on production and export without formulating a clear strategy. The public policy formation process in Israel was exceptional also in its approach to long term planning for security of supply, considering the long-term needs of the domestic market prior to initiation of major production and export. However, despite this exceptionally thorough initial formal policy formation process, Israel spent more than five years attempting to develop a full-fledged regulatory framework for the natural gas resources.

This article claims that standing in the way of broader utilization of these gas reserves has been two ideologically based self-imposed constraints: non-involvement of the government in establishing infrastructure and the assurance of a competitive gas market. This article claims that Israel's policy decisions on its natural gas sector were highly influenced by an international trend to promote competitive gas markets. In the last two decades, often regardless of the specifics of a potential gas market or with little study of whether competition by and large results in greater public benefit, the United States, the European Union, and international financial institutions have actively promoted establishing competitive gas markets around the world. In addition, Israel's decision to establish a competitive gas market was influenced by a domestic factor: in recent years, across the Israeli political range, support for competition in all sectors of the economy has been widespread and embraced by most political elements, both right and left on the economic ideology spectrum.

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I. INTRODUCTION

During 2009 and 2010, major natural gas deposits were discovered off the shore of Israel. With these discoveries, Israel was transformed from a state that was almost completely dependent on energy imports to a potential energy exporter. In order to establish a resource management strategy for these new discoveries, the government of Israel appointed a series of official committees to examine policy options and make recommendations to the Cabinet.[1] The Israeli government recognized that the new energy resources created significant new opportunities that should be identified through comprehensive policy analysis. The government also recognized that there were competing public interests at stake in its energy policy: fiscal, commercial, public health, geopolitical, environmental, etc., and that the conflicts between these competing public interests were best resolved through interagency discussions among various ministries and government agencies. Government officials were also highly aware that infrastructure projects in Israel are usually highly contested and often delayed for years by legal injunctions. Thus, the government aimed for a thorough policy formation process upfront that would be more resilient to legal challenges.

1. There were two main committees: The first was the Committee for Examination of the Fiscal Policy on Oil and Gas Resources in Israel (commonly referred to as the "Sheshinski Committee"), which submitted its final report in January 2011, dealing with the tax regulatory framework for oil and gas volumes. REPORT OF COMMITTEE FOR EXAMINATION OF THE FISCAL POLICY ON OIL AND GAS RESOURCES IN ISRAEL (Jan. 2011) [hereinafter SHESHINSKI REPORT] (Isr.), http://mof.gov.il/Committees/PreviouslyCommittees/PhysicsPolicyCommittee/FullReport_FullReport.pdf. The second committee dealt with the overall regulatory framework for the emerging natural gas sector, including the suggested percentages of gas for export and for the domestic market. It was called the Inter-Ministerial Committee to Examine Government Policy on the Natural Gas Sector in Israel (commonly referred to as the "Zemach Committee"), which submitted its final report in August 2012. INTER-MINISTERIAL COMMITTEE, THE RECOMMENDATIONS OF THE INTER-MINISTERIAL COMMITTEE: TO EXAMINE THE GOVERNMENT'S POLICY REGARDING NATURAL GAS IN ISRAEL: EXECUTIVE SUMMARY (Sept. 2012) [hereinafter ZEMACH COMMITTEE], http://energy.gov.il/English/Subjects/Natural%20Gas/Documents/pa3161ed-B REV%20main%20recommendations%20Tzemach%20report.pdf. Full report in Hebrew: http://energy.gov.il/subjects/ng/pages/gxmsmningcommitee.aspx.

Israel's policy process for developing its energy resource strategy was unique: most states, upon discovery of initial large energy resources, embark on production and export without formulating a clear strategy. The public policy formation process in Israel was exceptional also in its approach to long term planning for security of supply: few states upon discovering new energy resources have considered the long-term needs of the domestic market and the implications of the resource policies for the local economy prior to initiation of major production and export. Consequently, most other natural gas producing states have either exported gas until their reserves were depleted and they were forced to import gas (for example, Egypt) or revised their export policies after exporting significant quantities of gas in order to prevent shortages in the domestic market (for example, Netherlands).

Despite this exceptionally thorough initial formal policy formation process based on inter-ministerial committees, cabinet approval and review by the High Court of Justice, Israel spent over five years attempting to develop a viable regulatory framework that can realize its desired energy policy objectives and which delayed further development of the gas resources. This article claims that standing in the way of broader utilization of these gas reserves has been two ideologically based self-imposed constraints: non-involvement of the government in establishing infrastructure and the assurance of establishment of a competitive gas market. These constraints impinged the ability of the government to realize greater domestic utilization of the gas sources and other public interests such as lower gas prices, improved public health, and improved security of supply of energy. During the policy making process, in most cases when policy proposals were suggested that could improve Israel's security of supply, but entailed government direct involvement or limited the attempt to establish a competitive gas market, the representatives of the economic policy institutions, such as the Ministry of Finance, struck them down. Moreover, the security of supply elements recommended by the inter-agency committee that was established to recommend gas policy by and large were not adopted by subsequent government decisions on the gas sector.

The attempt to establish a competitive market has left Israel's security in supply of natural gas highly vulnerable: although other gas sources have been found, currently all of Israel's gas supplies are supplied from a single field, Tamar, by way of one pipeline that enters the Israeli coast in the south of Israel, in close proximity to the Gaza Strip. The subordination of energy security considerations to competition concerns is especially noteworthy, given that traditionally the Israeli government and public generally give national security considerations greater weight than most other public interests.

Throughout most of the policy formation process, Israel's policy makers and wider public did not question whether Israel should establish a competitive gas market or what are the potential draw backs of competition versus other forms of regulation. This is despite the fact that in Israel's small gas market, there are signs that the drive for competition has actually hurt Israel's energy security. Energy

security has three components: security of supply, affordability, and environmental sustainability.[2]

This article claims that Israel's policy decisions on its natural gas sector were highly influenced by an international trend to promote competitive gas markets. In the last two decades, almost regardless of the specifics of a potential gas market or with little study of whether competition by and large results in greater public benefit, the United States, the European Union, and international financial institutions have actively promoted establishment of competitive gas markets around the world. Competitive gas markets have become a goal, not a tool, with little research as to the implications of this approach, especially for small gas markets and/ or in varying geopolitical and governance circumstances. In addition, the United States, the European Union, and the international financial institutions promote privatization globally and reduced government involvement in the energy sector. In addition, Israel's decision to establish a competitive gas market was influenced by a domestic factor: in recent years, across the Israeli political range, support for competition in all sectors of the economy has been wide-spread and embraced by most political elements, both right and left on the economic ideology spectrum.

This article begins with a discussion of Israel's energy security profile and Israel's major regulatory milestones since the discovery of Israel's major gas resources in 2009-2010. It then examines the Israeli approach to the role of government and competition in Israel's natural gas sector, its policy consequences, and the relevant global trends related to the role of government in gas trade and supply infrastructure. The article concludes with lessons that can be derived from the Israeli case for other states establishing policy for managing substantial new energy reserves.

II. ISRAEL'S ENERGY SECURITY PROFILE

Each state possesses specific energy security needs and advantages based on its own geographic, climate, geopolitical, economic, technical level and other characteristics. Israel's energy security needs are affected by a number of unique challenges. One, Israel has few linkages with other countries' electricity grids and natural gas infrastructure because of the absence of peace and significant trade ties with most of its neighbors, coupled with the fact that most neighboring states are not able to provide sufficient energy supplies to their own population. In addition, Israel's energy, strategic infrastructure, and resources are potential targets for terrorists and in wars, thus obligating higher levels of security and protection than in most other countries. Israel's energy security needs are also influenced by the fact that Israel supplies almost all the electricity and liquid fuel supplies consumed in the Palestinian Authority and Gaza Strip. In addition, Israel's energy demand is affected by the power needs for desalination plants that produce much of Israel's water, as well as significant water volumes supplied to the Palestinian Authority and Jordan.

2. *See* BRENDA SHAFFER, *Introduction* to BEYOND THE RESOURCE CURSE 4 (Brenda Shaffer & Taleh Ziyadov eds., 2012).

Israel's energy demand is affected by its small size and relatively small population (approximately 8 million). Most sectors of Israel's economy are also highly concentrated in the hands of a few market players. This is true of the energy sector and, in particular, the nascent natural gas sector, which has a very small number of participants.

Israel's energy needs are also affected by the country's relatively moderate climate, which results in a limited demand for heating. While there is greater demand for cooling, it is significantly less than in other parts of the Middle East. In addition, industrial use of energy is low relative to Israel's GDP.

Israel also has a high level of energy efficiency, on par with most Western European states, due to a number of factors including the lack of heavy industry, high electricity prices (partly as a means to encourage low consumption), and considerable adoption of technologies to decrease energy, water and other resource use. In addition, due to the small size of the country, less energy is needed to transport physical goods and average commuting distances are relatively small.

III. MILESTONES IN ISRAEL'S NATURAL GAS SECTOR DEVELOPMENT

Until the late 1990s, Israel had not identified significant energy deposits and was almost entirely dependent on imported fossil fuels for its energy supply.[3] In order to encourage exploration, Israel adopted a market–oriented policy of granting free concessions for oil and natural gas exploration in Israel's Exclusive Economic Zone (EEZ). Since the major gas discoveries, Israel also refrained from establishing a national oil company to engage or serve as a partner in the offshore exploration efforts.[4] The only exception Israel made to its following of the private sector model was its 2003 establishment of Israel Natural Gas Lines Company, a state-owned company, which operates the on-shore gas transmission system.

Israel's first substantial commercially recoverable fossil fuel discovery was in 1999 at the Noa and Mari-B fields in the Mediterranean near Ashkelon (the fields are collectively known as Yam Tethys). These fields contained approximately 32 Bcm of gas (U.S. company Noble Energy was the operator of this project) and were discovered under an exploration license owned by the U.S. company Noble Energy and the Israeli Delek Group.[5] The State-owned Israel Electric Cooperation (IEC) purchased most of the gas produced from Yam Tethys, enabling Israel's first use of natural gas in power generation beginning in 2004.[6]

Following this milestone, and the subsequent lowering of air pollution rates and electricity production costs, subsequent Israeli governments pursued efforts to bring additional natural gas volumes to Israel through gas supply deals with Russia, Egypt, and Azerbaijan. In addition, in 2007, Israel also decided to commission an LNG import facility.

3. For more on the history of Israel's energy sector, *see* Brenda Shaffer, *Israel—New Natural Gas Producer in the Eastern Mediterranean*, 39 ENERGY POL'Y 5379 (2011).

4. In the 1950s, Israel established two state-owned companies for oil exploration in Israel and that later explored in the Sinai Peninsula when the area was under Israeli control. These companies were privatized in 1965 and 1996 respectively.

5. Shaffer, *Israel—New Natural Gas Producer in the Eastern Mediterranean*, *supra* note 3.

6. Yam Tethys ceased production in 2013.

Of the potential gas import sources, Israel was especially keen on importing gas from Egypt. Policy-makers viewed the gas trade with Egypt as a means of reinforcing the peace accord with its southern neighbor. The first natural gas from Egypt began to flow in 2008. The IEC contracted the gas supplies from Egypt through the Eastern Mediterranean Gas and Oil (EMG) company. EMG also built an undersea pipeline from Egypt's city of El Ariash in the Sinai Peninsula to the Israeli port of Ashkelon. From the inception of the contract arrangement, the Egyptian gas supplied to the EMG project rarely met its supply obligations. This supply source became increasingly erratic throughout 2011 as a consequence of multiple sabotage attacks on the gas pipeline in Egypt's Sinai Peninsula. The gas supplies ceased completely in March 2012.[7]

In 2009-2010 there were a series of major natural gas discoveries offshore Israel that dramatically changed Israel's energy supply situation. In January 2009, the Tamar natural gas field was discovered off Haifa's coast (at a depth of 1650 m).[8] The field contains approximately 282 Bcm of gas.[9] The field was discovered within the framework of a license held by a joint venture of Noble Energy, the Delek Group, Dor Gas Exploration and Isramco Negev. In April 2009, the Dalit field was discovered offshore near the Israeli town of Hadera, containing approximately 8 Bcm of gas.[10] The license is held by Noble Energy, Delek Group, Dor Gas Exploration, and Isramco Negev.

Next came Israel's most dramatic gas discovery. In June 2010, a massive gas field, Leviathan, was discovered off the coast of Haifa (at a depth of 1645 m). The exploration license is held by Noble Energy, Delek Group, and Ratio Oil Exploration.

In November 2011, explorers operating under a license held by Delek, Noble, and Ratio, discovered a very small gas field, later named Dolphin. The field is estimated to contain only a few Bcm of gas.[11] In 2012-2013, two additional small gas fields were discovered offshore Israel, the Tanin and Karish fields, which collectively contain approximately 55 BCM of gas.[12] The exploration license was held by Noble Energy (47%) and Delek Group (53%).[13]

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7. MINISTRY OF NATIONAL INFRASTRUCTURE, Energy and Water Resources *Israel Natural Gas Sector* (Isr.), http://energy.gov.il/Subjects/NG/Pages/GxmsMniNGEconomy.aspx (last visited Sept. 14, 2016). Officially, the contract to supply to Israel via EMG was unilaterally cancelled a month later on April 2012 by the Egyptian Natural Gas Holding Company (EGAS).

8. State of Israel, Ministry of National Infrastructure, Energy and Water Resources, PETROLEUM AND NATURAL GAS PROSPECTING (last accessed, Oct. 24, 2016), http://energy.gov.il/ENGLISH/SUBJECTS/OILANDGASEXPLORATION/Pages/GxmsMniPetroleumAndNaturalGasProspecting.aspx. [hereinafter ISRAELI GAS OPPORTUNITIES].

9. State of Israel, Ministry of National Infrastructure, Energy and Water Resources, ISRAELI GAS OPPORTUNITIES 4 (September 2016), http://energy.gov.il/English/PublicationsLibraryE/Israeli%20Gas%20Opportunitties.pdf.

10. *Id.*

11. Lior Guttman, *Lost a Discovery? The Ministry of Energy decided that "Dolphin" will not be recognized as a Discovery*, CALCALIST (July 21, 2016), http://www.calcalist.co.il/markets/articles/0,7340,L-3693763,00.html.

12. ISRAELI GAS OPPORTUNITIES, *supra* note 9.

13. Initially the license was held by Noble (47%), Delek Drilling (26.5%), and Avner Oil and Gas Exploration Ltd. Partnership (26.5%). The Delek Group is the major shareholder of both Delek Drilling (69%) and Avner (51%).

A. Short-Term Measures

The government of Israel took a number of steps in 2011-2012 to address the immediate supply crisis the country's power sector faced by the cessation of gas supplies from Egypt. Most importantly, the government fast-tracked the development of the Tamar field to supply the Israeli domestic market. In March 2013, Tamar began production and in April 2013 the first gas from the field reached the Israeli domestic market. Tamar's development took place in record speed, enabled by government supported measures, such as fiscal incentives, flexible pledges policy, mitigating lease conditions, and disregarding anti-trust issues, due to the emergency situation of assuring supplies to the domestic market.

In the interim period after cessation of the Egyptian supplies and prior to the commencement of production of the Tamar gas field, electricity supplies were sustained primarily through transfer of a large portion of electricity production to fuel oil and diesel. The use of oil and diesel for electricity production in lieu of the natural gas supplies led to a dramatic increase in the air pollution rate in Israel in 2012 and estimated increased costs of 10 billion shekels (2.6 billion USD).[14]

The development of the Tamar gas field and its commencement as a supply source to the Israeli domestic market was accomplished within three years. Tamar's production allowed Israel to offset the shortage created by the interdiction of Egyptian gas supplies and to remove fuel oil almost completely from the nation's electricity fuel mix. Due to the urgent needs for the new gas supplies to compensate for the loss of the Egyptian gas, there was no opposition in the government or public to fast-tracking this process.

Along with fast-tracking the development of Tamar, the Ministry of Energy and Water Resources decided to establish a floating LNG regasification facility. The IEC commissioned and began construction of the facility in October 2012. Since January 2013, Israel has received intermittent imports of LNG supplies.[15] This floating regasification facility was established in order to augment the security of supply of natural gas to the domestic market, which would be served from 2013 only by the Tamar field through a single pipeline. The facility also provides some gas storage for Israel, having a capacity of 138,000 cubic meters.[16]

B. Policy Process to Form Energy Resource Management Strategy

Following the major natural gas discoveries, the Israeli government sought to take a long-term strategic approach to policy to govern the emerging natural gas sector. It appointed a series of committees to recommend new regulatory frameworks to govern the energy sector and promote Israel's national interest

14. Particle emissions increased 13.7% from a total of 2870 tons in 2011 to 3263 tons in 2012. In 2013, these numbers dramatically dropped by 86% to 452 tons of particle emissions due to the return of gas into the fuel mix of the IEC. State of Israel, Ministry of Envtl. Prot., REPORT OF AIR QUALITY MONITORING FOR THE YEARS 2001-2013 17 (Feb. 2015) (Isr.), http://www.sviva.gov.il/infoservices/reservoirinfo/doclib2/publications/p0701-p0800/p0777.pdf.

15. Press Release, Pub. Util. Auth., Electric Authority Approves the Cost of Ship Leased by the IEC (Oct. 14, 2012) (Isr.), http://pua.gov.il/Publications/PressReleases/Pages/20121014.aspx.

16. Alan Townsend, *Around the World in FSRU's - LNG Floating Storage and Regasification Units: Innovations, Lessons and Cautionary Tales*, WORLD BANK PRESENTATION 4 (October 2015), https://energypedia.info/images/4/40/Around_the_World_in_FSRUs.pdf.

through its gas policies. The first committee was appointed in April 2010 by Israel's Minister of Finance (then Dr. Yuval Steinitz, the current Minister of National Infrastructure, Energy and Water Resources) to recommend a revised fiscal regime for energy resources. The Committee was headed by Professor Eytan Sheshinski. In December 2010, the "Sheshinski Committee" published its recommendations, which were adopted into law by the Israeli parliament in March 2011.[17]

In October 2011, Israeli Prime Minister Benjamin Netanyahu and the Minister of National Infrastructure Dr. Uzi Landau appointed the Inter-Ministerial Committee to Examine Government Policy on the Natural Gas Sector in Israel, headed by the Director-General of the Ministry of Energy and Water, Shaul Zemach (commonly referred to as the "Zemach Committee").[18] Under the belief that "diversity improves the final results," committee members were chosen from eight Israeli ministries and various government authorities, including: the Ministry of Energy and Water Resources, the National Economic Council and the National Security Council in the Prime Minister's Office, the Ministry of Foreign Affairs, the Ministry of Finance, the Ministry of Environmental Protection, the Attorney General's office, and Israel's Anti-Trust Authority.[19] The Zemach Committee met over eleven months, and submitted its final report to the Prime Minister in September 2012.[20]

The Committee was tasked with three goals in its appointment letter:

- To examine various models of government policies for natural gas in countries which possess similar characteristics to Israel, while taking into consideration Israel's unique geopolitical situation.
- To examine projected supply and demand according to different scenarios and assumptions. On the supply side, to estimate both present discoveries and potential future discoveries.
- To propose government policy for development of the natural gas sector in Israel, balancing the following goals: ensuring domestic energy supplies, fostering competition in the domestic market, and maximizing economic and political benefits. The Committee was requested specially to examine the proper balance between preserving reserves for the domestic market and exports.[21]

One of the most interesting charges to the Committee in the appointment letter was for the Committee to propose policy for establishing "competition in the

17. SHESHINSKI REPORT, supra note 1.

18. The name of the ministry changed a number of times over the years. Until 1977 it was called the "Ministry of Development," and between 1977-1996 it was called the "Ministry of Energy and Infrastructure." between 1996-2011 it was called the "Ministry of National Infrastructures." The name of the ministry was changed again in December 2011 to the "Ministry of Energy and Water." In August 2013, it was changed again to its current name: the "Ministry of National Infrastructures, Energy and Water Resources."

19. Author's interview with Shaul Zemach, Director-General of the Ministry of Energy and Water, March 2015, Israel.

20. *Zemach Committee*, supra note 1.

21. Letter of Appointment from Inter-Ministerial Committee to Examine Government Policy on the Natural Gas Sector in Israel (Oct. 2, 2011) (Isr.), http://energy.gov.il/AboutTheOffice/SpeakerMessages/PublishingImages/Doc14264[1].tif.

domestic market along its various components."[22] The Committee was not asked to examine how and where competition can and should be established in the Israeli gas sector, rather it was tasked to recommend policies on how to implement competition. This reflected two underlying assumptions: a competitive gas market is the best regulatory approach, and Israel's gas market is amenable to competition.

The Zemach Committee studied various policy options to manage the new natural gas resources and emerging gas sector. The Committee recognized that natural gas policy would affect and be affected by developments in related markets such as electricity and industry and that these mutual influences must be evaluated as part of the policy formation on the natural gas.[23] In addition, reflecting the research methodology of the Committee, the chair tasked competing teams to examine the same policy questions. The Committee employed a number of Israeli and international advisors from diverse countries, trained in different regulatory approaches to energy policy based upon their respective countries' unique energy security needs and thus often suggesting diverging policy approaches.

As stipulated in its appointment letter, the Zemach Committee conducted in-depth and comparative studies of worldwide practices in the natural gas sector. As part of this study, the Committee examined the gas markets and policies in thirty different countries around the world, and focused its study on twelve of them, which shared many characteristics with Israel, such as scale of resources and their location (offshore, ultra-deep natural gas deposits). The Committee set out to identify and adopt existing models, policies, and best practices used by countries that Israel views as suitable, primarily from OECD members such as the United States and European Union member states. The government also sought to assess and balance the needs of the domestic market as compared to the potential fiscal and other benefits that might arise from quicker monetization of the natural gas resources.

During the deliberations, one of the major constraints limiting the policy options available to the Committee was the opposition of the Ministry of Finance to any policies that would support government involvement in establishing major energy infrastructure directly or indirectly through finance measures that might be introduced by the government. Thus, in order to win unanimous support, other members of the Committee were forced to abandon policies that they viewed as important for security of supply, such as a government role in establishing gas storage facilities, building a second pipeline connection from one or both of the two large gas fields, purchasing gas in bulk, or establishing common off-shore infrastructure.[24]

Dr. Uzi Landau served as the Minister of Energy and Water during the period that the Zemach Committee conducted its research and policy recommendation formation and saw security of supply to the domestic market as the top priority of the government's natural gas policy. The Committee also viewed security of supply to the domestic market an important priority and succeeded in

22. *Id.*

23. Author's interview with Shaul Zemach, Director-General of the Ministry of Energy and Water, March 2016, Israel.

24. Based on author's interviews 2011 and 2016, Israel.

incorporating a number of principles in the report aimed at securing gas supplies for the Israeli domestic market. The first was that no volumes would be counted as part of Israel's total gas volumes (and thus affect the amount of volumes available for export) unless a field was in production and connected to the Israeli domestic infrastructure.[25] Second, no export would be allowed from the Tamar field (which would serve as the main source of gas to the Israeli domestic market) before the Leviathan field would be in production and connected to Israel.[26] However, subsequent government decisions would remove these stipulations that aimed at ensuring Israel's security of supply.

The Zemach Committee resolved the issues in its mandate with one exception: the issue of competition. The Committee proposed allowing the investing companies to produce the gas and establish infrastructure jointly, but require them to market their gas separately.[27] This mechanism, while superficially attempting to address the issue of competition, was highly unlikely to create actual competition. The Anti-Trust Commissioner, Prof. David Gilo, was a member of the Zemach Committee. During the deliberations, the Commissioner refused to offer anti-trust guidelines as part of the Committee recommendations or to give his view on those suggested by the Committee. He asserted that as an independent authority it was inappropriate for the Anti-Trust Authority to state a position on competition issues in a collective inter-ministerial format.[28]

On August 29, 2012 the inter-ministerial committee submitted its policy recommendations to the Prime Minster of Israel,[29] which were adopted by the Cabinet of Ministers with few alterations on June 23, 2013.[30] Soon thereafter, petitions to block implementation of the policy were submitted to Israel's High Court of Justice.[31] In October 2013, the High Court of Justice rejected these petitions.[32]

Nevertheless, following the court's action, Anti-Trust Commissioner declared Delek and Noble were acting as a monopoly in supplying gas to the Israeli market.[33] He then held discussions in Spring 2013 with the company

25. *Zemach Committee*, supra note 1.

26. *Id.*

27. *Id.*

28. *Id.*; Restrictive Trade Practices Law, § 41(A)-(C) (1988) (Isr.), http://www.antitrust.gov.il/files/24303/מלא%20נוסח%20העסקיים%20ההגבלים%20חוק.pdf.

29. Press Release, Ministry of Energy, Announcement on the Existence of a Monopoly: Delek Drilling Ltd. Partnership Together with Avner Oil and Gas Exploration Ltd. Partnership, Noble Energy Mediterranean Ltd., Isramco, Negev 2 ltd. Partnership, and Dor Gas Exploration Ltd. Partnership (Nov. 13, 2012) (Isr.), http://www.antitrust.gov.il/subject/121/item/25986.aspx.

30. *Zemach Committee*, supra note 1.

31. Israel's Supreme Court hears petitions also as an Administrative Court with direct petition (not appeals court).

32. State of Israel, Supreme Court, Seated as High Court of Justice, VERDICT4491/13; 459313/, http://elyon1.court.gov.il/files/13/910/044/s12/13044910.s12.pdf.

33. State of Israel, Antitrust Authority, DECLARATION ON THE EXISTENCE OF A MONOPOLY: DELEK DRILLING LTD, TOGETHER WITH AVNER OIL AND GAS EXPLORATION LTD, NOBLE ENERGY MEDITERRANEAN LTD, ISRAMCO NEGEV 2 LTD AND DOR GAS EXPLORATION LTD, (November 13, 2012). (Hebrew), http://www.antitrust.gov.il/files/11526/%D7%94%D7%9B%D7%A8%D7%96%D7%AA%20%D7

representatives in an attempt to formulate an agreeable anti-trust formula. Reportedly, he had concluded with the companies that if Delek and Noble Energy relinquished their licenses in the two small fields—Karish and Tanin—he would sanction their holdings of the two main gas fields as not constituting an anti-trust concern.[34] But this proposal, while acceptable to the investing companies, would not have provided bona fide competition in the natural gas market and most likely would have been rejected by the courts on basis of anti-trust violation. Production at Israel's small fields could not provide meaningful competition to significantly larger fields that most likely will be in production primarily during different time periods. Also, due to small size of their volumes, the small fields can supply the Israeli domestic market only for a short period (if they supply a major portion of the domestic consumption).

Following media reports of the emerging anti-trust arrangement, there was significant public backlash, led by interest groups, major media outlets and opposition party politicians. In addition, the Anti-Trust Commissioner evidently estimated that the arrangement he was proposing might not be sanctioned by the courts. During December 2014, the Anti-Trust Commissioner retreated from his earlier proposal. With the anti-trust issue unresolved and the resulting regulatory uncertainty, the companies could not conclude contracts with potential consumers in Israel and abroad, and thus production in additional natural gas fields was stalled.

Conclusion of natural gas supply contracts was further complicated by an additional anti-trust policy: The Electricity Authority (which is appointed by the Minister of Energy and Water) did not allow the Israel Electric Corporation to sign long term contracts with Tamar or Leviathan, in order to leave open the option of future competition for contracts with the IEC.[35] Consequently, without an anchor contract with Israel's largest potential gas buyer, the effort to expand production at Tamar or develop the Leviathan field had to rely on export contracts for development.

C. Addressing Anti-Trust

In December 2014, the Israeli government charged a team of officials led from the Prime Minister's office with developing a policy framework that could address the anti-trust concerns while encouraging the investing companies to move toward production from Leviathan and Israel's small gas fields and further development of the Tamar field. In contrast to the other Israeli committees that examined policies for the gas sector, the group's official mandate and initial membership was not made public.[36]

In response to the emerging policy proposal, Anti-Trust Commissioner Gilo resigned on May 25, 2015. On June 30, 2015, the first draft of the government-

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34. State of Israel, Antitrust Authority, PRESS RELEASE: ANTITRUST COMMISSIONER FORCES DELEK AND NOBEL TO SELL AT LEAST 70 BCM TO COMPETITOR (March 27, 2014).

35. Based on interviews with officials in the IEC, 2013, Israel.

36. STATE OF ISRAEL, Protocols of Discussions on Natural Gas Framework (June 30, 2015) (Isr.), http://www.mof.gov.il/reportsandreviews/documents/naturalgasprotocols_main.pdf.

proposed policy framework (Framework) was released for public review.[37] The Framework proposed that Delek and Noble should be required to divest significant holdings.[38] It proposed that Delek should completely divest from Tamar (it currently holds 31.25% of the shares), while Noble Energy reduce its share from its current 36% to 25%.[39] The proposal did not call for any change in the ownership structure of Leviathan. In addition, the Framework called on both companies to divest completely from their holdings in the small Tanin and Karish fields within fourteen months of formal adoption of the Framework.[40] The Framework document stated that the government would propose at a later date a number of incentives to ensure the purchase and development of these small fields.[41] It also included a stability clause in which the government agreed not to change the regulatory framework governing the natural gas sector for ten years.[42] A formula for setting the price for gas sales was also included in the document. On August 16, 2015, the Cabinet adopted the Framework.[43]

While the Framework was being developed, the Prime Minister acted to circumvent the Anti-Trust Commission's authority in order to facilitate the Framework's adoption.[44] As part of the publication of the Framework document, the Ministry of Energy and Water Resources published official briefs from the Director General of the Ministry of Foreign Affairs and the National Security Advisor declaring that urgent national security and foreign policy considerations exist that obligate exemption from anti-trust considerations.[45]

37. Draft Framework to Increase the Amount of Natural Gas Produced by "Tamar" Natural Gas Field and the Quick Development of "Leviathan", "Karish", and "Tanin" Natural Gas Fields and Other Natural Gas Fields, MINISTRY OF ENERGY (Dec. 3, 2015) [hereinafter Draft of Framework] (Isr.), http://energy.gov.il/abouttheoffice/newsandupdates/documents/shimua/dov_312_2015.pdf.

38. State of Israel, Prime Minister's Office, FRAMEWORK TO INCREASE THE AMOUNT OF NATURAL GAS PRODUCED FROM TAMAR FIELD, AND FOR THE RAPID DEVELOPMENT OF LEVIATHAN, KARISH, TANIN AND OTHER NATURAL GAS FIELDS (DECISION 476), (August 16, 2015), http://www.pmo.gov.il/Secretary/GovDecisions/2015/Pages/dec476.aspx.

39. *Id*. at Appendix A, Section 3: 11-12.

40. *Id*. at Appendix A, Section 3: 1-8.

41. *Id*. at Section 11: 7.

42. *Id.* at Section 10: 6.

43. STATE OF ISRAEL, Framework to Increase the Amount of Natural Gas Produced by "Tamar" Natural Gas Field and the Quick Development of "Leviathan", "Karish", and "Tanin" Natural Gas Fields and Other Natural Gas Fields, Resolution No. 476 (Aug. 16, 2015) (Isr.), http://www.pmo.gov.il/Secretary/GovDecisions/2015/Pages/dec476.aspx; STATE OF ISRAEL, Amendment to the Framework to Increase the Amount of Natural Gas Produced by "Tamar" Natural Gas Field and the Quick Development of "Leviathan", "Karish", and "Tanin" Natural Gas Fields and Other Natural Gas Fields, Resolution No. 1465 (May 22, 2016) [hereinafter Amendment to the Framework] (Isr.), http://www.pmo.gov.il/Secretary/GovDecisions/2016/Pages/dec1465.aspx.

44. Article 52 of the law establishing the Anti-Trust Authority authorizes the Minister of Economy following consultations with the Committee of the Economy of the Knesset, to exempt a business that is breaching the orders of this law, completely or partially, if he assesses that this is necessary due to foreign policy or national security considerations. State of Israel, Antitrust Law § 52 (1988), https://www.nevo.co.il/law_html/law01/083_001.htm.

45. The briefs of the National Security Advisor and the Ministry of Foreign Affairs were made available in Hebrew at the Ministry of National Infrastructure, Energy and Water Resources: Brief of Ministry of Foreign Affairs, National and Strategic Aspects to the Development of the Gas Fields (July 1, 2015) (Isr.), http://energy.gov.il/abouttheoffice/newsandupdates/documents/shimua/ngmfa.pdf. Brief of National Security Council, Natural Gas Sector in Israel – National Security Aspects and Repercussions from Delays in the

The Minister of Economy at the time, Arie Deri, evidently concerned about public backlash, refused to sign the unpopular order without backing from a Knesset decision. When it was clear that the Knesset would not support this move, Deri resigned on November 1, 2015, and Prime Minister Netanyahu assumed the position of Minister of Economy.[46] On December 17, 2015, Mr. Netanyahu as Minister of Economy signed the order to exempt the gas sales arrangement from anti-trust violations based on Article 52 of the Law on the Anti-Trust Authority.[47] On January 11, 2016, a variety of petitions were submitted to Israel's High Court of Justice to prevent implementation of the Framework, asserting that the exemptions from anti-trust rules were illegal. On March 27, 2016, the High Court of Justice accepted parts of the petitions and prevented implementation of the stability clause of the Framework.[48] On May 18, 2016, the Ministry of Energy announced that a revised Framework agreement was concluded with the investing companies that reduced the scope of the stability clause, and on May 22, 2016, the government formally adopted the revised Framework document.[49]

As part of its efforts to create a competitive gas market in Israel (and fulfillment of its obligations in the Framework document), the government of Israel decided to establish a set of incentives that would give advantages to the small fields and new producers, in comparison to production from the Tamar and Leviathan fields. Among the proposed incentives is that the Israel Electricity Authority (the government regulatory body that oversees the electricity sector and sets the prices) would set a higher price for electricity produced from gas from the small fields. As a result, the Israeli consumer would have to pay higher electricity prices in attempt to create a market with multiple suppliers.

While the main goal of the Framework was to remove the anti-trust limitations, it also removed some energy security cornerstones of the Zemach Committee recommendations. For instance, the recommendations had called for prohibiting exports from Tamar before Leviathan was in production. In addition, the Framework removed the stipulation that only fields that had a physical connection to the Israeli market would be counted as proved volumes for the sake of setting exports quotas. As a result, the current Framework document has created significant security of supply challenges, such as making a second pipeline dependent on export projects. Moreover, Israel was left with a highly vulnerable gas supply situation, with only one gas field in Israel supplying all the country's gas needs through a single pipeline throughout the period of forming a policy that addresses the anti-trust concerns.

Expansion and Export of Natural Gas (July 1, 2015) (Isr.), http://energy.gov.il/abouttheoffice/newsandupdates/documents/shimua/ngmalal.pdf. Brenda Shaffer, author of this article, submitted an amicus brief to the High Court of Justice opposing the claim that there were urgent national security and foreign policy considerations that mandated natural gas exports. Brief of Brenda Shaffer, Foreign Policy and National Security Implications of the Natural Gas Policy Framework (Dec. 22, 2015) (Isr.), http://media.wix.com/ugd/58a970_494bf3d38acb4b478fb6d63a8e222456.pdf.

46. In addition to being the Prime Minister, Netanyahu also held the portfolios of the Ministry of Foreign Affairs, the Ministry of Communications, and the Ministry of Regional Cooperation.

47. Draft of Framework, *supra* note 37.

48. State of Israel, Supreme Court, Seated as High Court of Justice, VERDICT 4374/15, 7588/15, 8747/15, 262/16 (March 27, 2016), http://go.calcalist.co.il/pic/contralmanager/gas.pdf.

49. Amendment to the Framework, *supra* note 43.

IV. ISRAEL'S APPROACH TO THE ROLE OF GOVERNMENT AND COMPETITION IN THE NATURAL GAS SECTOR

The self-imposed constraints focused on promoting competition and eschewing a government role in establishing energy infrastructure limited Israel's policy options in promoting its larger energy security goals. This article claims that these policy goals were influenced to a considerable degree by a larger global trend related to the role of government in energy markets that had taken place. The establishment of competitive gas markets and privatization of energy production and supply infrastructure has become a regulatory norm in the United States, Europe, and other major market economies. A vast reduction of the role of government in natural gas trade and infrastructure development has occurred in the United States, is underway in Europe, and is attempting to be followed in a number of market economies around the globe. In most spheres, Israel emulates U.S. and European regulatory models and tends to evaluate itself by how it measures up to these and other OECD member countries.

Indeed, commitment to these models has even superseded national security considerations as illustrated by policy deliberations on establishing a second gas supply pipeline from the offshore fields to Israel. There was widespread consensus among the nation's various policymakers and experts that it would be highly risky to have all of Israel's gas supplies sourced from a single field, through a single pipeline, that enters Israel near the Gaza Strip. A properly functioning gas supply system should have backup infrastructure that could cope with various technical, weather, or other disruptions that might arise. In the case of Israel, frequent terrorism attacks, and regular involvement in wars, requires an especially robust energy supply system. However, at almost every juncture in the natural gas policy formation process that such a direct role has been proposed it was quickly struck down by Ministry of Finance representatives. Thus, the Government of Israel generally believes it should not have a role in funding, commissioning or otherwise directly establishing energy infrastructure, irrespective of the potential security consequences.

It is instructive that the only major new gas supplies since the major natural gas discoveries—-the quick development of the Tamar gas field and its connection by pipeline to the Israeli market—was made possible through direct government actions and by ignoring competition concerns. The urgent concrete national security need to replace the Egyptian gas convinced the government to make a series of regulatory exceptions that facilitated quick development and allowed it to proceed without public protest or media controversy. If the government of Israel had taken anti-trust limitations into consideration in bringing Tamar into production, Israel would not have been able to gain access to this gas supply. While the Israeli press, especially the left-leaning newspaper *Haaretz* and a large number of civil society organizations that focus on rule of law and good governance in Israel, have challenged almost every aspect of the government's policy initiatives in the gas sector, few even discussed, let alone challenged, the fast tracking of Tamar and its subsequent, circumvention of standard tender processes, anti-trust limitations, and government involvement due to the urgent need for the gas supplies.

A. Insistence on a Competitive Gas Market Despite No Precedent and No Clear Public Benefit

With the exception of the fast track development of Tamar, in Israel's policy process to set a regulatory framework and management strategy for the new energy resources, almost all the major actors insisted the market for gas supplies be competitive. This is evident in the appointment document for the Zemach Committee, the deliberations of the representatives of the various government ministries and authorities, political opposition representatives, and members of public organizations involved in influencing the gas policy from all sides of the Israeli political spectrum.

The Zemach Committee members were presented with an overview of the state of gas market structures around the world and it was pointed out that there was not one precedent of a market the size of Israel that was competitive.[50] Yet, despite being acquainted with the exceptionalism of small gas markets, the Committee refrained from acknowledging that competition was not attainable in Israel's small market and nevertheless attempted to design a competitive regulatory framework.

In fact, missing from the energy policy debate in Israel was not only if competition is attainable, but whether it would be beneficial. Not only has there been wide public and policy maker support for the need to establish a competitive gas market in Israel, there has been no discussion in the formal government committees or publically as to whether competition results in public benefit. This is despite that fact that in Israel's small market there are indications that the drive for competition actually hurts Israel's energy security. As pointed out, energy security has three components: security of supply, affordability, and environmental sustainability.[51] In terms of security of supply, the supply of gas to Israel's domestic market would be less vulnerable to disruptions if the fields were managed in coordination. For instance, the small fields if operated in coordination with supplies from Tamar and/or Leviathan, could be useful for balancing demand fluctuations and as gas storage. Moreover, the delay in development of additional fields left Israel potentially vulnerable to supply disruptions. The drive for a competitive gas market has delayed development of additional gas fields in Israel and thus the expanded use of natural gas, with its resulting environmental and public health benefits. The government incentives for development of Israel's small fields will most likely result in higher electricity prices, thus hurting affordability.

Establishment of a competitive gas market in Israel was supported by wide-scale public demand, as part of the struggle of a wider economic social justice movement that had emerged in Israel in the summer of 2011. Israeli policy makers by and large felt that they needed to be responsive to this movement's demands that enjoyed wide support across the Israeli political spectrum, and thus avoided any policy options that did not include a competitive gas market, as well as public

50. Presentation submitted to The Inter-Ministerial Committee to Examine Government Policy on the Natural Gas Sector in Israel (November 2011 and January 2012); BRENDA SHAFFER, INTERNATIONAL TRENDS IN NATURAL GAS SUPPLY (Nov. 2011 & Jan. 2012) (Isr.), http://energy.gov.il/Subjects/NG/Documents/Transcription/PresentationCo/BS.pdf.

51. BRENDA SHAFFER, *supra* note 2, at 4.

policy discussions on the potential negative consequences of the attempt at competition.

In the summer of 2011, a mass economic protest movement emerged in Israel. These protests focused on housing and food prices, Israel's income gap, the perceived intermingling between Israel's political and economic elites, and the rising concentration of the Israeli economy in the hands of a small number of tycoons. The movement held a major two-month long sit-in at the center of Tel Aviv and organized one of the largest demonstrations in Israel's history, reportedly attended by close to 400,000 people.[52]

This political protest movement in its slogans and platforms for policy action promoted competition as the panacea for their issues of concern in the Israeli economy. For instance, high food prices would be solved by importing food from additional suppliers. The recent deregulation of the cellular telephone sector, which created greater competition between companies, was viewed as a success that should be emulated and applied to additional sectors. The movement demanded that competition be applied to the emerging natural gas sector as well.

This economic protest movement transformed its activities to focus on Israel's natural gas policies from approximately mid-2013. They organized frequent protests, intensive media campaigns, and turned the gas issue into the focus of their activities. The same activists of this protest movement became the leaders of the protest movement focused on Israel's gas policies. The same Twitter, Facebook, and other online mobilization tools used to rally activists to the general protests in 2011 on Israel's economy were used in the service of the protest movement against Israel's gas policies. The main speakers of the economic protest movement became the central spokespeople of the gas policy protest movement. Since breaking up the power of economic oligarchies and monopolies was a central issue of their movement, they campaigned for competition in the natural gas sector, regardless of the differences between this sector and other goods, such as food and cell phone markets.

It seems that one of the reasons that Israeli policy makers did not seriously evaluate regulatory options outside of the attempt at competition, nor the benefits of a competitive model, is their perceived constraints from a wide spread public support for competition. The only major political figure that was willing to challenge the benefits of competition in the natural gas sector and go against this popular trend was the former Minister of Environmental Protection, Avi Gabai, who had also opposed the Framework document.

B. Global Trends in the Role of Government in Gas Trade and Supply Infrastructure

In addition to the developments in the domestic Israeli political arena, Israel's approach to the appropriate role of government in the energy sector was highly influenced by regulatory trends in the world's leading market based economies. Beginning in the second half of the twentieth century, significant changes have taken place in the role of the state in energy trade and energy supply infrastructure.

52. The Marker Online, *Over 400 Thousand People Protested Across the Country: We are the New Israelis* (Hebrew). THE MARKER (September 3, 2011), http://www.themarker.com/news/protest/1.1306272.

The United States, the European Union, and many market-oriented states have engaged in policies that have significantly reduced government involvement in the energy sector, beginning first with oil trade, then power generation and trade in the natural gas sector. This market "liberalization" process has opened up energy markets in many places in the world to competition through deregulation, forced unbundling of energy companies, and privatization of state energy companies and energy infrastructure, such as ports, grids, and storage facilities.

Liberalization of energy trade and energy supply infrastructure has different implications based on the specific energy good that is traded and supplied. The trade and supply of oil and coal, as fungible commodities, was amenable to market deregulation. However, the deregulation of trade and supply of natural gas, which requires extensive permanent infrastructure and large scale investments in both production and transport, presents significantly different policy questions.

To date, there are only a few functioning competitive gas-on-gas markets around the globe; they exist in the United States, United Kingdom, and the Netherlands/Germany. Despite their rarity, however, such markets are promoted as a benchmark standard by international financial institutions, such as the International Monetary Fund. In addition, U.S. government institutions, such as the State Department's Bureau of Energy Resources, the U.S. Agency for International Development (USAID), and the U.S. Department of Energy promote liberalization and privatization of gas (and power) trade and infrastructure around the globe.[53] Not only are competitive gas markets the exception, most gas markets don't near the scale of those that exist. The U.S. gas market is used as an example for emulation around the world. However, the U.S. natural gas market, with its hundreds of participants, is fundamentally different than gas markets in small countries containing few players.

In promotion of establishment of competitive gas markets, the proponents do not give much consideration to the differences in various markets—such as scale, level of rule of law, quality of governance, and geopolitical circumstances.[54] While clearly scale affects the prospects of results of competition, size and amount of players is not taken into consideration in most of the policy efforts to promote competitive gas markets.

Experts faced with the limitations of small markets with insufficient domestic players frequently recommend interconnections with neighbors and creating regional markets. This suggestion ignores the reality of most of the world's regions outside Europe and North America, in which border conflicts, corruption, and an absence of well-functioning legal systems are commonplace, prohibiting well-functioning cross border gas trade.

The policy promotion of competitive gas markets seems to, by and large, ignore geopolitical circumstances. In the last two decades the United States, European Union, World Bank, and the International Monetary Fund have promoted establishment of competitive gas markets in Eastern Europe and former

53. *Bureau of Energy Resources*, U.S. DEP'T OF STATE, http://www.state.gov/e/enr/.

54. On this practice of advising on power sectors, *see*: Robert Bacon, *Restructuring the Power Sector: The Case of Small Systems*, FPD Note No. 10, THE WORLD BANK (June 1994), http://siteresources.worldbank.org/EXTFINANCIALSECTOR/Resources/282884-1303327122200/010bacon.pdf.

Soviet Union states. For example, during a 2016 visit of U.S. Vice-President Joe Biden to Latvia, the Vice-President stated that the "US is highly interested in ensuring Latvia's energy security and gas market liberalisation [sic]." According to the Latvian Prime Minister, the issue of market liberalization was raised by the American representative.[55] However, in reality, privatization of Latvia's energy infrastructure and breaking up of the state companies, could actually create more opportunity for neighboring Russian companies to gain greater influence in Latvia's economy and weaken Latvia's energy security and national independence. Similarly, the European Union has promoted adoption of the principles that guide the EU member states energy sectors in former Soviet Union states that have signed the EU's Eastern Partnership agreement – Moldova, Georgia, and Ukraine. All three of these states have high levels of corruption and weak rule of law governing their economies and significant presence of Russian entities in their economies. Under these circumstances, privatization of the gas infrastructure and liberalization of the gas trade, can create conditions for an increase in the extent of corruption, strengthen the power of the oligarchic elements in the economy, as well as allow greater foreign intervention.

Indeed, the few locations where there are functioning competitive gas-on-gas markets, competition has not necessarily produced public benefits, such as lower gas prices, greater utilization of gas in a market, or improved security of supply. The gas market in the United Kingdom is a good example: the market has failed to produce lower prices, enhance security of supply, or expand use of natural gas.

The liberalization of electricity and gas markets is the European Union's flagship energy policy over the last two decades, embodied in its Third Energy Package. But the European Commission's report on the results of the first ten years of these gas and electricity liberalization policies states that liberalization efforts have not led to a reduction in natural gas and electricity prices,[56] and that with regard to "existing European financial and energy regulation, there is concern that the current regulatory framework for these markets is not delivering effective oversight or sufficient transparency."[57] In its discussion of security of supply, the report states that "the EU faces an increased risk of lack of or delay in construction of infrastructure to meet future supply needs."[58] Yet, despite its critical assessment of the market liberalization efforts, the European Union then called for strengthening and accelerating the liberalization process. In a recent study of gas prices in the European Union, an EU Commission study reported that prices at Europe's gas trade hubs are not lower on average than those of the contracted gas traded in Europe, illustrating that competition does not necessarily lower gas prices.[59]

55. *Biden promises US support in ensuring Latvia's energy security-Latvian PM, THE* BALTIC TIMES, August 23, 2016. http://www.baltictimes.com/biden_promises_us_support_in_ensuring_latvia_s_energy_security_-_latvian_pm/.

56. *Report on Progress in Creating the Internal Gas and Elec. Mkt.* at 5 (Nov. 3, 2010), http://ec.europa.eu/transparency/regdoc/rep/1/2010/EN/1-2010-84-EN-F1-1.Pdf.

57. *Id.* at 5.

58. *Id.* at 13.

59. European Commission, *Communication from the commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Progress towards*

V. LESSONS FOR ENERGY RESOURCE MANAGEMENT STRATEGY FROM THE CASE OF ISRAEL

The policy process surrounding Israel's attempt to form a strategy for managing its major natural gas resources is instructive for other states with new energy resources and especially small states. First, study and identification of the main national and public interests that can be promoted through utilization of the energy resources at the onset of the policy process is important. In addition, harmonization of the activity of various government ministries and agencies at the onset of the policy process is also very valuable. Most states, upon discovery of new gas resources usually attempt to monetize through export, with little thought to the long-term needs of the domestic market and how to best monetize through study of different options. While Israeli policy-makers did not succeed in the full implementation of the proposed policies, the exceptional policy formation process should still serve as an example for states aiming to identify resource management strategies.

An additional lesson is that energy policies entail prioritization of competing public interests. For instance, states such as Poland prefer to consume locally produced coal to imported natural gas, emphasizing security of supply and national security considerations over environmental and public health implications. Germany, meanwhile, has decided to produce the majority of its electricity from renewable energy, despite the consequences for its economy's competitiveness. The Israeli policy makers attempted an almost unachievable feat: realization of a large number of goals—monetization of the new gas resources through gas export, security of supply to the domestic market, positive impact on foreign relations, increased domestic consumption of natural gas, incentivizing additional energy exploration in Israel's EEZ; all together with the self-imposed constraints that the government would not play a direct role in establishment of infrastructure or gas purchases, and that gas would be sold in Israel in a competitive market. Prioritization of goals would have led to faster realization of each part of their agenda and recognition that some of the goals were mutually exclusive or almost impossible to realize, especially with no direct government involvement in establishment of infrastructure, leading to greater policy success.

Next, while liberalization of energy trade and establishment of infrastructure may have brought many benefits to the U.S. energy sector, applying the U.S. model abroad, especially in small markets, with varying governance and geopolitical circumstances, is in most cases undesirable, as well as almost impossible to implement. Research needs to be done to identify new models of relationships between markets and regulation in the natural gas sector. Policies on the appropriate format of regulation of gas trade should be determined by the individual circumstances in a specific country. Recommended gas sector policies need to take into consideration a variety of factors, such as scale, geopolitical settings and the level of rule of law in a state and economy. The functioning of gas markets will be constrained in states which are geographically isolated (such

completing the Internal Energy Market, COM (2014) 634 final (October 13, 2014). https://ec.europa.eu/energy/sites/ener/files/documents/2014_iem_communication_0.pdf.

as islands) or geographically constrained (such as landlocked states), are in conflict areas, or which have poor governance or high degrees of corruption. It is impossible to have a well-functioning gas market in a place that the economy is not governed by strong rule of law. Despite this, as presented in this article, the European Union, the United States, and international financial institutions continue to export competitive gas markets as the regulatory standard around the world.

In the last decade, the number of locations where natural gas has been discovered and/or consumed has grown rapidly and is set to grow even more. Among these locations are Israel, Cyprus, Tanzania, and Mozambique. Most of these states will require different models than those in place in the United States and Europe to maximize the public benefits from their gas resources.

In light of the difficulty in applying the U.S. model and the importance of taking into consideration the unique constraints in each state, U.S. government agencies and international financial institutions need to revise their policies of automatically recommending the U.S. or European models of gas trade.

The Israeli policy makers were correct in studying best practices around the globe, with focus on the United States and Europe in shaping Israel's policies for governing the new gas resources. However, the limitations of applicability to Israel with its small scale, limits in trade with neighbors, multiple security of supply challenges, should have been considered and a new form of regulation of gas trade identified that was best suited for its specific market.