The Ministry of Energy
Main activities 2018

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From the Minister of Energy

The Ministry of Energy is responsible for Israel's natural resources and for the supply of essential resources: water, electricity, natural gas and liquefied petroleum gas.

The State of Israel is in the midst of a revolution in the field of energy with the help of the policy I am leading, which is mainly to reduce the use of polluting fuels, while maintaining energy security. This policy will drive the economy to phase out coal and polluting energy, toward a cleaner and healthier future.

In the field of natural gas, the development of “Leviathan” and “Karish-Tanin” reservoirs and the dispersal of the distribution network allow us to exploit the potential inherent in its many economic and environmental benefits. In addition, after years in which the sea was closed to natural gas and oil exploration, we are in the midst of a second competitive process that calls for international companies to invest in the Israeli energy economy, with the goal of discovering additional natural gas reservoirs in Israel's economic waters.

In the field of electricity, together with the Electricity Authority and the Ministry of Finance, we have approved a historic reform in the IEC. The reform will lead to a competitive and advanced electricity economy and a more efficient and financially sound company. I have also canceled the construction of another coal-fired power plant and set timetables for closing the coal-fired power plants in Hadera and Ashkelon. At the same time, we have decided to significantly increase electricity generation through renewable energy while meeting the target of 17% by 2030, more than anything that has been done in Israel in the last decade.

In the field of water, we are dealing with a five-year drought, but to our delight this past winter we were blessed with many rains. At the same time, we continue to promote a policy of maintaining an efficient water economy, which will work optimally for drought years that may come in the future. Saying that, we have begun implementing the government's plan for treating the water economy, whose main aims are - doubling the amount of desalination, saving the Sea of Galilee and northern streams, and establishing the opposite national carrier.

In the field of fuel and LPG, the Ministry is working to increase fuel supplies for emergencies, and is promoting reform that will increase LPG competition for the benefit of consumers in Israel. The State of Israel has also completed the Universal Gasoline Card Revolution, where as of January 2019, all fuel pumps in the country can provide services to Gasoline Card consumers (for company corporate fleets) with no transit barriers and with full flexibility for the customer.

The pamphlet presented to you summarizes the key projects for 2018, which, alongside multiple and challenging work, are the result of strenuous and professional work by all Ministry employees and this is a great opportunity to thank them for their work and contribution to the advancement of the state of Israel's energy sector.

Dr. Yuval Steinitz, Minister of Energy

From the Ministry Director General

You are hereby presented a booklet summarizing the Ministry of Energy's activities for 2018 and expressing the Ministry's commitment to transparency regarding its goals and achievements. A review of this booklet shows the significant progress and tremendous achievements in a wide range of issues affecting all areas of life and influencing many citizens:

- Historical electricity reform that will lead to real competition in the Israeli electricity economy.
- Accelerated development of Leviathan reservoir that will meet growing electricity needs and reduce our dependence on polluting fuels.
- Acceleration scheme for rapid deployment of natural gas distribution network to plants and consumers.
- Strategic plan for dealing with drought periods.
- Setting energy goals for 2030, in collaboration with other government ministries, which include concrete measures to transition the economy to natural gas and renewable energy, which will significantly reduce air pollution in the energy and transport sectors.
- Promoting the layout of charging stations for electric vehicles and encouraging the establishment of natural gas refueling stations.
- Improving Israel's energy security and preparedness for routine and emergency events.
- Improving the level of competition in the domestic gas sector and completing the Universal Gasoline Card Revolution.

The Ministry’s achievements for 2018 are the product of thorough and in-depth planning work and focus on results while monitoring and supervising ourselves, which has helped us achieve our goals and execute the Ministry's targets. The year 2018 is our milestone in establishing a reliable, efficient and cleaner energy economy and we are committed to continuing this work for the benefit of the public in Israel.

I would like to thank the Ministry's staff for their daily efforts and investment to advance the Israeli energy economy. I am confident that thanks to your hard work, professionalism and dedication we will meet the goals we set for ourselves for the benefit of the energy sector and the public as a whole.

Udi Adiri, Ministry Director General

Ministry of Energy

The Ministry of Energy is responsible for Israel's energy sectors and natural resources: electricity, energy efficiency, fuel, cooking gas, natural gas, oil exploration, quarries, water policies and more.

The Ministry supervises public and private bodies in these fields and acts to ensure adequate response to the ever-changing energy and infrastructure needs of the economy, today and in the future, at high levels of reliability, availability, efficiency and quality, while regulating the market, protecting consumers and protecting the environment.

The Ministry of Energy is committed to providing essential products and ensuring the quality of life of each and every citizen of the State of Israel. The office fulfills its mission and purpose by establishing policies, legislation, and implementing natural gas, electricity, fuel, quarry and water applications. For the purpose of leading and implementing the Ministry's policy in the energy sector, we strive to maintain professionalism, excellence, reliability, expertise, development of appropriate scientific and technological bases and establishing collaborations.

In 2018, the Ministry defined a number of strategic missions as a focal point, supervised by the Ministry's Director General, with the aim of removing barriers as soon as possible and accelerating their completion. These tasks are extensively detailed in this document.

Strategic plans for 2018:

1. Reform in the Electric Company
2. Development of Leviathan and Karish Tanin reservoirs
3. Deployment of infrastructure for transmission and distribution of natural gas
4. Energy sector targets for 2030
5. Government plan for handling drought and saving the Sea of Galilee and rivers in the north
6. Expanding the use of fuel substitutes for transportation
7. Promoting energy efficiency – grants fund and guarantee fund
8. Overall national outline plan for the energy sector infrastructure
9. Improving energy continuity in emergency situations

Strategic plan: Energy sector targets for 2030

At the start of 2018, the Minister of Energy announced targets for the energy sector for 2030. The targets were to reduce the use of polluting fuel products, in particular to stop the use of coal and to stop the vast majority of use of oil distillates, while maintaining reliability and continuous supply of energy.

The realization of the energy sector's targets for 2030 is expected to make a significant contribution to reducing environmental and health damage from air pollution and greenhouse gas emissions and economic benefits that are also reflected in the utilization of local natural gas resources. In addition, it contributes to reducing dependence on imported fuel products to establish energy independence for the State of Israel.

These goals are made possible by global trends in reducing greenhouse gas emissions, which became a binding global regulation at the Paris Convention and spurred energy and transportation economies around the world to adopt renewable energy and electric vehicles. These global trends, combined with natural gas discoveries in Israel's economic waters, open up a window onto a cleaner, energy-efficient world for the State of Israel, based on local energy.

The 2030 Energy Sector Plan sets out objectives for the fuel mix that the economy desires in 2030 and the range of policy measures required to achieve it. The plan represents a significant step towards reducing Israel's dependence on coal and oil distillates and is expected to lead to wide changes in the Israeli energy economy.

Goals for 2030

1. **Phasing out coal:** To stop the use of coal in electricity generation in all coal power plants and to transition to electricity generation from natural gas.
2. **Penetration of renewable energy**: A target of 17% production from renewable energy, feasibility study to increase the target by 2022.
3. **Transition to transportation by alternative propulsion – electricity and natural gas**: Reduction in oil distillation consumption in land transport, and accordingly, from 2030 onwards, entry of light vehicles powered by petrol or diesel into Israel.
    - Private vehicles: 100% of new private vehicles sold in Israel will be electric.
    - Heavy vehicles: in light of the uncertainty regarding the development of an alternate propulsion technology for heavy transportation, targets for the entry of alternate technologies into heavy transportation are: Trucks driven by compressed natural gas (CNG) will make up 60% of truck sales with a weight exceeding 5.3 tons, and 20% of trucks weighing less than 5.3 tons. The remainder of light trucks will be powered by electricity. For buses, the target penetration rate of CNG is 25% of total bus sales, and the rest by electricity.

4. **Transition to clean energy in industry**: Discontinuing the use of pollutant fuels in industry and replacing them with more efficient and cleaner energy sources. The total natural gas consumption expected from connecting approximately 455 potential industrial consumers to the distribution network is approximately 0.72 BCM and constitutes about 80% of the light industrial potential; additional consumption of about 0.27 BCM is expected from the connection of some further 250-300, smaller factories.
5. **Promotion of energy efficiency**: The goal is to reduce energy consumption by a rate of at least 17% by 2030 in comparison to the electricity consumption according to a "business as usual" scenario. In order to meet the target, it is proposed to require 10% - 20% of new buildings, in accordance with type, to comply with zero energy construction principles and to assimilate energy rating according to consumption in existing buildings. It is also proposed to promote a model city for efficient and smart energy use and to streamline government offices.
6. **Energy security**: The Israeli energy sector is not connected by continuous energy infrastructures to other countries and therefore in a state of emergency Israel is reliant on capabilities that have been prepared ahead of time. The main steps required to ensure proper functioning of the energy sector during an emergency are:
    - Securing redundancy in the supply of natural gas to the economy, including: ensuring independent functioning of natural gas receptor systems, increasing natural gas pipeline redundancy and establishing a terrestrial gas reservoir.
    - Transportation sector: ensuring electric charging abilities and securing natural gas supply for propulsion of vehicles running on CNG.
    - Industry sector: preference of natural gas supplies for vital industries.
    - Electricity sector: ensuring emergency reserves of diesel for a scenario of damage to the ability to supply natural gas and connection of new power plants by pipelines.
    - Designing connections and facilities required to set up systems that will provide redundancies for the sector to function even in an emergency.

Strategic plan: Reform in IEC

The IEC reform approved this year in the Knesset is significant for the electricity sector and will create a more competitive and efficient sector. One that enables financial development, innovation promotion and clean energy. The reform determines where the market will be free and competitive; and in places where there is a natural monopoly, it must be much more efficient and controlled by advanced regulation.

As part of the reform, competition in the field of power generation will increase by selling about half of IEC's production sites and turning the unit that manages the electricity system into a separate government company, competition will open up in the field of supply and structural changes will take place that will improve IEC's activities and make them more efficient. The reform will bring the company into focus on the grid segments of transmission and distribution, in a way that will ensure the reliability of electricity supply to all consumers in Israel as well as accelerate the connection of renewable energy and private production in general. The reform sets out to streamline efficiency which will reduce the workforce by 2200 jobs. Moreover, the reform will allow for significant updating of company labor relations, including transition of senior management to personal contracts, as is customary in leading companies in the economy. In order to allow for a fast closure of coal units 1-4 in Hadera, in accordance with the decision by ministers of energy and the environment, and to enable cleaner and more efficient production, IEC will establish 2 new integrated cycle power plants on the Orot Rabin site.

The following steps, which will take place over the next eight years, are set out in the reform:

1. IEC will sell approximately 19 generation units over the next 5 years. These units are in 5 different sites and account for about half of the electricity production by gas: A) Alon Tavor – within eighteen months of the government resolution. B) Ramat Hovav – within two and a half years of the resolution. C) Reading – within three years of the resolution. D) Hagit East – within four years of the resolution. E) Eshkol – within five years of the resolution.
2. Management of the national electricity system will be transferred from IEC to an independent government company in a way that will reduce current conflicts of interest within IEC, thus ensuring competitiveness in the field of production. Employees from the field of system management will transfer to the new company as will some of the units from the planning, development and technologies division.
3. The transmission and distribution network, which is a natural monopoly, will remain with the company. The company will invest resources for accelerated development and significant expansion of billions of ILS each year over the coming years, as part of a binding development plan to be set by the Minister of Energy, while meeting measurable targets and regulatory supervision for stability and quality of electricity supply to the public.
4. In addition, it was decided that the company would establish two new production units using natural gas at Orot Rabin, as part of the trend of reducing the use of coal

in electricity generation processes, and instead of coal-fired units 1 to 4 which are to be closed. This will be incorporated by a wholly owned subsidiary of IEC.

5. The five-year transmission network development plan has been approved, valid until 2022, in order to adapt the system to the dynamic needs of the State of Israel.
6. In the field of supply, it was decided to fully open power supply to competition for large business customers and, for the first time, for low-voltage consumers, in accordance with rules that will be set ensuring multiplayer competition in which some electrical manufacturers and other players will take part. It should be noted that in order to continue to maintain electricity supply stability, IEC will continue to serve as the default supplier for all customers and can only compete in supply to low-voltage consumers in the future if its market share drops to 60% over the next 8 years, and according to conditions prescribed. The company will be able to provide value-added services immediately to electricity consumers in the cyber sector. "Smart home" and energy efficiency sectors will also provide these services to customers from the day that their market share in the field of supply to low voltage consumers is less than 75 percent.
7. In order to adapt to changing reforms and realities in the electricity sector, the company, under the leadership of management, will undergo a comprehensive set of organizational structure changes to support the new efficiency plan and tasks. With regard to human resources implications, over the next eight years the company's workforce is expected to decline by about 25%: approximately 1,800 employees will terminate their employment with early redundancies, in addition to the thousand employees the company has parted with over the past two years. In addition, approximately a thousand additional employees are expected to end their work with compulsory retirement and retire. At the end of eight years, and after the planned retirements, the company staff will be reduced by 2,200 permanent employees, having approximately 6,400 employees.
8. The reform is expected to significantly improve IEC's financial position and according to company estimates, it will also reduce the volume of debt, improve the company's financial metrics and thus reduce their financing costs.

Reservoir development and export of natural gas

Global trends in reducing pollutant and greenhouse gas emissions, combined with natural gas discoveries in Israel's economic waters, open up to the State of Israel a cleaner, more efficient, and locally-based world of energy. The use of natural gas in the State of Israel has great environmental benefits over other fossil fuels (coal and oil) and its use has positive, economic and strategic implications.

The gas sector in Israel now relies on one reservoir, one rig and one coastal connection. As a result, it is imperative to increase redundancies in supply and transmission systems and to continue to develop the gas sector for the welfare of Israeli residents. By the end of 2019, the connection of Leviathan reservoir is expected to be completed, and Tanin Karish reservoir's connection is expected in about two years. The development and connection to the shore of Leviathan reservoir and Karish Tanin reservoirs, in addition to the currently connected Tamar reservoir, will enable the Israeli economy to rely on natural gas as a substitute for imported fuel products.

In a conservative estimate, a 5-year delay in the connection of Leviathan will incur an additional cost resulting from air pollution of ILS 8 billion (calculated in accordance with the Ministry of Environment's estimates of morbidity and mortality costs) or about 547 cases of early mortality.

Strategic plan: Development of Leviathan and Karish Tanin Reservoirs

Development of Leviathan Reservoir:

During the past year, the development of Leviathan reservoir has progressed greatly. Leviathan Partnership completed three development drills in the field, laid hundreds of miles of piping connecting the reservoir to the Israeli coast and continued construction of the production rig in Houston. In parallel with offshore development work, laying onshore pipeline has been accelerated both for natural gas and its connection to the national gas conduit system for sale and distribution to consumers in Israel and neighboring countries, as well as for condensate that connects to the national gas pipeline and the Haifa refinery to be mixed in within the rest of the Israeli fuel mix.

- Leviathan drills 3, 4, 5, and 7 have been completed
- Completion of pipeline connecting the field to the area designated for the rig.
- The gas and condensate pipes have been installed.
- Pipeline has been laid on land.
- Rig building in Houston has progressed.

Leviathan reservoir is expected to be connected to the Israeli market by the end of 2019.

Development of Karish Tanin Reservoir:

Karish Tanin Reservoir is expected to be connected to the Israeli market in the first quarter of 2021. This connection will increase redundancies in the supply and distribution system and allow the Israeli market to rely on natural gas as a replacement for imported fuel products. During the year a decision was made to invest in the reservoir's development. In addition, construction work has begun on a FPSO floating production rig that will be located about 80 km west of Haifa.

Connection of this field is very significant in light of Government Resolution 4080 of July 29 2018 which determined that when there is redundancy in the supply of natural gas to the market in Israel through connection of the three natural gas reservoirs, each of which will be connected to the national natural gas transmission system by a separate infrastructure, the ministry will act to stop the ongoing operation of 1-4 power generation units at the "Orot Rabin" coal-based power plant in favor of operating new natural gas-based power plants.

Promotion of second tender procedure

The Ministry of Energy published the documents for the second competitive procedure for granting natural gas exploration licenses in Israel's maritime territory. The procedure is a direct continuation of the sea-opening process that began two years ago, under which six search licenses were granted, some of which are expected to be drilled in coming year.

In order to provide relevant information, the Ministry has set up a dedicated website where all the information about the procedure can be found and relevant documents and materials browsed. Companies will be able to submit bids by mid-June 2019, and the winners will be announced in July.

Under the new procedure, 19 search licenses (blocks) of up to 400 square kilometers each are offered, in five clusters of maximum size up to 1,600 square kilometers each. The decision to market the area in clusters of licenses was intended to allow a better match of search areas to geological structures that may contain oil and gas reservoirs. Maintaining larger areas will make geological and geophysical surveys more professional and efficient, and increase the attractiveness of the areas to entrepreneurs.

Implementation guarantees for the new procedure, which are designed to ensure the licensee winner's compliance with all stipulated conditions and rapid and professional execution of work plans. It is also planned to ensure the possibility of granting continuous and larger areas to each group. The basic guarantee fee per license will be $ 2.5 million. An additional $ 500 thousand will be added to each additional block within the same cluster. The maximum guarantee amounts for four consecutive areas (clusters) will be $ 4 million.

According to the principles of the second competitive procedure, a search license will be granted for a 3 year period with the option of extending it for another two years, provided that conditions set out in the procedure documents are met.

In order to ensure participation of as many new groups as possible in the procedure, the Ministry decided to limit the number of licenses granted to each party and place them at only 8 licenses. It should be emphasized that the Oil Law allows to grant up to 12 search licenses. In addition, it was decided that a holder holding over 25% of the oil in which reserves over 200 BCM exist – will not be able to participate in the current competitive process. In addition, during the procedure, groups that do not contain a factor that has existing holdings will be prioritized.

As part of the procedure, search licenses will only be granted in areas that are at least 22.2 km offshore, a distance that is in line with recommendations of the Ministry's strategic-environmental survey, and which recommends a distance of at least 7 km offshore. By granting search licenses and subsequently granting approvals for surveys, drilling and infrastructure development, the ministry informs search license applicants about the sensitivity of the habitat available in the area of the license, the possible impact on the level of development that will be possible, measures that will be required and restrictions that will be imposed for conservation of the habitats.

Export of natural gas

In 2018, natural gas exports from Tamar reservoir to Jordanian Dead Sea plants continued, standing at 0.1 BCM. In addition, beyond the existing approval, an additional export approval was granted from Tamar reservoir to the Jordanian Dead Sea plants of 1.24 BCM over 15 years. Moreover, two significant export agreements were signed with the Egyptian company Dolphinus, amounting to 32 BCM from Tamar Reservoir and 32 BCM from Leviathan Reservoir over ten years. Requests for export approval for these two agreements were submitted to the Commissioner for Petroleum Affairs.

EASTMED

After two years of meetings and discussions, an agreed text was reached for an agreement to lay underwater gas pipelines for the export of natural gas from Israel and Cyprus to Greece, Italy and Europe, which would make Israel a significant player in the European energy economy.

The EU and the Italian-Greek corporation IGI allocated € 70 million for the project's economic and engineering feasibility study. In 2018, after coming to a conclusion that the project is economically-engineeringly feasible, the EU allocated an additional € 34.5 million which will allow completion of planning for a final decision on investment in 2019.

The pipeline route will begin in Israeli maritime areas, pass through Cyprus and Greece's maritime and inland territory and end in Italy. The underwater pipe will be the longest and deepest in the world, reaching a length of approximately 2,100 km and the maximum water depth in which it will be laid will be about 3,000 meters.

As part of the agreement, the four countries undertake to cooperate to enable the project to be established in all areas and levels. The agreement states that natural gas will be supplied by Israel and Cyprus and is intended for Greece and Italy, but the pipeline route will also enable provision of gas to the Balkans and Central Europe. Other countries will be able to join the project with the consent of all founding countries.

The text of the agreement has been approved by the European Union Representative and will be brought to the states for signing.

Professional team for periodic review of recommendations of the committee for examining Government policy regarding the natural gas economy in Israel (update of Tzemach conclusions)

The team, headed by the Director General of the Ministry of Energy, Mr. Udi Adiri, was set up following the government's decision to review government policy on the natural gas economy in Israel (following recommendations of the Tzemach Committee) for a periodic review of the committee's recommendations. The team was composed of representatives from the bodies involved in discussions on natural gas policies: Ministry of Energy, Electricity Authority, National Council of Economics, Ministry of Finance, Ministry of the Environment, Competition Authority, Ministry of Justice, Foreign Ministry, Bank of Israel and National Security Office. The team has been reviewing developments in the Israeli gas economy over the five years since the government's decision, and has reexamined supply and demand for natural gas, as of 2018, including resources and reserves and a current and future snapshot of the development of natural gas reservoirs. The team has also explored exploration operations in recent years in Israel and neighboring countries, scenarios for natural gas in the economy for the next 25 years, including predicted maximum hourly demand, implications of a reservoir's connection to the local economy and minimum supplies to the local economy based on the size of the natural gas field.

On July 16, 2018, the professional team’s interim report was published on Ministry of Energy’s website for public reference. During the advertising period, references were received from various stakeholders including rights holders, public associations, economic consulting firms and citizens. The professional team examined these references and some were incorporated into the final report of the government-approved professional team.

On December 18, 2018, the professional team’s final report was published on the Ministry of Energy website.

Approved recommendations:

- 500 BCM of natural gas will be guaranteed for the local economy for the next 25 years which will enable the supply of natural gas demand for the energy needs of the local economy for this period. This is after considering the needs of the local economy and considering the natural gas supply.

- It is not recommended to cancel the agreement with the ship carrying liquid natural gas connected to the maritime link off the coast of Hadera, in order to ensure redundancy to the local economy. In addition, the Ministry of Energy's natural gas authority will examine in 2021 whether the economy has redundancies that allow it to meet maximum hourly demand in the economy and report its recommendations to the Minister of Energy by December 31, 2021.
- The Minister of Energy, in consultation with the Minister of Finance and the Minister of Economy, will formulate principles of regulation required when selling natural gas to consumers in the local economy, intended for the production of secondary products produced from natural gas and intended primarily for export, and submit their recommendations to the government within 90 days. The Minister of Energy will also make a series of amendments including legislative amendments, as required, in accordance with said recommendations.
- The Minister of Energy will initiate a series of amendments, including legislative amendments, as required, for the purpose of regulating secondary trade in natural gas for export, including ensuring compliance with the export limit of 3% of total natural gas sales to the Israeli economy in the past year.
- An obligation to connect to the local economy of a gas field, in discoveries to be discovered after approval of the government decision, will be determined according to the size of each field as follows:
    1. New reservoirs in excess of 200 BCM will be required to connect to the local economy while in development and before the date of commercial natural gas flow.
    2. New reservoirs in which the amount of natural gas exceeds 50 BCM and does not exceed 200 BCM will have to connect to the local economy by December 31, 2032. Any delay will be at the discretion of the Commissioner who will consider the state of redundancy and the amount of natural gas reserves.
    3. New small and medium reservoirs up to 50 BCM will not have to connect to the local economy.
- The state's participation in the establishment of an additional maritime assemblage in the Southern Polygon approved under NOP 37/H will be examined, which includes a marine absorption station and a coastal connection as operations justify it.
- The Petroleum Affairs Commissioner will be responsible for examining additional measures to encourage exploitation of the economic well-being potential arising from natural gas fields and encouraging connection to the local economy of fields that are not obligated to connect to the local economy.
- Calculation of minimum supply obligations for the local economy, in discoveries that will emerge after approval of the government decision, will be such that the supply obligation

is proportional to the size of the field and calculated according to the supplementary part, as follows:

1. Fields in which the amount of natural gas, as determined by the Commissioner, is less than 50 BCM, there is no supply obligation to the local economy will apply.
2. For each 1 BCM, an additional 50% of the quantity must be supplied to the local economy from 200 - 50 BCM.
3. For every additional 1 BCM from 200 BCM and above – a duty of supply of 55% of this quantity to the local economy.

- An additional test committee will be established 5 years from the date of approval of the government decision, regarding the professional team's recommendations according to the needs of the local economy and taking into account the supply of natural gas.

Strategic plan: Deployment of infrastructure for transmission and distribution of natural gas

The natural gas economy has evolved significantly in recent years. Natural gas has become the dominant natural fuel in the electricity sector as well as in heavy industry in the economy. However, the penetration of natural gas into the medium and small industries and other consumers has been limited.

Grants to accelerate distribution network deployment

In 2018, the Ministry drafted a plan to accelerate the connection of consumers to natural gas, which is expected to connect more than 150 new consumers and will benefit the Israeli economy valued at a total of approximately ILS 500 million. The plan is made up of two parts:

- The first part includes grants to distribution companies of ILS 350 million to accelerate line deployment and connecting consumers. The grant program is expected to significantly accelerate network deployment and connect dozens of new consumers over the next three years.
- The second part of the program includes grants to increase planned line capacity through the distribution network. Increasing the capacity will allow distribution companies to supply natural gas to future consumers (refueling stations, cogeneration stations, etc.) as well as adding significant redundancy to the system. Establishing such stations will improve system redundancy and reduce the cost of connecting consumers to the distribution network. The budget stands at ILS 150 million.

In 2018, according to the plan, ILS 202 million was allocated in a tender calling for the first phase that included grants to accelerate deployment of distribution networks totaling ILS 127 million, grants to increase line capacity to a total of ILS 72 million and grants to establish pressure reduction stations totaling about ILS 3 million.

Connecting distant consumers

As part of efforts to connect additional consumers to the network, ILS 130 million has been allocated to benefit remote consumers. In 2018, a tender process for connecting 5 consumption centers was completed for a total amount of ILS 45 million, and in addition, a second tender was published for connecting remote consumers, in which eligibility certificates for connection of 6 consumption centers were issued for a total amount of ILS 55 million.

Encouraging small reservoirs

In 2018, a licensing was given for the establishment and operation of a transmission system to suppliers, which will be used to transfer natural gas belonging to the holders of Karish and Tanin gas reservoirs (Energean Company).

In addition, a Memorandum of Understanding (MOU) was signed between NatGas and Energean, according to which Energean will assist NatGas in setting up the pipeline segment that begins with the valve at the entrance to the offshore gas station that allows piping of other suppliers to the system, a coastal gas station (CVS), 30” inland pipeline and terrestrial

gas station (DVS) which includes, among other things, pressure measuring and lowering facilities (PRMS). This section ends with the entrance to NatGas's gas station at 'Dor'.

After construction of the section by Energean, the section will be transferred to NatGas. This section of the transmission system will be used to connect small and medium-sized reservoirs under Government Resolution 2592 to encourage small reservoirs and will enable additional suppliers to be connected to the national transmission system. The natural gas authority will approve specification of the section above in 2019.

This step is a significant milestone in encouraging competition in the gas sector.

Regulating the activities of natural gas production facilities connected to the electricity grid – decentralized production

In December 2017, the Minister of Energy published policy principles for regulating the activities of natural gas production facilities that are connected to the electricity grid of 300 megabytes. The activities of these facilities will contribute to decentralizing electricity generation. Distributed production has potential benefits to the electricity economy by saving investment in the transmission grid as well as contributing to energy security and survival of the electricity system.

In November 2018, after extensive headquarters work, the Electricity Authority issued a series of grants under which 300 megabytes were allocated to register the facilities as well as a graded grant for construction of the facilities. This regulation, which is expected to allow such facilities to be connected to the natural gas distribution network, has significant potential for accelerating the distribution network deployment, which will connect more consumers to the distribution network.

Strategic plan: Government plan for handling drought, saving the Sea of Galilee and rivers of the north

An anomalous five-year drought has brought the Israeli water sector to the point where urgent adjustments need to be made to its water production and development plan. The plan has become even more critical due to hydro-climatic trends attributed to the phenomenon of climate change. In order to deal with droughts, the Ministry of Energy has led a strategic plan to deal with drought periods in the water economy throughout 2018-2030. The plan has been approved by Government Resolution 3866 on 10.06.18.

Highlights of the plan:

A. **Increasing supplies of desalinated water**: Water production capacity will be increased, so that the target for desalinated seawater produced in 2030 will be between 1,100 and 1,200 million cubic meters per year. An intermediate target for 2024 is 300 million cubic meters that will be executed due to the establishment of two new desalination plants in Sorek and the Western Galilee.

B. **Sea of Galilee basin reinforcement**: Water will be supplied to the Sea of Galilee from the national system, with an annual volume of not less than 30 million cubic meters in 2020 which will be increased to at least 100 million cubic meters by 2022.

C. **River rehabilitation**: A plan for the rehabilitation of seven streams in the north of the country totaling ILS 81 million has been approved.

D. **Connecting distant areas to the national system**: To create full credibility for the supply of drinking water, agriculture, nature and tourism, the following areas will be connected: Ma'ale Kinneret, Western Galilee, Eastern valleys and the Golan Heights.

E. **Streamlining and expediting procedures in the development of the water sector**: solutions for streamlining permits for related required water drilling facilities with the aim of promoting water production by reducing drilling time.

F. **Reducing demand for water and encouraging water savings**: Reducing demand and encouraging short-term water savings through a campaign.

G. **Mekorot Water Company Ltd. three-year development plan**: Mekorot will update the three-year water program in order to meet the government decision.

Strategic plan: Expanding the use of fuel substitutes for transportation

Today there is almost complete dependence on oil as a source of energy for transportation in Israel and around the world. More than 90% of global energy consumption comes from oil, and in Israel there is an even greater dependence. This situation has negative consequences from an environmental aspect, as a result of greenhouse gas emissions and various pollutants; from an economic aspect, since oil prices are highly volatile; and from a geopolitical aspect, since oil is largely found in countries that contribute to political instability. Since the transportation sector is responsible for 25% of the world's greenhouse gas emissions, second only to the energy sector (30%), much of the effort to reduce greenhouse gas emissions is concentrated on promoting alternative, cleaner methods of propulsion.

Israel has significant advantages in adopting alternative vehicle propulsion methods relative to other countries in the world due to its unique conditions. In particular:

- Israel is a small country making the travel distances short. This allows for a more convenient deployment of charging and refueling infrastructure.
- Fossil fuel prices in Israel are high relative to alternative fuel prices such as electricity and compressed natural gas.
- Israel has natural energy sources of natural gas for electricity production, but has almost no oil reserves at all.
- Israel is one of the most innovative countries in the world and the public is known for adopting and leading technological innovation.

During 2018, the Ministry continued to work on reducing the use of oil-derived fuels and switching to green transportation, which includes, among other things, electric motor vehicles and compressed natural gas.

Promoting penetration of electric vehicles into the economy

The Ministry has issued four tenders to support the establishment of charging stations, amounting to ILS 30 million, as follows: a tender for supporting the establishment of fast and ultra-fast charging stations (DC) in the amount of ILS 13.2 million; a tender for supportingthe establishment of slow charging points (AC) in public spaces such as sidewalks and parking lots for ILS 10 million; a tender for supporting the establishment of slow charging stations (AC) in semi-public spaces such as malls and recreation centers for ILS 3.2 million; a tender for supporting the establishment of slow positions (AC) in workplaces of ILS 3 million. The tenders were made after the Ministry carried out extensive work of mapping barriers that inhibit electric vehicle entry into Israel, and following a process of public participation.

In addition, the Ministry has worked with an inter-agency team that includes the Electricity Authority, the Fuel Substitute Administration at the Prime Minister's Office, the Ministry of Finance, the Planning Administration, the Ministry of Transport, the Ministry of the Environment, the Ministry of Construction and Housing and the Ministry of Justice, to

accelerate the use of electric vehicles and remove delaying barriers. Among the main moves that began in 2018: granting an exemption for 8 years of the need to have a license in order to establish and operate charging stations, initiating the establishment of charging stations in joint homes and drafting guidelines for establishing a preliminary charging infrastructure for new construction.

The Ministry continued to support pioneering and demonstration projects every year through grants from the Ministry's Chief Scientist. In 2018, winning projects from 2017 were implemented, including the initial deployment of rapid charging stations totaling ILS 2 million, the development of advanced charging stations for electric vehicles totaling ILS 1.5 million and a public charging system in a demand driven model totaling ILS 1.5 million.

Promotion of compressed natural gas driven transportation

1. The Ministry, together with the Ministry of Finance, has promoted a taxation system that includes significant support for converting heavy transport to natural gas, and a long-term precedent certainty for this outline.
2. The Ministry published a tender for the establishment of natural gas refueling stations at a scope of ILS 100 million; approximately 47 bids were received for the tender, out of which 37 bids were selected.
3. The Ministry acted to promote natural gas for transportation among interested parties (vehicle importers, vehicle fleets and local authorities) through conferences, seminars and other activities.
4. The Ministry promoted the amendment for NOP 18/4/2 for statutory relief in establishing natural gas refueling stations, reducing required distances between the stations and allowing internal stations to refuel additional fleets commercially and more. The Ministry has also facilitated regulatory relief for refueling stations such as HFC and Firefighting & Rescue guidelines.

Strategic Plan: Promoting energy efficiency – grants fund and establishing a guarantee fund

In recent years, energy demand has been growing, partly due to population growth, rising living standards and economic growth. Increasing use of energy entails investing financial resources, utilizing land resources that are in short supply and even exacerbating the climate crisis. In light of the above, promoting energy efficiency in the world is necessary and vital. It manifests itself in the rational utilization of energy resources, in producing products and economic benefits using reduced energy and in maintaining modern quality of life. Energy saving is known as the "fifth fuel type" which can help meet rising energy demand and whose only byproducts are financial savings and a reduction in our eco-footprint.

Like other developed countries, Israel has recognized its responsibility to reduce energy demand and optimize consumption, and pledged to meet national targets for reducing electricity consumption by at least 17% by 2030 relative to electricity consumption expected in that year under the "business as usual" scenario (i.e. with no policy changes in the field).

In 2018, the Ministry cooperated with the Ministry of Finance, the Ministry of Economy and the Ministry of the Environment, among others, on two levels:

1. Energy efficiency grant fund of ILS 300 million: During 2018, the second phase of the grant fund, which was established as part of Government Resolution 1403 to support energy efficiency projects and reduce greenhouse gas emissions, was published. As part of this phase, ILS 84 million was given in grants to 100 energy efficiency projects, which are expected to generate savings of about 160 million kWh per year, which equals approximately ILS 80 million annual savings to the Israeli economy. In addition, in December 2018, the preparatory work for the third phase, which was published in January 2019, will be completed, and approximately ILS 66 million will be awarded.
2. Energy efficiency state guarantee fund loans of ILS 500 million: At the end of 2018, the banks Mercantile Discount, Hapoalim, Mizrahi Tefahot and the International were selected to provide loans for energy efficiency projects guaranteed by the state. This is the first fund of its kind in Israel, and as part of its activities, state guarantees will be provided to businesses for implementing energy efficiency projects totaling ILS 3.5 billion. The tender was managed by the Ministry of Energy, the Accountant General's Office, the Ministry of Finance and the Ministry of the Environment.

Israel – US energy research center

As part of the collaboration between the Israeli Ministry of Energy, the Innovation Authority in Israel and the US Department of Energy (DOE), it was decided to establish a virtual research center in the field of energy shared by both countries. Its goal is to promote energy security and economic development through R&D of innovative technologies, through collaborations between companies, research institutions and universities in Israel and the US. The energy center's four areas of R&D are: fossil energy (mainly natural gas), cyber protection of energy and water facilities, water and energy interfaces and energy storage.

The center was established under an implementation agreement signed between the Israeli and US ministries in June 2018. This decision established a budgetary framework of up to $ 8 million for 2016-2024, for collaboration with the US government in the energy sector. In December 2014, the US Strategic Cooperation with Israel Law was signed, which extends previous laws from 2007 and 2012, inter alia, on energy cooperation between Israel and the United States. The new law states, among other things, that cooperation between energy offices in both countries will continue until 2024 and be expanded to a range of other issues beyond renewable energy and energy efficiency, such as natural gas and oil, combined energy and water and protection of energy and water infrastructure facilities. Since 2009, annual agreements have been signed by the Israeli and American energy offices to promote R&D projects in the field of renewable energy and energy efficiency through an organization called BIRD ENERGY totaling $ 2 million on each side.

The research center will run for 5 years on a budget of $ 1 million from each side, for each of the above areas, for each research year. Total support of both countries will therefore be $ 40 million. The BIRD Foundation's bid will be a one-time occurrence and will include the selection of collaboration that include academics and industry entities from both countries who will offer R&D programs in each of the fields. The R&D program may also include joint activities, such as student exchange and lecturers, and access to research labs. In total, one collaborative will be selected for each of the defined fields and a 5-year framework agreement will be signed with them. Each collaborative will invest from their sources an amount corresponding to the government support, so that the total annual budget for each issue will be $ 4 million (double the government's investment), and a total of $ 80 million over 5 years.

Fuel and liquefied petroleum gas

Today, there is almost complete dependence on oil as a source of energy for transportation in Israel and around the world. More than 90% of global energy consumption comes from oil, and in Israel there is even greater dependence. Therefore, the Fuel and Gas Administration in the Ministry of Energy works tirelessly to improve, optimize and promote the fuel and LPG market in a way that benefits the end consumer.

Universal refueling device

Approximately half a million vehicles in Israel have an automatic refueling device, which allows for refueling without the need for payment at the point of sale. The device is installed on the vehicle's gas cap (usually a publicly or commercially owned vehicle). The charge is made in accordance with an agreement between the fuel company and the organization, which usually includes favorable discounts and payment terms. The device enables fast and convenient refueling and provides the organization to which the vehicle belongs to, information about the vehicle's fuel consumption, the time and location of refueling, etc.
Since each fuel company installs its own unique device that allows refueling only at specific stations, the consumer has no freedom of choice and cannot refuel at other stations and enjoy deals and discounts, and so on. In addition, the competitive ability of small fuel companies is harmed as in the absence of full national deployment, they do not have the possibility to sell through an automatic refueling device and thus losing a large share of consumers.
Therefore, the Ministry of Energy has promoted regulations requiring the introduction of a general automatic refueling device (universal device), which will allow refueling at any station that has an automatic refueling device, subject to an agreement with the fuel company. The Fuel Administration has also commissioned and accompanied a uniform standard for a general automatic refueling device (standard 6200).

As of early 2018, every company that sells fuel through an automatic refueling device has installed a universal reader for each fuel product. During the year, over 400,000 vehicle refueling devices were installed in cars trucks and buses in Israel. The operation included extensive logistical efforts in the last months of the year. The reform was fully completed by the end of 2018. Associated devices are a thing of the past, and as of 2019, all fuel sales using an automatic refueling device will be through universal refueling devices only.

Updating marketing margins

The Fuel Administration at the Ministry of Energy conducted a thorough examination of gasoline tariffs at gas stations. The audit included reviewing accounting reports; addressing macroeconomic implications in the field of competition and promoting the economy; examining impacts and comparisons for unregulated products and more.
As part of the examination, the ministry recognized that due to a reduction in company costs and a significant increase in amounts of gasoline purchased, the maximum cost per liter paid by citizens could be lower.

Therefore, the Ministry of Energy and the Ministry of Finance came out with a public participation plan along with representatives of the Antitrust Authority and the Consumer Council; and received detailed information from fuel companies.
After hearing the public views, which also included the transmission of up-to-date and detailed data, including updates on payroll expenses, updates on property taxes and more, the committee recommended a reduction of 0.0047 NIS per liter of gasoline to be purchased in the next five years (0.055 NIS including VAT). In addition, according to calculations, the full -service refueling fee will increase by one agora, mainly due to an increase in the minimum wage in the economy.
This move joins the process of increasing competition promoted by the Fuel Administration in the Ministry of Energy in the past year in the form of universal refueling devices.
In April 2018, the Minister of Energy and the Minister of Finance signed the decree regulating the reduction of marketing margin, as mentioned.
According to calculations by the Fuel Administration at the Ministry of Energy, the reduction means savings to the public of about ILS 100-150 million a year.

Computerized system for monitoring and mapping aggregators and liquefied petroleum gas hubs – Migdal

Israel has tens of thousands of central gas systems that supply domestic gas to millions of households. For years, due to a minority of manpower resources, the state was unable to produce a regular control system for these systems.
Over the course of two years, an innovative computing system was developed designed to map and test the integrity of LPG aggregators and hubs of gas suppliers. Supervision is carried out on the ground using tablets linked to the Ministry computer system. The system responds to a lengthy and complicated procedure of inspection, many forms and reporting quality, and performs accurate mapping that shortens the time of arrival at the facility in an emergency (during gas leaks, earthquakes, war).
The Fuel and Gas Administration started using the system in March 2018. There are three external companies that carry out field control. The Inspection and Safety Division carries out quality control on external controllers' inspections and, if necessary, sends letters to correct deficiencies to the gas company from the system.
In 2018, around 29,400 facilities across the country were inspected.
The Fuel and Gas Administration and Database Division at the Ministry presented the system to the Quality and Excellence Division of the Civil Service Commission and reached the final of the 2017 Civil Service Innovation Competition.

Promotion of energy infrastructure planning

Occasionally, infrastructure lines occupy a large area of Israel's underground due to the fact that they are designed with large distances between them so as not to “interfere” with each other with regards to safety, in terms of construction, operation or maintenance, and possibilities of future expansion. This results in the deployment of broad infrastructure strips while wasting land resources, damaging landowners, or creating land-use restrictions and unnecessary expenditure. In addition, attempts at coordination between various infrastructure companies on how to link infrastructure lines creates delays in project schedules as there was no fixed definition of the required distances from each other.

Strategic plan: Overall national outline plan for the energy sector infrastructure – NOP 41

NOP 41 was formulated in accordance with Government Resolution 2426, which deals with the principles of sustainable development that combine: dynamic economics, intelligent use of natural resources, protecting ecosystems and providing equal opportunities for all. As part of this decision, the Minister of Energy is required to inculcate external, environmental and social costs in assessing infrastructure projects. As part of the steering team for planning and establishing sustainable infrastructures established by the Ministry of Energy, the need arose to devote a chapter to recommendations for shared infrastructure strips that optimize land use and also relate, among other things, to proximity distances between various infrastructure lines, as implemented in NOP 41.

NOP 41 is in the final stages of formulating plan documents for approval from the design institutions. The plan includes planning of energy infrastructures: electricity, natural gas, fuel, LPG for the years 2030 and 2050. The purpose of the plan is to ensure supply redundancy and reliability while streamlining land use and resource savings. This plan constitutes implementation of the Division's objectives, by means of planning:

- Anchoring integrated underground and surface infrastructure strips and guidelines for promoting plans for implementation.
- Saving infrastructure strips for power transmission systems
- Saving areas for electricity generation with renewable energy
- Marking areas for examining multi-system infrastructure tunnel design
- Uniform and clear guidelines for energy infrastructure planning

This year, the Ministry conducted a public participation process, an important tool in the design world that allows stakeholders to hear comments about the plan in order to learn and adopt some of the issues that came up in the process.

Promoting national programs in the field of ministry operations

1. National infrastructure plan 82 has been approved – enabling renewable energy generation with a capacity of over 400 MW.
2. Completion of NOP 32 Planning the construction of LPG storage sites – NOP 32/1 / A, D, E at the sites of Yavur, Ashdod and Trans-Israel Pipeline were approved in 2018. Preparations for tender for sites approved in NOP 32 / 1 D. and H.
3. A holistic reference to the field of phosphate extraction in Israel: NOP 14B approval in the housing cabinet, detailed planning for the Sde Brir site, preparation of a report on available phosphate reserves in mining franchises, formulating an internal professional position and a legal examination for renewal of the franchise.
4. During the year, 5 detailed national outline plans for power stations for the production of natural gas were promoted.

Improving emergency preparedness in the economy

Due to the fact that the Israeli energy sector is not connected by continuous infrastructure to other countries and is based on imports of primary energy sources by sea, the State of Israel is defined as an "energy island". In an emergency in which sea ports will be closed, Israel will be isolated in terms of the ability to supply energy sources and will have to rely on capabilities that have been prepared ahead of time.

In recent years, the Ministry of Energy has been working to improve the energy continuity of Israel, and has invested large budgets and great efforts. Proper preparation and operation of the energy and water economy during times of non-emergency and emergency depends, among other things, on the regular supply, as far as possible, of electricity, various types of fuel, natural gas and water – which are essential products. Ministry of Energy is responsible for emergency preparedness in the areas of energy and water infrastructure. It has therefore established four emergency authorities for this purpose, through which the Ministry works to prepare the different sectors for emergency situations (electricity, water and sewerage, fuel and LPG and natural gas). The Ministry prepares according to an approved reference scenario derived from the national home front scenario and in accordance with this scenario service levels are determined and response plans of designated authorities under the Ministry's responsibility are written.

Strategic Plan: Improving energy continuity in emergency situations

1. Promoting Government Resolution B/116 on increasing inventories and upgrading the fuel transmission system, the purpose of which is to increase redundancy of the electricity sector in an emergency by purchasing diesel fuel for the electricity sector and connecting transmission piping to power plants:
   - Completion of distillate stocks procurement for the civilian economy.
   - Purchase diesel fuel for the electricity sector.
   - Promotion of NOP 37/3 – aimed at laying piping for connecting power stations to the fuel transmission system.
2. Promoting the Energy Security Law – Formulation (proposal) of pre-draft memorandum of law.
   An energy security law will give the ministry priority in planning the energy sector and regulate operation of the energy economy in emergencies.
3. Implementation of a multi-year protection plan – Protection of the infrastructure of the energy sector against rocket fire.
4. Approval of programs from the Ministry Director General for the four designated emergency authorities (reference scenario, service levels and response plan).
5. Approval from the electricity authority plenum for the purchase of spare parts for electricity sector and mobile power systems engineering.
6. Approval from the natural gas authority for the purchase of spare parts stock and mobile PRMS for the natural gas economy.

Establishing a cyber lab

In 2017, the Ministry of Energy and the National Cyber Council at the Prime Minister's Office signed a collaboration to establish a national cyber lab for research and innovation in the field of cyber protection for industrial control systems. The Ministry of Energy is a regulator facing private power plants, natural gas companies, fuel and LPG companies and water desalination plants. In this framework, surveys of vital operating environments are carried out in the facilities of the above companies, which incorporate new technologies to improve monitoring capabilities and alert against cyber damage. In addition, the ministry has established the Sector Steering Center, which controls all infrastructure facility monitored in a single cyber center integrated with the National Cyber Protection Authority. Establishment of the lab is another key factor in cyber protection of critical operating systems that are located in infrastructure facilities and enables the simulation of a dynamic communication routine, oriented to an operational environment for the purpose of examining scenarios, technologies and factors that may harm the cyber world. The laboratory is national and therefore required to provide infrastructure for all government offices and affiliated units in accordance with threats, technological development and cyber requirements (such as transport, local authorities, etc.).

Quarries

Mining and quarried materials produced in Israel are used as raw materials for the construction and road construction economy as well as for various other industries. Regular supply of raw materials to the economy is essential for the continued physical development of the State of Israel – residential construction, employment, industry and public buildings, infrastructure construction and paving of roads and railways.

Quarry design

NOP 14B is a national outline plan for mining and quarrying which aims to meet the needs of the construction and road construction industry by 2040, and the needs of industry by 2045. In April 2018, after more than a decade of planning procedures, NOP 14B was approved. In order for raw material reserves at sites marked in NOP 14B to be available to the economy, another detailed plan was required. Most of the mining and quarrying programs are promoted by the Quarry and Mines Division and some by private developers. During 2018, two significant programs promoted by the division were approved. The first is plan 11/03/256, which significantly expands the Mt. Dragot quarry. The plan took effect in February 2018. Reserves in the quarrying area are estimated at about 130 million tons of dolomite for gravel. The second is NOP 14/8, a detailed national outline plan for the Kadarim quarry, which took effect in November 2018. Reserves in the field are estimated at about 200 million tons of raw material for the construction and road construction industry in the north of the country. The program allows the operation of two different operators at the same time. Also, in November 2018, an extension plan for the basalt quarry east of Kibbutz Beit HaShita was promoted by a private entrepreneur. Reserves are estimated to be about 8 million tons.

Quarry rehabilitation fund

The Mines Regulations (Quarry Rehabilitation Fund) was established in 1978. In accordance with the Regulations, the Quarry Rehabilitation Fund was established. The fund is managed by 9 ministries and authorities, headed by a representative from the Ministry of Energy in addition to the Mining Superintendent who is a permanent representative in management.

The fund's working principle is based on collection of funds during quarry activities for the purpose of restoring the quarries, after the Mining Superintendent declares the area as requiring rehabilitation. Since there is no necessary connection between collection and rehabilitation, the foundation also handles old quarries according to criteria for rehabilitation priority including safety, proximity to the population, nature and landscape sites, intensity of the damage and zoning of the area.

The Quarry Rehabilitation Fund handles more than 30 quarries each year in various stages of rehabilitation, from the preparation of rehabilitation programs to completion of field work. One of the most important restoration projects that the Fund is promoting today is the

rehabilitation of abandoned quarries in Migdal Tzedek National Park with an investment of ILS 30 million.

Promoting enforcement in the field of ministry operations

Enforcement in the field of fuel and LPG

- Enforcement in the fields of fuel quality and pirate stations – enforcement activities against a number of pirate gas stations in collaboration with enforcement agencies – Israel Police, Israel Lands Authority, Ministry of Environment and more. About 1,200 fuel and gas refueling stations, including terminals.
- LPG Enforcement – The Enforcement Unit operates in a field that includes approximately 2 million households and businesses with approximately 60 licensed gas suppliers and hundreds of branches and gas agencies. Scope of supervised areas: in 2018, the Inspection Division conducted over 11,000 audits of various types, and approximately 3,000 fuel samples and approximately 391 operations. More than 340 indictments were filed as part of the Fuel Investigation Division's activities, and 80 administrative fines were granted.

Enforcement in energy efficiency:

The Division carries out enforcement by the power of the Energy Sources Law. The Division also supervised all projects subsidized by the Ministry and projects of the Grants Fund for Energy Efficiency and Emissions Reduction.

In 2018, more than 120 fines were imposed on local authorities, water corporations, factories and shops that did not comply with energy sources regulations. In addition, 539 field reviews were conducted and 6 indictments were filed.

Government legislation and resolutions

LPG[1] and fuel

- **The liquefied hydrocarbon gas bill, 2018** – A bill that regulates the LPG economy and replaces the Gas (Safety and Licensing) Law, 57491989. The proposal was published on December 12, 2018 and passed the first reading of the Knesset plenary on December 24, 2018. As the new government enters, we will work to advance the law with a second and third reading.
- **Gas Regulations (Safety and Licensing) (Licensing of LPG Workers) (Amendment), 2018** – comprehensive amendment of the regulations. The amendment was approved by the Economic Commission on July 30, 2018 and published in the records on September 16, 2018.
- **Gas Regulations (Safety and Licensing) (Licensing LPG Suppliers), 2018** – new regulations governing professional requirements for obtaining an LPG supplier license and replacing the procedure for granting a gas supplier license. The regulations were approved by the Knesset Economic Committee on July 30, 2018 and published in the records on October 28, 2018.
- **State Regulations (Legislative Amendments) (Gas Sales by Refineries and Gas Providers) (Amendment), 2018** – comprehensive amendment of the regulations, in which material elements of the allocation mechanism have been regulated and facilitated for small companies in order to encourage competition. The amendment was approved by the Knesset Economic Committee on March 6, 2018 and published in the records on May 31, 2018.
- **Order of Arrangements in the State Economy (Legislative Amendments) (Extension of the periods referred to in sections 17A (b) and 17b (b) of the Law), 2018** – an order that extends the validity of two provisions designed to promote competition in the LPG economy. The order was approved by the Knesset Economic Committee on December 17, 2018 and published in the records on December 26, 2018.
- **Vehicle Operation Order (Engines and Fuel) (Petrol Vehicle Engine Operation) (Amendment), 2019** – an order permitting the use of gasoline mixed with methanol to drive a vehicle.
- **Price control orders** – Commodity and Service Price Control Order (Fuel Infrastructure Rates) (Amendment), 2018, Commodity and Services Price Control Order (Maximum Prices at Refueling Stations) (Amendment), 2018, Commodity and Services Price Control Order (Applying Diesel Transportation Law and Determining Level of Supervision) (Amendment), 2018.

Energy efficiency:

[1] LPG is commonly used in Israel for cooking and heating.

- **Energy Sources Regulations (Conducting a Survey to Detect Potential for Energy Conservation), 2018** – Survey execution regulations to detect potential for energy conservation, updated in 2018 and take effect in June 2019. The significant changes are: annual consumption threshold required to conduct a survey is 1,250 tons of oil equivalent (TOE) in fuels or electricity, instead of 2,000 TOE which has been the practice so far. In addition, the frequency of surveys decreased from every five years in existing regulations to one every 4.5 years. From now on, various public bodies, government agencies, local authorities, government companies and consumers whose income is at least 80% of the state budget will be obliged not only to carry out the surveys, but also to implement survey recommendations, which are expected to return the investment in up to three years.
- **Energy Sources Bill (Amendment No. 2), 2018** – in accordance with government resolution in the year 1858, on "Reducing regulatory burden on import of electronics", which was aimed at "increasing competition and streamlining import processes" and as part of the government's policy to reduce the cost of living in the consumer goods sector; an amendment to the Energy Sources Law for Israel was amended, which changes the model of import to Israel to an importer declaration format instead of individual inspection of a sample at the Standards Institute. The law was passed in the first reading of the Knesset, but due to the elections, it did not advance. As the new government enters, we will work to promote the law with a second and third reading.

Electricity and renewable energy

- **Approval of solar system regulations at the National Planning and Building Council** – in 2018, the National Planning and Building Council, in collaboration with the Ministry of Energy, the Planning Administration, the Ministry of the Environment and the Ministry of Construction and Housing, approved new regulations for solar systems in high-rise buildings. To date, it has been mandatory to install solar systems for the supply of hot water only on the upper 7 floors; when new regulations take effect, the installation of energy-efficient systems (heat pumps or solar panels) will be required on all floors of high-rise buildings.
- **Amendment of building permit exemptions for rooftop photovoltaic facilities** – in order to encourage the establishment of renewable energy on roofs, the Ministry, in collaboration with the Ministry of Finance and the Planning Administration, promoted amending Planning and Building Regulations (works and structures exempt from permits), 2014, so that the exemption clause for the establishment of a photovoltaic system whose installation supplier does not exceed 700 kW per building is extended, provided other conditions specified in the regulations are met".
- **Government Resolution 3859, dated 03/06/2018, on Reform of the Electricity Economy and Restructuring of IEC and amendment of Government Resolution as well as the Electricity Sector Law (Amendment no. 16 and Temporary Order), 2018** – comprehensive change in all segments of the electricity sector, streamlining the electricity sector, encouraging competition in the electricity sector and in particular

increasing competition in the production segment, preparing for the absorption of renewable energy and consolidating the electricity company's financial strength, following policy principles published by the Minister of Energy on May 17, 2018.

- **Revision of electricity sector regulations** – Electricity Sector (Cogeneration) Regulations (Amendment), 2018, Electricity Sector Regulations (Conventional Private Electricity Manufacturer) (Amendment), 2018, and Electricity Sector Regulations (Licensing Terms and Procedures) (Amendment), 2018. Amendment of the regulations is further required to amend the Electricity Law No. 13 under the Economic Program Law (legislative amendments for the implementation of economic policies to amend the 2015 and 2016 budget), 2015, among other issues related to the establishment of the Electricity Authority and in view of the amendment of the qualification clauses in the main legislation.
- **Electricity (Cogeneration) Regulations (Amendment), 2018** – extending conditional license periods and deadlines for financial closure relevant to a power generation facility whose source is wind, in view of the continuation of planning procedures for wind energy projects, which are significantly more complex longer than planning with other technologies.

Natural gas

- **Government Resolution 4442 of 06/01/2019 – Adopting Principal Recommendations of the Professional Staff for Periodic Review of the Recommendations of the Government Policy Committee on the Natural Gas Sector in Israel and Amending the Government Decision.**
- **Gas (Safety and Licensing) Law (Amendment 6), 2018** – The law was passed on July 9, 2018 and amends the Gas (Safety and Licensing) Law, 1989. Today's law provides for the requirements to authorize private inspection bodies to conduct safety inspections for the installation and operation of natural gas installations for consumption, and to give proper approval to those facilities. However, the law states that in cases where there are concerns of danger to public safety, the natural gas authority's safety commissioner may issue instructions to the facility owner to prevent the danger, as well as instruct a reviewing body to perform a proper inspection of the facility, provided that the body that inspects the facility will not be the same body that gave the facility a license of validity. The amendment to the law extends the validity of said provision for two years, so that it will apply until September 2019.
- **Gas order update (safety and licensing) (installations for natural gas transmission) and gas order update (safety and licensing) (installations for distribution of natural gas)** – The purpose of updating the orders is to regulate activities of the transmission and distribution license holders to comply with the most recent standards and the latest developments in the economy.
- **Gas Order (Safety and Licensing) (Natural Gas Distribution Facility), 2018** – A distribution licensee shall not establish a natural gas installation which is part of a

distribution network, shall not operate or perform gas work unless the planning, construction, operation and execution of the gas work is in accordance with all of these.

Research

- **Government Resolution No. 4339 (23 December 2018) - Approving an Expanded National Monitoring Program for the Mediterranean** – The resolution was submitted together with the Ministry of the Environment and the Ministry of Science. The proposal built a framework for sharing information on measurements made in the Mediterranean and set a budgetary framework for monitoring and research supporting monitoring.
- **Government Resolution 4075 (dated 12/07/2018) – Application of Principles to a Framework Agreement between the Ministry of Energy and the Israel Ocean and Lakes Research Company Ltd.** – The resolution was passed as part of the implementation of Article 2 of Resolution 2461

Water

- **Amendment of the Water and Sewage Corporations Law** – The amendment stipulated, among other things, that water corporations should not exceed 30, and that the regional corporation's obligation would begin from July 2019, compared with 56 existing water corporations today. Within the scope of the amendment, the authorities may appoint directors to regional corporations according to the size of the population, up to a limit of 11 members. The Water Authority was also authorized to establish rules for installing water meters – remote reading and the Water Authority Council was authorized to set a reduced water tariff in cases of liquidity.
- **Government Resolution 3866, dated 10/06/2018, on a Strategic Plan for Coping with Drought Periods in the Water Economy 2018-2030.**