وزارة الطاقة والثروة المعدنية

Annual Report 2020









His Majesty King Abdullah II Ibn Al Hussein

His Highness Prince Al-Hussein bin Abdullah II, The Crown Prince

Foreword by the Minister of Energy & Mineral Resources

2020 has been an exceptional year in the true sense of the word! Many challenges occurred during the emergence of the coronavirus pandemic, but these challenges have proven the efficiency and effectiveness of the sector, through ensuring a sustainable security of energy supply during the pandemic and without any interruptions, considering the safety of workers and taking decisions to support various economic sectors to mitigate the negative impacts of the pandemic.

This achievement did not happen by chance, it came as a result of planning, implementation, and a participatory approach among all sector institutions which always seek to enhance our vision of achieving sustainable supply security and optimal exploitation of natural resources, considering the relevant royal directives.

Confronting the pandemic did not stop the efforts of fulfilling achievements, as the Energy Sector Strategy for the years 2020 to 2030 was launched under the title «Self-Reliance» in order to keep up with the challenges and changes that emerged in various fields, with the aim of diversifying energy sources and forms, increasing the contribution of local energy sources to the overall energy combination, increasing the efficiency of energy use in all sectors, and reducing the cost of energy on the national economy, in addition to developing the energy Sector system in Jordan to make it a regional center for the exchange of all forms of energy.

In the field of mineral resources, investment opportunities were launched in the petroleum and oil shale sectors as well as mineral resources and strategic minerals, after identifying the promising and accessible for these resources. Twelve national ores were identified for the purposes of mining and commercial utilization in extractive industries and manufacturing industries. The location, reserves, and usage as well as the investment status of these minerals were determined.

Challenges always push us to achieve the best for the benefit of our dear Jordan. Indeed, this is our aspiration!

In conclusion, I always emphasize our motto: “Together we create excellence and achieve sustainability“, because teamwork is the basis of success, and our distinguished team in various institutions of the sector are the basis of our success. Therefore, thank you to our staff in the Ministry and our valued partners.

Hala Adel Zawati

Minister of Energy and Mineral Resources

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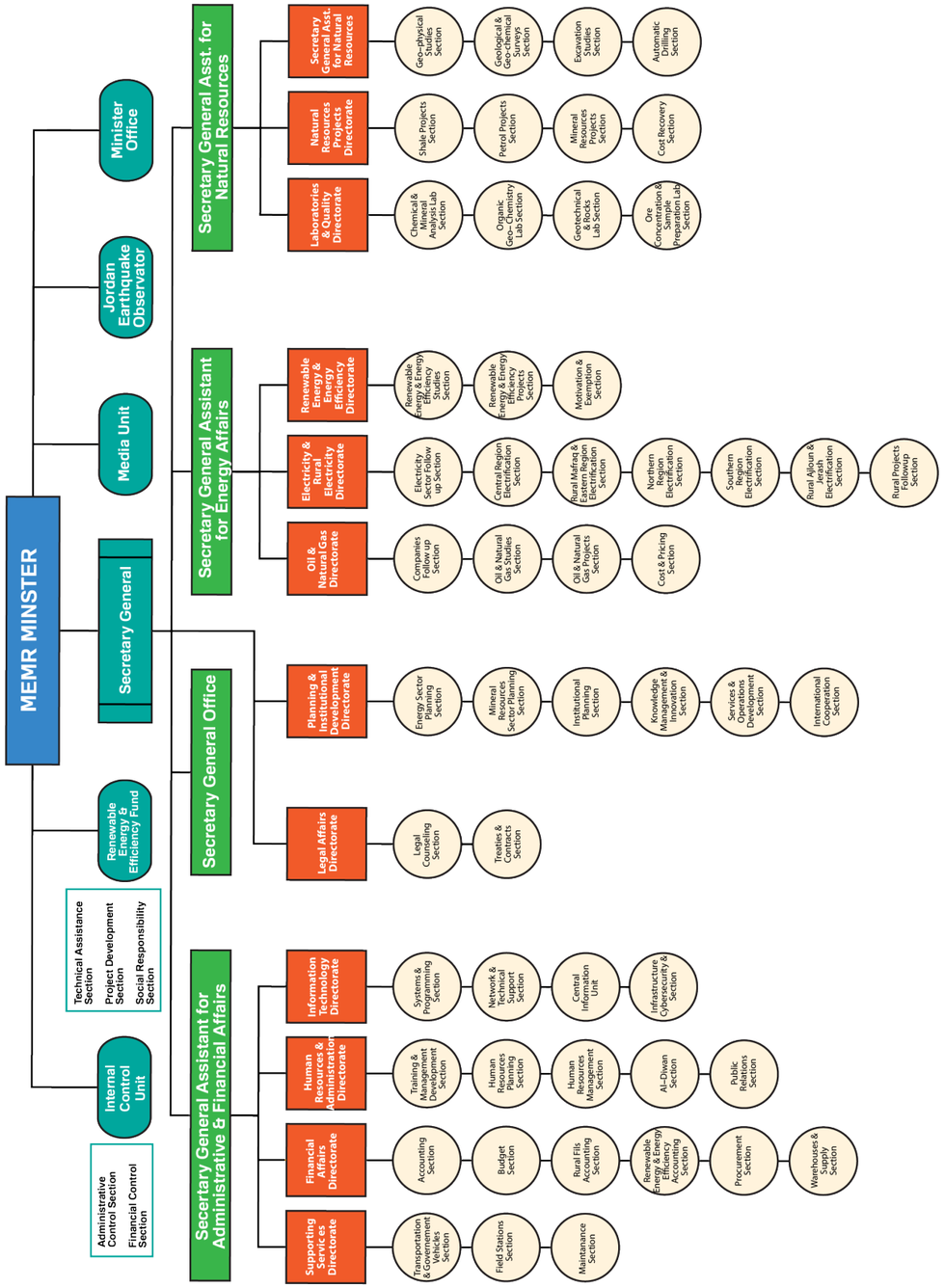
The Organizational Structure of the Ministry of Energy & Mineral Resources



Strategic Objectives of the Ministry of Energy & Mineral Resources

Vision

Achievement a secure sustainable supply of energy and optimal utilization of natural resources

Mission

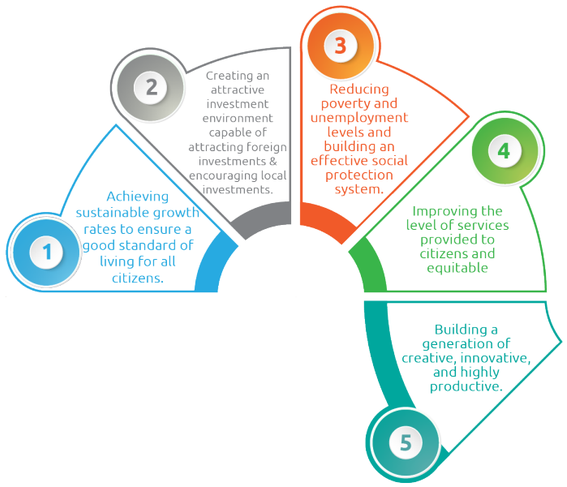
Setting and developing the appropriate policies and legislations to achieve a secure sustainable supply of energy and the optimum utilization of natural resources in compliance with international best practices.

Core Values

1. Teamwork Spirit
2. Knowledge dissemination & use
3. Integrity & Transparency
4. Excellence & Entrepreneurship
5. Loyalty & Affiliation

National Goals

The Ministry institutionalized the national goals that were defined from Jordan's 2025 vision. These goals contribute to the government's priorities according to the "in prosperity's footsteps" action plan for 2019 and 2020 within its three themes (rule of law, state of production, and state of solidarity). The national goals are:



Sectoral objectives of the Ministry of Energy and Mineral Resources

Strategic objectives of the Ministry of Energy and Mineral Resources

Programs contributing to the Ministry strategic objectives:

Objective	Program
Establishing and reinforcing strategic thinking and governance practices	•Developing Ministry strategies and decision-making mechanisms
Diversifying energy sources	•Developing the petroleum sector and opening its market to competition •Maintaining reliable natural gas supply •Maintaining reliable electricity supply
Developing domestic energy sources	•Expand renewable energy deployment •Expand oil shale exploitation •Development of oil and gas exploration areas (conventional and unconventional).
Improving energy conservation and efficiency	•Household sector program •Industrial sector program •Government buildings sector program •Tourism sector program •Exemption program •Energy training program •Awareness and education program
Increasing investment in the mineral sector	•Increasing investment in the mineral sector •Increasing the accuracy and quality of laboratory tests
Monitoring, analysing, and evaluating seismic information	•Upgrading seismograph station
Strengthening and developing international relations and cooperation	•Promote international cooperation
Improving the ministry's institutional performance	•Institutional development •Information and communication technology •Improve financial performance •Internal control •Human resource development, capacity building, and motivation •Public relations •Administrative services

Ministry of Energy and Mineral Resources Building

Institutional Framework of the Ministry of Energy and Mineral Resources

The ministry is entrusted with the energy sector to achieve its mission. Thus, the institutional framework of the energy sector gives the ministry a leading role, all public institutions in the energy sector are under the umbrella of the ministry. The role of the ministry is achieved by developing a comprehensive plan for the energy sector, setting its policies for the public institution, and following the implementation of these policies until targets reached by the relevant public institutions

The Institutional framework of the energy sector has evolved since the establishment of the Ministry of Energy and Mineral Resources in 1984. Below are the milestones of the institutional framework evolution:

1984

Late 1984, the Ministry was established to manage and organize the energy sector by Regulation No. 26 for the year 1985. The ministry was responsible for the overall planning of the sector.

2011

In 2011, the rural electrification project was integrated as a unit in the Ministry, the Ministry's organizational structure was updated. Accordingly

2014

The energy sector was restructured in accordance with Article 3 of Law No. 17 for the year 2014 in which the Natural Resources Authority was abolished. The Ministry of Energy and Mineral Resources became responsible of the authority's rights and assets except for organizational tasks. Since then, the Ministry has been working on preparing and developing appropriate policies and legislation to achieve sustainable energy supply security and optimal use of natural resources in accordance with best practices.

2017

The Energy and Minerals Regulatory Commission was established following Law No. 8 of 2017. subsequently, the Ministry's authority of granting licenses and issuing permits was transferred to the commission in accordance with Article 4/b of the same law.

2019 - Present

The Ministry of Energy and Mineral Resources was restructured upon Regulation No. 123 for the year 2019. the restructure of the ministry organizational units aims to achieve the entrusted tasks efficiently and effectively.

Energy Sector Organizations

Oil Sector Organizations

1. Jordan Petroleum Refinery Co. Ltd.
2. Jordan Oil Terminals Company (JOTC)
3. Central gas distribution companies
   - 4.1 Central Technology For Gas Co. Ltd./ Central Gas.
   - 4.2 Technical control for central gas Co.
   - 4.3 National Gas Resources
   - 4.4 Elite Engineering Gas and Fuel Company (UNIGAS)
   - 4.5 The Advanced Central Gas Company (PROGAS)
   - 4.6 Jordanian Lebanese For Central Gas (JOGAS)
4. Petroleum Products Marketing Companies
   - 3.1 Total Jordan
   - 3.2 Modern Jordanian For Oil And Fuel Services Co. Ltd
   - 3.3 Jordan Petroleum Products Marketing Company (JOPETROL)

Petroleum & Gas Sector Organizations

1. National Petroleum Company
2. Jordanian Egyptian Fajr for Natural Gas Transmission & Supply
3. 9 Oil Shale Companies

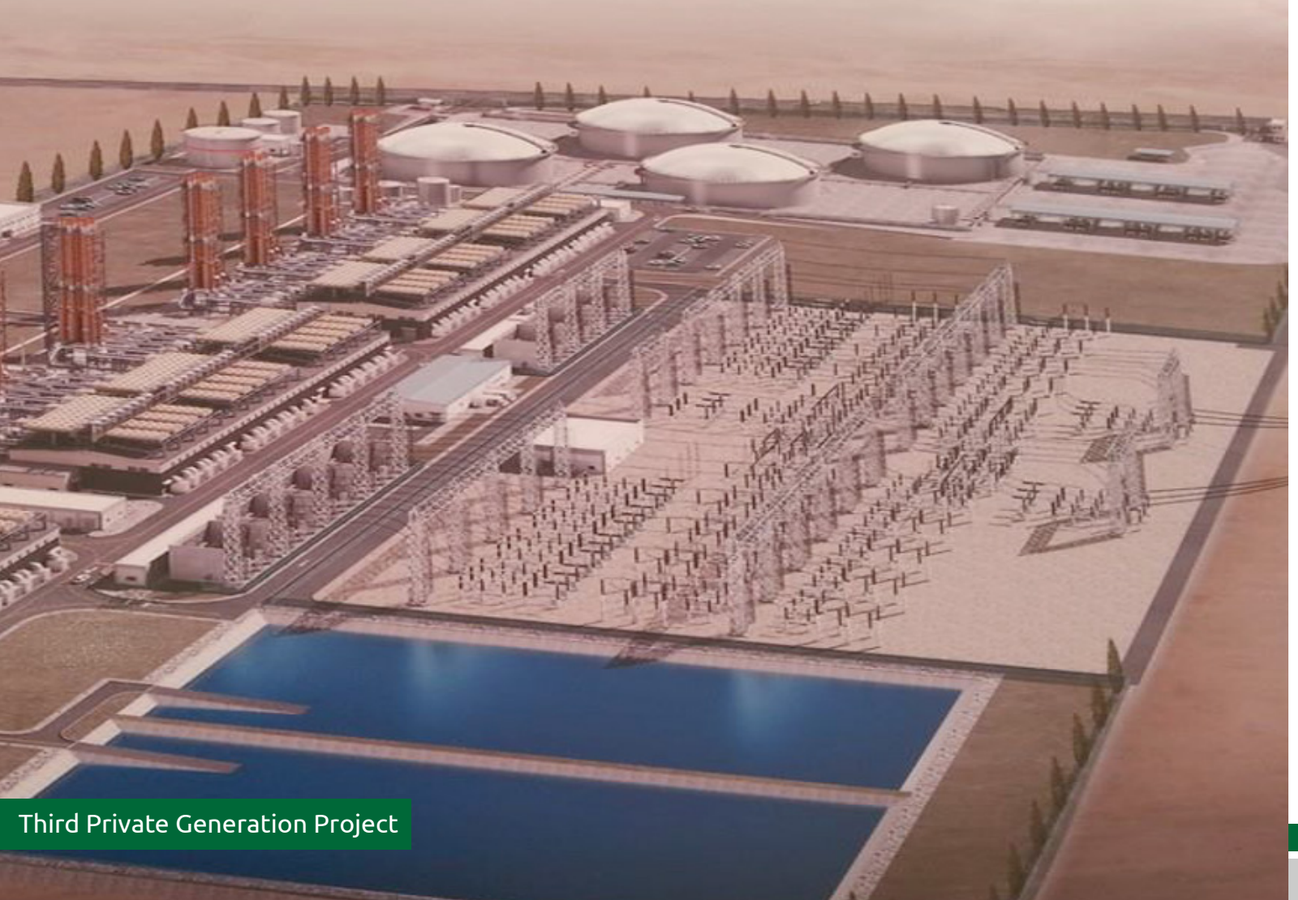
Electricity Sector Organizations

1. Renewable Energy Companies
   - 30 Renewable Energy Companies
   - 7 Wind Energy Companies
   - 30 Solar Companies
   - Biogas Companies
2. Electric Transmission Networks
   - National Electric Power company (NEPCO)
3. Electric Power Distribution Companies
   - 3.1 Jordanian Electric Power Company (JEPCO)
   - 3.2 Irbid Electricity Company (IDECO)
   - 3.3 Electricity Distribution Company (EDCO)
4. Electricity generating companies
   - 4.1 Central Electricity Generating Company (CEGCO)
   - 4.2 Amman East Power Company
   - 4.3 Qatrana Power Company
   - 4.4 AES Levant IPP4
   - 4.5 Amman Asia Electric Power Co.
   - 4.6 ACWA Power
   - 4.7 Samra Electricity Power Company (SEPCO)
   - 4.8 Atarat Oil Shale Company

Mining sector enterprises

1. Granite
2. Phosphate
3. Travertine
4. Marble
5. Limestone
6. Zeolite
7. Gypsum
8. Clay
9. Pure Limestone
10. Glass Sand
11. Volcanic Twirl Puzulana
12. Potash

مشروع التوليد الخاص الاول / شرق عمان



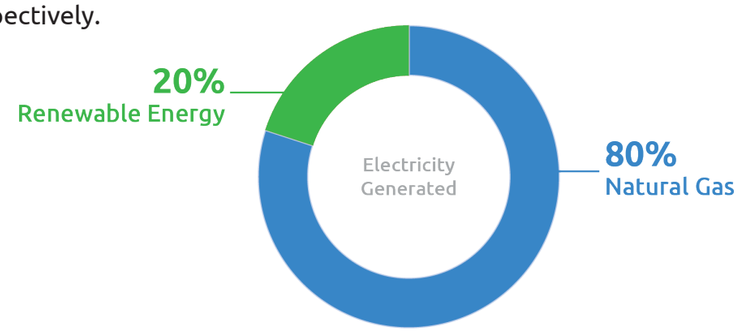
Third Private Generation Project

MEMR Achievements

The energy and mineral resources sector saw many achievements in 2020 despite the challenges of the COVID19- pandemic. This report presents these achievements in each field as follows:

1. Electric power

Electricity was generated using natural gas and renewable energy at a share of %80 and %20 respectively.



1.1 Electricity generation using natural gas

The average daily consumption of natural gas to generate electric power amounted to 337 million cubic feet. The supply of natural gas is secured from:

- Egyptian Gas
- North Gas
- Sheikh Sabah Liquifies Natural Gas (LNG) port
- Risheh Gas field

1.2 Electricity generation using renewable energy

The combined installed renewable energy sources capacity reached about 2063.3 MW. This includes the following renewable energy projects:

723.6 MW
Renewable energy sources capacity owned by end-users to cover their consumption using net-meter or wheeling schemes.

1339.7 MW
Renewable energy sources capacity is from projects selling the generated electricity to electric companies.

Electricity generation projects using renewable energy During the years 2015 - 2020

Ministry of Energy and Mineral Resources

2015 — TOTAL 134.5 MWac

- Azraq Project Spanish Window Loan — 2.5 MW
- Azraq Project Spanish Debt Swap Grant — 2 MW
- Al Badia Power Generation Company Project — 13 MW
- Jordan Wind Project Company — 117 MW

2016 — TOTAL 270 MWac

- Hussein Wind Project Gulf Grant — 66 MW
- 12 Power Projects/ Direct Offers — 204 MW

2017 — TOTAL 14 MWac

- Hussein Wind Project Gulf Grant — 14 MW

2018 — TOTAL 341.1 MWac

- FRV Solar Project — 51 MW
- Imperial Solar Company Project — 51 MW
- Jordan Water Company Project — 51 MW
- Sheikh Zayed Solar Energy Complex Project Gulf Grant — 92 MW
- Air Force Project — 10 MW
- Green Energy Company for Renewable Energy Project — 86.1 MW

2019 — TOTAL 235.1 MWac

- AM Solar Company Project — 40 MW
- Risheh Solar Project — 50 MW
- Safawi Green Energy Company Project — 51 MW
- Azraq Project UN Grant — 5 MW
- Al-Fajeej Wind Energy Company Project — 89.1 MWac

2020 — TOTAL 345 MWac

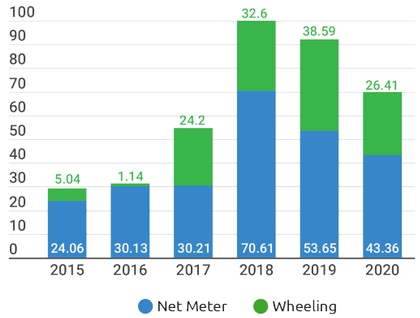
- The "Jordan Mas" Company for Renewable Energy Project — 100 MW
- Baynouna Solar Energy Project — 200 MW
- Al Shoubak Wind Energy Project — 45 MW

Direct Offers

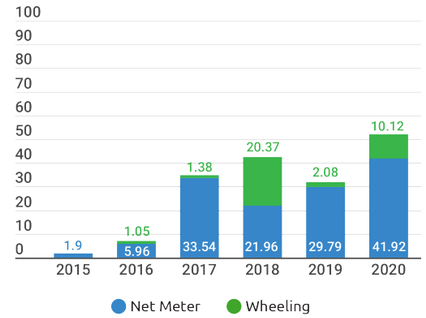
Grant

The capacity of renewable energy systems owned by end-users to cover their consumption using net-meter or wheeling schemes during the years 2015 to 2020 per electric distribution company (in megawatts)

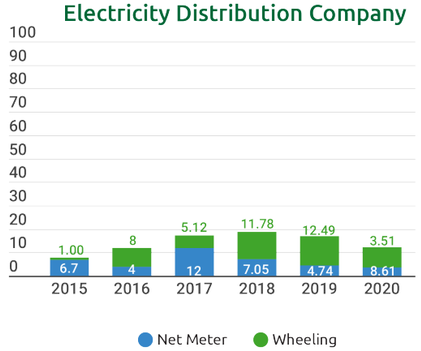
Jordan Electric Power Company



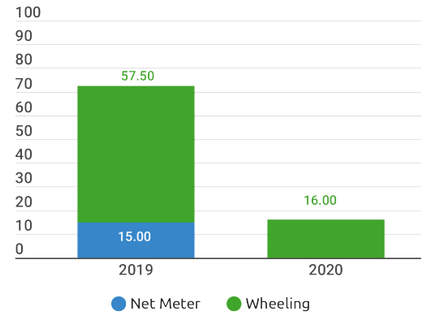
Irbid District Electricity Company



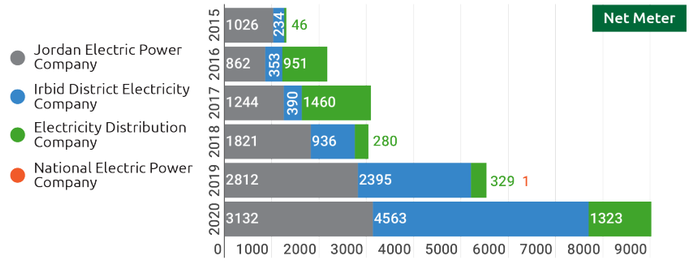
Electricity Distribution Company

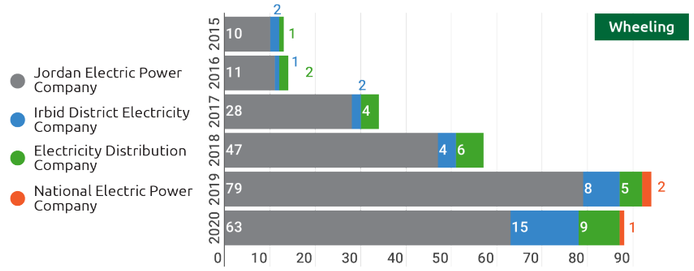


National Electric Power Company



Number of renewable energy systems owned by end-users to cover their consumption using net-meter or wheeling schemes during the years 2015 to 2020 per electric distribution company





1.3 Generation using oil shale

Attarat Power Company generates electric power from the direct burning of oil shale. Currently, the project is in an operational trial phase, full commercial operation is expected to commence within the third quarter of 2021.

1.4 Electric Interconnection

The Jordanian Palestinian Electrical connection (West Bank)

A memorandum of understanding was signed to increase the capacity of the Jordanian-Palestinian Electrical connection (West Bank) from 24 megawatts/hour to 80 megawatts/hour. In addition, an agreement was signed to establish an interconnector substationon the Jordanian-Palestinian border with a capacity of 2 x 80 MVA 33/132 KV.

The Jordanian - Egyptian connection

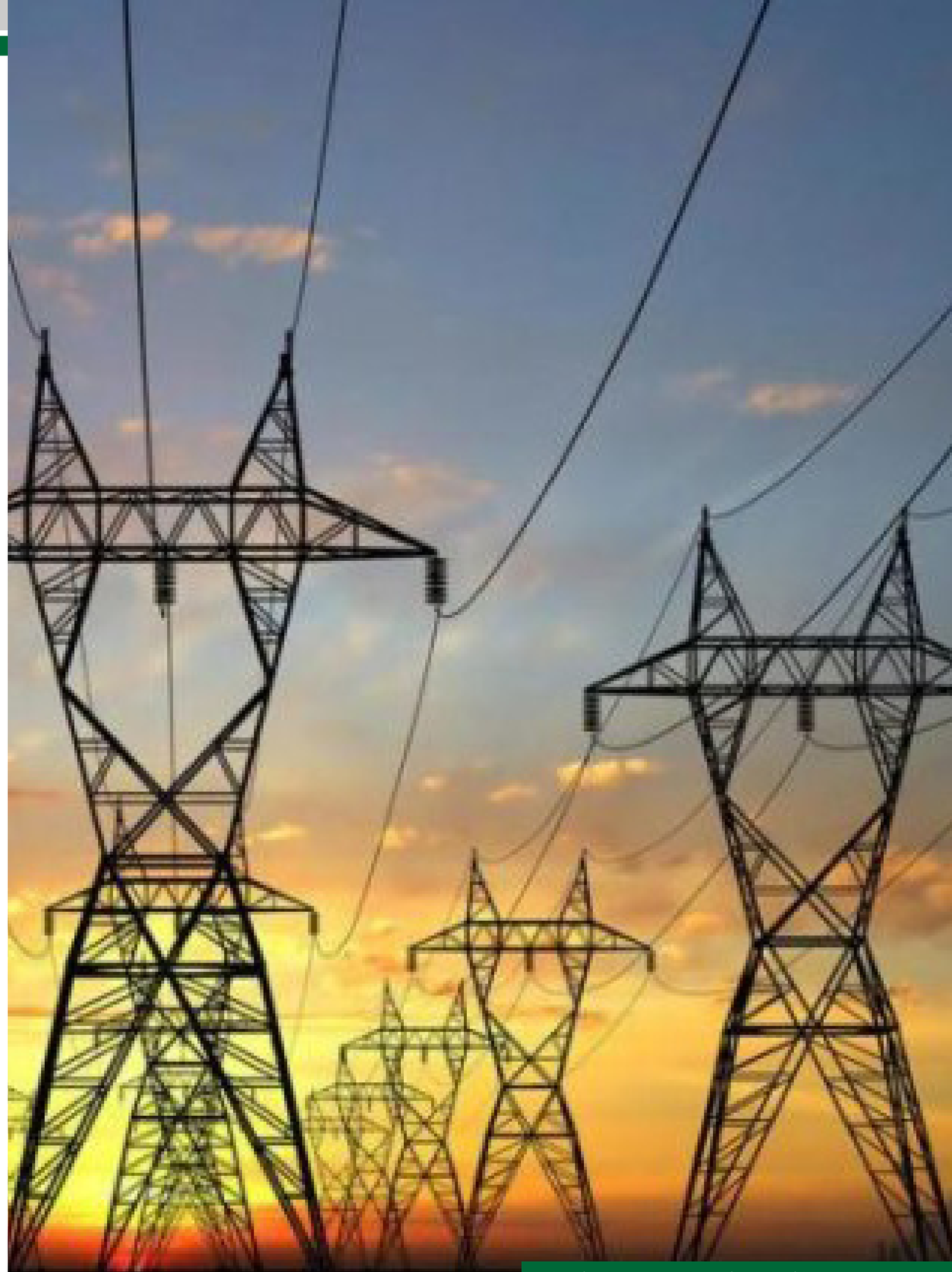
The energy exchange contract was renewed in 2020.

The Jordanian - Saudi Electricity connection

Jordan signed a memorandum of understanding with Saudi Arabia to establish an electric connection between the two countries. Electric companies in both countries (the National Electric Power Company of Jordan and the Saudi Electricity Company) were delegated to prepare the connection agreements and develop a financing model for the project.

The Jordanian-Iraqi electrical connection

An agreement was signed to supply electrical energy to Iraq. The first phase of the project will supply 1000 GWh annually to Iraq. The project is expected to start operation in 2022.



Jordanian-Egyptian Electrical Interconnection

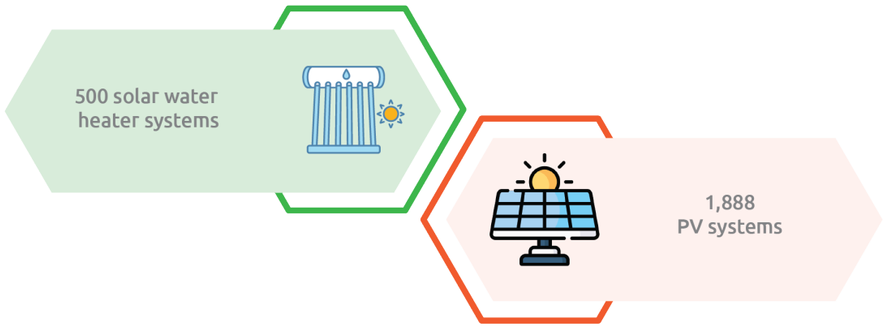
Home Sector Support Program - Ajloun

2. Energy Conservation & Efficiency

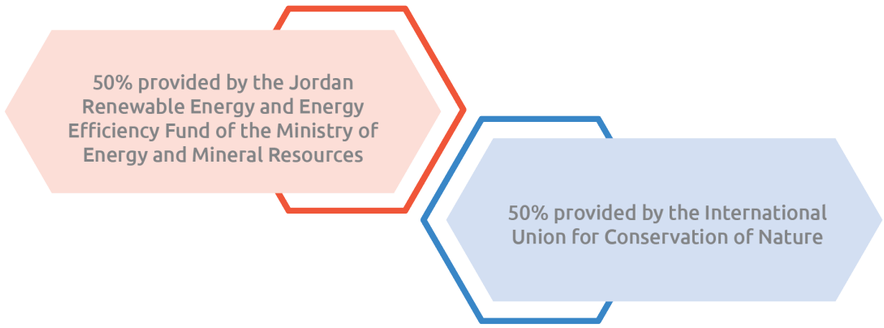
The Ministry implements various energy conservation and efficiency projects in several governorates. These are implemented through the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF) in cooperation with all stakeholders. The projects target the following sectors:

2.1 Household Sector

2.1.1 Firstly, the household subsidy program enables the installation of solar water heater system or photovoltaic (PV) systems. The program offers a %30 subsidy of the cost of these systems. The program is implemented in cooperation with financial institutions such as banks, as well as civil society institutions and local associations. The program resulted in:

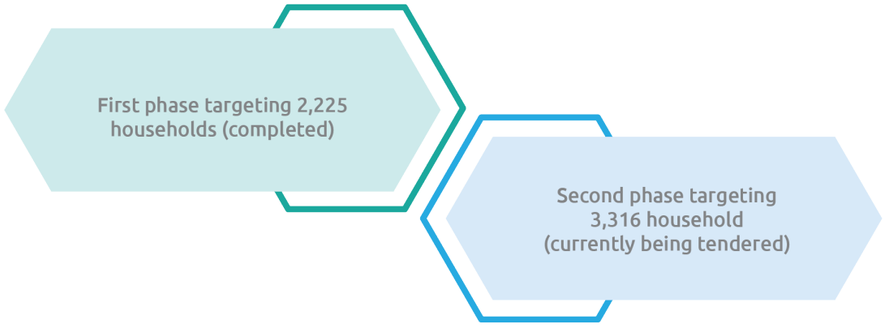


2.1.2 Secondly, a subsidy program supports vulnerable families in Sahab district (Al-Khashafieh and Al-Manakher area). The program covers the full cost of solar water heater systems for 200 families. It is jointly funded by the International Union for the Conservation of Nature and the Jordan Renewable Energy and Energy Efficiency Fund as follows:



2.1.3 Thirdly, the LED energy-saving lighting program distributed 27,000 high-quality LED units. This program is implemented through the electricity distribution companies in all governorates.

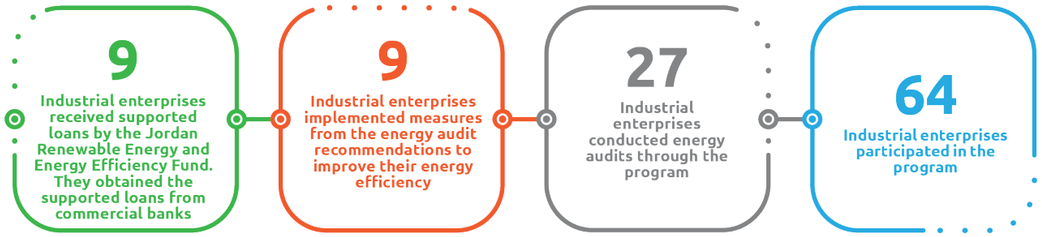
2.1.4 Fourthly, the Renewable Electrification Project is a full grant program offered to the beneficiaries of the National Aid Fund. The program installs PV systems of 2 kilowatts capacity. It is funded by the Rural Electrification Project (rural fils). Project phases are:



2.1.5 Finally, through the off-grid PV system program, 11 households were equipped with such solar systems.

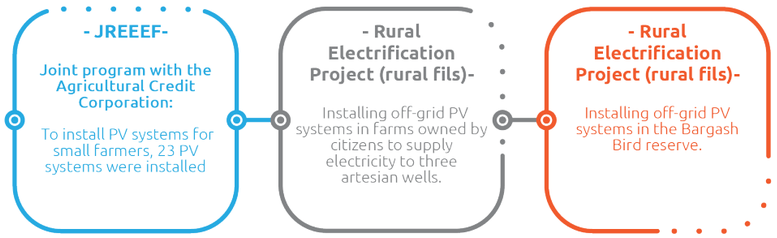
2.2 Industrial Sector

The industrial program was implemented in cooperation with the Jordan Chamber of Industry. The program figures of 2020 are:



2.3 Agricultural Sector

Three programs are implemented for the agricultural sector. These are:



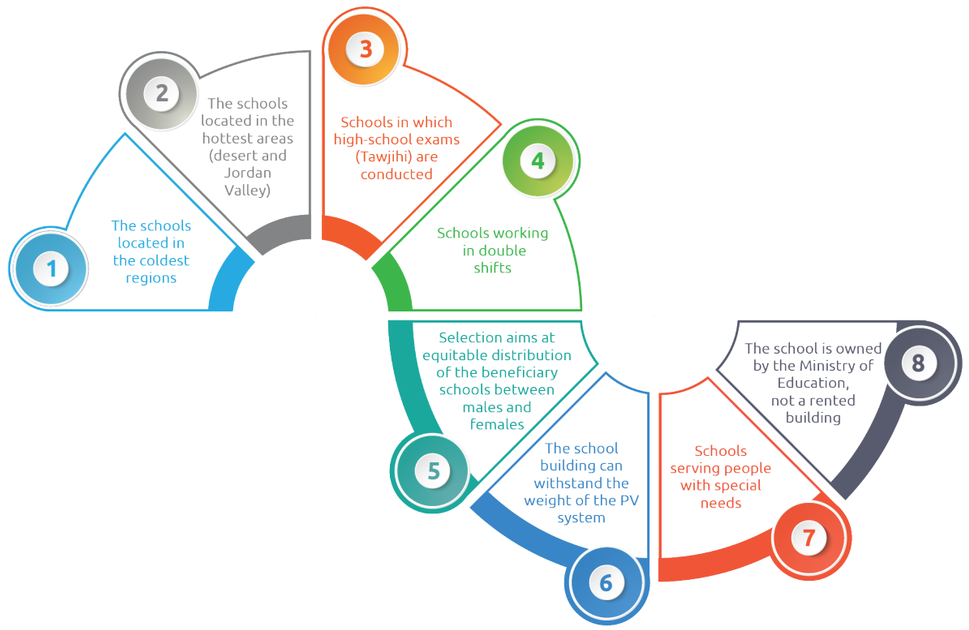
2.4 Public and government buildings

2.4.1 Houses of Worship Program

The houses of worship program is implemented in cooperation with the Ministry of Awqaf Islamic Affairs and Holy Places. The program installed PV systems in 181 houses of worship (including 9 churches) across all governorates.

2.4.2 School Program

The school program is implemented in cooperation with the Ministry of Education. The program provides PV systems for schools in extreme weather conditions. Twenty-one schools were selected to benefit from the program. These schools are located in Madaba, the Jordan Valley, Balqa, Aqaba, Ma'an, and Jerash. Also, the program included schools affiliated with the Directorate of Military Culture in the southern Jordan Valley, Northern Badia, and Zarqa. The selection criteria were as follows:



- The installation of PV systems was completed in 13 schools in the northern, central, and southern regions of the Jordan Valley.
- Off-grid PV systems were installed in two schools in Aqaba, funded by the Rural Electrification Project (rural fils).

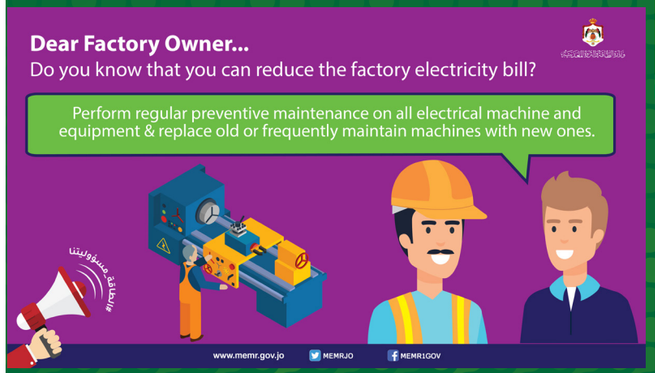
2.4.3 Institutions of Public Benefit

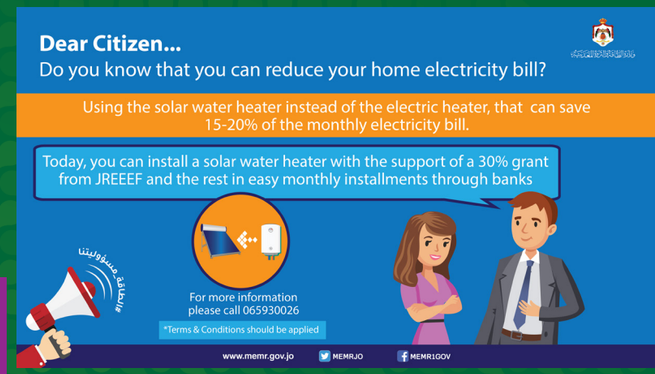
The program grants PV systems to institutions working for the public benefit. Three associations and civil society institutions received the grant. These are institutions providing shelter to individuals with special needs or contributing to the efforts of protecting natural environments. The selected institutions are:

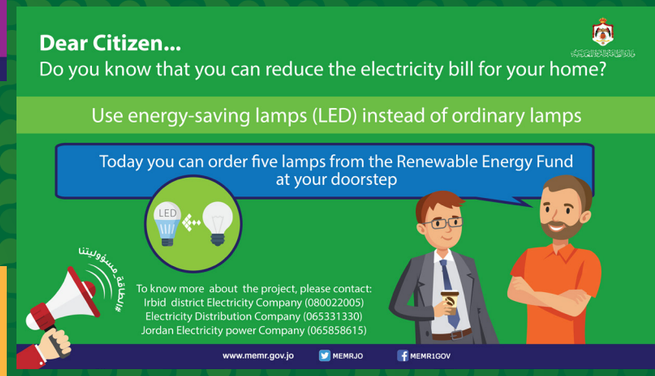
30kW
King Hussein Charitable Associatio – Irbid

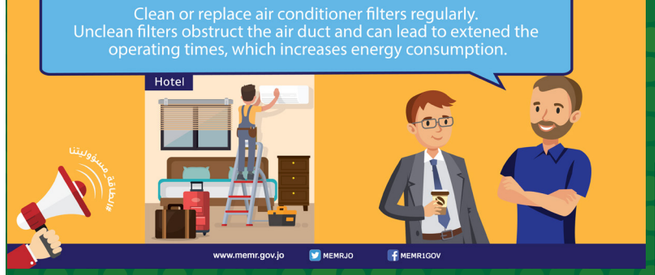
22kW
Disabled Child Care Association – Irbid

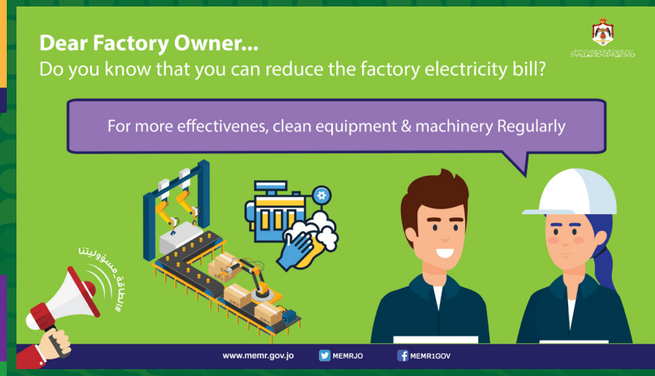
75kW
Royal Society for the Conservation of Nature – Royal Academy for the Conservation of Nature Building – Ajloun.

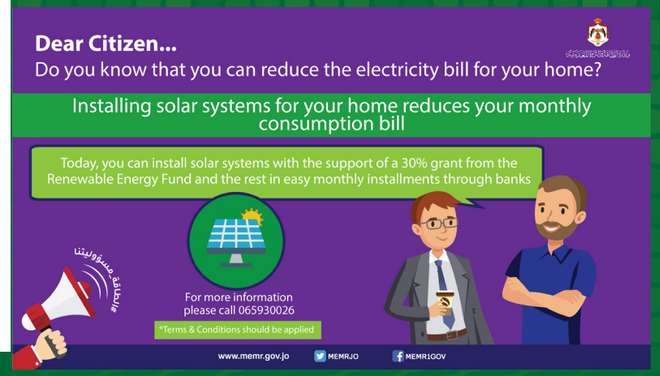












Installing offgrid solar cell systems for farmers at the expense of Fils Alreef /Azraq

Delivering Electricity to Beneficiaries at the Expense of Fils Al Reef / Karak

3. Rural Electrification

Electricity access efforts are continued through Rural Electrification Project (rural fils). The project has contributed to the development of local communities and supported various sectors. Project highlights in 2020:

3.1 1,544 applications submitted to the Rural Electrification Project (rural fils) of which:

- 741 applications were approved for implementation
- 803 projects were completed and provided access to electricity, including 6260 homes

3.2 Replacing street lighting units with energy-saving units:

The Energy-efficient street lighting project will replace 410,000 units in all municipalities and Palestinian refugee camps. The project is coordinated with the Ministry of Local Administration. The Rural Electrification Project (rural fils) will finance 35 million dinars from the value of the project over a period of 7 years at a rate of 5 million annually. Four bids were submitted in 2020; project implementation will start in 2021.

3.3 The Rural Electrification Project (rural fils) contributed to COVID19- pandemic measures:

- Electricity was provided to the six COVID-19 field hospitals
- Electricity was provided to the COVID-19 quarantine facilities in the Dead Sea area and at Al-Omari Border Center in Al-Azraq

4. Oil sector

4.1 Diversifying crude oil sources

2074 thousand tons of crude oil were imported through the port of Aqaba by the Jordan Petroleum Refinery.

2.258 million barrels of oil were imported from Iraq in 2020 by the Jordan Petroleum Refinery.

4.2 Strategic reserve of petroleum derivatives

Regulation No. 58 for the year 2020 was issued to regulate the strategic reserve of crude oil and petroleum derivatives

01

02

03

The ministry increased the strategic reserve of crude oil and petroleum derivatives. This reserve is stored in Amman Strategic Reserves Terminal for Petroleum Products (Al-Madouneh). The reserve amounts to 20 thousand tons of Gasoline 90 ,10 thousand tons of Gasoline 95, and 52 thousand tons of diesel (Euro 5).

The project to increase the liquefied petroleum gas capacity reached 79.5% completion. The storage capacities will increase to 6 thousand tons at the Amman Strategic Reserves Terminal for Petroleum Products (Al-Madouneh).

The project of adding three LPG tanks in Al-Maduna to increase storage capacities by about 6 thousand tons

5. Natural Gas

5.1 Diversifying Natural Gas Sources

01 — The North Gas Pipeline project is completed and the supply of natural gas started in early 2020.

02 — Power plants' supply of natural gas is imported from multiple sources which are the Sheikh Sabah LNG port in Aqaba, the Arab Gas Pipeline from Egypt, and the North Gas Pipeline. In addition, domestic production of natural gas is secured from the Risheh gas field.

03 — Gas exploration in Risheh gas field raised the production capacity to 27 million cubic feet.

04 — The Risheh gas field production amounts to around 5318 million cubic feet, the daily average production is 14.6 million cubic feet, which is a 57% increase compared with 2019.

05 — In 2020, the Risheh gas field contributed 2.1% to electric power generation.

Sheikh Sabah LNG port in Aqaba

Well Drilling Process with SD300 Excavator

6. Oil & Oil Shale

- The ministry has signed an agreement with the National Petroleum Company on May 2020 ,27. The agreement includes the development and operation of Hamza oil field which aims to increase its productivity. The field infrastructure upgrade is completed.
- Regulation No. 76 of 2020 is issued to regulate the exploitation of petroleum, oil shale, coal, and strategic minerals. Relevant instructions are under development.
- Follow-up on oil shale exploitation projects through a memorandum of understanding and concession agreements.
- Preparing an updated report on oil shale type, and quantity of oil shale and its distribution in the Kingdom's regions.
- The number of surface oil shale distillation areas and open areas for investment in deep oil shale distillation reached 21.
- New wells (4 wells) were discovered in Hamza oil field, they are being rehabilitated to increase the daily production.

7. Geology and Mining

7.1 Jordan General Gravity Survey Project

- 170 gravity points were measured using the geo-gravity survey device (CG3). Moreover, the values of gravity, Bouguer anomalies, and free air were calculated.
- A gravity station was established to calculate the absolute gravity value. The station was added to the Jordanian reference gravity network which is based on the gravity network of global reference stations.
- The gravity geophysics index was updated by adding five maps of the Bouguer anomalies and fre air at a scale of 1:50000.

Excavator Support Mechanisms

7.2 Geophysical Studies and Information Services

Conducting geophysical studies at the archaeological site in Petra. The study results revealed the location of appearances and buried matter in Al-Khazneh Square, Facades Street, and the Amphitheatre.

Conducting a sensory field detection study for the Ministry of Local Administration at Al-Thaniya - Karak area.

7.3 General Geological Survey Project

The project aims to produce geological maps of Jordan at different scales. The maps will contain the distribution of rocks and geological structures.

Ras al-Naqab geological map is completed at a scale of 1:50000000

7.4 Rare Earth Elements Project

Preparing geochemical maps showing the distribution of concentrations of 40 analysed elements to cover 900 km² of Al-Dubaidib formation rocks, where a report was prepared on the discovery of high concentrations of rare earth and radioactive elements in the sand mass layer in the lower third of Al-Haswa Sand formation. Furthermore, 102 rocky geochemical samples were collected for study purposes during the general geochemical survey of Haswa sandy formation.

Preparing a plan to study the mineralization of lithium in the M20 formation and the formation of the Peninsula tongue (Lisan) in the Dead Sea region.

01

02

03

A national team was formed to study a new area according to the JORC system, in cooperation with the Jordan Atomic Energy Commission to determine the national strategic reserve of rare earth elements.

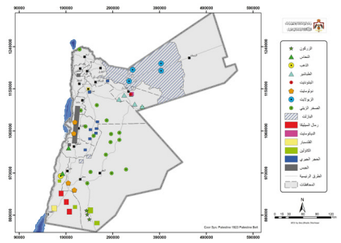
Lupus samples extracted from wells

7.5 Investment Opportunities in The Mineral Resources Sector

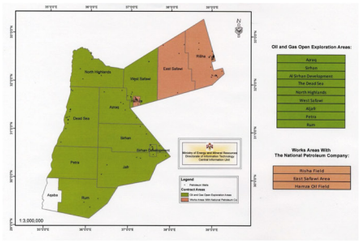
The ministry Launched investment opportunities in the mineral resources sector and selected promising areas which are open for investment in the exploitation of these resources. The following studies were carried out:

- Studies determined twelve nationally promising minerals for the purposes of mining and commercial exploitation.
- The location and reserves of identified mineral resources is mapped for potential investment.

Available strategic investment opportunities, minerals and industrial rocks in the Kingdom



Conventional and unconventional oil and gas exploration



Mineral Resources in Jordan
-Investment Opportunities-

- **Extractive Minerals**
  - Copper
  - Gold
  - Zircon
  - Rare Earth Elements
- **Industrial Minerals & Rocks**
  - Silica Sand
  - Basalt
  - Pure Limestone
  - Kaolin
  - Chalk
  - Feldspar
  - Zeoloite
  - Dolomite
- **National Treasures as Sources of Energy**
  - Oil & Gas

To view the report on Mineral Resources in Jordan

Laboratories of the Ministry of Energy and Mineral Resources/ Geotechnical

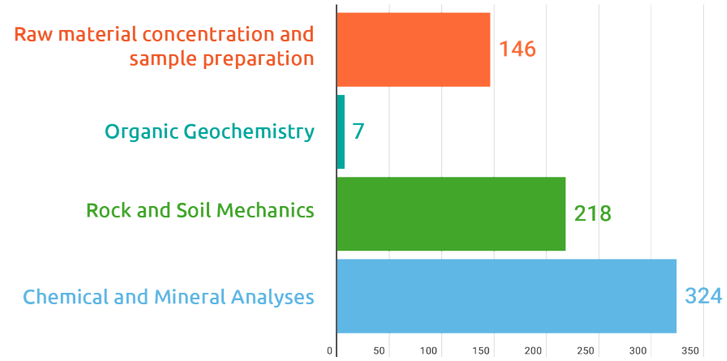
8. Laboratory Analyses

The Ministry laboratories provides chemical and mineral analyses for the public and private sectors upon request. The following was achieved in 2020.

The directorate of laboratories received ISO standard 17025 / 2017 for its accreditation and quality system.

The Jordanian Accreditation Unit renewed the accreditation of 14 tests carried out by the Ministry after the external evaluation process.

The number of samples and analyses that has been conducted in the departments of the laboratories and Quality assurance Directorate until the end of 2020:



9. Earthquake monitoring

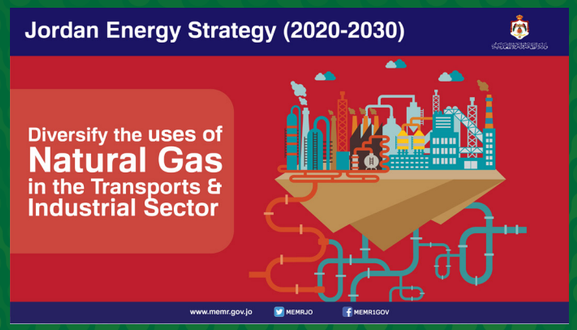
- %100 coverage of seismic activities
- Seismic activity monitoring registered 970 earthquake in 2020, including:

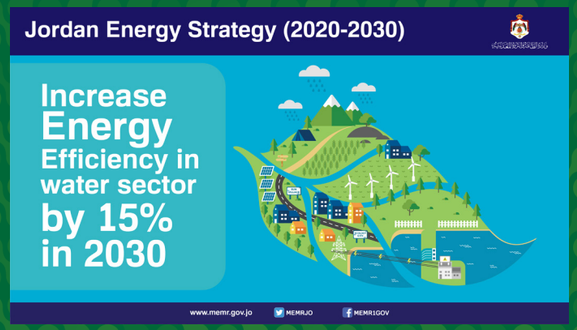
140 LOCAL EARTHQUAKES

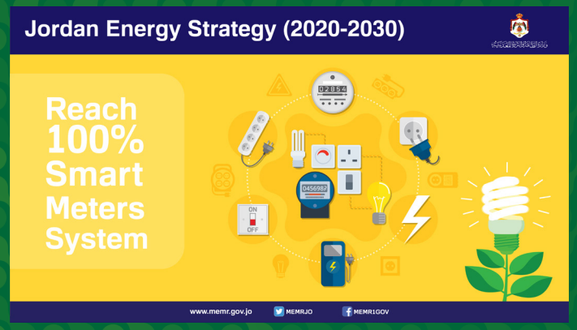
549 REGIONAL EARTHQUAKES

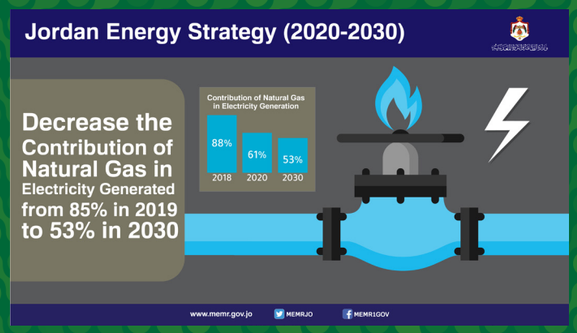
286 DISTANT EARTHQUAKES

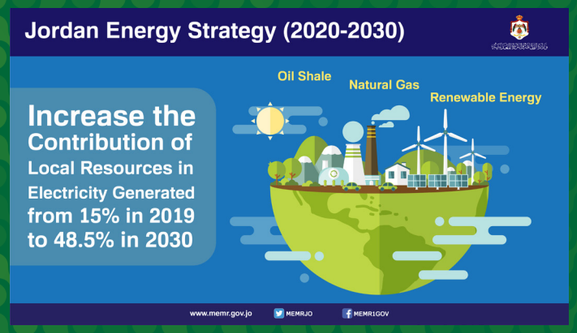
- A new seismic station was Installed in Mu'tah University.
- The ministry has signed two agreements with the University of Jordan and the American Geological Survey.

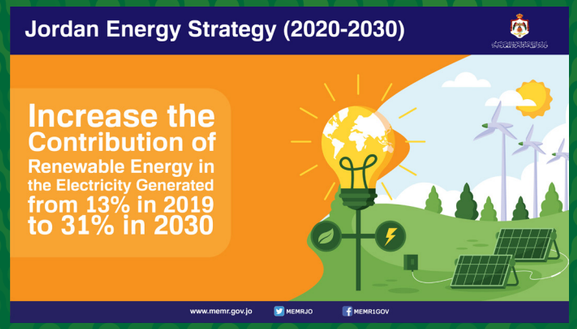


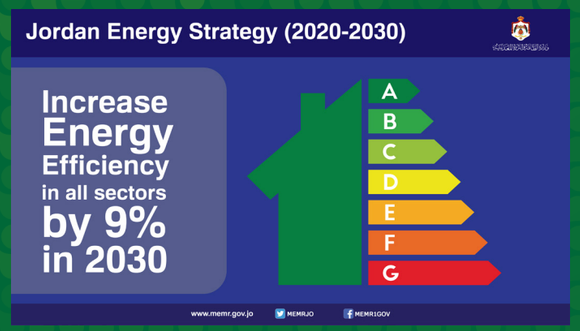










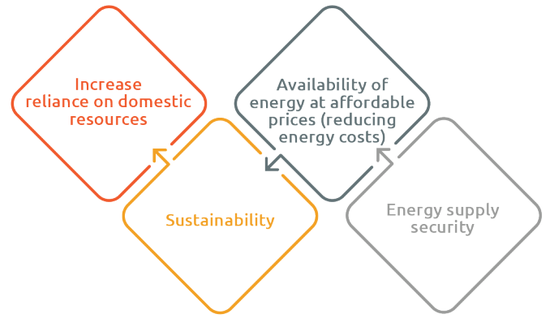


10. Ministry Planning and Institutional Development

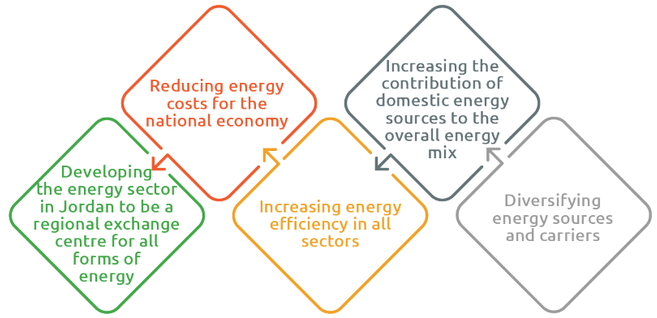
10.1 Energy Sector Planning

The ministry launched the comprehensive strategy of the energy sector 2020– 2030 and its action plan

The Pillars of The Strategy



The Objectives of The Strategy



10.2 Crisis Management

The ministry applied and monitored the emergency plan of the energy sector in response to COVID-19.

The Ministry continued its work during the COVID-19 pandemic according to its work sustainability plan.

10.3 Institutional Planning

The third edition of the strategic plan for the years 2019 to 2021 was developed. The ministry supervises its implementation and evaluating its progress.

The "Core Values reinforcement " assessment measures the Ministry's commitment to achieve its core values. The 2020 assessment report shows the performance indicators increased to 73 compared to 70 in 2019.

Managing Relationships with Partners

The partners satisfaction report indicates increased partners satisfaction of 87.0% in 2020 compared to 85.8% in 2019.

The ministry held periodic meetings with partners to discuss the latest developments in the energy sector.

10.4 Managing The Relationship with Service Recipients

1. The ministry published its service guide for 2020 on the ministry website. The guide was developed according to the guideline for setting services standards and indicators.

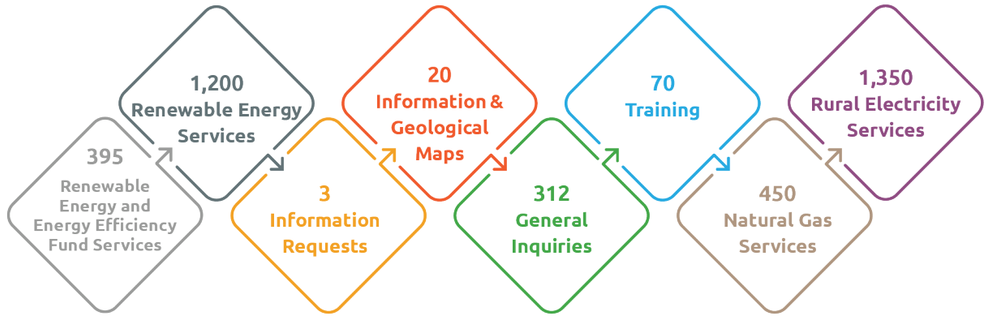
2. The service recipient satisfaction report measured a satisfaction increase to 92.4% in 2020 compared to 92.1% in 2019.

3. Six ministry services were digitised:

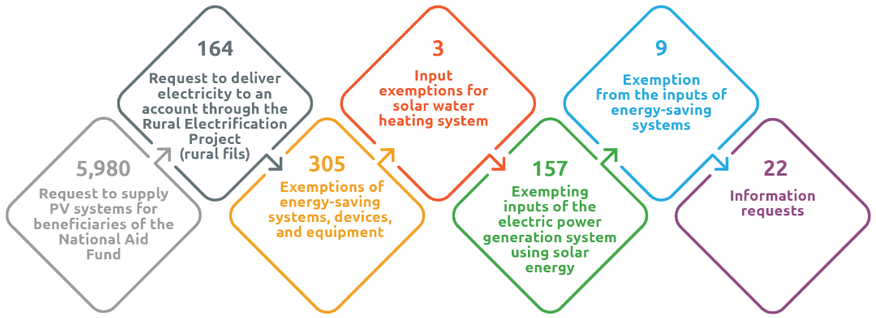
- Internship application (fresh graduates and students)
- Granting approval for sale or subdivision transactions on plots of land that may be partially acquired
- Approving of the takeover of small parts of land that resulted from land acquisition for the gas pipeline project
- Renewing energy audit licenses
- Energy audits for small and medium industries
- Energy audits for hotels

Customer Happiness Office

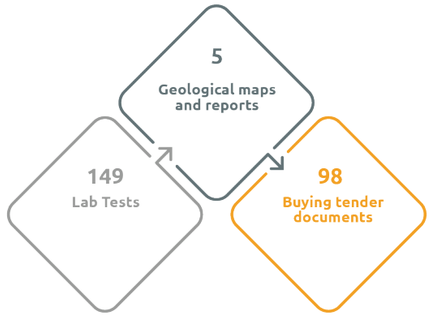
The customer happiness office received 3800 recipients in 2020. They are classified according to the following scheme:



Number of Electronic Services Requests Submitted Through The Ministry Website

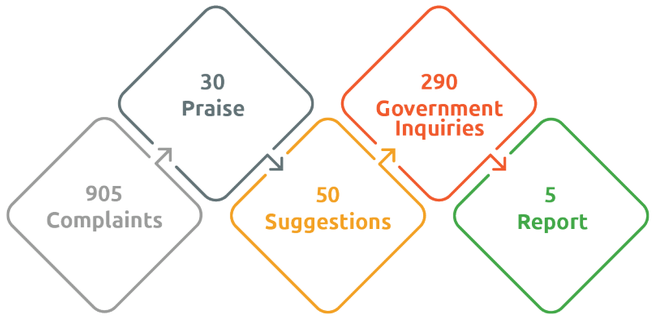


Number of electronic payment requests

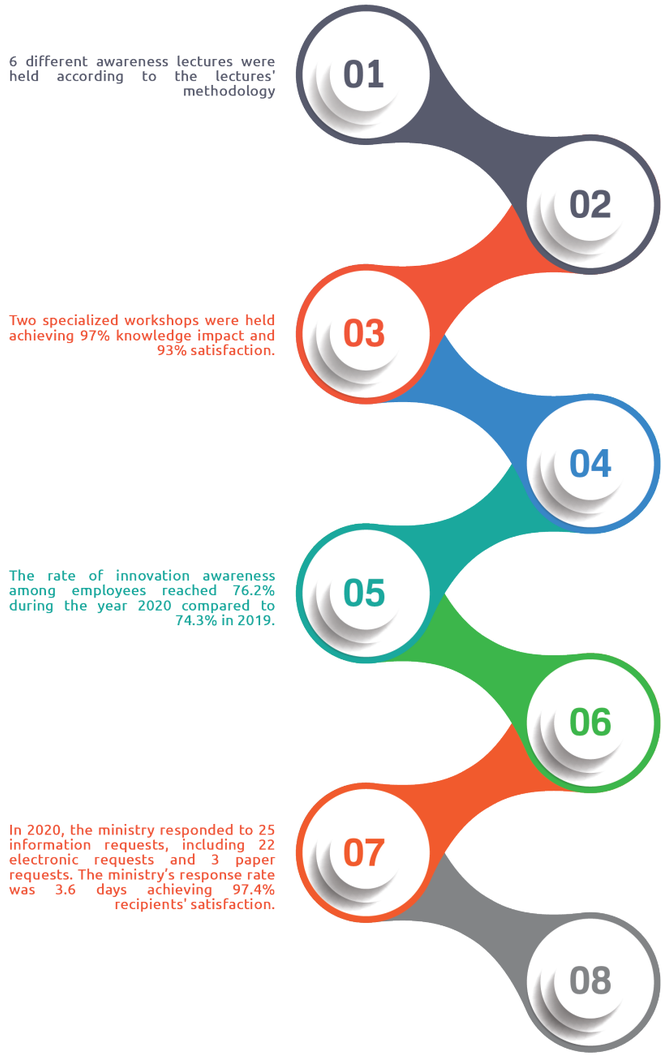


“At Your Service” Government Platform

In 2020, the energy and mineral resources sector received 1280 requests on the «At your service» government platform, they are distributed as follows:



10.5 Knowledge Management and Innovation



10.6 International cooperation

The ministry signed the following Memoranda of Understanding, agreements, contracts, and letters of cooperation:

1. A Memorandum of Understanding to expand the electrical interconnection project between the Hashemite Kingdom of Jordan and the State of Palestine

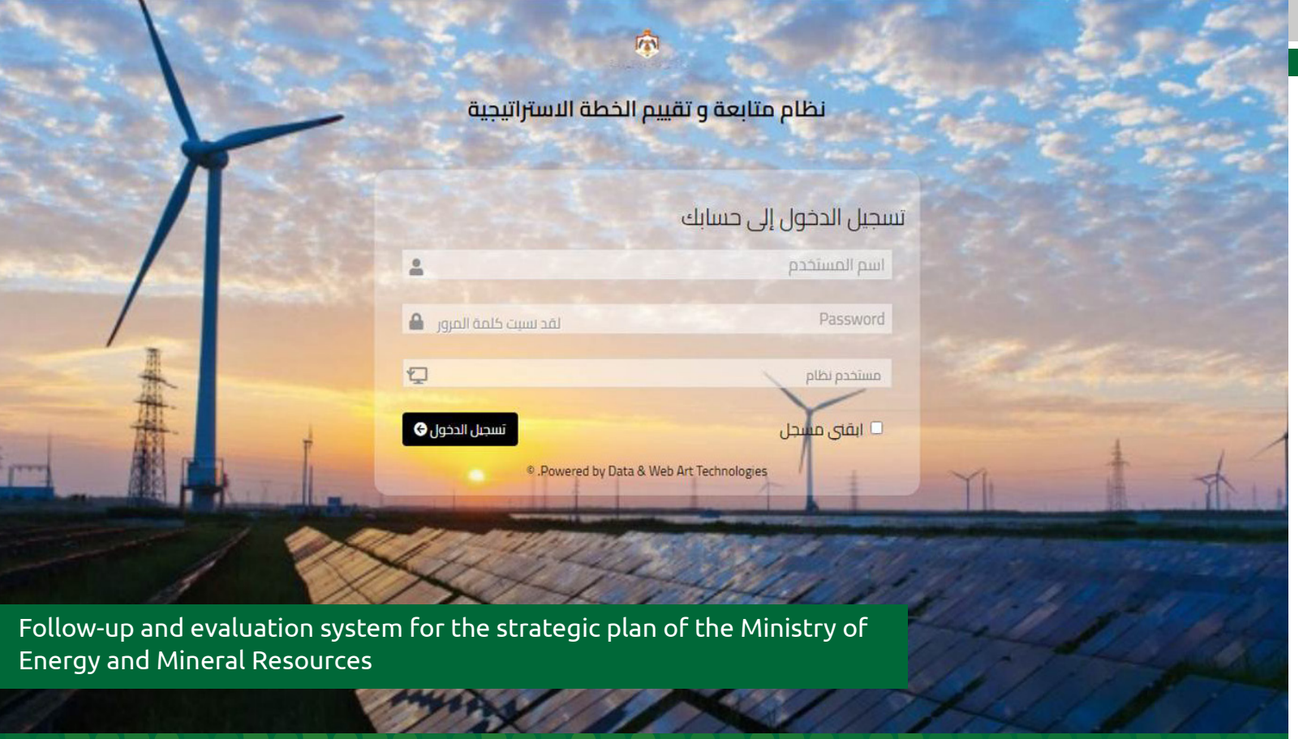
2. A Memorandum of Understanding between the government of the Kingdom of Saudi Arabia and the government of the Hashemite Kingdom of Jordan in the field of electrical interconnection

3. A memorandum of Understanding for seismic research and studies between the Ministry of Energy and Mineral Resources and the University of Jordan

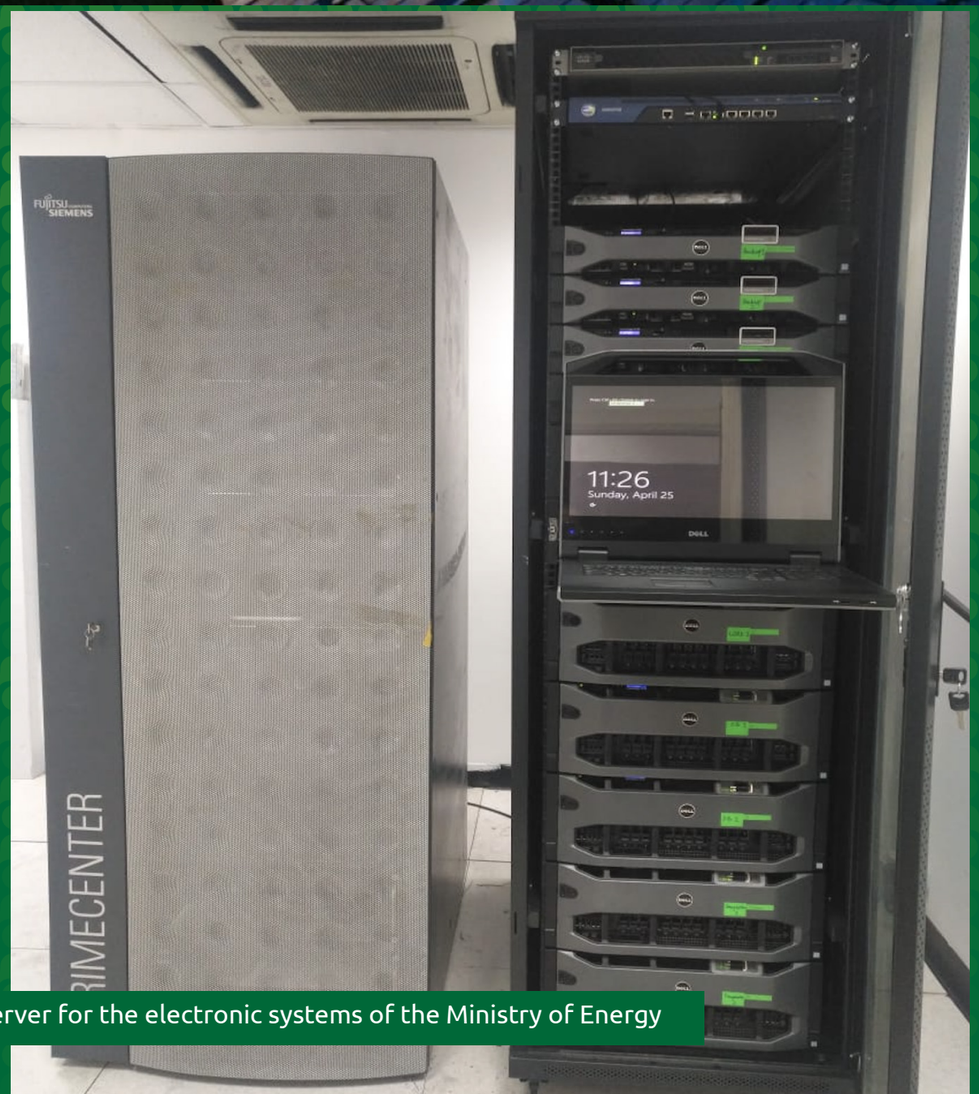
4. **Letter of cooperation between the Jordanian Seismological Observatory and the US Geological Survey (USGS)**

5. Following up on the Jordanian-German Energy Partnership projects and implementing the action plan in accordance with the joint letter of intent signed between the Government of the Hashemite Kingdom of Jordan (represented by the Ministry of Energy and Mineral Resources) and the Government of the Federal Republic of Germany (represented by the Ministry for Economic Affairs and Energy).

Signing a memorandum of understanding with the Kingdom of Saudi Arabia in the field of electrical interconnection analyzes



Follow-up and evaluation system for the strategic plan of the Ministry of Energy and Mineral Resources

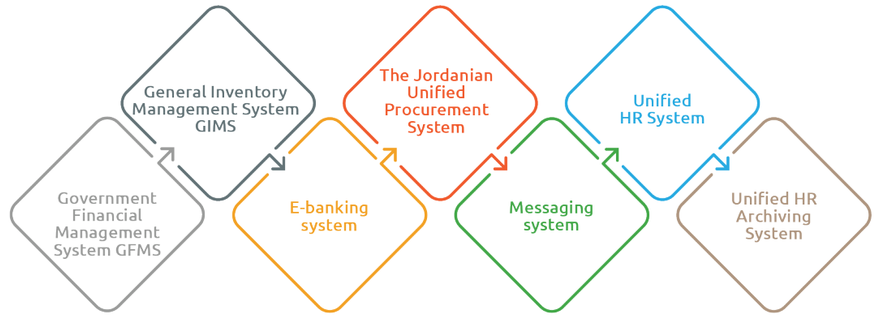


The main server for the electronic systems of the Ministry of Energy

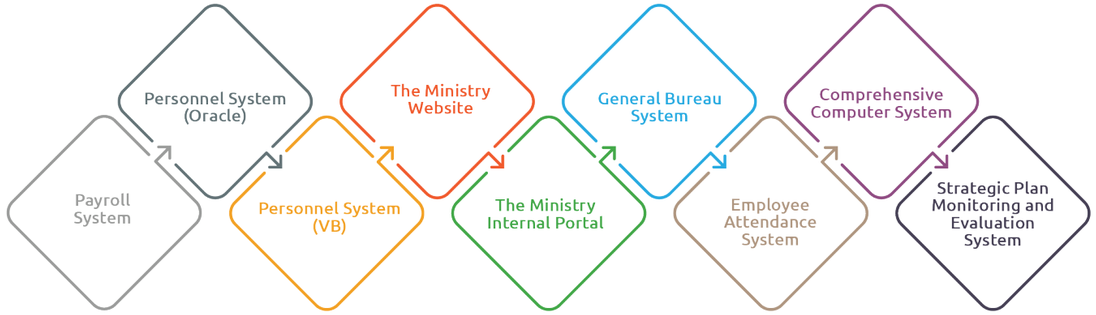
11. Digital Readiness

- %92 of ministry staff were provided with modern computers and %98 of these devices included internet and e-mail services.
- The ministry utilize 16 electronic systems in its operations, which are:

External Systems

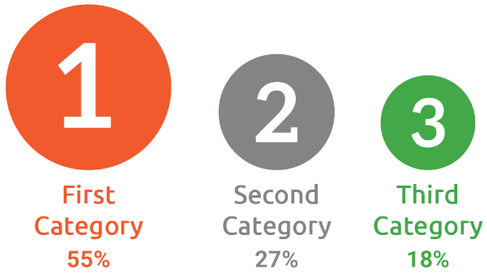


Internal Systems



12. Human Resources

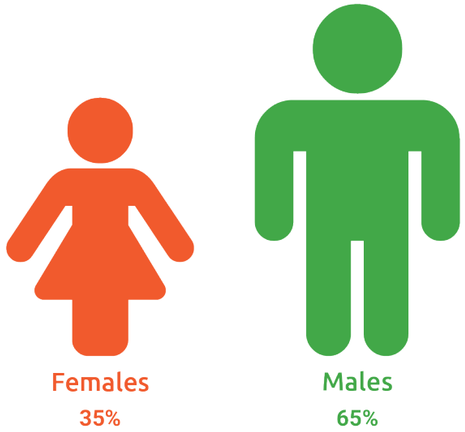
The Ministry staff reached 368 at the end of 2020, distributed as follows:



First Category 55%

Second Category 27%

Third Category 18%



Females 35%

Males 65%

Support Functions 56%

Specialist Functions 26%

Supervisory Functions 15%

Leadership Functions 3%

During the visit of His Majesty the King to inspect storage capacities in Madouna

Connecting the electric current to the Karfat Quarantine Project in the Dead Sea area

The Ministry's Measures in Response to the COVID19-Pandemic

Sustaining energy supply during COVID19- was a remarkable achievement of the energy sector. The emergency plan assured sustainability and availability of the electrical system and petroleum products. An emergency plan was implemented in cooperation with the sector institutions based on clear and specific measures.

01 The medium industrial sector, the agricultural sector, and the hotel sector were relieved from the maximum load tariff. Their tariff was amended to reflect the zero maximum load tariff for a period of three months from the beginning of COVID-19 pandemic.

02 The ministry supported the affected productive sectors by enabling an instalment payment scheme for electricity bills.

03 Electricity service disconnection was suspended for a month from the start of the pandemic.

04 Electricity supply to refugee camps was ensured by the coordination between the Energy and Minerals Regulatory Authority with UNHCR and electricity distribution companies.

05 Distribution companies of petroleum products offered free of charge storage capacity for a period of three months. The storage capacity was located at the Jordan Oil Terminals Company to enhance the strategic reserve of petroleum products.

06 Petroleum products marketing companies were allowed to postpone payments of the special lump-sum tax on petroleum products until the end of 2020.

07 The strategic reserve was increased by 80,000 tons (24% increase) within the period of the COVID-19 crisis. The strategic reserve is located at Amman Strategic Reserves Terminal for Petroleum Products (Al-Madouneh).

08 The cost of delivering electricity to the COVID-19 quarantine area (Dead Sea area) was funded from the Rural Electrification Project (rural fils)at an estimated cost of around 140,000 JOD.

The Energy Sector in 2020 in Numbers

4
Number of sources of natural gas supply

80%
Percentage of natural gas contribution to electricity generation

20%
Percentage of the contribution of renewable energy to electricity generation

22%
Percentage of local sources' contribution to electricity generation

99%
Electricity Supply Coverage

60
Number of days for the adequacy of the diesel reserve

60
Number of days of adequacy of gasoline reserve

30
Number of days of reserve adequacy for liquefied petroleum gas

45
Number of days of reserve adequacy for crude oil

100%
Percentage of securing the supply of crude oil and petroleum products

13
Number of schools in which the Royal Initiative project for heating public schools has been implemented

181
Number of mosques and churches benefitting from the program to support PV systems for houses of worship

500
Number of solar water heaters installed with subsidy for the %30 a domestic sector from JREEEF

3,316
Number of solar energy systems with an installed capacity of 2kW under implementation for disadvantaged families benefiting from national aid at the expense of the Rural Electrification Project (rural Fils) in the second phase

2,225
Number of PV systems with an installed capacity of 2kW for disadvantaged families benefiting from national aid at the expense of the Rural Electrification Project (rural fils) in the first phase

1,544
Number of sites that have been approved for implementation at the expense of the Rural Electrification Project (rural fils)

27
Number of factories that conducted energy audit studies until the end of carried 9 of which ,2020 out recommendations by the studies

1,888
Number of PV systems for the household sector, by %30 subsidized by JREEEF

27,000
Number of lighting units distributed until 2020 the end of through distribution companies

23
Number of farmers benefiting from the program to support farmers' PV systems

500
Barrels

Daily production of oil in the Hamza field

2.258
Million Barrels

The supplied quantities of Iraqi oil (barrels). These quantities were loaded on tankers (Jordanian (12879) .and Iraqi)

140
Number of local earthquakes observed

324
Number of chemical and mineral analyses and examination

21
Number of areas for surface oil shale distillation. Additionally, several areas are open for investment in deep oil shale distillation

6
Number of awareness lectures conducted

16
Number of electronic systems in the Ministry

5
Number of automated electronic payment services

97.4%
Percentage of satisfaction of information requests service recipients

27
Million Cubic Feet

Production capacity of the Risheh gas field

89%
Budget Performance Ratio (Current Expenditures)

92.1%
Rate of satisfaction of the recipients of the ministry services

87%
Partner satisfaction rate

17
Number of awareness-raising workshops in the field of government innovation for the Ministry's employees

2
Number of specialized workshops conducted

3.6
Days

Average time to respond to requests for information

25
Number of requests for .information

97%
Budget Performance Ratio (Capital Expenditures)

Outstanding indicators in numbers

Imports of crude oil and petroleum products during the period 2016 – 2020 in thousand tons

Year	Jet fuel	Gas	Solar	liquefied Gas	Crude oil
2016	64	832	967	327	2978
2017	125	923	1029	368	2795
2018	67	964	1145	357	2366
2019	305	977	963	432	2321
2020	0	773	910	409	2074

The evolution of petroleum products consumption during the period 2016 – 2020 in thousand tons

Petro-leum products / Year	Lique-fied Gas	Gas	Gaso-line	Solar	Fuel Oil	Fuel Oil	As-phalt	Total
2016	433	1446	355	108	1726	606	238	4912
2017	431	1431	396	88	1859	505	226	4936
2018	429	1410	412	69	1672	515	168	4675
2019	478	1411	462	95	1482	132	176	4236
2020	463	1139	137	83	1313	145	135	3415

Domestic production of crude oil and natural gas during the period 2017 – 2020

Year	Oil Production (Thousand barrel)	Gas Production (Billion cubic feet)
2017	0.3	3.6
2018	1.0	3.3
2019	1.6	3.5
2020	1.8	5.3

The evolution of electric power production and peak load during the period 2016 – 2020

Year	maximum load (MW)	Generated electrical energy (GWh)
2016	3250	19677.2
2017	3320	20793.5
2018	3205	20476
2019	3380	20995.8
2020	3630	20952.8

Sectoral distribution of electric energy consumption during the period 2016 – 2020 in GWh

Sector / Year	Residential & public buildings	Industrial	Commercial & Hotels	Agricultural water pumping	lighting streets	Total
2016	7642	3625	2435	2553	378	16633
2017	8097	3782	2562	2684	402	17527
2018	7929	3822	2650	2696	407	17504
2019	8260	3622	2870	2747	411	17910
2020	9100	3489	2584	2866	387	18425

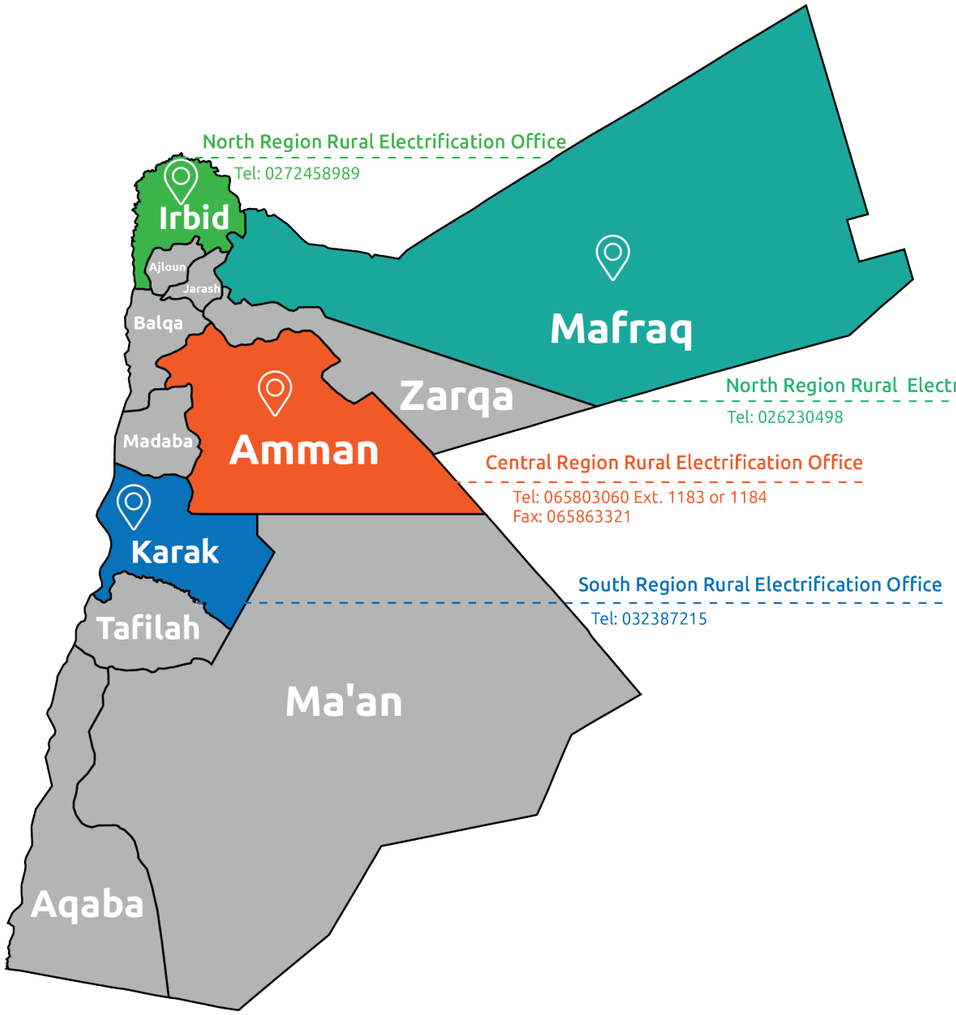
Percentage of sectoral consumption of electric energy during the period 2016 – 2020

Sector / Year	Residential & public buildings	Industrial	Commercial & Hotels	Agricultural water pumping	lighting streets	Total
2016	46	22	14	15	3	100
2017	45	22	15	16	2	100
2018	45	22	15	16	2	100
2019	46	20	16	15	3	100
2020	49	19	14	16	2	100

Financial statements of 2020

Description	Specified Allocations (Dinar)	Expenses Incurred (Dinar)	Expenses Ratio
Running expenses	5233300	4671057	89%
Capital expeditures	26900000	26139781	97%
Total	32133300	30810838	96%

Service delivery centres in the Ministry of Energy and Mineral Resources



Ministry of Energy and Mineral Resources Services for the year 2020

Electricity connection services for approved segments (inside/outside the organization) at the expense of the Rural Electrification Project (rural fils)

1. Delivery of electricity to beneficiaries according to the approved segments of the local networks based on the calculation of the Rural Electrification Project (rural fils)
2. Delivery of electric current to artesian wells located outside the regulated zones by off-grid PV systems at the expense of Rural Electrification Project (rural fils)
3. Delivery of electric current to individual homes located inside / outside the boundaries of the regulated zones using solar energy systems connected to the grid at the expense of the Rural Electrification Project (rural fils)
4. Delivering electricity to individual homes outside the regulatory limits using off-grid PV systems at the expense of Rural Electrification Project (rural fils).

Training service for university students and recent graduates

1. Training university students and recent graduates in organizational units in the Ministry

Lab tests

1. Request for laboratory tests

Renewable Energy Services

1. Request for approval to exempt the inputs of electrical energy production systems using solar energy
2. Request for approval to exempt energy-saving systems, devices, and equipment
3. Granting approval to exempt solar water heating system inputs
4. Granting approval for bioenergy system input exemption
5. Granting approval to exempt energy-saving systems (insulation materials)

Services providing geological information and maps

1. Request information about petroleum and mineral resources and data about petroleum archives
2. Purchase of geological maps and reports
3. Buy digital maps

Renewable energy promotion and rationalization services

1. Granting a license to practice energy audit activity
2. Renewal of the energy audit license
3. Energy audit of government buildings
4. Providing energy auditing service for small and medium industries and implementing the study outputs
5. Providing energy audit service for hotels

Information request service about energy and mineral resources

1. Request information about energy and mineral resources

Seismic information and studies service

1. Seismic information and studies.

Geological studies and surveys services

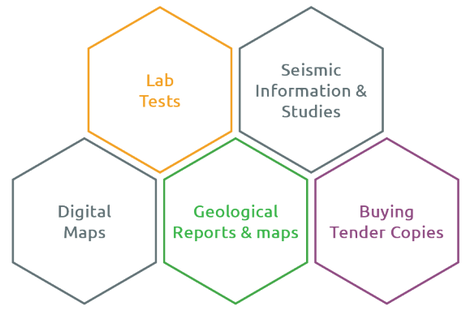
1. Geological surveys
2. Geophysical studies
3. Petrographic studies

Natural gas services

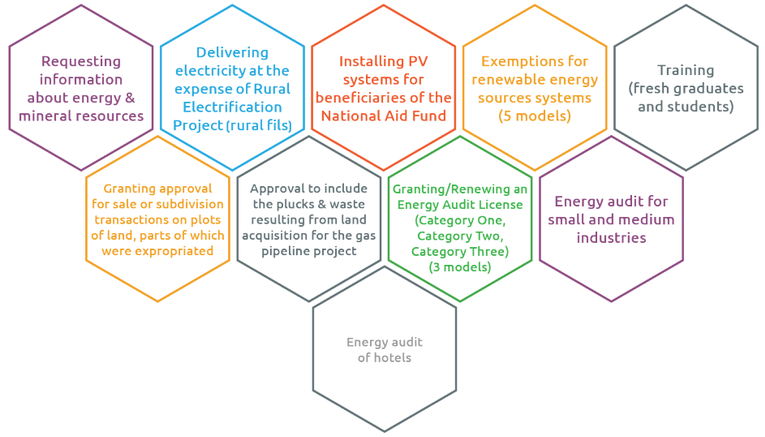
1. Request for approval of licenses for establishments on plots of land that intersect or fall within the precincts of a natural gas pipeline
2. Granting approval for sales or subdivision transactions on the expropriated plots of land, parts of which are for the purposes of gas pipeline projects
3. Request for approval to include the plucks and waste resulting from the acquisition of land for the natural gas pipeline project, which cannot be used

The Electronic Services Portal of the Ministry of Energy and Mineral Resources

Electronic Payment Services



Free Electronic Services



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