EASTERN MEDITERRANEAN NATURAL GAS: POTENTIAL FOR HISTORIC BREAKTHROUGHS AMONG ISRAEL, TURKEY, AND CYPRUS

Recent large-scale discoveries of natural gas in Israel and Cyprus could help reshape the geopolitical trajectory of the Eastern Mediterranean, a region that is emerging with its own strategic identity at the confluence of the Middle East, North Africa, and Eurasia. If managed with collaborative vision and skill, these new natural gas fields could provide Cyprus and Israel energy independence, catalyze new industries, generate significant export revenues, and foster diplomatic breakthroughs on the Cyprus Question and Turkey-Israel relations. Absent collaborative vision, however, this hydrocarbon bounty could reinforce political divisions and weaken regional stability.

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Economic and political issues are intertwined for Israel, Cyprus, and Turkey as each country's government and commercial partners deliberate how best to develop the Leviathan and Aphrodite natural gas fields in Israel and Cyprus, respectively. In Israel, recent natural gas discoveries are viewed above all as providing domestic benefits, namely, reducing Israel's dependence on imported energy, strengthening energy intensive industries, and boosting economic growth. The Israeli government has therefore allocated 60 percent of all of its future natural gas production to domestic consumption, including the entire Tamar field, which began producing in March 2013. At the same time, the Israeli government realizes that significant natural gas exports will be required to enable commercial development of the Leviathan field, the world's largest discovery during the past decade. The government will therefore permit exports of up to 40 percent of the country's natural gas.

Prime Minister Netanyahu also appears to view natural gas exports as a means to strengthen Israel's geopolitical standing by improving relations with neighboring countries. A modest quantity of Israel's gas will likely be provided to the Palestinian territories; slightly more (perhaps 2 bcm) may find its way to Jordan. But, the lion's share of the exports will occur *via* pipeline and/or a liquid natural gas (LNG) terminal, which could enable Israel also to revitalize its relations with Turkey, Cyprus, and perhaps even the rest of the EU.

Israel seeks multiple export options to mitigate the risk of any one country suspending exports for political reasons and to maximize commercial leverage to secure the highest prices for sales of its gas. These political and commercial factors will likely drive Jerusalem to select an LNG terminal and a pipeline to Turkey as its preferred mix of gas export options.

LNG offers maximal marketing flexibility by providing access to a full range of global markets, including the world's highest priced ones in East Asia. Moreover, LNG avoids tying Israel to a single importing country through a point-to-point pipeline. But, locating an LNG terminal within Israel may be politically impossible, given intense public concerns about environmental damage and loss of life that could result from a terrorist or military attack on such an attractive target. A floating gas LNG (FLNG) terminal in Israel's territorial waters could mitigate these concerns; but the technology is only now being deployed for the first time (in Australia) and will cost up to twice as much as a land-based LNG terminal, and more than three times as much as a pipeline to Turkey. That said, FLNG technology is developing quickly, with significant cost decreases, and could soon provide viable export options for both Cyprus and Israel.

Another option could be LNG exports from a terminal located in a neighboring country. Egypt's unused gas liquefaction facilities could provide a cheap option. Israeli gas could be pumped south *via* either an existing onshore pipeline across the Sinai Desert or a new offshore line (avoiding potential terrorist attacks in the Sinai) to Egyptian LNG terminals, then shipped to East Asian markets *via* tanker through the Suez Canal. In practice, however, the political obstacles to this option may be insurmountable. First, the Israeli government requires a treaty with any country from which Israel would export LNG, which seems impossible to negotiate during Egypt's current political turmoil. Second, it is politically inconceivable that Israel would make itself dependent on an Arab state for the location of such a strategically important energy asset. This constraint would likely hold even for Jordan, a relatively friendly Arab state that seeks to develop an LNG terminal at Aqaba on the Red Sea, provided that a non-Arab option is available.

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That leaves Cyprus as the most promising location for an LNG terminal for Leviathan gas. This reality coincides with the ambitions of the government of the Republic of Cyprus, which has defined development of an LNG terminal for gas from the Aphrodite field beneath Cypriot waters as an urgent national priority for both economic and political reasons.

Economically, a gas liquefaction terminal would cost only one-third to one-half as much as Cyprus's other favored export option for Aphrodite gas, a pipeline to Crete and mainland Greece. The LNG terminal's lower capital expenditures (CAPEX) would therefore earn Cyprus higher profits from its gas exports, thereby helping Nicosia meet the conditions of its financial bailout from its European Commission, European Central Bank, and International Monetary Fund creditors. These profits could increase in later years, if/when future Lebanese gas volumes allow for a larger Cypriot LNG terminal that benefits from economies of scale.

Politically, an LNG terminal could elevate Cyprus's strategic importance by enabling it to emerge as a natural gas transit hub for the Eastern Mediterranean. This, in turn, would boost Cyprus's relations with Israel and Lebanon, and perhaps elevate its confidence in UN-led negotiations on a comprehensive settlement of the Cyprus Question.

The Cypriot government is therefore making a strong push for a gas liquefaction terminal in Vasilkos. The Vasilikos complex would also house a new gas-fired power plant, which would overcome a severe electricity shortage resulting from destruction of a diesel-fired power plant in Vasilikos in June 2011 by an explosion at a neighboring ammunition dump; a gas-fired power plant would also help the Cypriot government reduce budgetary expenditures by substituting relatively cheaper natural gas for more expensive diesel to generate electricity.

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The oil companies leading the development of the Aphrodite field, the U.S.'s Noble Energy and Israel's Delek Drilling and Avner Oil, appear to favor the Vasilikos LNG terminal as the most commercially attractive export option for Aphrodite's production. These three companies are also developing Israel's Leviathan field, (along with the Israeli company, Ratio), which provides an opportunity for a dramatic win/win solution (as discussed below). One of the world's largest LNG developers, Australia's Woodside, is weighing whether to join the Leviathan consortium, clearly with an eye on an LNG solution, and with a terminal on Cyprus providing the most realistic option.

Notwithstanding these economic and political advantages, a Cypriot LNG terminal faces potentially serious financing obstacles. Aphrodite's proven volume of natural gas reserves, as previously announced by the Cypriot government to be approximately one-third of Leviathan's 960 bcm, justify only a single train of LNG production. Absent additional proven reserves, it will be difficult to secure financing for a single train on a commercial basis (e.g. without government subsidies, which are inconceivable in Cyprus's current financial situation).

Over time, Cyprus will most likely develop sufficient gas reserves to justify two or more production trains, with future volumes from Lebanon providing a further boost. But, drilling the necessary appraisal wells will take several more years. The timeline appeared to grow even longer on 3 October 2013, when Cypriot Energy

Minister Lakkotrypis announced that Aphrodite's proven reserves appeared to be one third smaller than the Cypriot government previously thought. As a result, Aprhodite will now require a second appraisal well before serious planning can advance on the LNG terminal. Charles Ellinas, Executive President of the Cyprus National Hydrocarbons Company, told the *Associated Press* that the need for this second well could delay development of the Vasilikos terminal by another year.

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The financial prospects of the Cypriot LNG terminal could receive a decisive boost if the Israeli government decided to permit export of early Leviathan production from Vasilikos. But, it appears politically unlikely that Israel will do so before it acquires another export option over which it enjoys more operational control, meaning a pipeline to a lucrative market.

The most promising such option is a sub-sea pipeline from Israel to Turkey, which would offer the cheapest export route for Leviathan (as well as Aphrodite) gas, other than the more politically difficult Egyptian pipeline-plus-LNG route. According to Turcas Petrol, the Turkish energy company on whose board I sit, connecting the Leviathan field with the Turkish coast at either Ceyhan or Mersin would cost approximately 2.5 billion dollars, or a little more than half the CAPEX required for a single train of LNG at Vasilikos. The pipeline would consist of two strands of 24-inch pipe, each pumping 8 bcm, for a total of 16 bcm. The landfall at Mersin or Ceyhan could then be connected *via* a 40-kilometer pipeline to Turkey's national gas grid for approximately 83 million dollars.

More ambitiously, Leviathan gas could enter the European Union *via* the Southern Corridor, the network of pipelines comprising the South Caucasus Pipeline Expansion (SCP-X) across Azerbaijan and Georgia, the Trans-Anatolian Pipeline (TANAP) across Turkey, and the Trans-Adriatic Pipeline (TAP) across Greece and Albania then under the Adriatic Sea to Italy. According to Turcas's engineering studies, connecting the Israel-Turkey pipeline to TANAP would cost an additional 647 million dollars; joining TAP at the Turkey-Greece border from Ceyhan or Mersin would require an additional 1.9 billion dollars. By comparison, the CAPEX of even this grandest pipeline variant all the way to Greece would be lower than even one train of LNG at Vasilikos.

Incorporating Eastern Mediterranean gas into TANAP and/or TAP would boost the geopolitical significance and enhance the economic attractiveness of the Southern Corridor, which, in turn, would bolster the ties of both Israel and Turkey to the European Union. But, for now, any infrastructure beyond the sub-sea pipeline and its connection to the Turkish national gas grid is beyond the scope of commercial negotiations; current deliberations foresee Leviathan gas being consumed within Turkey at prices pegged to spot-market prices at European trading hubs.

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The Israel-Turkey pipeline is highly attractive to Turkey for economic and political reasons. Economically, Leviathan gas would help Turkey diversify away from its heavy dependence on more expensive Russian and unreliable Iranian gas, providing Turkey with three key economic benefits: a lower national gas price for Turkish consumers; leverage to negotiate still lower prices from Gazprom in the future; and a boost to Turkey's halting effort to liberalize its natural gas market and establish hub-based pricing.

Politically, an Israel-Turkey pipeline would make Turkey a new gateway for natural gas into Europe, and perhaps one with hub-based pricing. This would elevate Turkey's strategic importance as a key enabler of EU's efforts to diversify gas supplies away from Gazprom and to end oil-indexed pricing through the advance of free-market trading at hubs. Additionally, an Israel-Turkey gas pipeline would bolster Turkey's political standing as a key regional actor and honest broker in the Eastern Mediterranean. During the late 1990s, Turkey established a strategic partnership with Israel that included military and intelligence cooperation. This partnership opened new opportunities for Ankara in combatting terrorism, managing relations with Iran, and contributing to the Middle East peace in both the Palestinian territories (through economic assistance) and Lebanon (through troop contributions to the UN mission beginning in mid-2006).

Turkey's strategic partnership with Israel began to collapse in late 2008, when Prime Minister Erdoğan sharply objected to Israel's military assault on Gaza, which he viewed as an attempt to sabotage Turkey's effort to broker a breakthrough in Israel-Syria relations. Relations continued to deteriorate throughout the next 18 months, beginning with Erdoğan's verbal attack on Israeli President Peres at the World Economic Forum in Davos in January 2009. The two countries' relations entered free-fall in June 2010, when the Turkish government expressed support for activists aboard the Turkish ferry, *Mavi Marmara*, who were challenging Israel's "blockade" of Gaza; Israel responded with a commando raid on the vessel that resulted in a violent clash and the deaths of eight Turkish citizens.

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During the past year, Turkey and Israel have been working to mend their relations. On 22 March 2013, Israeli Prime Minister Netanyahu apologized by telephone to Turkish Prime Minister Erdoğan (with U.S. President Obama's intercession) for the *Mavi Marmara* deaths. Despite Israel's dramatic gesture, the reconciliation process between the two countries slowed in the summer of 2013. Yet, behind the scenes, both governments have made quietly clear their support for the private companies that are exploring a possible Israel-Turkey pipeline. Indeed, a package solution appears increasingly possible in which framework agreements on both the pipeline and diplomatic normalization would be reached in tandem.

A similar dualistic breakthrough involving both energy infrastructure and diplomatic relations is also possible in Turkey's relations with Cyprus, despite severe political differences between the two countries. Turkey and the Republic of Cyprus have lacked diplomatic relations since Turkey's military intervention (according to Turkey) or invasion (according to the Republic of Cyprus) in 1974 in response to a Cypriot military *coup* that aimed to reunify Cyprus with Greece and to Turkish Cypriots' complaints of harassment. Today, Turkey remains the only country to recognize the Turkish Cypriots' breakaway state on the northern third of the island, where up to 35,000 Turkish troops are based. Nearly 40 years of UN-brokered negotiations have failed to resolve the conflict, and the political breach between Ankara and Nicosia remains deep. Turkey is threatening to commence exploration in prospective natural gas blocs where its continental shelf claims overlap with those of Cyprus; it is also forbidding international companies prospecting in those blocs without Turkish Cypriot permission from operating in Turkey (such as Italy's ENI).

There is nevertheless some hope for new momentum in a round of UN-brokered talks that are supposed to begin in autumn 2013. Cyprus now enjoys its most adamantly pro-settlement president since the country entered the EU in 2003. Meanwhile, throughout early autumn 2013, President Gül and other top Turkish officials have indicated their desire for a breakthrough in this next round of talks.

Absent such a breakthrough in Cyprus-Turkey relations, it is difficult to imagine how an Israel-Turkey pipeline could proceed. The pipeline has only two possibilities for reaching Turkey from Israel: through the exclusive economic zones (EEZ) and continental shelves of either Lebanon and Syria, or those of Cyprus. It is politically inconceivable that Lebanon and Syria would grant permission for such a pipeline, or that Israel would request it. That leaves only Cyprus, from which such permission would be possible only under significantly improved political circumstances with respect to Turkey.

Theoretically, investors could try to force a pipeline across Cyprus's continental shelf without permission of the Cypriot government, citing the ambiguity of the UN Convention on the Law of the Sea (UNCLOS). Pursuant to Articles 58 and 79 of UNCLOS, all states are entitled to lay subsea pipelines across the EEZ and continental shelf of another state. Indeed, Subparagraph (2) of Article 79 states, "Subject to its right to take reasonable measures for the exploration of the continental shelf, the exploitation of its natural resources and the prevention, reduction and control of pollution from pipelines, the coastal State may not impede the laying or maintenance of such cables or pipelines." But, Subparagraph (3) seems to suggest the opposite, stipulating, "The delineation of the course for the laying of such pipelines on the continental shelf is subject to the consent of the coastal State." Hence, UNCLOS seems to grant Cyprus a right to withhold its consent for a pipeline across its continental shelf at the same time that it obligates Cyprus to permit such a pipeline.

Given this legal ambiguity, it is unlikely that either the Israeli government or any (non-Turkish) private investor will accept the political risk of challenging the apparent right of Cyprus, an EU member state, to withhold permission for an Israel-Turkey pipeline, notwithstanding other apparent obligations of Cyprus to offer such permission. Overcoming this legalistic impasse will require Cyprus, Turkey, and Israel to reach a *sui generis* agreement permitting the Israel-Turkey pipeline, without prejudice to other energy related boundary disputes between Cyprus and Turkey, such as rights to gas fields that straddle the two countries' conflicting continental shelf claims.

Paradoxically, an Israel-Turkey pipeline itself could provide the catalyst to reach such an agreement to break this legal impasse. As noted above, securing financial support for a Cypriot LNG terminal will be difficult, given the need to prove additional reserves in Cypriot fields, which could take time. A Turkey-Israel pipeline, on the other hand, could be financed, built, and generating revenue by as early as 2016 or 2017. Given that the same private companies are leading efforts to develop both the Leviathan and Aphrodite fields, a portion of the pipeline's early revenues could be channeled into development of the Vasilikos terminal, as could additional volumes of Israeli natural gas beyond those required for the Israel-Turkey pipeline. Taken together, these two factors prove crucial in overcoming the financial challenges confronting Cyprus's LNG terminal.

This dual-track approach would mark both a commercial and a diplomatic breakthrough. Commercially, Delek and Noble would be enabled to finance upstream production at Aphrodite; the companies would simultaneously be able to satisfy the Israeli government's quest for two export options for Leviathan as well as the Cypriot government's goal of an LNG terminal. Moreover, agreement to develop a Cypriot LNG terminal thanks to an Israel-Turkey pipeline would radically improve the political mood between Cyprus and Turkey. This, in turn, should clear the way for the Cypriot government to grant permission for the Israeli-Turkey pipeline to cross Cyprus's continental shelf.

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Diplomatically, the dramatic improvement in Cyprus-Turkey relations resulting from this dual-export option for the Leviathan and Aphrodite fields could also generate a historic breakthrough in UN-brokered talks on the Cyprus Question. This could lead to settlement of a political dispute that has hampered investment and stability in the Eastern Mediterranean while restricting military cooperation between the EU and NATO. Meanwhile, Cyprus could emerge as the Eastern Mediterranean's natural gas transit hub, while Turkey and Israel could restore their previous partnership.

Choreographing this complex double-export solution will require considerable diplomatic, commercial, and financial skill. A prerequisite will be a political agreement among the governments of Israel, Turkey, and Cyprus to pursue these two projects in tandem. The natural brokers of such an agreement would be the U.S. and/or EU. This umbrella agreement would be analogous to the commercial and legal frameworks reached with U.S. assistance in the late 1990s among Azerbaijan, Georgia, and Turkey for the Baku-Tbilisi-Ceyhan oil and South Caucasus gas pipelines.

No such agreement will be possible, however, unless Turkey further aligns its relations with both Israel and Cyprus. Fortunately, senior Turkish officials now appear increasingly ready to rejuvenate Cyprus settlement talks and to repair relations with Israel, though challenges remain on both tracks. The good news is, Turkish Prime Minister Erdoğan appears to have willing partners in both Israeli Prime Minister Netanyahu and Cypriot President Anastasiades. But, just beneath the surface, feelings remain raw. If these leaders fail to seize current opportunities to reach historic breakthroughs, conflicts over maritime territorial disputes and natural gas claims in the Eastern Mediterranean will intensify and further undermine stability in this strategically vital region.