

# MARITIME STRATEGIC EVALUATION FOR ISRAEL 2021/22

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## **Section 3: The Maritime Domain – Economic Aspects**

This section deals with economic aspects of the maritime domain in the Middle East. It includes articles on the blockage of the Suez Canal for six days in March 2021 by the Ever Given container ship, which emphasized the importance of the Canal on the one hand and its vulnerability on the other hand, as well as the cost of blockages for global trade; the Exclusive Economic Zones in the Red Sea, which thanks to the energy resources creates opportunities but also risks, and attracts both regional powers and superpowers; Israel's goal of producing 30% of its energy from renewable energy sources but is far from meeting; and the first year of the Chevron Corporation in the Israeli energy market, with the difficulties that were already exposed and the future opportunities that are worth taking advantage of.

## The Incident of the Suez Canal Blockage by the *Ever Given* Container Ship – The Implications for the Region and for Israel

*Ehud Gonen*<sup>1</sup>

The sequence of events in the March 2021 Blockage of the Suez Canal

On March 23, 2021, the *Ever Given* container ship, which was passing northwards through the Suez Canal, ran aground on the banks of the Canal about ten km north of the Port of Suez. The Canal got blocked as a consequence, and shipping through the Canal was stopped in both directions for almost six days.

The *Ever Given* is a megaship built in 2018 with a gross tonnage of 219,079 tons and operates under a Panama flag. It is about 400 meters long and 59 meters wide. It was carrying goods worth billions of dollars in 18,300 TEU out of its maximum carrying capacity of 20,000 TEU.<sup>2</sup> The ship is owned by the Japanese Shoei Kisen corporation, managed by the Taiwanese Evergreen Company, and is insured against third party damages by the UK Club insurance organization.<sup>3</sup>

While sailing through the Canal, the ship swerved toward the bank of the Canal, its bow hit one bank while its aft swung to the opposite bank so that the ship totally blocked the passage. The official reason for the accident was not made public, however it is possible that the prevailing weather conditions at the time were the cause of the accident, since strong winds were blowing perpendicular to the ship, and sandstorms restricted visibility.

Following the blockage, hundreds of ships of various kinds got stuck inside the Suez Canal, in the Bitter Lakes and also at the north and south entrances to the Canal. Realizing that it would take a long time to release the ship, numerous ships changed course and opted for the route circumnavigating Africa, rather than sailing through the Canal. These were ships which were at this decision point along their voyage in the Indian Ocean, and were geographically in a place that enabled altering the course southwards. Ships that were already in the Red Sea and ships in the Mediterranean continued along their course and waited in the ports of Port Said and in the Gulf of Suez.

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<sup>1</sup> The author wishes to thank Dr. Elai Rettig, Captain Alex Gerson and Dr. Benny Spanier for their professional assistance with this article.

<sup>2</sup> TEU – Twenty-foot equivalent unit.

<sup>3</sup> The data are from the shipping data website MarineTraffic.com.

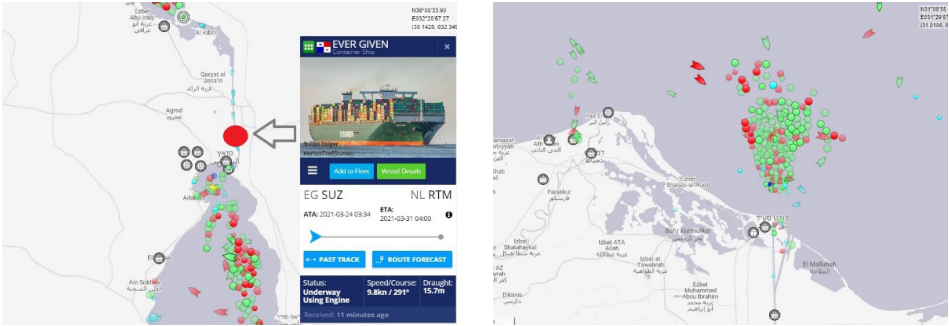


Figure 1: Left, the Ever Given (red dot) stuck approximately 10km north of the southern entrance to the Suez Canal and a queue of hundreds of ships waiting in the Gulf of Suez for the ship to be freed. Right, a similar queue of ships waiting at the northern entrance to the Canal opposite Port Said (source: screenshot from the Marine Traffic website).

This marine "traffic jam" was only fully uncorked about one week after the ship had been freed. While the traffic in the Canal was resumed, the Egyptian authorities impounded the *Ever Given* to investigate the incident and placed the responsibility for the heavy damage incurred to the *Suez Canal Authority* (loss of revenues and the cost of releasing the ship). The ship anchored in the Bitter Lakes area for 106 days and was only allowed to sail on on June 6, 2021 after an agreement was signed between the Canal authorities and the ship owners. The details of the agreement have not been made public.

The canal blockage incident and the delays to global and regional trade it caused aroused a public discussion over the importance of free, uninterrupted shipping to international trade and to economic prosperity. In a world where the global economy and the manufacturing value chain straddles the entire globe, there is a brisk trade in both finished goods and in semi-finished goods (products which are transported from one production site to another all over the world). Therefore, the canal blockage impacted not only trade in finished goods from the manufacturing centers to the markets, it also had an immediate impact on the industrial manufacturing processes in many countries due to the "just in time" method of industrial production processes and inventory management practices.<sup>4</sup>

<sup>4</sup> This is an inventory management method in which the components for the manufacturing process are received from the supplier when they are needed, rather than being stored in a warehouse on the manufacturer's premises.

Specifically, the Suez Canal was exposed as a significant choke point, mainly in the trade between Asia and Europe, and raised the need to consider alternative routes in order to reduce the dependence on the Suez Canal passage.

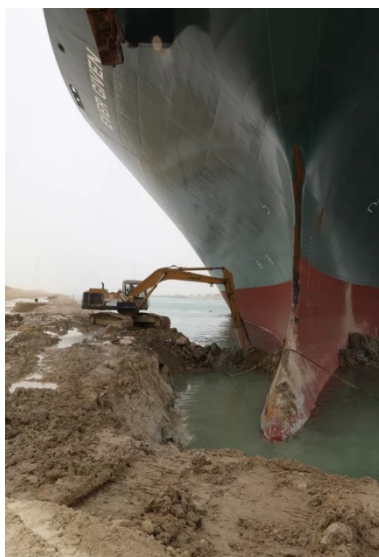


Figure 2: a lone bulldozer attempting to free the huge ship stuck on the Canal banks  
(photo credit: Suez Canal Authority – SCA)

## The Suez Canal and Global Trade

The Suez Canal, which was first opened in 1869, is one of the world's most important shipping lanes. Passage through the Canal shortens the sailing distance from the Straits of Malacca to Rotterdam (the largest port of entry into Europe) by approximately 3,500 nautical miles and it also shortens the sailing distance from the Straits of Malacca to the ports on the United States eastern shore (see figure 3). In 2019, before the outbreak of the COVID-19 pandemic and its disruption of the global economy, approximately 13% of the world's trade passed through the Suez Canal<sup>5</sup> in 18,880 ships (an average of 52 ships per day), which carried cargoes weighing 1,031 million tons.<sup>6</sup> During the first half of 2021, the traffic through the Canal increased drastically (despite the blockage event which lasted six days). Between January and June 2021, 9,763 ships passed through the Canal, a 2.3% increase compared to 2020.

<sup>5</sup> SCZone head: 13% of world trade passes through Suez Canal, *Hellenic shipping news*, June 24, 2019.

<sup>6</sup> SCA Navigation Statistics.

The net cargo weight that passed through the Canal grew in the first half of the year by 3.8% to 610.1 million tons, compared to 2020.<sup>7</sup> It appears that 2021, despite the Canal blockage incident, will be the most successful year in the history of the Canal from the financial perspective.<sup>8</sup>



Figure 3: the navigation routes from the Straits of Malacca to western Europe and to the United States eastern seaboard via the Suez Canal and bypassing the Canal

In 1956, the canal, which was under British ownership and operation, was nationalized by the Egyptian President at the time, Nasser, and since then it is operated by the Suez Canal Authority (SCA). Egypt's revenues from the canal are extremely significant and stood at approximately \$5.84 billion during the 2021–2020 fiscal year, accounting for approximately ten percent of the total revenues of the Egyptian government and approximately 2% of the total Egyptian GDP. This is a fixed, stable source of revenues in foreign currency (exporting services), which are of the highest priority to the Egyptian economy, which is beset by numerous structural difficulties.

In 2014, Egyptian President Abdel Fattah al-Sisi announced a national project of widening the Canal, which was completed within just one year in 2015. The project, which was carried out and financed in full by Egyptian internal sources and accompanied by the expression of intense national sentiments, doubled the northern section of the Canal over a length of 70 km (out of a total Canal length of

<sup>7</sup> Egypt's Suez Canal reports record revenue despite blockage crisis, *Alljazeera*, July 11, 2021.

<sup>8</sup> *Ibid.*

approximately 200 km). Today it is also integrated with the construction of industrial parks,<sup>9</sup> which take advantage of the existing workforce in Egypt on the one hand, and the logistical accessibility to the world's main trade routes on the other. The doubling of the canal project is also combined with the New Egyptian Administrative Capital project. The Canal is a primary national symbol in Egypt, whose roots go back to those days when it was nationalized by Nasser and the canal widening project harped on those same national sentiments.

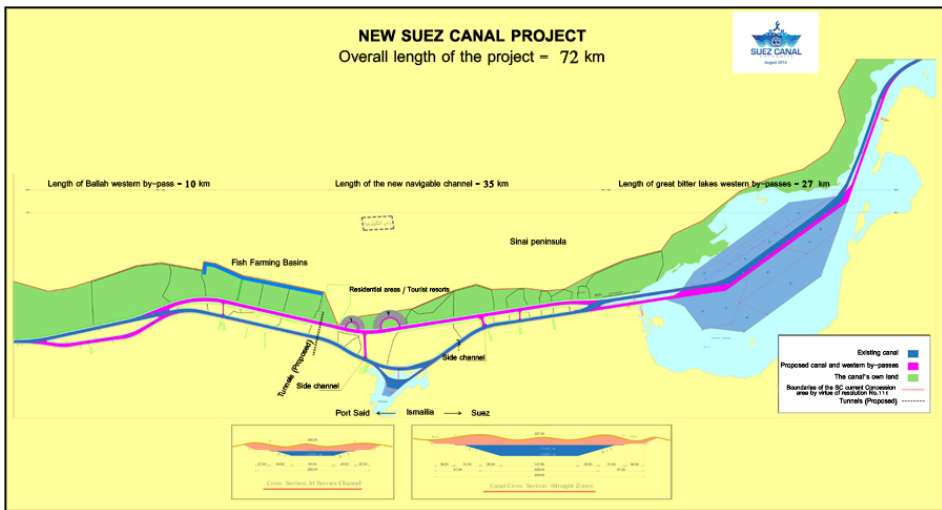


Figure 4: The area of the widened Suez Canal north of the Bitter Lake (source: Suez Canal Authority)

## Legal Aspects

The Canal blockage incident by the *Ever Given* placed the issue of responsibility of Compulsory Piloting on the agenda. This responsibility lies with the ships crossing the Canal and also, to an extent, placed the Egyptian authorities in a rather unflattering light. Since Egypt requires whoever passes through the Canal to use SCA pilot services, the question regarding the Canal authorities' accountability, and that of the Egyptian pilot, has been asked following the accident.

According to international law, the Canal is an internal waterway, meaning that all of the Egyptian laws apply to those passing through the Canal. The passage regime in the Canal was set in the Convention of Constantinople (1888) and in addition

<sup>9</sup> Suez Canal Area Development Project, Great Egyptian Dream.

there are specific Egyptian laws governing the Suez Canal, starting with the decree nationalizing the Canal (1956) and other laws from 1975, 1998,<sup>10</sup> and also other general commercial laws.<sup>11</sup>

After the ship was extricated from its location, the Canal authorities impounded the ship in the Great Bitter Lake area and set a price of approximately \$916 million as the price for releasing it as compensation for the damages caused to the Canal through loss of revenue, release costs, financial damage and damaged reputation. The ship's insurer, the UK Club, named this as an unacceptable demand. The Egyptian authorities later lowered their demands to approximately \$550 million. Upon releasing the ship in July 2021, the Canal Authority chairman Admiral Osama Rabie said that the parties (the Canal Authority and the ship owners) have no more claims from one another.<sup>12</sup> On another occasion the Chairman of the Canal Authority said that the compensation agreement includes the purchase of a tugboat for the Canal. However, the details of the final agreement that was signed in early July between the owners and the insurer on the one hand, and the Canal Authority on the other, remain confidential.

The private international law (Conflict of laws) governing torts is complicated. According to past precedents, which go back as far as the 19th century, there apparently is no unequivocal legal grounds for the Egyptian authorities to claim torts from the ship owners directly in case of damage during a voyage under a compulsorily-piloted journey under international law. However, the law (or more precisely certain concepts of the law) allow for "personification" of the ship and claiming torts from the ship itself even in a case of compulsory pilotage.<sup>13</sup> On the other hand, the rules of navigation of the Suez Canal Authority explicitly state (Art., 4(1) – Responsibilities) that the vessel and its captain are responsible for any damage that may be caused when navigating through the Canal.<sup>14</sup> In addition, in terms of the accountability of the Egyptian pilot stationed on board the ship according to Egyptian law, the pilot bears no responsibility for damages in case of an accident.

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<sup>10</sup> Canal Treaties & Decrees.

<sup>11</sup> Egyptian Maritime Trade Law No. 8 for the year 1990.

<sup>12</sup> Egypt's Suez Canal reports record revenue despite blockage crisis (Video), *Alljazeera*, July 11, 2021.

<sup>13</sup> Dennis M. Robb, (1974) "The Compulsory Pilot Defense: A Reexamination of Personification and Agency," *University of Chicago Law Review*, Vol. 42(1), Article 8, pp. 199–215.

<sup>14</sup> Rules of Navigation, Suez Canal Authority, August 2015 (p. 6).



This lies fully on the ship's captain even in the event of a mistake on the part of the Egyptian pilot.<sup>15</sup>

This is not the place for an exhaustive legal discussion, in particular since the issue never actually reached the courts in Egypt and the ship was ultimately released with a confidential agreement. However, certain media outlets claim that such conduct on the part of the Egyptian authorities – including slashing the claim amount in half – presents Egypt in an unflattering light and as a country operating non-transparently and even resorting to blackmailing methods.

### Operating the navigation of a ship through the Suez Canal and Calculating the cost of passage

In terms of ton-mile cost (the cost of transporting one ton of merchandise a distance of one mile), maritime shipping is the most effective mode of transport over long distances. This is why approximately 80% of world trade in terms of weight is transported by sea (and the rest by air, overland and through pipelines). This efficiency of maritime shipping increases as the distance the merchandise travels increases. Therefore, in the longest and most congested shipping lines in the world between northeast Asia and Europe, with the existing railway technology overland transport via the vast expanses of steppes in central and western Asia cannot possibly serve as an economical, efficient substitute for maritime shipping.

Another main parameter in the logistics of trade is the transfer of cargo from one means of transport to another and transshipment<sup>16</sup> of cargo between two of the same means of transport. Generally speaking, it can be said that any transfer of cargo from one means of transport to another considerably increases the shipping cost.

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<sup>15</sup> Liability: Pursuant to the Egyptian Maritime Code No. 8 of 1990 (Art. 279) as well as rulings of the Supreme Court in Egypt, the responsibility for pilotage operation in port and in the Suez Canal lies entirely with the Master of the guided vessel even in case of the pilot's error. In this context one can mention the ordinance from 1939 issued by the British High Commissioner to Palestine, which is still practiced in Israel and in many other countries. According to "[the Damage by Vessels under Pilotage Ordinance](#)": "Notwithstanding anything contained in any Ottoman law or in any other law or Ordinance the owner or master of any vessel under pilotage, whether compulsory or otherwise, shall be answerable for any loss or damage caused by the vessel or by any fault of the navigation of the vessel".

<sup>16</sup> Transshipment: in the maritime context, transshipment is transfer of a container from one ship to another. The transshipment is usually done at a transit port between the port of origin and the destination port of the merchandise.

An outstanding and extreme example of this commercial principle can be seen in the trade between Europe and Asia, beginning in the 16th century, with the discovery of the maritime route from Europe to Asia by *Vasco da Gama*. Trade, which until then passed through the Mediterranean and continued in overland caravans through Egypt and in ships to India came to a halt, and instead the trade was diverted to the long route circumnavigating Africa. The Cape of Good Hope route included only a single vessel from Europe to India with no loading or unloading and without an overland component, and was therefore much more efficient despite the considerable added distance (approximately 3,500 nautical miles). This efficiency eventually resulted in the demise of the trading city-states like Venice, which had dominated the Mediterranean trade which dwindled in favor of the trade route to India through the Atlantic Ocean.

This being said, however, despite the great efficiency of the maritime trade, the Canal blockage incident raised the need to consider additional trade routes, which might be less profitable but which provide redundancy and will enable trade to continue even in case of a major shipping lane being blocked. For this, the cost of sailing along the various routes and the cost of passage through the Suez Canal needs to be considered, as well as other possible overland routes, pipelines for fluid commodities, etc.

The passage through the Canal shortens the maritime voyage from east Asia to Europe by about 3,500 nautical miles, which are equivalent to 8 to 12 sailing days. The exact number of days saved is calculated as a function of the ship's speed, which is determined by a number of factors.<sup>17</sup> The cost of a day of sailing can vary between a few thousands of dollars and tens of thousands of dollars.<sup>18</sup> In other words, the cost savings gained from shortening the journey time, for example by approximately ten days saved by traversing the Suez Canal, can vary between a few tens of thousands of dollars for small ships and hundreds of thousands of dollars for a large, modern ships.

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<sup>17</sup> The ship speed is determined by mechanical factors such as type of engine, ship structure, environmental factors like weather and administrative factors like captain decisions to increase or decrease speed, instructions from the owners of the cargo regarding the urgency of the ship's arrival, etc.

<sup>18</sup> The per-diem cost depends on numerous factors such as ship size, ship type, ship launch date, type of charter etc. (in general there are two kinds of charter: time charter – meaning chartering the ship for a fixed term, and voyage charter, meaning chartering the ship for a voyage from a port of departure to a destination port. It is also possible to charter a ship under various charter models, such as bareboat charter, etc.).

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On the other hand, the passage through the Suez Canal is not free. Egypt, through the Suez Canal Authority, charges a hefty fee for each passage and it is reasonable to assume that this payment is determined by the abovementioned alternative cost of circumnavigating Africa. The cost of a passage in the Canal for a large container ship can add up to hundreds of thousands of dollars.

The container megaships being built in recent years, with capacities in excess of twenty thousand TEU, are faster and can sail at speeds of more than 20 knots. At such speeds, the time saving afforded by the Suez Canal is less than a week, meaning that the alternative cost of a Suez Canal passage is reduced.

Beyond the direct monetary aspect, the passage through the Suez Canal also allows for greater certainty as to the costs of the voyage and its duration, since the weather when circumnavigating Africa can make it difficult to meet the planned voyage schedule. In order to meet the schedule in case of bad weather, the captain might have to increase speed, meaning increased fuel consumption and increased wear on the ship's systems.

The high costs of Canal passage, which in certain cases come close to the alternative route circumnavigating Africa, make the shipping companies consider the worthwhileness of the Canal passage. Shipping companies, primarily in the container sector, which operate fixed-frequency lines with periodic port calls will of course prefer passing through the Canal since the savings in time mean they need a smaller total number of ships for the total circuit. For example, for a weekly service between Japan and Europe, at least eight ships would be needed (four weeks for each direction). Extending the duration of the voyage by two weeks due to the Africa circumnavigation means each one-way journey would take six weeks, or 12 weeks for the full circuit, meaning it would be necessary to operate 12 ships in order to keep up the same service level.<sup>19</sup> Also owners of sensitive cargos or cargos with relatively short lifetimes will prefer to sail through the Canal – for example cargos of agricultural produce, livestock, refrigerated goods (food, medicines etc.), and so forth. It is commonly assumed that all time-sensitive goods would prefer the Suez Canal crossing.

Cargo owners and ship owners that transport the rest of the types of goods will do a financial feasibility calculation before crossing through the Canal. Sometimes, under depressed prices in the commodities market, cargo owners will prefer the long

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<sup>19</sup> This is only an example. The shipping companies cope with the scheduling issue also by setting up 'alliances' and other forms of collaboration.

African circumnavigation in order to gain time and wait for the prices to recover. On the other hand, the Suez Canal authorities are quite flexible when setting the cost of passage and they grant "discounts" to certain ships according to the prevailing market conditions. For example, a discount for ships carrying liquefied natural gas (LNG) when prices in the natural gas market are low. This is done in order to encourage them to use the Canal for passage in any case.<sup>20</sup>

## Suez Canal Blockage

Ships pass through the Suez Canal in convoys. The ships wait in the Canal termini at Port Said in the north and in Suez in the south (the wait usually lasts a few hours). When there are enough ships waiting, the convoy gets underway where a local Egyptian pilot boards each ship (this is a requirement of the Egyptian authorities) and a tugboat escorts the convoy.

The convoys depart concurrently from the north and south and pass each other in the Bitter Lakes, where the Canal opens into a wide waterway. After having completed the doubling of part of the Canal in 2015, convoys can sail concurrently in opposite directions through the stretch where there is a double canal.

The Canal blockage by the *Ever Given* occurred in the section where there is no double canal. This highlighted the vulnerability of the trade route, which passes through the Suez Canal bottleneck and raised dire concerns as to the continuity of navigation along this route in case the Canal will be blocked for longer periods of time. In all its 150 years in operation, the Canal had remained closed for eight years between 1967 and 1975 due to wars between Israel and Egypt (from the outbreak of the Six-Day War in June 1967 to June 1975, while the negotiations over the Interim Agreement were suspended). The second time it was shut down to navigation was on account of the *Ever Given*.

There are three conceivable reasons why the Canal might be blocked to navigation:

1. **Operational and safety reasons:** as was the case with the *Ever Given*, meaning a ship running aground, cargo overboard blocking the Canal, availability issues with the tugboats that accompany the ships in their crossing, etc. In view of the dramatic increase in the size of container ships, which have reached Mega Container Ship proportions, it appears that the operational risks in managing such large ships in general, and in narrow passages like the Suez Canal in particular, are on the rise due to the fact that their size leaves no margin for error in such

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<sup>20</sup> Suez Canal extends discounts for LNG carriers, *Sea trade Maritime News*, September 17, 2019.

a narrow waterway. The sides of such a mega-ship, along with the thousands of containers on board, form a formidable huge wall, making them exceptionally difficult to navigate in case of strong wind shear. In recent years there have been other events and accidents which resulted in the loss of thousands of containers when the container hold collapsed in the ship, container fires which destroyed entire ships, etc.<sup>21</sup> Events of this kind occurred also years ago, however the increased size of the ships means that nowadays, when such an incident occurs, the damage, both direct to the cargo and to the ship, and indirect – for example to the environment – are immeasurably greater. Also the amount of hazardous materials these megaships carry is greater, with potential for touching off a significant safety incident.

2. **Force Majeure:** ranging from temporary conditions like the local weather through to catastrophes like earthquakes or tsunamis, which could disable the Canal.
3. **Security and political causes:** for example, the past wars between Israel and Egypt or a terrorist attack. In this context it must be noted that Egypt is indeed engaged in a battle against radical Islamic terrorist organizations throughout the country, and in the Sinai Peninsula in particular. The terrorist organization *Ansar Bayt al-Maqdis* which is operating in Sinai and which has sworn allegiance to ISIS, has in the past launched severe terrorist attacks against the Egyptian Army and even against IDF soldiers on the border with Egypt (2012) and fired rockets at the city of Eilat (2017). Between 2012 and 2013, Egypt reported foiling attempts to attack Canal shipping.<sup>22</sup> It is likely that the sinking of one large vessel (or more than one, in case of a mega-attack) in the Canal will result in months of blockage. However, considering the fact that the digging of the New Suez Canal, 70 km in length, took just one year, it is likely that even in an extreme scenario of deliberate blocking of the Canal, the Egyptian authorities (perhaps with international assistance) would solve the problem in a matter of a few months.

It is very difficult to estimate what the long-term effects of a protracted blockage (months) of the Suez Canal would be. Yet, an analysis of the costs and behavior of global shipping in the case of the *Ever Given*, makes it safe to assume that in the short term there would be a sharp spike in the costs of maritime transport, plus a degree of increase in the prices of goods and products. The rise in the prices of maritime haulage prices would be caused by the diversion of maritime transportation from

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<sup>21</sup> Among the most outstanding accidents in just the past two years one can mention the collapse of hundreds of containers on board the ONE Apus, the fire on the decks of the X-Press Pearl in Sri Lanka and the fire on the decks of a container ship in the Port of Dubai.

<sup>22</sup> [Egypt attack on Suez Canal ship 'foiled'](#), *BBC News*, September 1, 2013.

other regions around the world toward the Asian-European trade in order to complete the periodic calls as described above. The rise in product prices would primarily be the result of the uncertainty effect, of the opportunity to raise prices even if the actual costs have not really risen (consumers understand and accept the rise of prices due to a large-scale event like the Canal blockage).

In the medium and long term, it is likely that the market will stabilize around a new permanent situation (a "new normal"), and to the extent that such an extreme event can be analyzed, one can deduce that the costs of shipping between Asia and Europe will increase, albeit not drastically, since for part of the goods, already today the costs of passage in the Canal embody, to an extent, the alternative costs of circumnavigating Africa.

At the same time, certain goods, which are sensitive to the voyage duration, might endure a sharp rise in prices due to the need to transport these cargos by air or by high-speed ships, which incur high fuel consumption costs. Or in some cases, the inability to transport the goods over maritime routes altogether.

Some countries would be severely affected by such a future long-term closure, first and foremost Egypt. The revenues from the Suez Canal are extremely vital to the Egyptian economy. Hundreds of thousands of jobs are created by and around the Canal (tens of thousands of employees in direct employment and more in the other circles of employment in the industrial parks adjoining the Canal). In the second circle would be the Eastern Mediterranean countries like Israel, Cyprus, Greece, and Malta, which will find themselves far from this major global shipping lane, which today passes along the shortest line between Port Said on the northern outlet of the Canal and the Straits of Gibraltar. Malta, for example, is a major transshipment hub in the central Mediterranean. This transshipment activities contribute immensely to the economy of this small island. Should global trade switch to the route around Africa instead of passing through the Mediterranean, Malta's economy would be severely affected since the volume of transshipment in the island-nation's ports would be slashed drastically.

The connectivity of the ports in Israel would also be affected by such a hypothetical future blockage: they would find themselves far from the world's main shipping routes. This would lead to negative impacts on Israel's foreign trade, since the import and export costs would increase. Figure 5 presents two shipping lanes. On the right is the main lane between Asia and Europe nowadays through the Suez Canal (marked in black). The Israeli Mediterranean ports of Ashdod and Haifa are approximately one hundred nautical miles from this route (marked in yellow). On the left is the

route around Africa in case the Suez Canal is blocked (marked in black). The Israeli ports would now be 2,700 nautical miles from the route (marked in yellow).

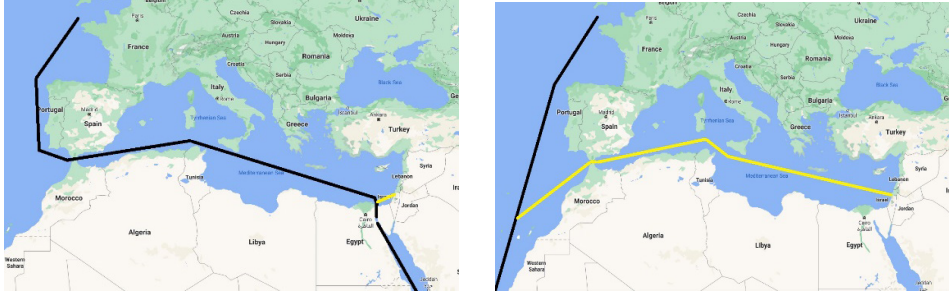


Figure 5: Right, the main trade route from Asia to Europe via the Suez Canal, Left, the global trade route around Africa

## Alternative routes

The Suez Canal creates a maritime trade link between the Mediterranean Sea and the Indian Ocean. This issue of connecting the trade routes between the Mediterranean Sea and the Indian Ocean has occupied the minds of the region's rulers, merchants and sailors for thousands of years. Evidence of attempts to connect the Nile River eastwards to the Red Sea, thereby forming a maritime route between the Mediterranean and the Red Sea, has existed since the time of the Pharaohs.<sup>23</sup> In the Roman era, trade between the Mediterranean basin and Asia passed through Egypt via overland routes before continuing onwards by sea. It was France which succeeded in completing this massive project of digging the Suez Canal, which was first opened in 1869.

Any future alternative route would have to deal with the economy of scale of the trade via the Suez Canal. The average cost of transporting a container through the Canal stands today at approximately \$25–35,<sup>24</sup> compared with hundreds of dollars it would cost to transport the same container via overland routes by truck or train.

<sup>23</sup> Suez Canal... A Historical Evolution, Suez Canal Authority.

<sup>24</sup> To do a rough calculation, we can use a 6,000-container ship, which pays approximately 200,000 dollars in passage fees through the Suez Canal, which are equivalent to 33.3 dollars per container crossing through the Canal.

Besides the Suez Canal, several alternative routes can be taken into consideration between the Mediterranean and the Indian Ocean (both existing and future routes).<sup>25</sup>

## Oil Pipeline Network

There are two active oil pipelines between the Red Sea and the eastern Mediterranean. The first is the SUMED pipeline,<sup>26</sup> which was laid between the City of Suez and Alexandria after shipping was blocked in the Suez Canal following the Six-Day War (June 1967). The pipe began operations in 1978. The second pipe is the EAPC (Asia-Europe Pipeline Co), formerly the Eilat-Ashkelon Pipeline) between Eilat and Ashkelon in Israel. In addition, there is a pipeline between Iraq and Ceyhan in Turkey. Although this pipeline does not originate in a sea port in Iraq, but rather from the Kirkuk region, it does help reduce European dependence on tanker passage through the Straits of Hormuz and the Suez Canal in the oil trade between the Persian Gulf and Europe. In addition, there is the route of the oil pipeline between Iraq and Syria, which has been inactive since 2003 and the oil pipeline from Iraq to Haifa, which has not been used since 1948.

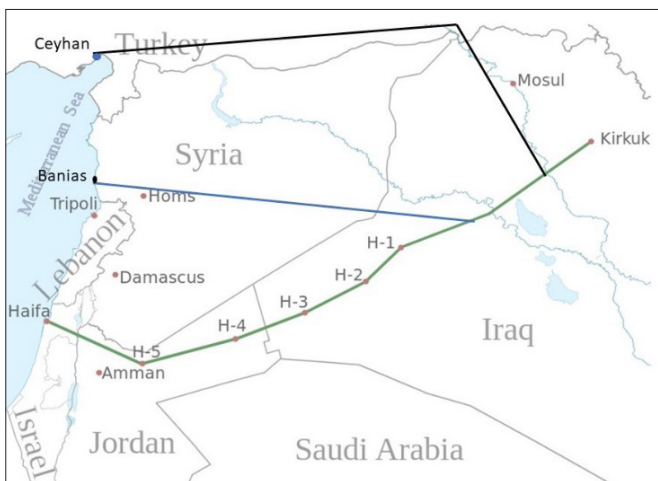


Figure 6: Oil pipelines from Iraq to the Mediterranean, the Kirkuk-Haifa (Israel) line, the Kirkuk-Banias (Syria) line which branches off it, and the Kirkuk-Ceyhan (Turkey) line (Drawn by the author)

<sup>25</sup> For a complete review, see: Ehud Gonen, *Logistic Corridors between the Indian Ocean and the Mediterranean – Existing trade routes, planned ones and China possible future involvement*, in: Shaul Chorev and Ehud Gonen (eds.), *Maritime Strategic Evaluation for Israel 2020/21*, pp. 336–354, University of Haifa.

<sup>26</sup> SUMED – Suez Mediterranean pipeline





Figure 7: Route of the SUMED oil pipeline from Suez to Alexandria (published by the Netoil Company which built the pipeline).

In 2017, 9% of the global trade in oil products passed through the Suez Canal and the SUMED pipeline.<sup>27</sup> In recent years there is an upward trend in the oil traffic from north to south, primarily oil from Russia and the United States to destinations in East Africa and South Asia, in addition to the "traditional" oil traffic from the Gulf states to Europe.<sup>28</sup> The data go on to show that in 2016 (the last year verified data were released by the US Energy Information Authority), approximately 30% of the oil passing from Suez to the Mediterranean passed through the SUMED pipeline and the remaining 70% passed by tanker.<sup>29</sup> Israel does not publish data on the oil traffic in the EAPC.

### Overland connection in the Levant

Theoretically, it would be possible to transfer goods between the Mediterranean and the Indian Ocean by unloading and loading in the ports of Eilat and Ashdod in Israel, and transporting the cargo between these two ports on trucks. While this route

<sup>27</sup> The Suez Canal and SUMED Pipeline are critical chokepoints for oil and natural gas trade, US Energy Information Administration, July 23, 2019.

<sup>28</sup> In this context, it must be noted that due to the sanctions imposed on Iran, which have meant a decline in European imports of Iranian oil, have resulted in a decline in the oil movement from south to north via the Canal and via the SUMED pipeline.

<sup>29</sup> World Oil Transit chokepoints, US Energy Information Administration, July 25, 2017.

did indeed operate on a small scale in certain periods, the unloading and loading, and then the truck-borne transport, is an inefficient proposition for very large-scale trade. There is a plan in principle to link the city of Eilat and its sea port with a railway line to Israel's national railway network, however it seems this project is still very far from materializing for economic, environmental and social reasons.<sup>30</sup>

Another overland link is connection of the continuation of the Valley Train Line in Israel to the Jordan border crossing (the Sheikh Hussein Bridge), and from there via a future railway south toward Aqaba or east toward the Gulf States via Saudi Arabia. This link would enable trade between the Kingdom of Jordan with Europe, without having to pass through the Suez Canal (Jordan's only outlet to the sea is the Port of Aqaba on the Red Sea). Economically this is a very attractive proposition, however it encounters political hurdles due to the political situation between Israel and Jordan.

It should also be noted that Iran is working to build an overland corridor, based on an ethnic Shiite continuum (referred to as the '*Shiite Crescent*') from the northern Persian Gulf to the Syrian coast. The motivation for building this logistical corridor, however, is mainly political – to support Hezbollah in Lebanon and to prop up the Syrian regime – and not commercial, in support of global trade.

### The northern route



Figure 8: The northern route versus the Suez Canal for trade between the Far East and northwestern Europe.<sup>31</sup>

<sup>30</sup> Gad Lior, The train to Eilat is not in Minister of Finance Avigdor Lieberman's work plan: "It isn't viable", *YNET*, July 12, 2021 [Hebrew].

<sup>31</sup> What is the Northern Sea Route?, *The Economist*, September 24, 2018.

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It is possible that, due to global warming, new seasonal shipping routes will be opening up between northeast Asia and western Europe via the Arctic Ocean.<sup>32</sup>

Despite the economic attractiveness of this route (as opposed to the dire consequences of global warming), large-scale trade in the Arctic Ocean is still a long way off since there are substantial logistical hurdles to overcome for shipping in that region (there are no major ports anywhere along the way to provide technical support), legal difficulties due to various claims being made by the countries in the region (mainly Russia) and also very strict environmental regulation.

### Overland Link via Central Asia

In 2013, China announced its Belt and Road Initiative, which is intended (inter alia) to build physical and logistical connectivity between the countries throughout the Eurasian region that have signed up to the initiative. A significant part of this building of connectivity is intended to rebuild the ancient overland trade routes (the Silk Road) from China through Central Asia en route to Russia and Europe.

As part of this initiative, China is investing billions of dollars in building railroads over enormous distances in central Asia, on the way overcoming engineering challenges and political instability in some of the countries in the region. At the same time, despite these mega-investments, trade by railway over long distances cannot compete with the economic efficiency of maritime transport. A large part of the trade being done over the newly-opened land routes is transacted thanks to generous government subsidies provided by China. These accounted for over 50% of the cost of the transport and nowadays they account for "only" a third of the transport cost.<sup>33</sup>

The Belt and Road Initiative was intended, inter alia, to stimulate China's economic development in its western provinces, which are far from its prosperous eastern seaboard cities, to check internal migration from the west eastwards, and through a supportive economic policy, to help deal with internal political problems with ethnic minorities on western China. All these, from the domestic Chinese perspective, justify these far-reaching subsidies. Besides, one can think of certain scenarios, for example for certain goods produced in western China which are destined for inland cities (for example Moscow, the large city in Europe with 12 million inhabitants). In such cases,

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<sup>32</sup> For more on this, see Tzevy Mirkin, *The Russian Northern Sea Route – Declarations and Reality*, in: Shaul Chorev and Ehud Gonen (eds.), *Maritime Strategic Evaluation for Israel 2018/19*, (Haifa: University Haifa, 2019), pp. 118–127.

<sup>33</sup> Huilin Shi, *Is the elimination of Chinese subsidies a good idea?* *railfreight.com*, January 11, 2021.

a direct westward overland journey by train would be cheaper and more efficient than a lengthy journey to the Chinese east coast, then by sea to European ports and from there transshipment overland or by river boat to landlocked destinations.

Nevertheless, besides these specific cases, for the bulk of Chinese exports produced in the large economic centers on China's eastern shores, maritime trade was and remains the most efficient, cheapest means of transport to the international markets.

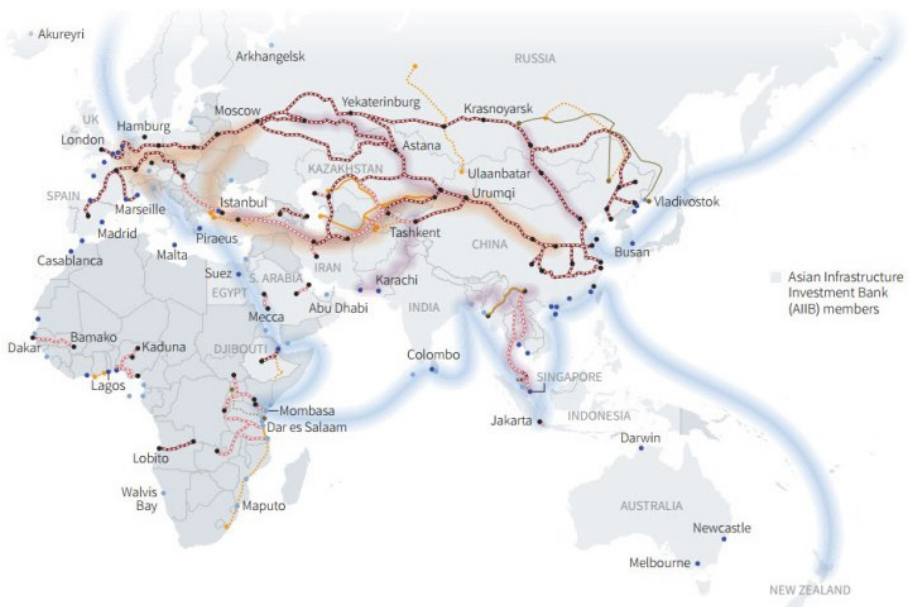


Figure 9: Logistical Corridors between China and Europe under the Chinese Government's Belt and Road Initiative (BRI).<sup>34</sup>

Another overland route between east and west Asia is the Trans-Siberian Railroad. Russia is trying to sell this train line mainly to customers in Japan, who are offered a ferry line between Japan and Vladivostok in the Russian Far East and from there via the Trans-Siberian Railroad to eastern Russia and onwards to Europe. However, it seems that despite a measure of attractiveness this journey has to offer, which under certain circumstances can even be shorter than the maritime journey, bureaucratic and administrative obstacles in Russia, plus the limited transport volume, make this route unattractive.

<sup>34</sup> Mercator Institute for China Studies (MERICS).

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## Conclusion

One of the reasons for blocking the Suez Canal in the first place, and certainly the main reason for the great difficulties in releasing the *Ever Given* is the huge size of the container ships which are being built this past decade – larger than aircraft carriers. With the opening of the new ports in Israel (the Haifa Bay Port and the South Port in Ashdod), such megaships will be calling in Israel at relatively high frequencies. This fact has numerous economic and commercial benefits to it, but at the same time it is worthwhile to prepare (and we hope this is being done) for safety incidents inherent to these megaships. Safety incidents and hazardous materials are present in any case, but these are exacerbated due to the sheer size of the ships. It seems that Egypt, with assistance from the international community, ought to take a close look at the safety aspects of the passage of ships in the Canal and also evaluate the shipping safety of these megaships elsewhere around the world.

At present there is no alternative overland Asia-Europe route for large-scale trading in goods (which are not oil in a pipeline). On the other hand, the world's reliance on maritime transport ensures that at least for the foreseeable future the Suez Canal will continue to serve as a significant shipping route of considerable importance. The only "threat" to the Suez Canal's preeminence as a main commercial link in the Asia-Europe trade is the opening up of the northern route to large-scale trade on the tail of global warming, however even the opening up of this route has its problems and it will be a long time before trade there will gather significant momentum.

The Suez Canal is vital to the Egyptian economy. It is a key service export sector especially now with global tourism in freefall due to the COVID-19 pandemic; in view of Egypt's demographic and economic situation – a population of over one hundred million of which approximately forty percent are under the age of twenty and an (official) unemployment rate of ten percent; plus the past experience of the Muslim Brotherhood movement's election victory (2012), provide the west with a clear interest in the continued operation of the Suez Canal, which on its part is helpful in preserving the stability of the regime in Egypt.

Israel has a clear economic interest in maintaining the Suez Canal as a major world shipping route. The proximity of Israeli ports on the Mediterranean coast (Haifa and Ashdod) to the northern outlet of the Suez Canal (160 and 105 nautical miles respectively) enables Israel's foreign trade to benefit from a high degree of connectivity thanks to this proximity to a main trade route. Therefore, beyond the overriding consideration of security in the Sinai Peninsula vis-à-vis Israel, there is also a secondary economic consideration in support of collaborating with Egypt

in eradicating terrorism in the Sinai Peninsula which will also assure the continued trade via the Suez Canal.

The Ministers of Transport in Israel have promoted the railway connection of the Port of Haifa through the Beit She'an region to Jordan, and have branded this initiative in various ways. For instance, *Tracks to Peace* under Minister Israel Katz and the *Bay to Gulf* initiative of Minister Miri Regev. In any case, and regardless of the branding, such a project has tremendous regional development potential, mainly with Jordan, and it could curry sizable European support thanks to the logistical redundancy it presents for passage through the Suez Canal. It is recommended that the railway to Jordan initiative continue to be promoted as opposed to a railway line to Eilat, which is more problematic from the environmental, transport (loading the railway system in the center of the country) and demographically (transforming the city of Eilat from a tourist city to a logistic city). The promotion of the railways project eastward past the Israeli border has to be coordinated with Egypt in order for them not to feel that the railway lines are supplanting the passage through the Suez Canal, and to make it clear that there is no intention to harm the Egyptian economy.

## Exclusive Economic Zones (EEZ) in the Red Sea Region: Risks and Opportunities<sup>1</sup>

*Shlomo Guetta*

### Introduction and Main Points

The Middle East has been endowed with various natural resources, including plentiful energy resources in the form of crude oil and natural gas fields. Many energy resources in the region are located at sea or near the coastal shelf. The maritime region in which the energy resources are found is referred to in professional circles as the Exclusive Economic Zone – EEZ. In this article we shall also use the term Economic Waters. This is a relatively new term that entered maritime law in the course of drafting the Convention on the Law of the Sea in 1982. This is a maritime region which can span a strip of up to 200 nautical miles in width from the baseline (the country's coast), within which the country has sovereign rights to explore and exploit natural resources, both living and non-living, on the seafloor, and also to carry out prospecting activities and economic exploitation such as energy production from currents, winds and water. A state is permitted, but not required, to declare exclusive economic zones.<sup>2</sup> Throughout the Middle East region, there are three maritime spaces in which there are EEZ's: the Persian Gulf and the Gulf of Oman; the eastern Mediterranean; and the Red Sea.

In my opinion, the Economic Waters within the Red Sea region have not been adequately reviewed relative to the other two regions. In view of the increasing importance of the Red Sea, it is advisable to shed some light on this region and expand on the information regarding the energy potential within the maritime medium of the Red Sea – a zone which has been developing in recent years, including regarding natural gas resources.

So far, the Red Sea has functioned as a main transit route for energy shipments. Nowadays the sources from which energy is extracted are in the sea itself. This change is expected to radically alter the definition of the Red Sea Basin and its importance. On the one hand, it may be holding the seeds of a great promise and prosperity for all of the countries in the Basin, but on the other hand, it might also turn into a source of disputes and power struggles, especially when considering the battle raging between the superpowers and the regional powers over hegemony in the region.

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<sup>1</sup> The topic of the article is very dynamic. It reflects the situation at the time of writing in November 2021.

<sup>2</sup> For more on the term EEZ, see Sarah Weiss Me'odi, *Maritime Law*, clause 21.7

Regardless of the Economic Waters issue, the Red Sea serves, now as in the past, as a bustling sea route for goods and energy from the Far East to Europe and vice versa. In recent years, the interest and attention regarding the Red Sea has increased due to violent conflicts unfolding within it, in particular regarding the Red Sea, and in particular regarding a strategic threat to one of the world's most critical choke points at the southern outlet of the Red Sea, namely the Straits of Bab el-Mandeb.

The concern is that the freedom of navigation in this important strait will be curtailed due to actual hostile activities – related to the protracted civil war in Yemen, increasing penetration by Iran, which is supporting the Houthis – one of the toughest factions opposing the official government in Yemen – to the southern Red Sea, and concerns of maritime terrorism and piracy in this region.

Also in the background is the growing tensions between Egypt and Ethiopia (the latter being a landlocked country following the breakaway of Eritrea), following the construction of the Renaissance Dam in Ethiopia – a dam which Egypt views as a severe threat to the water reserves it needs in order to exist as a country with a large population.

The goal of this article is to shed light on the Economic Waters within the Red Sea and, in the process, to point out some fundamental data, varying details and the implications in terms of challenges and threat profiles regarding the countries bordering the Red Sea Basin. The first part of the article will review the fundamental factors in terms of maritime borders between the various countries, disputes or understandings and agreements. The second part will review the current activity regarding the actual or potential exploitation of the offshore energy resources. The final part will present an analysis of the implications and challenges facing the region's countries within the general context and within the specific context of exploiting the energy resources.

## Geographic Fundamentals

### *Agreements, understandings and disputes concerning the demarcation of the Economic Waters and the maritime boundaries within the Red Sea*

The unique geographic structure of the Red Sea,<sup>3</sup> as a kind of 2,250 km (1215 nautical miles) long inlet from the Indian Ocean, allows in principle for a relatively straightforward division and demarcation of the Economic Waters zones between

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<sup>3</sup> For more on this see Benni Ben Ari's article, *The Geography of the Red Sea. The Strategic Series 2020* (Haifa: Chaikin Chair for Geostrategy, University of Haifa, 2021) pp. 82–106 [Hebrew].



the various countries along its coast. There are two strategic choke points at both ends of the Red Sea, –in the south, Bab el-Mandeb, a narrow strait connecting the Gulf of Aden to the Red Sea, and in the north, the Suez Canal.<sup>4</sup> The Red Sea has Egypt, Sudan and Eritrea on its western shores, with Djibouti straddling the southern tip of the Sea just west of the Strait of Bab el-Mandeb. On the eastern shores lie Saudi Arabia, which has the longest stretch of coastline along the Red Sea. Yemen lies to the south of Saudi Arabia while on the northern tip of the Gulf of Aqaba lie Jordan and Israel. The latter two do not have any mineral resources on the northern Gulf of Aqaba-Eilat.

Besides the importance of the Red Sea as a strategic shipping lane connecting the trade between three continents (Asia, Africa and Europe) between the Indian Ocean and the Mediterranean, it is home to a rich and diverse ecosystem, which has been endowed with deposits of oil and gas, and therefore the demarcation of its economic waters is of importance.

### *The countries on the western shores of the Red Sea*

**Egypt** shares the longest common maritime boundary in the Red Sea with Saudi Arabia. This shared border is approximately 910 km long (approximately 490 nautical miles). It extends from the north of the Gulf of Aqaba down to the center of the Red Sea (latitude 22 degrees). An agreement was signed between the two countries in April 2016, regularizing the maritime border between them. This took place during Saudi King Salman's visit to Egypt, during which several investment projects were announced (see Figure 2). In the joint communique issued in Cairo, they said: "This [agreement] enables both countries to benefit from the exclusive economic zone for each, with whatever resources and treasures they contain".<sup>5</sup> Based on this agreement, and as will be discussed later on, in the recent two years the two countries have begun taking measures to realize the energy potential within their respective exclusive economic zones.

An interesting point, which can be observed in the map of the agreement between Egypt and Saudi Arabia, is that the Egyptian side includes the maritime region of the Hala'ib Triangle – an area disputed between Egypt and Sudan (see Figure 3). It is likely that the marking of the maritime border opposite the Hala'ib Triangle was

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<sup>4</sup> For more on the Red Sea's characteristics, see: Benni Ben Ari and Moshe Terdiman's article, *Geography and Strategy in the Red Sea – the Current Situation*, In Shaul Chorev and Ehud Gonen (eds.), *Maritime Strategic Evaluation for Israel 2020/21* (Haifa: Maritime Policy and Strategy Research Center, University of Haifa, 2021) pp. 99–124.

<sup>5</sup> Reuters Staff, *Saudi, Egypt draw up maritime borders*, *Reuters*, April 9, 2016.

introduced following a demand from Egypt, which has been claiming sovereignty over that area ever since Sudan achieved its independence in 1956. The area is rich in iron ore, gold, magnesium and other natural resources. In the past, the Sudanese government granted a Canadian company a concession to explore oil in the waters off the Hala'ib Triangle shores, a fact which inflamed tensions between Egypt and Sudan.



Figure 1: General map of the Red Sea, demarcating the Economic Waters of the countries bordering its shores



Figure 2: Map of the maritime boundary agreement between Saudi Arabia and Egypt from 2016

**Sudan** Nowadays, due to their common interest against Ethiopia's Renaissance Dam, the relations between Sudan and Egypt have warmed slightly, although it is still not clear whether this will at last bring about a settlement of the dispute between them over the Hala'ib Triangle. In any case, in tenders for natural gas exploration, which the Egyptians issued in 2019 in the Red Sea, the maritime region off the Hala'ib coast was included in the list of sites ("blocks") on offer. Contrary to the Egyptian position, the Economic Waters map claimed by Sudan shows that the maritime region opposite the Hala'ib Triangle is included in the Sudanese demand (see Figure 4). Beyond the Hala'ib Triangle, Sudan, which is also situated on the western shores of the Red Sea, shares a maritime border with Saudi Arabia, which is located on the eastern seaboard of the Red Sea. The maritime boundary shared between Sudan and Saudi

Arabia spans a stretch of approximately 440 km (approximately 240 nautical miles), not including the Hala'ib Triangle.



Figure 3: Map of the Hala'ib Triangle

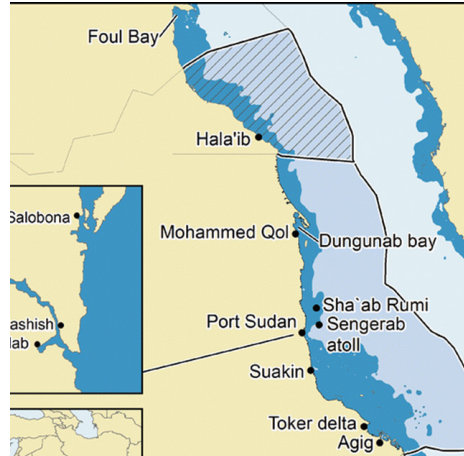


Figure 4: Map of the Economic Waters claimed by Sudan

**Eritrea** is located on the southwestern shores of the Red Sea. It achieved its official independence in 1993 when it seceded from Ethiopia. Eritrea shares a maritime boundary with Sudan to the north, while opposite lie two countries along the eastern coast of the Red Sea – Saudi Arabia and Yemen (see Figure 5). The maritime boundary between Saudi Arabia and Eritrea is a stretch of approximately 320 km (approximately 170 nautical miles). In 1999, Eritrea and Yemen signed a treaty settling their maritime boundary in a section of approximately 380 km (approximately 205 nautical miles) (see Figure 6).<sup>6</sup>

**The Republic of Djibouti** is south of Eritrea, on the western shores of the Red Sea on the way to the Gulf of Aden. It gained its independence from France in 1977. Djibouti is on the southwestern side of the Straits of Bab el-Mandeb. Its southeastern border is with Somalia. Regarding the small Republic of Djibouti, no data or visual information was found as to the Economic Waters belonging to this country, nor were any claims, made by Djibouti in this regard, found.

<sup>6</sup> For more on the maritime boundary treaty between Eritrea and Yemen, see: *Award of the Arbitral Tribunal in the second stage of the proceedings between Eritrea and Yemen (Maritime Delimitation) Decision*, vol. XXII, pp. 335–410, December 17, 1999.

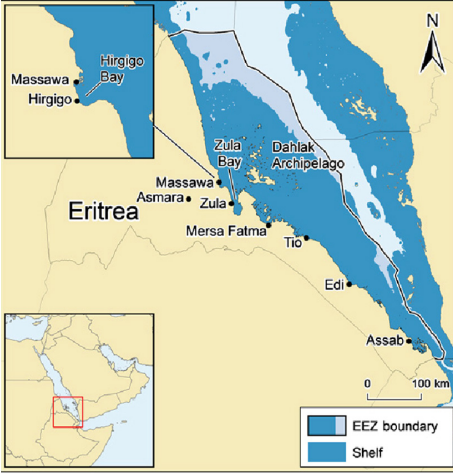


Figure 5: Map of the Eritrean Economic Waters

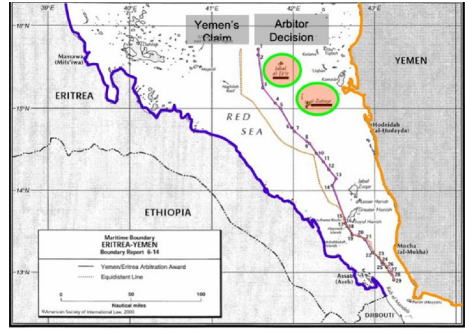


Figure 6: The compromise agreement on the shared maritime boundary between Yemen and Eritrea from 1999

*The countries along the eastern shores of the Red Sea*

**Saudi Arabia** is located on the eastern side of the Red Sea and has the longest coast along this sea (including the Gulf of Aqaba) compared with the rest of the countries bordering it. Its shores span approximately 1,670 km (900 nautical miles). It borders Yemen to the south, which is currently being torn apart by a prolonged bloody civil war. The region along the Red Sea between Saudi Arabia and the Straits of Bab el-Mandeb are controlled by the Houthis, currently propped up by the Iranians. The Houthis are a bitter adversary of the central government both in Yemen and in Saudi Arabia. As for the demarcation of the Economic Waters between Saudi Arabia and Yemen, there are no known disputes. However, this issue is marginal nowadays in view of the violence and hostilities between the warring parties in the Yemeni civil war, where the Saudis support the central government, while the United Arab Emirates support the separatist Southern Transitional Council in South Yemen. The armed conflict in this region has its manifestations in the maritime space as well, including the use by the Houthis (with considerable support from Iran and Hezbollah) of naval mines, missiles, UAV's, suicide boats and various other weapons launched against shipping, infrastructure, and port installations along the Saudi coast.

**Yemen** is the result of the unification of North and South Yemen in 1990. It has a coastline that stretches between the shorter portion along the Red Sea as far as the Straits of Bab el-Mandeb and the longer portion on the northern coast of the Gulf of Aden. As for the Yemeni stretch of coastline in the Red Sea south of the Saudi coast

and opposite the Eritrean coast, an agreement had been signed in 1999 between Yemen and Eritrea, demarcating a shared maritime boundary of approximately 380 km.

To sum up this section, the countries along the Red Sea coast have for the most part settled the maritime boundary between them, and therefore it is generally quite clear how the Exclusive Economic Zones (EEZ) are divided between them. The only exception is the disputed region of the Hala'ib Triangle between Egypt and Sudan, along the 22 degrees northern latitude. The southern section where Yemen borders Saudi Arabia is unclear as well, in view of the civil war which is still raging there and the splitting of the Yemeni coast between several factions which control it.

## Actual Realization of the Energy Resources in the Red Sea

Of the countries reviewed in the previous section, which dealt primarily with the demarcation of the maritime boundaries between them, Egypt and Saudi Arabia are the only countries<sup>7</sup> which are actually exploiting the energy potential within their territories through the extraction of crude oil over several decades, while recently they have begun exploring for and extracting natural gas.

### *Egypt – Energy Fields in the Gulf of Suez*

Egypt has been extracting crude oil since the early 1900s. Over half of Egypt's oil reserves are in offshore oil fields, primarily in the Gulf of Suez. Egypt is an important energy producer which is not a member of OPEC.<sup>8</sup> Commercial amounts of oil were first discovered in 1908. Additional discoveries were made in the late 1930s along the Gulf of Suez coast and within the waters of the Gulf itself.

Egypt extracted crude oil from offshore installations in the Gulf of Suez, with the most prominent and widely-known being the oil fields dubbed Morgan, Belayim and July. During the Six-Day War (June 1967), Israel conquered the Sinai Peninsula and began extracting crude oil from the "Oil Corridor" on the eastern coast of the Gulf of Suez: the Abu Rodeis site, Ras-Sudar, Abu Zenima and a cluster of offshore

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<sup>7</sup> To be precise, Sudan, in the late 1950s, attempted to explore oil through the AGIP company along its Red Sea coast, with no meaningful results *History of Oil Exploration in Sudan, Republic of Sudan Ministry of Energy & Oil*. 50 years later (in 2010), Sudan announced that it would be searching for oil in the Red Sea waters with the help of the China National Offshore Oil Corporation, however it is unknown whether this initiative was indeed pursued. *Sudan starts oil exploration in Red Sea, The European Coalition on Oil in Sudan*.

<sup>8</sup> Organization of the Petroleum Exporting Countries – OPEC.

production facilities known as Belayim. Israel shipped the crude oil it extracted from the oil corridor in Sinai using tankers, which were operating in its service, to the oil terminal in Eilat, and from there through the Eilat-Ashkelon oil pipeline (nowadays named Europe-Asia Pipeline Co, EAPC) to the Mediterranean. This production by Israel, through a government corporation named *Netivei Neft*, infuriated the Egyptians, who considered Israel to have usurped Egypt's natural resources for its own use. For this reason, the Egyptian leadership decided, among other things, to task the Egyptian Navy with laying naval mines at the Straits of Gubal during the October 1973 war, to prevent tanker traffic in Israel's service from making the trip between the Gulf of Suez and the Gulf of Eilat. The Egyptian mining was done in secret and caught Israel by surprise. On October 26, 1973, just two days after a ceasefire came into effect, the naval minelaying became evident to Israel when a tanker in its service named *Siris* hit two powerful mines and sank.<sup>9</sup> The naval mining action in the Straits of Gubal was a final touch to the naval blockade the Egyptian Navy had imposed in the central and southern Red Sea through the use of destroyers and submarines. This was done in an effort to halt shipping to and from the Port of Eilat, and in particular to prevent crude oil from reaching Israel from the Persian Gulf.

In September 1975, as part of the interim agreement (Sinai II) with Egypt, Israel agreed to vacate the oil installations in Sinai. After the production facilities were returned to the Egyptians, additional oil fields were discovered in western Sinai. However, 50% of Egypt's crude oil continued to be extracted from the Gulf of Suez. Between 1996 and 2005, the crude oil production decreased following depletion of the existing fields and the failure to develop new ones. Concurrent with the decline in crude oil production, new deposits of natural gas were being discovered, initially in the Mediterranean, with the first signs of gas deposits being discovered in the late 1960s. The first was discovered in 1969 in the Abu Qir Bay (close to the Port of Alexandria).<sup>10</sup> Egypt's gas fields in the Mediterranean, most of which were discovered from the 1990s onwards, and in particular during the first two decades of the 21st century, are not within the scope of this article.

The Gulf of Suez continues to be a source for production of crude oil, however in recent years it has also entered the era of natural gas production. The Norwegian

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<sup>9</sup> About the surprise naval mining in the Straits of Gubal during the October 1973 war, see: Shlomo Guetta, *The Egyptian Sea Mining Surprise during the Yom Kippur War (October War 1973)*, In Shaul Chorev and Ehud Gonen (eds.), *Maritime Strategic Evaluation for Israel 2020/21*, (Haifa: Maritime Policy and Strategy Research Center, University of Haifa, 2021) pp. 228–242.

<sup>10</sup> From the Egyptian Ministry of Petroleum and Mineral Resources website *Natural Gas, Ministry of Petroleum and Mineral Resources*.

company Neptune won an oil exploration tender in 2018 to explore and produce crude oil and gas in the offshore field named Al Amal (block No. 4), located in the southwestern section of the Gulf of Suez, south of Ras Gharib and north of Al-Ghardaqah (see Figure 7).<sup>11</sup>

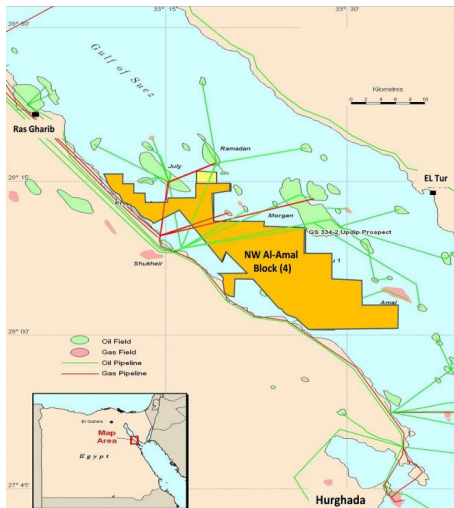


Figure 7: The Neptune concession map for the oil and gas exploration in the South Gulf of Suez (North Red Sea).



Figure 8: Area of responsibility of the Egyptian holding company Ganope in the Red Sea (between latitude 22 degrees in the south and latitude 28 degrees in the north)

### *Egypt – Potential gas fields in the Red Sea*

In the previous decade, feasibility checks were conducted for gas exploration in the Red Sea, headed by the Egyptian holding company Ganope. Apparently, following the maritime boundary agreement between Egypt and Saudi Arabia, signed in 2016, in 2017 agreements were signed with the American company Schlumberger and with the British TGC to conduct preliminary seismic surveys in the Red Sea. In March 2019, based on the findings of the seismic surveys, Egypt issued a huge gas exploration tender in 10 sites ("Blocks") within the maritime region spanning from the northern Red Sea as far as the Sudanese border, including the maritime region of the Hala'ib Triangle (see figures 8 and 9). The tender was closed in September 2019.

<sup>11</sup> Neptune Energy awarded oil exploration license in Egypt, *World Oil*, 2/12/2019.

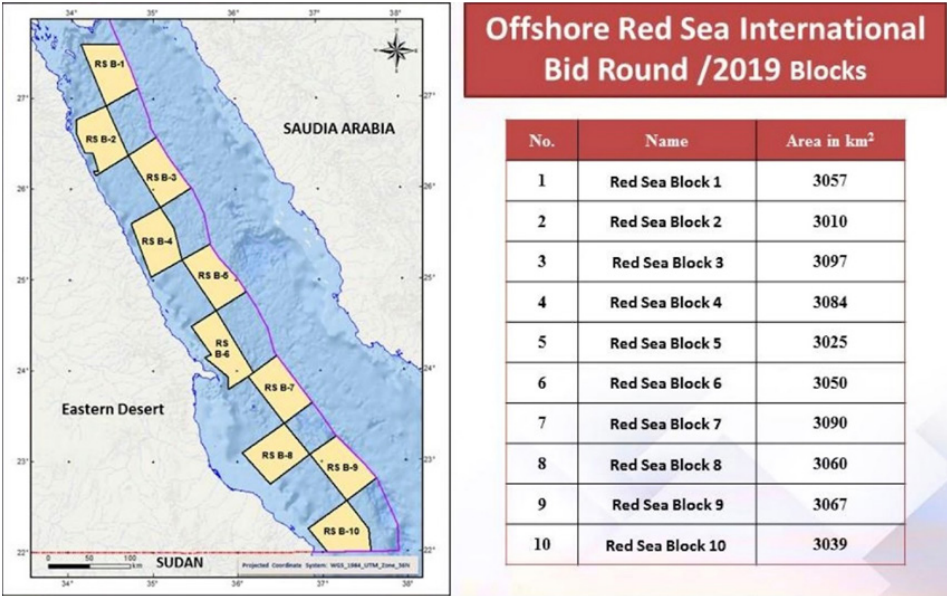


Figure 9: The blocks (sites) included in the 2019 Egyptian tender

At the end of December 2019, the names of the companies that had won three of the ten blocks included in the tender were announced. American company Chevron won block 1 (figure 10), Dutch Shell won block 3 (figure 11), and block 4 went to the United Arab Emirates company Mubadala, jointly with Dutch Shell (figure 12). It is worth noting that Shell and Chevron are also involved in gas exploration and production in Egypt's Economic Waters in the Mediterranean. Another noteworthy fact is that Chevron, the American energy giant, which until 2019 operated only in the Persian Gulf region in the Middle East, got involved also in Israel's Economic Waters after buying Noble Energy's assets in the Tamar and Leviatan gas fields.

In July 2020, the Egyptian parliament approved the wins those companies had made in those three north Red Sea blocks.<sup>12</sup> In this context it should be noted that so far, to the best of my knowledge, no activity has been detected indicating discovery or actual production of a single gas deposit from any one of the above blocks. Another unclear fact concerns block 2, the winner of which, if any, remains unknown.

<sup>12</sup> Announcement of Egyptian Parliament approval of 12 gas and oil exploration agreements, including in the Red Sea: *Egypt's House of Representatives approves 12 Oil & Gas E&P Agreements, Energy Egypt*, July 7, 2020.



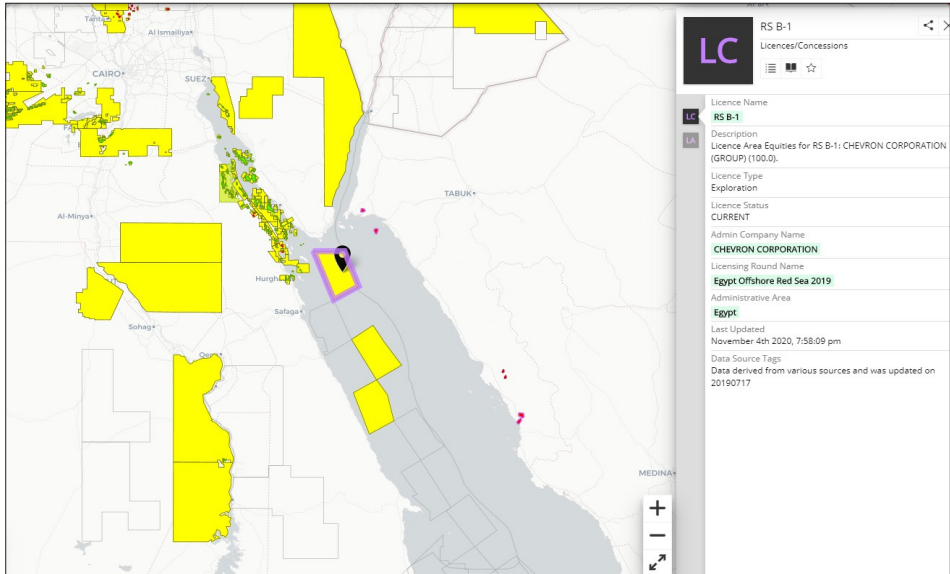


Figure 10: Chevron's win of Block 1

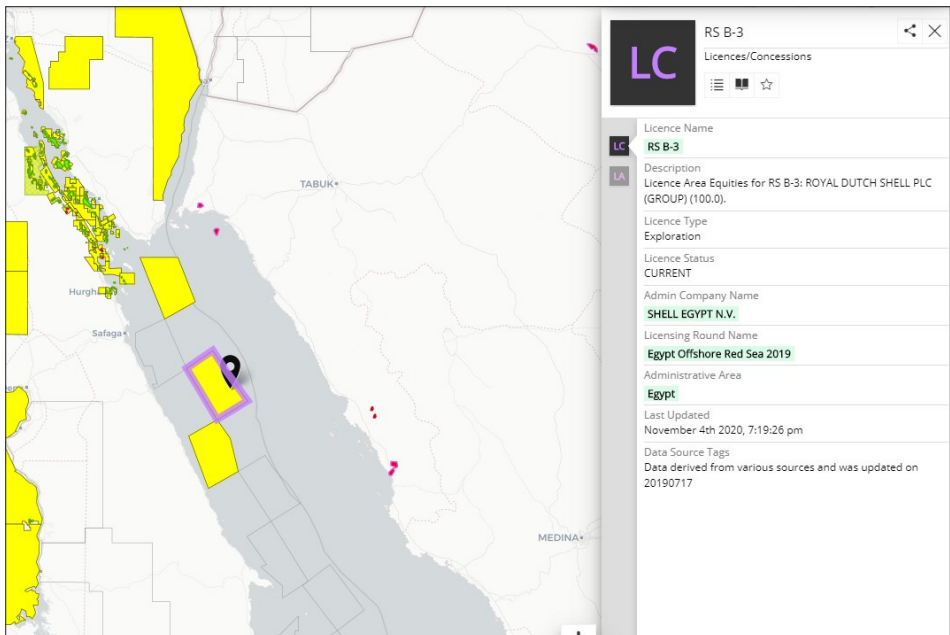


Figure 11: Shell's win of Block 3

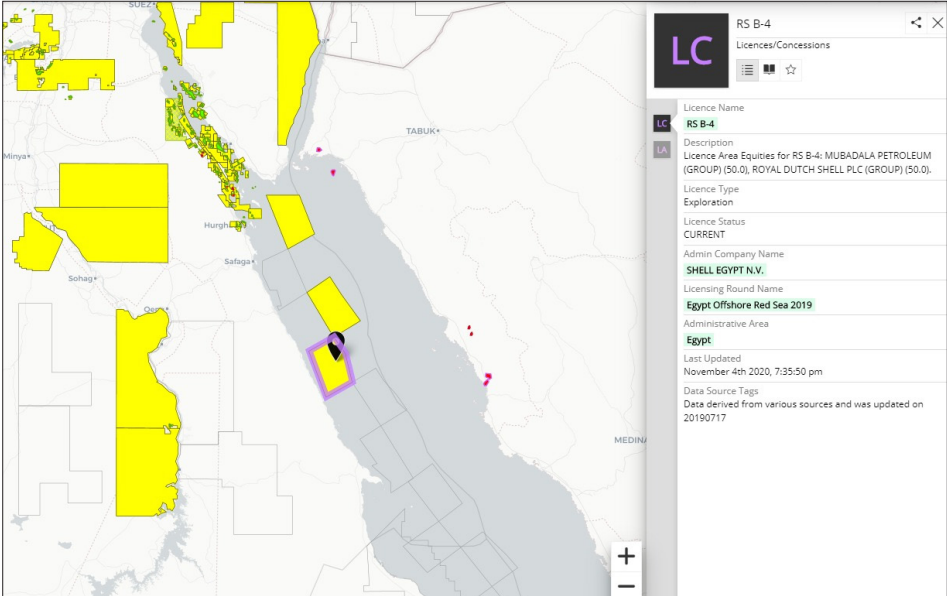


Figure 12: Mubadala's and Shell's win of Block 4

In short, Egypt has been producing crude oil from offshore and onshore production facilities within the Gulf of Suez region, on both its shores, for over 100 years. Norway's Neptune has recently begun producing gas in the southern Gulf of Suez. As for the Red Sea, following the maritime boundaries agreement with Saudi Arabia, seismic surveys were carried out, which likely produced positive results. Following these, Egypt issued a tender and three leading energy companies have in the meantime already had wins in the tender. Exploration activities or actual production have not yet been detected. Apparently, the Red Sea holds good potential, as far as Egypt is concerned, for gas deposit discoveries, which will be added onto the ample deposits which have already been discovered, in the Mediterranean over the past two decades.

### *Saudi Arabia – Potential and realization of energy in the Red Sea*

Most of Saudi Arabia's energy reserves are concentrated in the Persian Gulf and on its shores. In particular in the al Hasa Oasis. Saudi Arabia is one of the world's largest energy producers. This began in the 1940s through ARAMCO – the Arabian-American Oil Company – but beginning in the 1970s, Saudi Arabia took full control over the oil production within its boundaries. In 1980, Saudi Arabia became the Company's sole stockholder, and the company's name was changed to Saudi ARAMCO.

Following the agreement with Egypt in 2016, Saudi Arabia began searching for gas deposits in the Red Sea through its national energy company ARAMCO. On March 7, 2019, Saudi Ministry of Energy Khalid Al-Falih, announced the discovery of "large quantities of gas" in the Red Sea. Al-Falih noted that ARAMCO would be stepping up its natural gas exploration activities in the Red Sea over the next two years. In his statement, Al-Falih did not specify the estimated quantity of natural gas found, nor did he indicate the location of the newly-discovered deposit. He did however explain that the oil quantities in the Red Sea were low and that the cost of its extraction was prohibitive since the oil reservoirs are located at depths ranging from 1,200 to 1,500 meters below the surface. It should be noted, that before the new reservoir was discovered in the Red Sea, the 2017 data from the US Energy Information Administration showed that Saudi Arabia had natural gas reserves totaling 303 trillion cubic feet. That same year ARAMCO's natural gas production totaled about 12.4 billion cubic feet per day, compared with 12.03 billion in 2016.<sup>13</sup>

Regardless of the size of the new Saudi natural gas deposit in the Red Sea, the very fact of its discovery shows that the Red Sea, too, is a potential region where more gas deposits may be found. It is possible that the discovery in Saudi Arabia motivated the Egyptians to issue the tender for gas exploration that same year in the ten blocks on the western side of the Red Sea.

### *Oil pipelines in the Red Sea*

This area is not directly related to this paper's main them ("Economic Waters"), however to complete the picture, and in order to present another aspect related to the importance of the Red Sea for the world of global energy marketing, it is worth discussing briefly.

Oil pipelines serve for transporting oil from its extraction site to an oil refinery or port from which it continues in tankers to oil refineries and from there to distribution stations. Oil pipelines are of considerable economic and political importance. As an interface to the Red Sea, one can point to three such piping systems:

1. The oil pipeline from the Persian Gulf to Saudi Arabian city of Yanbu on the Red Sea coast. This line was built to bypass the Straits of Hormuz, which are under threat from the Iranians and their proxies, the Houthis. Unrelated to the Red Sea, the Saudis once had the TAPline pipeline, which traversed Jordan and split

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<sup>13</sup> A report quoting the Saudi news agency SPA: [Large gas reserves found off Saudi Arabia's Red Sea coast](#), *Arabian Business*, 10 Mar. 2019. And also: [Saudi Arabia finds 'large quantities of gas' in Red Sea](#), *Energy*, 8 Mar. 2019

to Syria and Lebanon. In addition, a pipeline is planned to exit Saudi Arabia via Oman to the Indian Ocean coast also in order to bypass the Straits of Hormuz.

2. The SUMED oil pipeline – a pipeline in Egypt that transports crude oil from the Ain Sukhna terminal on the northern end of the Gulf of Suez to Alexandria on the Mediterranean coast. This pipeline is intended to serve as an alternative to the passage of oil tankers departing from the Persian Gulf through the Suez Canal.
3. The Eilat-Ashkelon Pipeline, which is today named the Europe Asia Pipeline Company (EAPC) – was originally built to transport Iranian oil to the Mediterranean, bypassing the Suez Canal. Following the 'Abraham Accords', recent reports suggest it could serve for transferring crude oil from the United Arab Emirates in tankers to the Port of Eilat, from where it will continue through the pipeline to the Mediterranean. This option has aroused vociferous criticism from environmental protection quarters due to the fear of the risks of crude oil spills in the Gulf of Eilat as well as spills due to damage and malfunctions along the overland pipeline's route from Eilat to Ashkelon.<sup>14</sup>

In short, concerning the extraction of crude oil, the Red Sea is emerging as a region in which natural energy resources are being used. This has been done since the early 20th century, particularly in the Gulf of Suez, and concerning natural gas, this area has also seen an uptick in activity in recent years, following the measures taken in Egypt and Saudi Arabia.

## Opportunities and Risk Scenarios

The previous two sections reviewed the picture of the Exclusive Economic Zones (EEZ) belonging to the countries bordering the Red Sea and the arrangements, agreements, understandings or disputes between them as to their maritime borders. As for the actual realization of the energy resource potential in the Red Sea, the review focused mainly on Egypt and Saudi Arabia.

In terms of the potential of the Economic Waters in the Red Sea, as well as from the aspect of actual realization, it is clear that the Red Sea will develop into another center of energy in the Middle East in the coming years. Although this will not be at the magnitude we have become accustomed to in the Eastern Mediterranean and Persian Gulf, it is still a focus that should be taken seriously in future. On the one hand, the region holds promise to increase the revenues of the stakeholder

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<sup>14</sup> On this issue, see Shaul Chorev and Moshe Terdiman, [Extending the EAPC activity – and the lessons of the Guardian of the Walls Operation](#), Maritime Policy & Strategy Research Center, University of Haifa, June 2021 [Hebrew].

countries, however on the other hand, it might also provoke disputes and conflicts on top of those which have already existed there in the past decade. These include the tension between Egypt and Ethiopia over the Renaissance Dam, the political instability in countries like Sudan and Ethiopia, the protracted civil war in Yemen and the Iranian involvement in that war, which highlights the risks to freedom of navigation in the critical choke point at the south of the Red Sea – the Straits of Bab el-Mandeb. And last but not least are the threats of terrorism and piracy in the Gulf of Aden region on the way to the Red Sea.

The level of these risks and threats in the southern Red Sea has lately been on the agenda of the command of the American Fifth Fleet. In view of this, the US Navy (Fifth Fleet) Central Command decided to send two minesweepers into the southern Red Sea – the *USS Gladiator* (MCM 11) and the *USS Sentry* (MCM 3), which crossed the Straits of Bab el-Mandeb on October 18, 2021. These vessels are intended to purge and neutralize naval mines which get randomly laid by the Houthis near the Straits of Bab el-Mandeb and near Saudi ports and islands in the Red Sea.



Figure 13: The US Naby minesweeper that entered the Red Sea in October 2021

Regarding the clearly visible risks and opportunities concerning the Red Sea, it is worth quoting Dr. Moshe Terdiman, an expert on the Red Sea Basin and the environment in the Arab Muslim world:

Undoubtedly, the Red Sea Basin is becoming extremely active in terms of energy. Until now, the Red Sea has functioned as a main transit route for energy shipments. However, from now on, the Red Sea is in itself a source for energy production. This change is expected to radically alter the definition of the Red Sea Basin and its importance. It may be holding the seeds of a great promise and prosperity for all of the countries in the Basin, but at the same time it might also be a source of disputes and power struggles, especially when considering the battle raging between the

superpowers and the regional powers over hegemony in the region. Time will tell how this unfolds. However, because of this, Israel, which is also located in the Red Sea Basin, should be mindful of events in this highly-dynamic region.<sup>15</sup>

Dr. Terdiman's analysis from early 2019 remains valid and relevant today too, in particular in view of the sensitivity that has emerged in the past two years around the Red Sea, which involves Israel. As mentioned earlier, Saudi Arabia and Egypt are currently the lead players concerning the Economic Waters in the Red Sea and their exploitation, and therefore we shall devote a few final words to the challenges and threat profiles, and to these two countries' response to them.

### *Saudi Arabia*

Most of the Kingdom's energy assets are concentrated in the eastern parts of the Arabian Peninsula bordering the Persian Gulf. However, in recent years, Saudi Arabia has come to regard the Red Sea as being highly important and is even establishing one of its most prestigious projects there – Neom, a futuristic city in the southern part of the Gulf of Aqaba, which will serve as a bridgehead to Egypt's Sharm el-Sheikh. The project was announced in 2017 as a central feature of the Saudi Vision 2030 Plan.

The Saudi naval force buildup is also in full momentum, part of which is being directed at the Red Sea Region. Saudi Arabia has three main ports in this region – Jeddah, Yanbu and Jizan. The Port of Jeddah is Saudi Arabia's main Red Sea port, named after the Late King Faisal. The Port's naval dock serves the Saudi "Western Fleet".<sup>16</sup>

The main Saudi Navy vessels currently deployed in the Red Sea are four French-made missile frigates (*Al-Madinah* class), built in the 1980s and also two missile boats and a minesweeper. The rest of the surface combat vessels (frigates and missile corvettes), which were built in the United States and France are deployed in the Persian Gulf.

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<sup>15</sup> See Moshe Terdiman's article, *The World in Turmoil / A Sea of Energy*. *Davar*, March 22 2019 [Hebrew]. Further elaboration about the Red Sea can be found in the two following articles: Moshe Terdiman, *The Boiling Water of the Red Sea: Power Struggles and Israel's Interests*. *Mitvim*, *The Israeli Institute of Regional Foreign Policy*, September 2018; Moshe Terdiman, *Israel and the Red Sea Basin: Challenges and Opportunities*. *Mitvim*, December 2020 [Hebrew].

<sup>16</sup> The Saudi Navy is split between two arenas. The "Eastern Fleet" in the Persian Gulf, whose home port is Jubail, named after the Late King Abdulaziz, and the "Western Fleet", based in Jeddah. The Naval headquarters are located in the capital Riyadh. For general information on the Saudi Navy, go to the Wikipedia entry: [Royal Saudi Navy](#)

Presently, the Saudi Navy is in the midst of an ambitious procurement drive, apparently as part of the Vision 2030. The total worth of this drive is approximately \$4 billion. It can be assumed that some of the vessels included in this program will be posted to the Red Sea arena:

- Four multipurpose missile frigates of the *Freedom* class are currently under construction in the Fincantieri Marinette Marine shipyards in the United States. Delivery is scheduled to begin in 2023. This deal is worth approximately \$2 billion.<sup>17</sup>
- Five missile corvettes model *AVANTE-2000*, which are currently under construction at the Navantia shipyard in Spain. So far, three corvettes, which are included in this project, named Sarawat, have been launched, costing approximately \$2.1 billion.<sup>18</sup>



Figure 14: Vessels under construction in the United States and Spain

Saudi Arabia has in the past decade been embroiled in the ongoing civil war in Yemen. It supports the central government headed by Yemeni President Abdrabbuh Mansur Hadi. Saudi Arabia's bitter enemies in this war are the Houthis, who are supported, trained and armed by Iran. Iran also provides the knowledge needed for self-production of various armaments. Since the Houthis control the Red Sea region of Yemen, this war has also assumed considerable naval dimensions. The Houthi

<sup>17</sup> About the construction of the frigates in the United States, see: David B. Larter, *Lockheed inks \$1.96B contract for Saudi frigate*, *Defense News*, December 20, 2019.

<sup>18</sup> Sarawat, the name given to the corvette construction project in Spain, is a mountain range in western Saudi Arabia, bordering the Red Sea. Does the project name hint to the boats' being deployed in the Red Sea? Possibly. For more on the construction of the corvettes in Spain, see: *Avante 2200 Combatant corvette is designed and built by Spanish shipbuilder Navantia*, *Naval Technology*, September 18, 2020; *Royal Saudi Navy launches new ship in Spain*, *Arab News*, April 1, 2021.

rebels have laid naval mines along the coast in Yemeni waters and also opposite the Saudi coast. They have used explosive boat and launched land-to-sea missiles primarily against Saudi naval vessels. At least one case is known (in April 2018) in which they hit a Saudi oil tanker.

### *Egypt*<sup>19</sup>

Egypt's main energy assets are currently located in the Eastern Mediterranean – particularly prolific gas deposits discovered over the past decade. However, the Red Sea is of no less strategic importance because of the two choke points – the Suez Canal and the Straits of Bab el-Mandeb – that are very important to Egypt's economy. Freedom of navigation in these points have implications on Egyptian revenues.<sup>20</sup>

As for the threat of naval mine laying mentioned earlier, it is worth noting that in 1984 Egypt itself fell victim to naval mines laid by Libya in the Gulf of Suez, apparently at the behest of Iran, in order to disrupt the transfer of weapons destined for Iraq from Egypt's Port of Suez to the ports of Aqaba in Jordan and Yanbu in Saudi Arabia. This mining activity demonstrated to Egypt and to the other users of the Suez Canal the risks involved in such hostile action.

The importance of these choke points to Egypt is further increased due to the potential gas deposits in the Red Sea region, being a continuation of the energy deposits already in use in the Gulf of Suez.

In addition, there are serious tensions building up between Egypt and Ethiopia due to the construction and operation of the Renaissance Dam in Ethiopia. Egypt considers it an existential imperative that the proper flow of water in the Nile River is not disrupted due to this dam, and that the flow rate needed by a populous country like Egypt (over 100 million inhabitants) must not be diminished. Sudan shares this concern with Egypt. Although Ethiopia does not have an outlet to the sea following the separation from Eritrea, the maritime medium in the Red Sea and Gulf of Aden allows Egypt to come dangerously close to Ethiopia. This might

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<sup>19</sup> On the challenges facing the Egyptian Navy and on its significant force buildup in recent years, see Shlomo Guetta, "The Egyptian Navy - Its Origins and Its Future (Is It on Its Way to Becoming a "Green Water" Navy?)" in Shaul Chorev and Ehud Gonen (eds.), *Strategic Maritime Evaluation for Israel 2019/20* (Haifa: Maritime Policy and Strategy Research Center, University of Haifa, 2020) pp. 1–22; Shlomo Guetta, *The Egyptian Navy: Renewal in the Face of Combined Challenges*, *Israel Defense*, May 24, 2020 [Hebrew].

<sup>20</sup> The incident in March 2021, when the Suez Canal got blocked for a week by the giant *Ever Given* container ship, demonstrated this dependency and the economic damage caused by the blocking of shipping traffic in the Canal was estimated at \$9.6 billion per day.



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explain the cooperation agreement Egypt signed recently with Djibouti, including the construction of a logistic base on its territory.<sup>21</sup>

Another challenge breathing down Egypt's neck in the Red Sea is the possibility of Turkish penetration and presence in the Red Sea. Turkey nowadays is an adversary of Egypt, ever since 2013, when President Abdel Fattah a-Sisi deposed the then-President of Egypt, Mohamed Morsi, who was a member of the Muslim Brotherhood. Ever since the attempted coup in 2016, Turkey has been actively implementing a Neo-Ottoman policy in the Red Sea region and in the Horn of Africa. In 2018, Ankara signed an agreement with Khartoum, allowing it to maintain a military presence in Sudan and in its territorial waters, including a base on the Island of Suakin, and it is also negotiating with Djibouti on the construction of another base. Qatar also signed an agreement with Sudan in 2018 regarding a port in Suakin. The Red Sea, then, is an arena in which various countries like Turkey and Qatar are increasing their involvement.<sup>22</sup> It is unclear where the relations between Turkey and Sudan stand today following the improvement in relations between Egypt and Sudan due to their shared interests over the Renaissance Dam. Further uncertainty has been added in late October 2021 in view of the political turbulence in Sudan. It is likely that Turkey will continue to seek renewed dialog with Sudan as part of its strategy of restoring the Ottoman "glory" of yesteryear.

From the Egyptian perspective, the Red Sea region, including the Gulf of Aden, poses challenges and threat profiles which the Egyptians are compelled to address. The current characteristics of the Red Sea arena, as well as the challenges Egypt is facing in this arena, have resulted in a strategic decision to reorganize the Egyptian naval space and to divide it into two arenas and, accordingly, into two fleets: the "Southern Fleet" in the Red Sea and the "Northern Fleet" in the Mediterranean. This division has been made in order to improve and streamline the naval force building and its operation. To enable each "Fleet" freedom of operation and control in their respective arenas, in an effort to reduce to a minimum the interdependency between the two arenas as had been the case in the past – for example when the Suez Canal was blocked between the June 1967 war and the October 1973 war.

The organizational division included considerable contents and resources. First of all, new, advanced surface, submarine and aircraft platforms have been procured and

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<sup>21</sup> For a report on Egyptian President A-Sisi in Djibouti in May 2021, see: [Egyptian, Djiboutian presidents hold talks over ongoing water dispute with Ethiopia](#), *Arab News*, May 28, 2021.

<sup>22</sup> Yoel Gozhanski and Oded Eran, *The Red Sea: An Old-New Area of Interest*. *Top View*, Issue 1067, June 12, 2018, INSS The Institute of National Security Studies [Hebrew].

inducted into service for maritime missions, part of which have been carried out in the Red Sea arena, including one of two helicopter carriers built in France (Figure 15). Second, a modern new naval port has been built in Ras-Banas (one of several new ports and naval bases recently built in Egypt, mostly in the Mediterranean) (Figure 16). The new naval port in Ras-Banas (with an area of approximately 600 sq. km) is located 90 km from the border with Sudan. It constitutes a significant addition to the Egyptian Navy, whose main Red Sea base, so far, had been in the more northerly Port of Safaga. The port was built with support from the UAE and was inaugurated in January 2020 by President a-Sisi in the presence of Emirati Crown Prince Mohammed Bin Zayed.<sup>23</sup>



Figure 15: Egyptian helicopter carrier



Figure 16: The new port in Ras-Banas

Assuming the relations between Saudi Arabia and Egypt will continue on a cordial note as they are today, one can assume that the Egyptian military might in general, and its naval strength in the Red Sea in particular, will also serve the Saudis, who have important ports and assets along the Red Sea coast. In addition to the friendly relations between the two countries, it should be noted that the Saudis, as well as the United Arab Emirates, contribute much toward the Egyptian economy, including toward its military procurement. Therefore, insofar as Saudi Arabia might need protection of its Economic Waters and its other assets in the Red Sea, it will be able to rely on support from Egypt.

In addition to the Saudi and Egyptian naval force buildup and their implications to the Red Sea arena, the establishment of the Arab Naval Coalition is noteworthy. It is headed by Saudi Arabia, and is intended to prevent Iran from continuing with its weapon shipments to the Houthis, and also to deal with the naval threats posed by the Iranians and the Houthis in the southern Red Sea, with special emphasis on the Straits of Bab el-Mandeb. This naval coalition conducts joint naval exercises with

<sup>23</sup> Yoel Gozhanski, *The Red Sea: Embroiled in Conflicting Rivalries*. *IDF Website*, September 2020 [Hebrew]; Jeremy Binnie, *Egypt inaugurates major Red Sea base complex*, *Janes* 16, January 2020.

the regional navies. For example, the Morgan 16 exercise, conducted jointly by the Egyptian and Saudi navies in the Red Sea in January 2020, was intended to practice coping with current and future threats.<sup>24</sup>

Regarding naval activity in the Red Sea, it should be noted that since 2016, an Iranian special operations ship (espionage/logistics) named *Saviz* had operated opposite the coast of Yemen/Eritrea. This ship belongs to, and apparently was operated by, the Iranian Navy, however due to the support provided through this ship to the Houthis in their war with Saudi Arabia, it is likely that the Revolutionary Guards Naval Force was also involved, or at least coordinated with its operation. In early April 2021 this ship was hit, according to various sources by Israel. In July 2021 an identical "sister" ship, the *Behsad*, took up its position in the region.



Figure 17: The Iranian *Saviz* spy ship and its location in the Red Sea

Another noteworthy framework is the "Council of Arab and African States Bordering the Red Sea and the Gulf of Aden", which can be relevant concerning the economic assets. It was established as a Saudi initiative in a summit meeting in Riyadh in December 2018 attended by Saudi King Salman Bin Abdelaziz and the Foreign Ministers of Saudi Arabia, Egypt, Yemen, Somalia, Jordan and Djibouti. At the end of the summit, Saudi Foreign Minister Adel al-Jubeir stated that "This is part of an overall effort on the part of the Kingdom to safeguard its interests and those of its neighbors", and promised to expand the economic cooperation between the countries. Since most of them are anyway clients of the Saudi Arabian coffers, the

<sup>24</sup> Egypt, Saudi Arabia conduct 'Morgan-16' naval exercise. *Egypt Today*, January 22, 2020.

"Union" will be underwritten by the Kingdom in full.<sup>25</sup> Regarding the establishment of the military and economic alliances with the Red Sea states that Saudi Arabia initiated, it is worth reading Dr. Terdiman's updated review: *Israel and the Red Sea Basin: Challenges and Opportunities*.<sup>26</sup>

To sum up the regional and global interest in the Red Sea, one can say that the Red Sea is gaining more and more importance in global geopolitics. Considering its importance for global trade and security, increasing geo-economic forecasts, military rivalries and the danger of conflict between central regional and international players. The regional countries as well as the superpowers are making efforts to increase their influence in the Red Sea and Horn of Africa, which analysts Luigi Narbone and Cyril Widdershoven believe might create a new potential conflict. One of the examples of such a conflict is the war in Yemen. They believe the security of the Straits of Bab el-Mandeb is related to resolving the war in Yemen.<sup>27</sup>

### And what about Israel?

Concerning Economic Waters and Exclusive Economic Zones, Israel is not a player in the Red Sea when compared to the assets it has in the Mediterranean. This being said, Israel does have clear interests in whatever happens and is being done in the Red Sea. It is clear that the same challenges and threat profiles which occupy the agendas of the Saudi Arabia, the United Arab Emirates and Egypt should also be of interest to Israel, such as the interest in preserving freedom of navigation in the Straits of Bab el-Mandeb and in the Suez Canal. The shipping lanes to and from Israel via the Red Sea and Suez Canal are significant. So is the potential threat on the part of the Houthis and the Iranians in the southern Red Sea – this is a challenge that must be monitored carefully.

The Red Sea-related military and economic alliances which have been set up under Saudi initiatives in recent years, which also radiate toward East Africa, could serve as a platform for regional cooperation as a complement to the Abraham Accords and the peace treaty with Egypt. Israel should seek recognition of its status in the Red Sea just as it has been recognized as a member of the Mediterranean Gas Forum.

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<sup>25</sup> Shaul Yanai, *The Red Sea Alliance*, *Ynet*, January 24, 2019 [Hebrew].

<sup>26</sup> Moshe Terdiman, *Israel and the Red Sea Basin: Challenges and Opportunities*. *Mitvim*, December 2020, pp. 4–5 [Hebrew].

<sup>27</sup> Luigi Narbone and Cyril Widdershoven, *The Red Sea link: Geo-economic projections, shifting alliances, and the threats to maritime trade flows*. *Robert Schuman Center*, European University Institute, July 2021.

This is also the opinion of analysts from the Robert Schuman Center, according to whom a framework of regional security and integration, and inclusion in the "Red Sea Alliance", may from Israel's perspective be influenced by the Abraham Accords.<sup>28</sup>

**My thanks to:** All those that have commented and shared their good advice with me: Prof. Shaul Corev, Dr. Moshe Terdiman, Dr. Elai Rettig, Dr. Benny Spanier. I wish to recognize the following for having added knowledge to the author: Baruch Peretzman, Irad P.

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<sup>28</sup> *Ibid*, p. 17.

## Solar Hopes and Grounded Reality: Should and Could Israel Meet its 2030 Renewable Energy Transition Targets

*Elai Rettig*

Despite the sweeping political consensus in Israel to promote more use of renewable energy sources, Israel's electricity market is only expected to increase its reliance on natural gas in the coming decade. Numerous geographic and technological barriers make the target that the Israeli government has set for itself to generate 30% of Israel's electricity from renewable sources by 2030 a particularly challenging one to meet. Since Israel has a very marginal effect on the overall global balance of manmade carbon emissions (less than 0.23%), it should concentrate most of its efforts on reducing local air pollution and increasing its readiness towards climate-induced threats, with carbon reduction treated mostly as a welcomed side-effect. Israel can achieve some of these goals relatively quickly by reducing the use of its coal-based power stations and encouraging more use of public transportation and electric and hybrid vehicles. Serving as a domestic and relatively cheap source of fuel, natural gas will be an integral part of these solutions for the time being, and the demand for it is only expected to increase in Israel and in all of the countries of the Eastern Mediterranean basin in the next two decades.

In May 2021, the inter-ministerial committee on Israel's natural gas policy recommended increasing the export quota of natural gas from Israel to 52% (up from the current 40%) at the expense of the amount earmarked to the domestic market.<sup>1</sup> The committee argued that in another 20 years the demand for natural gas in Israel and worldwide will substantially decrease due to an expected transition into renewable energy sources. Therefore, Israel should export as much gas as it can today so that it will not be left unused in the ground tomorrow. The committee argued that such a scenario would result in considerable loss of revenue and export royalties for the State of Israel.<sup>2</sup>

The committee's decision seemingly makes sense. The same month that the recommendation was made, the Ministry of Energy also presented for public response Government Decision 465 of October 2020, which set a target to generate

<sup>1</sup> Ministry of Energy, "Recommendations for policy measures for promotion of renewable energy - summary of interministerial administrative work following government decision 564", May 2021 [Hebrew].

<sup>2</sup> Israel Fischer, "Change in the Gas Outline: The companies will be able to increase exports", *The Marker*, May 31, 2021 [Hebrew].

30% of Israel's electricity from renewable sources by 2030, in line with similar targets set by the European Union in 2018.<sup>3</sup> Assuming the Israeli energy market will indeed meet these targets and even exceed them in the subsequent decade, there is a legitimate concern that demand for natural gas will fall and that the energy companies operating in Israel would be left with stranded assets in the ground. Moreover, the current gas export allocation of 40% is not proving to be sufficiently attractive to investors wishing to build a gas liquefaction plant or an underwater pipeline to Europe, at an estimated cost of approximately \$7 billion. This is due partly to the fact that the amount allocated to them is relatively small, around 300 billion cubic meters (BCM) over 30 years. Without increasing the quota, the gas companies operating in Israel fear they will not be able to attract additional buyers for approximately two thirds of the gas they still have left for export (after deducting the trade deals with Jordan and Egypt). This gap is especially important ahead of the Ministry of Energy's new licensing round designed to attract more companies to search for oil and gas deposits in Israel's exclusive economic zone (EEZ), after the previous three rounds failed to arouse sufficient interest. So long as the current companies operating in Israel cannot prove there are buyers for the gas they had already discovered, there is no incentive for new companies to search for more of it.

Besides the ability to release more natural gas for export and make the Israeli energy market more attractive to investors, the promotion of renewable energy also holds numerous advantages for Israel's economy and security and is therefore supported by the entire political spectrum in Israel. Renewable energy in Israel can help (1) increase its energy independence, (2) decentralize and disperse its sources of electricity generation,, thereby increasing the resilience of its grid to rocket attacks launched by militant groups during war, (3) encourage technological innovation in an emerging new field with the help of Israel's vibrant "start-up" sector, which can then be translated into more jobs and products to sell to global markets, (4) supply electricity to remote mountainous areas in the north of Israel and desert areas in the south without having to invest in costly long-distance infrastructure and maintenance, (5) reduce Palestinian dependence on Israeli electricity supply which, quite often, goes unpaid, and (6) reduce Israel's total carbon emissions, compared with the burning of natural gas or coal.

Despite the keen interest in renewable energy in Israel, for the time being there is no realistic scenario in which the Ministry of Energy will meet its targets for 2030 or in which Israel and the countries around it will decrease their use of natural

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<sup>3</sup> Ministry of Energy, "Report of the professional panel for the second periodic examination of the government policy on the natural gas market – draft for public comments", May 2021 [Hebrew].

gas. Already today Israel is failing in its efforts to meet the targets it set for itself. Whereas the original target was that 10% of its electricity mix would be generated from renewable energy by 2020, Israel as of 2021 stands at a mere 6.1%.<sup>4</sup> The reason for this is not political, but rather primarily technological. Israel's geographical constraints whittle down the term "renewable energy" to just solar energy, whereas the European renewable target consists primarily of wind energy, hydroelectric, and wood burning.<sup>5</sup> The current generation of photo-voltaic panels (PV) is not particularly efficient relative to the space it occupies, and Israel is facing a steep challenge locating sufficient land area for the number of solar panels it needs to achieve its 30% electricity target by 2030. For calculation purposes, on a particularly hot day in July 2020, Israel reached peak consumption of 13,800 Mega Watts per hour (MW/h).<sup>6</sup> The annual growth in demand for electricity in Israel during this past decade stands at approximately 2.8% on average, and this number may grow to 3.5% per year if electric vehicles and additional water desalination plants enter the market as expected.<sup>7</sup> Even if we take a more modest 3% growth scenario, the demand for energy on a hot summer day in July 2030 will stand at approximately 17,900 MW/h. To cover 30% of this demand Israel will have to generate approximately 5,370 MW from solar energy at any given moment. According to the calculations of the United States Government National Renewable Energy Laboratory (NREL), the continuous generation of such an amount of electricity with the current technologies of PV panels will require an area of between 70-120 sq. km, depending on weather conditions.<sup>8</sup> In comparison, the entire land area of Tel Aviv is 52 sq. km, which means solar panels will have to cover a combined area of at least 1.5 times the city of Tel-Aviv. These calculations assume no growth from 2030 onwards, but in reality, Israel is going to have to provide an extra 7 to 12 sq. km per year to build new solar plants just to keep up with the annual growth and remain within the 30% range – a new Tel-Aviv every 6 years on average.

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<sup>4</sup> Ministry of Environmental Protection, "Reducing Greenhouse gas emissions in Israel – annual follow-up report", May 2021 [Hebrew].

<sup>5</sup> European Commission, "Directive (EU) 2018/2001 of the European Parliament and of the Council on the Promotion of the Use of Energy from Renewable Sources", December 11, 2018.

<sup>6</sup> The Electricity Authority, "Report on the State of the Electricity Market 2020". August 2020 [Hebrew].

<sup>7</sup> Roeh, Anat. "Private electricity producers: updating the Israel Electric Corporation's demand forecast, a substantial increase is expected", *Calcalist*, 29 June, 2021 [Hebrew].

<sup>8</sup> National Renewable Energy Laboratories, "Land Use by System Technology", Accessed on October 30, 2021.



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These constraints only take into consideration the challenge of electricity generation, but the transmission stage can prove even more challenging. Solar energy does not generate electricity on demand, nor does it stop generating electricity when not needed. This requires exceedingly sophisticated and complicated electricity grid management technology to handle. On the one hand, during nighttime or cloudy days there is a shortfall of solar electricity generation just as demand for electricity peaks (between 6pm-10pm), and this needs to be compensated by ramping up the natural gas-powered power stations. On the other hand, when the sun is shining bright in midday and the PV panels are generating at full capacity, some of the gas-powered stations need to decrease generation or completely shut down so as not to lead to its collapse. This requires compensating or subsidizing privately-owned gas power stations, since they would be asked to lose revenue to make way for their competitors. In addition, the more decentralized the electricity grid becomes, and the more private consumers begin feeding electricity into the grid through their own rooftop PV panels in tens of thousands of locations, the "smarter" the grid has to be to balance between supply and demand, all of which are at the mercy of weather patterns that are becoming increasingly hard to predict as the effects of climate change become more prominent. This will necessitate the creation of microgrids and a redesign of the electricity grid in Israel. Electricity storage technologies (e.g. large-scale batteries) can help overcome many of these challenges, but still have a long way to go in terms of price and efficiency. It appears that the only way the Ministry of Energy will be able to come close to achieving its 2030 targets at a reasonable cost is to import "clean" electricity from outside. One possibility is to rely on Jordan's willingness to build large-scale solar farms in its territory and export electricity to Israel in return for desalinated water, despite domestic public resistance to such a deal. The second possibility is to connect underwater electricity lines from Europe through Cyprus, which will provide a partial solution.

Adding to these complications, recent events from around the world are beginning to deter policymakers from taking the necessary risks that often come with the initial transition to renewable energy. Weather events that resulted in widespread power outages in the US, particularly in Texas during the winter of 2021 and in California during the summers of 2020 and 2021, as well as the gas shortages and price hikes in Europe during the second half of 2021, serve as an indication that the transition to renewable energy will be slower and more complicated than what most people are hoping for. The reliance on wind and solar energy is usually an excellent solution throughout the year, but it fails during extreme weather events, which are increasing in frequency due to climate change. Policymakers thus find themselves in a paradoxical situation where the more extreme the weather becomes, the less

enthusiastic they are to invest in renewable energy solutions that are intended to minimize these same events. This is a sign that natural gas will continue to be a dominant factor in the electricity mix of the State of Israel and of the countries around it for several decades to come, as it provides the reliability that policymakers wish to see. The keenness to reach 30% renewable energy by 2030 might wane in Israel (and in the rest of the world) as widespread blackouts continue to plague industrialized countries in the coming years.

To dispel any doubt, all of these challenges can be overcome through technological innovation and the cumulative experience of energy markets around the world, but such solutions will come at a higher cost for some countries and will take longer to implement for others, including Israel. This is all in contrast to natural gas, which is cheap and readily available to the Israeli market for the next 35 years at minimum, and which is already supplying it with reliable electricity on demand. Even if Israel succeeds in meeting its targets and will generate 30% of its electricity from solar energy by 2030, the high annual growth in demand for electricity means that the Israeli market will still be consuming more natural gas in 2030 than it is consuming today. Adding to this is the fact that natural gas serves not only for electricity generation in Israel, but also heavy industries, petrochemicals, agriculture, and even some transportation, for which solar energy does not offer a solution. Other countries in Israel's region face similar conditions, as their population growth rates and demand for reliable electricity will only increase in the coming decade. Countries such as Egypt, Jordan, Lebanon, Syria and even the Palestinian Authority are expected to increase their demand for natural gas and construct additional gas-powered stations in parallel to their plans of PV power stations. Therefore, a scenario in which Israel will not need as much natural gas in twenty years as it consumes now simply does not add up with the reality on the ground.

A rather challenging question therefore presents itself: why did Israel set such ambitious targets for itself to advance so much renewable energy by 2030, and can it meet its overarching goals by other means? If Israel's main goal is to lower its own carbon emissions as part of its nationally determined contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC), then it is going to be hard-pressed to justify the costs associated with this transition for such a small payout. As of 2020, Israel's contribution to global manmade carbon emissions is 78 million tons per year out of a total of 33,622 million tons, which amounts to about 0.23% of overall emissions.<sup>9</sup> Even if Israel succeeds in drastically reducing its carbon

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<sup>9</sup> Ministry of Environmental Protection, "Reducing Greenhouse gas emissions in Israel".

emissions through unprecedented investment in infrastructure and changes in its population's lifestyle, the effect this will have on the global fight against climate change is practically nil. Israel should therefore shift its focus to public health and public safety concerns by reducing local air pollution (which would also reduce carbon emissions) and preparing the economy and infrastructure for the anticipated threats and consequences of climate change. These measures can save lives in Israel and in the surrounding countries much more effectively than those that are focused solely on reducing emissions as the overarching goal of which the rest of the targets are derived.

There is a wide range of practical measures Israel can take in the coming years to cope with the expected challenges posed by climate change, and natural gas is a solution for some of them. In terms of air pollution, shutting down coal-powered stations by 2025 will in itself reduce 17 tons of carbon emissions per year,<sup>10</sup> but more importantly, it will clear the air and reduce death rates in densely populated urban areas situated around the coal stations. This is the right thing to do also for Lebanon, the Gaza Strip, and the West Bank, which burn Diesel fuel to generate electricity, and whose subsequent air and ground pollution does not stop at the border. Only gas-powered stations are able to compensate for the shortage of regular, reliable electricity on demand the way that coal-fired stations do for Israel, particularly if the target date for their closure is 2025 as determined by the Ministry of Energy. Another goal Israel should continue to focus on is advancing more efficient, comfortable, and reliable public transportation and promoting the entry of electric and hybrid vehicles into Israel. The Ministry of Environmental Protection expects that such measures will only yield a modest reduction of another 4 million tons of carbon emissions per year by 2030,<sup>11</sup> however much more importantly, they will drastically reduce the "nose-level" air pollution to which the Israeli public is subject to on a daily basis from gasoline vehicles. Here too, compressed natural gas (CNG) can provide part of the solution for weaning Israel's transportation sector (and particularly the Israeli military) away from more polluting gasoline.

Finally, there is a great deal of uncertainty regarding the effects of climate change on the Israeli economy and its citizens' security. Quite naturally, climate change introduces a great deal of unpredictability into any existing threat forecast, and is rife with changes. These threats may include a modest or drastic sea level rise, an increase in the number and intensity of winter storms which may flood major cities,

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<sup>10</sup> *ibid.*

<sup>11</sup> *ibid.*

increase the number of electricity blackouts, and devastate the promenades along Israel's shores, extreme heat waves which may impede on pedestrians and damage road infrastructure, prolonged droughts which may destabilize neighboring countries and induce waves of migration towards Israel's borders, and many other scenarios. Having said that, it is very difficult for decision-makers to commit to specific targets and set aside significant resources for a scenario for which there is no clear estimate and whose cost is yet unknown. Therefore, at this stage Israel should closely monitor climate-related events and prepare appropriate response scenarios, which include introducing a high degree of redundancy to the electricity grid so that unexpected supply cuts can be quickly restored even under extreme events, as a lesson from the recent power outages in the United States and Europe. Natural gas is a critical component in creating this redundancy.

Past experience has proven that in all matters concerning long-term forecasts in the energy sector, it is best to take a cautious, conservative approach. Just as the forecasts regarding the amount of royalties that Israel expected to receive from its gas exports mostly failed to materialize, in this case it is worth remaining with the previous gas export quotas that were set at 40%, at least until the high hopes for solar energy in Israel come true, or until more substantial gas fields will be discovered in Israel's EEZ. If the Israeli government sets unrealistic targets for renewable energy integration merely as an excuse to enable more gas exports, it might find itself without sufficient quantities of domestic gas in another twenty years, and will be forced to resort once again to relying on expensive imports.

## The Chevron Corporation and the State of Israel

*Glen Segell*

Since October 2020 there has been a new actor in Israel's strategic maritime space and economy, predominately the energy sector. This is the result of the Chevron Corporation acquiring Noble Energy Inc.—hereafter Chevron and Noble—both US companies. Is Chevron here to stay?

Israel has been a hot potato as far as the global energy industry was concerned. Major energy companies have had too many interests in the Arab world to risk association with Israel. The discovery of natural gas in Israeli territorial waters is not large. But the strategic dynamics have changed since September 2020 with the signing of the Abraham Accords. The Gulf countries have warmed to Israel and so too have energy companies.

At the time of writing, October 2021, it is clear that in the maritime strategic evaluation of the first year of Chevron in Israel, it has not been easy for anyone. There was a rocky start to the new relationship, making it appropriate to examine and review the relationship between Chevron and the State of Israel.

### The Financial Aspects

On 5 October 2020, Chevron announced that it completed its acquisition of Noble. At the time, it held a 39.66 percent stake in Israel's Leviathan offshore gas field and a 25 percent stake in the smaller, older Tamar field. Chevron is the sixty-first largest public company in the world. Chevron announced its intention to honor the terms of all existing agreements and contractual obligations that the State of Israel and others had had with Noble (Noble Energy, 2021).

Israel's then Minister of Energy Dr. Yuval Steinitz responded that he welcomed the entry of Chevron into the Israeli market. In accordance with Israeli law, the rights to gas fields cannot be transferred without approval of the State of Israel as the regulator. After an appraisal, the Petroleum Council recommended that the Ministry of Energy Petroleum Commissioner approve the take-over with Noble continuing to operate as a Chevron subsidiary (Ministry of Energy, 2021).

### Regional Politics

The financial significance may be overshadowed by the political role Chevron could play because it has operations and economic clout in other countries, for example in

Cyprus, Israel's maritime neighbor in the Mediterranean Sea. Israel's Mediterranean Basin gas fields lie below the Mediterranean Sea between Israel and Cyprus leading to shared and joint interests. Now Chevron holds an interest in safety, security, environmental protection, and in the export of gas to third parties, possibly by a pipeline. Chevron holds a 35 percent stake in the Cypriot Aphrodite gas field with a license until 2044 (Chevron, 2021).

Egypt, the country with the highest population in the Middle East and a peace treaty with Israel, is no less important. In Egypt, Chevron has a 90 percent stake in four oil and gas exploration blocks in the Red Sea and in the Mediterranean Sea (Chevron, 2021). So here too are joint interests in safety, security, environmental protection, and the export of gas to third parties, possibly by a pipeline.

Moreover, Israel will no doubt wish that Chevron would use its connections and clout in Arab states to influence Lebanon to speed up efforts to resolve the issues between Israel and Lebanon regarding the demarcation of the maritime boundary and economic waters between them. Chevron might well do so for a win-win outcome and development of any gas fields that could emerge in Lebanese waters adjacent to both Israel and Cyprus.

Perhaps there might be quicker and more successful progress with Jordan, with whom Israel also has a peace treaty. There have been internal pressures in Jordan by those who oppose normalization with Israel and Noble's deal with the Jordanian electricity company, whereby Jordan would be provided with gas from the Israeli fields. Perhaps there will be less likelihood that Jordan will cede to these pressures considering Chevron's powerful economic clout globally, including in the Arab world (Ersan, 2020).

### The Eastern Mediterranean Natural Gas Pipeline

The most significant strategic endeavor that will require the closest partnership between Chevron and Israel is the transportation of gas to external markets. It is fair to assume that Israel will wish that Chevron assists in negotiations with neighboring countries, for example for a gas pipeline to Europe—the proposed Eastern Mediterranean gas pipeline (EastMed). This would be in the financial interests of all.

It is also fair to assume that Chevron's activities are for financial gain and so the company might not wish to be involved directly in any regional politics. But it will need to make a choice. Support EastMed and maybe become embroiled in the emergence of an anti-Turkey bloc of countries. Turkey views the proposed EastMed

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pipeline as a threat to its territorial claims in the Mediterranean Sea and believes that the pipeline, which bypasses Turkey to connect Israel with Greece through Cyprus and Crete, would undermine its status as an energy hub powering Europe (TRT, 2020). Alternatively, Chevron may choose not to support EastMed but then lose revenue by not being able to transport gas to a larger market in Europe.

Israel would also like Chevron to promote the Eastern Mediterranean Gas Forum (EMGF) that Israel formed with Egypt, Greece, Cyprus, Jordan, and the Palestinian Authority (Sukkarieh, 2021). The goal is cooperation rather than competition and overcoming the baleful politics of the East Mediterranean—Turkey threatening Cyprus, Hezbollah threatening Israel, and populism delaying Israeli energy development. Such a forum has significance, in a maritime strategic evaluation, for the entire Eastern Mediterranean, beyond the issue of gas production.

Chevron did not play a significant role in either the EastMed or EMGF in its first year of operations in Israel, from October 2020 to October 2021. Yet it is well within its capability should it wish to do so, as demonstrated when it and other partners signed an agreement under which Israel Natural Gas Lines Ltd. will lay a new subsea pipeline and expand some of its existing ones to export to Egypt. It is possible that Chevron could respond differently to the EMGF and EastMed pipeline in the future. Added into the equation is a new government in Israel including changes in cabinet ministers, among others for Energy, Finance, and Foreign Affairs all with different priorities and interests compared to their predecessors. Only time will tell what will transpire.

### The UAE and the Abraham Accords

The State of Israel as a regulator promotes competition, in part to prompt efficiency and safety and in part to reduce costs and increase profits. At the same time, the state works to reduce or prevent monopolies that could lead to the opposite. Chevron is prevented at this time from further bidding by the Committee for Reducing Business Concentration because of anti-monopoly legislation and practices.

Chevron's global connections and status can play a significant role without it having an increased stake in ownership. There can be mutual benefits through strategic endeavors to further Israel's increasingly successful diplomatic efforts, for example, the Abraham Accords signed in September 2020.

There are inferences that this is already happening. The Chevron takeover of Noble is not the only deal on the market. Another is for Delek Drilling, under orders

from Israel, to sell its stake in Tamar by December 2021 to prevent a monopoly situation. In April 2021, there were market rumors that Scotland's Cairn Energy was in negotiations with Delek. There were also suggestions that Chevron had a role in finding an alternate purchaser: the United Arab Emirates' Mubadala Petroleum whose board of directors is led by Abu Dhabi Crown Prince Mohammed bin Zayed, a key figure in the Emirati decision-making system.

On 2 September, it was announced that Delek had finalized a deal to sell its 22 percent stake in the Tamar gas field, operated by Chevron who has a 25 percent stake, to Mubadala for about \$1 billion making it the biggest commercial deal to be signed between Israeli and Emirati groups (Odenheimer, 2021). This deal, along with exporting gas to Egypt and Jordan, are actions on the ground that could be indisputable proof, that economics and politics go hand in hand, and that Chevron and Israel are working together for mutual interests and benefits in a strategic partnership.

### The Security Aspects

In its first year in Israel, Chevron has experienced the full spectrum of the unique relations between the State of Israel, its citizens and private companies. For example in the ongoing security situation with terrorist groups. There are two main features of this unique relationship, compensation legislation and the Israel Defense Forces (IDF).

First, but beyond the scope of this article, is whether Chevron or other companies would be compensated and by how much if the gas platforms were to be closed during a security event. Any sustained closure could no doubt lead to substantial financial loss and place the very existence of any company in doubt. Israel's government decides when to close and restart production; Chevron and other companies do not.

Such a topic is more real than theoretical, for example, during IDF Operation Guardian of the Walls. On 12 May 2021, Chevron shut down and depressurized the Tamar gas platform at the direction of the Ministry of Energy. It is located 25 kilometers offshore from the city of Ashdod, which was under rocket fire from Gaza. Chevron was instructed to restart operations nine days later, and production reached full capacity within thirty-six hours of its restart (Bouso & Rabinovitch, 2021).

Second, the IDF's mission is not only to protect the gas platforms for the benefit of their owners, but also because they are of strategic significance to Israel. By 2020,



75 percent of the electricity generated for domestic and industrial use in Israel has been from the gas drilled from these platforms (Israel Defense Force, 2021)

The Israeli Navy (IN) is an important branch of the IDF whose roles include protecting the new gas fields, desalination plants, and ports, shipping, and shipping routes for the vast majority of Israel's imports and exports are by sea. There are constant threats in the maritime space and landward from terrorist organizations and other states, as well as drug and gun smugglers and violators of environmental and fishing regulations.

There are significant risks facing the gas fields and especially the gas platform infrastructure from rockets and missiles launched from ships, from landward Gaza and Lebanon, and from unmanned drones. The complex decision of how to ensure their security is taken by the IDF and not by Chevron or other companies and includes weapons procurement at the expense of the State of Israel.

For example, a contract was signed to purchase four new Saar 6 corvettes in May 2015 manufactured in a German shipyard. An interim measure was to install the land-based Iron Dome missile defense system on existing warships to protect the gas platforms. All four were handed over to the IN during Chevron's first year in Israel—the INS *Magen* in November 2020, the INS *Oz* in May 2021, and the INS *Atzmaut* and INS *Nitzachon* on 27 July 2021 (Manaranche, 2021).

Each ship has advanced systems that can quickly assign the right interceptor for a rapid hard kill of adversarial projectiles. They are also equipped with advanced electronic warfare capabilities for a soft layer of defense. This multilayered defense of the gas rigs forms a virtual and real fence that will protect them against an array of threats.

With the Saar 6 the IN could also have a broad shift in naval doctrine in two directions, if it so chooses, given their capabilities. The first shift could be to a greater Brown Water doctrine, which places a focus on sea-to-land combat, founded on the building block of interconnectivity. That means a joint air-sea-land situation picture and a new level of interoperability between the Navy and the Israel Air Force (Lappin, 2021).

The second shift could be toward greater power projection. With the Saar 6 the IN has gained a significant extra strategic maritime capability. The IN is now capable of defending more maritime areas further from Israel's coast and beyond Israel's Exclusive Economic Zone (EEZ) for a longer period of time, including the EastMed pipeline; moreover, it is also capable of projecting forces for other national security interests.

## Chevron and Local Companies

The energy infrastructure in Israel can be a complex economic-security issue. In 2021 it was not evident that Chevron was working to achieve a win-win outcome. An example is relations with the Israel Electric Corporation (IEC) that is 99.85 percent owned by the State of Israel, who through the Public Utilities Authority for Electricity is also its regulator. The IEC runs the only national electricity grid and supplies almost all the domestic and industrial needs (Israel Electricity Company, 2021).

By 2020, 75 percent of the electricity generated for domestic and industrial use has been from the gas drilled from the platforms in the Tamar and Leviathan fields, where Chevron is the largest stakeholder. Within days of Chevron's entry into Israel in October 2020, the Israeli Antitrust Authorities announced its intention to investigate it. The catalyst was a new agreement that the IEC had reached with the Tamar partners for about 10 percent less than the price agreed in a separate previous deal for Leviathan gas. Chevron decided not to sell gas to IEC and was allegedly abusing its large stake in Israel's natural gas holdings to keep electricity prices high.

The dispute was resolved in January 2021 with estimated savings of \$35 million for the IEC and for Israeli consumers. This was before the regulator investigated. Chevron was reminded that the contract between Noble and the IEC, which Chevron said it would respect, includes a clause that allows the IEC to veto any change to the price at which gas is sold to the IEC. Chevron realized that it had a contractual obligation it could not rescind (Yeshayahou, 2021).

A somewhat better relationship arose when Chevron awarded Israel Shipyards a 16-month coating repair service contract for offshore and onshore facilities, in collaboration with a British company with the requisite expertise to assist and in implementing the localization program. That includes training of Israeli workers, project managers, and coating inspectors and their gradual integration into the project (Offshore Staff, 2021).

## Scandals and the Environmental Aspects

While there is optimism that Chevron will play a positive role, there are also allegations leading to causes for concern. These relate to accounting practices, labor relations, environmental matters, and human health. Any of these could have a significant and detrimental impact in the geo-strategic space of a small demographic and geographic country such as Israel.

Many experts and local and international environmental groups gave evidence to a Knesset committee and at the fore were alleged irregularities in environmental matters. The committee was informed of allegations in thirty-one countries where Chevron has left a trail of environmental and humanitarian disaster (Surkes, 2020).

In Israel, there were alleged irregularities in accounting practices. Quoted was an investor in Noble who sued in a New York federal court about a materially incomplete and misleading registration statement lodged with the US Securities and Exchange Commission that had been used deceitfully as a bid to persuade shareholders to approve Chevron's takeover.

The Knesset committee was also told about alleged irregularities pertaining to labor relations. Upon taking over Noble, Chevron declared an estimated run-rate synergy of about \$300 million a year. It noted that such synergies in part would be related to cutting its workforce in Israel and reducing the number of office buildings, information technology, and insurance costs. Indeed, since May 2020 Noble had already begun to lay off dozens of employees in Israel as part of a streamlining plan. This could lead to a reduction in safety and service that the company provides its customers.

When the Knesset committee challenged the government on all these examples, as is its obligation in the parliamentary process of oversight and checks and balances, it was disclosed that the government was going to approve the Chevron takeover of Noble but without checking the allegations and its environmental past.

## Conclusion

Chevron's first year in Israel can be viewed as a prototype—a work in progress. Thus far, it appears good for Chevron financially after its acquisition of Noble, but what does it do for Israel?

October 2020 to October 2021 has not been an easy year for anyone. Chevron has not had prior experience in working in Israel's unique and complex economic-security environment nor with such a strong regulator as the State of Israel.

In turn, Israeli companies, both state and private, and most citizens have not had experience in working with such a large global corporation as Chevron. Their experience with large US corporations has been in the defense sector with the US government playing a major role. This is not the case with Chevron.

Looking forward positively is with the hope everyone has learned that the way forward for a win-win outcome is to work together, to understand each other, and to make compromises when needed. In doing so Chevron can become an even more significant strategic maritime and economic partner to the State of Israel, Israeli companies (both state and private), and citizens as well as to Israel's partners in the region, predominately Egypt, Jordan, Cyprus, and the UAE.

What's next? Chevron has the capital and presence in all the key countries to make the EastMed pipeline happen. This may be the only means it has to substantially increase its sales and thus its profits. Israel as a strong regulator will not permit Chevron to bid for or to gain a larger stake of the gas fields, or even increase prices to the IEC and its consumers. Israel will insist that Chevron does not cut corners to reduce costs that would result in labor issues, health and safety dangers, and environmental catastrophe. A functioning EastMed pipeline could also have positive ramifications for regional politics. For the Israel Navy, it has four new warships of a type and capability never before commissioned, thanks to the gas fields' direct security needs, permitting a Brown Water doctrine shift while enabling enhanced power projection capability.

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