

Energy

First Edition

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Israel

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Overview of the current energy mix, and the place in the market of different energy sources

Israel's energy market is in a state of flux. Since Israel's establishment and until the last decade, energy generation was undertaken by Israel Electricity Company (IEC). IEC is a government owned company, which was granted a concession in the 1920s for the production, transmission and distribution of electricity in Israel. Successive governments have grappled with making the Israeli energy market more competitive, including through a privatisation of IEC or a splitting up of its various functions between different companies. To support these goals, the legislature introduced the Electricity Sector Law 5756-1996 in 1996 (ESL). Pursuant to the ESL, it was decided to open the energy market to competition and to reorganise the licensing of production, trade and transmission of electricity between separate entities. Ultimately, the idea is for each function to be performed by a separate entity. In the interim and until the reforms are implemented, the ESL provided IEC with a 10-year concession to continue to perform its roles. The IEC continues to perform the role of Essential System Manager until the completion of the reform. The initial 10-year period has been extended several times because the implementation of the reforms has been delayed.

In addition, in order to regulate the market, the Public Utilities Authority – Electricity (PUA) was established. The ESL also stipulated that IEC would be obligated to purchase energy from independent power producers. This was a breakthrough as it provided the platform for independent power producers to enter the market and sell electricity to the grid, as well as to end users.

Developments in legislation or regulation over the past few years

The regulatory reform resulted in a profound transformation of the Israeli energy market. Based on Government Resolution No. 4450 of January 2009, the Ministry of National Infrastructures (MNI) (as it was then called) issued a policy paper with respect to the allocation of quotas for licences for various renewable energy technologies, such as solar energy, wind farms and bio-gas systems, that aimed at achieving a generation target of 1,550 MW prior to 2014 (equal to 5% of Israel energy production) and 2,760 MW prior to 2020 (10% of Israel's energy production).

Feed in tariffs were also introduced for renewable energy projects. Between 2010-2012, approximately 400 MW of licences have been issued for the development of PV solar projects; approximately 800 MW of licences are in the process of being issued for the development of wind farms; and more than 3,500 MW of licences have been issued for the development of gas powered power plants. In just a few years, numerous local energy ventures have been established, and major international companies have entered the market.

All of these factors have resulted in significant changes to the structure of the energy market, even though the reforms of the IEC have not taken place. The changes have required Government and regulators to continue to be in dialogue to take the new factors into account with the industry players, in order to ensure that the market is structured appropriately. This has been particularly true with respect to the recent discoveries of natural gas. Below, we will examine the challenges that have been faced by Government, regulators and developers with respect to the regulatory framework for the new discoveries of natural gas.

Changes in the energy situation in recent times which are likely to have an impact on future direction or policy

In order to fully appreciate the impact of the discovery of natural gas, a little bit of perspective is needed.

A History of Israel's Natural Gas Discoveries

For geopolitical reasons, imports of oil and gas to Israel are influenced by Israel's relations with its Arab neighbours. Other than Egypt and Jordan, Israel does not have diplomatic relations with its neighbouring Arab countries. For this reason, traditionally, Israel sought to limit its dependence on oil or gas due to limited supply options and high transportation costs. In the early 1950s, the newly formed State adopted several laws in order to regulate the field of petroleum¹ exploration in its territory, among them the Petroleum Law of 1952 (the Petroleum Law).² Unfortunately, the following years did not yield any substantial discoveries,³ and, as a result, except for minor amendments to the Petroleum Law in 1965 and 1989, there was no need to update the legislation. Then at the end of 1999, after almost a century of exploration, the first significant offshore discovery of natural gas was made by the Yam Tethys Group, a joint venture between the US-based Nobel Energy and the Israeli Delek Group. The discovery of "Noa" and "Mari b" reservoirs by the Tam Tethys Group, with combined reserves of nearly 40 BCM,⁴ rekindled the dream that significant natural resources could exist, and the sleepy energy market was suddenly reawakened.

In 2002, the Natural Gas Market Law, 5762-2002 (the "**Natural Gas Law**"), was introduced in order to support the infrastructure required as a result of the discovery of natural gas, such as the construction of transmission and distribution networks. Israel Natural Gas Lines Ltd (INGL), a government corporation, was formed in order to develop a transmission network to distribute the natural gas within Israel. In addition, IEC undertook a conversion of a number of power plants to use natural gas. The annual consumption of natural gas rose from 1.2 BCM in 2004 to 2.3 BCM in 2006, a growth of more than 50% in two years.⁵

In parallel with the foregoing developments, in 2005, Israel signed a tripartite agreement with the Government of the Republic of Egypt and East Mediterranean Gas (EMG) to purchase natural gas from Egypt in an annual capacity of approximately 7 BCM. The import of gas from Egypt commenced in 2008 and EMG quickly became Israel's second significant source of natural gas along with the Mari b field (though the annual supply was eventually closer to 1 BCM).

Major events or developments

In 2008, the "Tamar" reservoir, with an estimated reserve of 240 BCM, was discovered. The discovery of the Tamar reservoir was considered to be one of the largest new discoveries of gas in the world at the time. At the beginning of 2010, an analysis by the US geological survey (USGS) estimated the existence of approximately 1,400 BCM of exploitable gas within the Exclusive Economic Zone of Israel (EEZ).⁶ Then a few months later, the USGS estimate was supported by the announcement of another significant discovery of natural gas reserves in the "Leviathan" reservoir with an estimated capacity of 453 BCM.

With the discoveries of natural gas, the consumption in Israel grew and between 2004 and 2010, the aggregate growth of natural gas consumption increased by more than 275%. By 2010, IEC had converted almost half its energy production units to be powered by natural gas compared to zero use in 2003.⁷ Similarly, a handful of major industrial plants, petro-chemical producers and large desalination plants, converted to natural gas production. Consumption of natural gas in the Israeli market is expected to continue to steadily grow, with annual consumption reaching as much as 30 BCM in 2040 compared to 4.96 BCM in 2011.⁸

Estimates of Demand for Natural Gas

As noted above, the demand for natural gas has increased steeply, however, the development of the new reservoirs and the necessary infrastructure has taken more time. Several factors have resulted in there being a shortage of natural gas in the near term. Due to the absence of other sources, the reserves of Mari b have rapidly depleted and are expected to be exhausted by the beginning of 2013. The Tamar reservoir is not yet connected to the network due to the need to build offshore and onshore

infrastructure, and the Leviathan reservoir is still a number of years from full development. These factors have been exacerbated by the fact that, in April 2012, the Government of Egypt announced that it was terminating the tripartite natural gas supply agreement with Israel. The termination of the agreement is now the subject of international arbitration. As a result, Israel may face an unexpected and acute shortage in the availability of natural gas in the next few years.

Developments in infrastructure

The focus is now upon developing the necessary infrastructure quickly in order to link the Tamar reservoir to the distribution network, which includes an offshore pipeline and onshore receiving terminal. Environmental concerns and objections have delayed Government decisions as to the location of the onshore receiving terminal. In June 2012, the Government decided upon an accelerated procedure to examine 15 locations for the construction of reception facilities for the offshore gas. This decision was made due *inter alia* to the cost to the economy of using more expensive fuels acquired by IEC owing to the lack of natural gas. The final plan for such facilities is expected to be submitted for approval in August 2013. Optimistic estimates are that supply from the Tamar reservoir will commence towards the end of 2013, but even then, the capacity of the offshore pipeline may be insufficient to service the forecast demand for natural gas.

In order to mitigate the consequences of the shortage, the Government adopted a series of Government resolutions for the construction of a Liquid Natural Gas Facility.⁹ In February 2011 the Ministry of Energy and Water Resources¹⁰ (“MEWR”) announced the construction of an LNG facility¹¹ as an offshore buoy approximately 10km from Hadera. The buoy will be constructed by INGL and is expected to be operational by the end of 2012. IEC will then acquire LNG and have it shipped to the buoy. Plans for an additional LNG facility in Eilat, on the shore of the Red Sea, are currently being promoted by INGL. A facility located on the Red Sea would have the advantage of quicker access to the Asian market, thereby reducing delivery times and transportation costs. The LNG terminals could in the future be used to export gas from Israel. The Government has also commenced discussions with Cyprus and Greece to examine possibilities for cooperation in the export of natural gas.

Developments in government policy/strategy/approach

The development of a sustainable natural gas market depends on the regulation of three main components: the exploration licences and royalty regime; a gas transmission and distribution system; and end users. The rapid development of natural gas kick-started frantic discussions about the appropriate legal framework and policy regime. Questions arose regarding the applicability of the existing legislation with respect to the allocation of licences, the royalties and tax regime, and the balance of exports versus the preservation of the reserves for the local market.

Royalties and Tax Regime

In 2000, after the discovery of the Noa and Mari b reservoirs, the fiscal regime was re-examined, and at the time, it was concluded that “there is no justification to increase royalties”.¹² However, after the discovery of the Tamar and Leviathan reserves, another review was undertaken in 2010/2011.

Until 2011, the applicable royalties were 12.5% from the petroleum amount exploited from the leased plot (excluding petroleum used by the lessee for the operation of its facilities). Royalties are calculated according to market value at the wellhead (in the absence of a market price, the value at the wellhead is taken to be the sell price minus transportation costs).

The tax regime was regulated under several income tax regulations, among them the Income Tax Regulations (Deductions from the Income of Petroleum Rights Holders), 5716-1956 (the **Petroleum Tax Regulations**) of 1956. The Petroleum Tax Regulations contained several allowances including with respect to depreciation in order to encourage and promote the risky and expensive exploration activity during those years. Among those allowances is the deduction for depletion which enables the petroleum right holder to deduct the value of the annual reduction of the petroleum’s reserves. The assumption was that after the depletion of the petroleum reservoir the owner would seek another petroleum exploration investment. Accordingly, the depletion deduction includes the annual depletion

of the petroleum reservoir within the same annual tax evaluation. The deduction of depletion amounts to 27.5% of gross income from petroleum revenues (excluding royalties paid in the same tax year), but no more than 50% of net income. Other allowances are the recognition of capital expenditure for “exploration and development” as ordinary expenditure for the purposes of deduction, and the option to shift deductions from one tax year to the following year.

In April 2010, the Minister of Finance appointed a committee to “Examine the Fiscal policy in practice in Israel in the field of Oil and Natural Gas Exploration” (the **Sheshinski Committee**). Following the Sheshinski Committee’s final recommendations, the Taxation of Petroleum Profits Law, 2295-2011 (the **Petroleum Tax Law**) was introduced, alongside amendments to the Petroleum Tax Regulations.¹³ As a result, the 12.5% royalty set forth in the Petroleum Law remained untouched, but changes were made to the depletion regime. The depletion deduction was cancelled since, in the view of the Sheshinski Committee, unlike other jurisdictions where licence holders purchase the reservoir of field, the petroleum right-holders in Israel are granted the right to exploit the deposits, which remain the State’s property, and do not purchase the rights. Hence, the depletion of the petroleum reserves do not result in a reduction in the value of the assets owned by the petroleum right holder and does not represent a real loss for him. In addition to the existing 12.5% royalty, a petroleum levy was introduced,¹⁴ imposing a progressive levy on the balance between the aggregate revenues after deduction of current expenses, royalties and levies paid in previous years, to the aggregate investment on exploration and initial development of the petroleum field. It has been decided that the levy would be imposed only when the balance reaches a ratio of 1.5, i.e., the return of the investment plus 50%. The initial rate of the levy would be 20% and would gradually rise up to 50%. The new regulation was applied retroactively on all existing petroleum rights holders, including projects that are in a development stage and close to commercial operation (although some gradual application of the new levy was determined for projects that were already commercially operating and those which will start commercial operation before the end of 2013, such as the Tamar reservoir).

Overall, the Government’s share of the profits from the natural gas reserves increased following the 2011 amendments from 30% to 50% on the Tamar reservoir (due to the gradual application) and 50%-60% on other reservoirs.

Competition

After the termination of the tripartite agreement with Egypt, for a number of years the Tamar reservoir will become basically the exclusive source of natural gas for the market. Gas supply contracts with the Tamar partnership are currently under review by the Israeli Antitrust Commission and the Public Utilities Authority in order to ensure that competitive terms have been offered to IEC and other independent developers of power plants. The regulators are concerned that a single supplier may be in a position to exploit its position by imposing terms that will lock customers into more expensive long term contracts. Ultimately, the price paid for natural gas has a direct impact on the electricity tariff for end users. The challenge being faced is to ensure that there are supply contracts that will ensure that both Tamar and the independent power plant developers have financeable projects, without end users paying unjustifiably high electricity tariffs. Due to the fact that additional suppliers will come on tap in the next few years, the belief is that the cost of natural gas in Israel will reduce in the future. In the meantime, the supply contracts remain under review and it is anticipated that the regulators will finalise their review of the gas supply contracts in the summer months.

Export and Independency

Another regulatory issue is the balance between preserving the gas reserves for the local market and enabling licence holders to export gas. The existing regulations do not limit the quantities that may be exported, but they do provide that the State has a preemptive right to purchase gas extracted from its territory and is entitled to force the licence holder to first supply the country’s needs, as evaluated by the Minister.¹⁵

Proposals for changes in policies

Following the discovery of the Tamar and Leviathan reservoirs, the regulator has re-examined this issue. The interim report of an Inter-Ministerial Committee for the examination of natural gas market

policy has proposed permitting exports while obligating licence holders to maintain up to 50% of each reservoir as a reserve for the local market¹⁶. Accordingly, the larger the deposit, the bigger the percentage of reserves it would be required to maintain. If this recommendation were to be implemented, Tamar and Leviathan would only be able to export about 50% of their reserves.

Furthermore, the Committee has recommended subjecting the amount of permitted exports to a 25-year sufficiency index. The proposal is that as of 2018, MEWR would annually determine the quantity of gas required for the local market for the next 25 years. The quantity of gas that would then be available for export in that period would be the quantity of gas in excess of the local requirements. Final recommendations of the Inter-Ministerial Committee are expected in the summer of 2012.

These recommendations have sparked much discussion between the regulators and the developers. Clearly, the ability to export improves the economics of the development of a reservoir, but at the same time, the position of the regulators is that the right to export should be balanced with the national need to ensure energy independence over an extended period of time.

Conclusion

As noted above, the Israeli energy market is very much under development. Independent power projects, renewable energy projects, the discovery of natural gas, the need for infrastructure, have resulted in a market that was previously dominated by IEC, becoming a multi-party industry.

The Government and regulators have had to fast-track reviews of the existing regulatory regime in order to ensure that it meets the needs and challenges for the new realities.

As the competing demands of developers, project finance lenders, and government continue, we expect that in the coming years, we will continue to witness a very active local energy market. Watch this space!

* * *

Endnotes

1. Petroleum was defined in the Petroleum Law as Kerosene, oil, natural gas, condensates, liquefied hydrocarbons, asphalt, etc.
2. The Petroleum Law, 5712-1952.
3. Except for the minor Heletz oil field.
4. Billion Cubic Metres. In some references, the measurement may be indicated as TCF (Trillion Cubic Metres). The relation shall be translated as: 1 TCF = 28 BCM.
5. Knesset Research Center, **Analysis of Government Take** in Revenue of Oil and Gas Production in Israel and Other Countries. Available at: <http://www.knesset.gov.il/mmm/data/pdf/m02596.pdf> (hereafter "Analysis of Government Take").
6. 370 km offshore.
7. Analysis of Government take, p2.
8. The Interim Report of the Inter-Ministerial Committee for the Examination of Natural Gas Market Policy (5.4.12) (the "**Inter-Ministerial Report**"), p45.
9. Government Resolution 2178 (12.8.2007); Government Resolution 3260 (13.3.2008); Government Resolution 177 (12.5.2009).
10. At the time still as Ministry of National Infrastructures.
11. Liquefied Natural Gas.
12. Stated from the official MEWR website, available at: <http://energy.gov.il/English/AboutTheOffice/SpeakerMessages/Pages/GxmsMniSpokesmanOil-and-Gas-Exploration.aspx>
13. Income Tax Regulations (Deductions from the Income of Petroleum Rights Holders) (amendment) 6997-2011.
14. The Petroleum Tax Law, §2.
15. The Petroleum Tax Law, §33.
16. Other countries have introduced similar limits on exports, for example, in Western Australia there is a policy of directing 15% of gas reserves to the local energy market, whereas Bangladesh introduced a policy that reserves must be maintained for the local market for the coming 50 years.



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