وزارة الطاقة والثروة المعدنية

ANNUAL REPORT
2023

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

Praise be to God To God, Lord of the Worlds, and peace and blessings be upon our Arab Hashemite Prophet, our Master Muhammad, and upon all his family and companions .

This annual report aligns with the ministry's policy of transparency, aimed at effective communication with partners and stakeholders. The annual report for 2023 is part of a series of annual reports that document the ministry's trajectory and achievements.

It is with great pleasure and pride that we present in this report the most significant accomplishments achieved by the Ministry of Energy and Mineral Resources in 2023, along with key statistical indicators related to the energy sector during this period, the institutional goals pursued by the ministry, and the strategic policies and plans it has adopted. Energy is a key tool for comprehensive development and a driving force for all economic, social, and service sectors. Thus, the national efforts exerted in the energy sector are focused on enabling all segments of Jordanian society to enjoy energy services, improving their well-being, enhancing their quality of life, and combating poverty.

After 40 years of dedication and development, the ministry has maintained its approach of developing and implementing appropriate policies, regulations, and programs, signing agreements, building partnerships, diversifying imported energy sources and forms, and enhancing and improving local and renewable energy sources. The ministry has also succeeded in extending its services to cover a larger portion of beneficiaries and remains committed to strengthening its national presence both economically and socially.

In conclusion, I extend my heartfelt thanks and appreciation to all employees of the ministry for their efforts in achieving many accomplishments, praying to the Almighty to grant us all success in serving our dear homeland and contributing to its prosperity under the leadership of His Majesty King Abdullah II Ibn Al-Hussein, may God protect him.

****Saleh Kharabsheh****

Minister of Energy and Mineral Resources

Contents

Institutional Framework of the Ministry of Energy and Mineral Resources

The main mission of the Ministry of Energy and Mineral Resources, as an umbrella for energy sector institutions, is to prepare and develop appropriate policies and legislation to achieve sustainable energy supply security and optimal exploitation of natural resources in accordance with the best international practices, through comprehensive planning for the sector, setting general policies and following up on their implementation to ensure the achievement of the tasks assigned to it.

Since the establishment of the Ministry of Energy and Mineral Resources in 1984 until now, the organizational framework of the Ministry has developed as follows:

1984

The Ministry was created at the end of 1984 and was entrusted with the management and organization of the energy sector under the Ministry of Energy and Mineral Resources System of Regulation and Management No. (26) for the year (1985) so that it assumes responsibility for the complete planning of the sector.

2011

Rural electrification project added to the Ministry and an organizational unit created to manage the rural electrification project so that it becomes part of the organizational framework of the Ministry.

2014

According to the paragraph c of Article 3 of the Law of Restructuring governmental agencies and Institutions No. (17) For the year (2014), the Natural Resources Authority established under the Natural Resources Regulation Law No. (12) Of the year 1968 has expired, and the rights and belongings of the authority have been transferred to the Ministry with the exception of regulatory tasks.
And accordingly the Ministry has since started work on preparing and developing suitable policies and legislation to achieve a sustainable supply of energy in addition to its main mission of achieving optimal use of natural resources according to best practices.

2017

After the enactment of the Energy and Minerals Regulatory Commission Law No. (8) for the year 2017 stating in article (4/b) that the Energy and Minerals Regulatory Commission shall assume the tasks and privileges regarding the granting of licenses and permits to people working in the sector, the Ministry's regulatory tasks relating to granting licenses and permits were transferred to the Energy and Minerals Regulatory Commission.

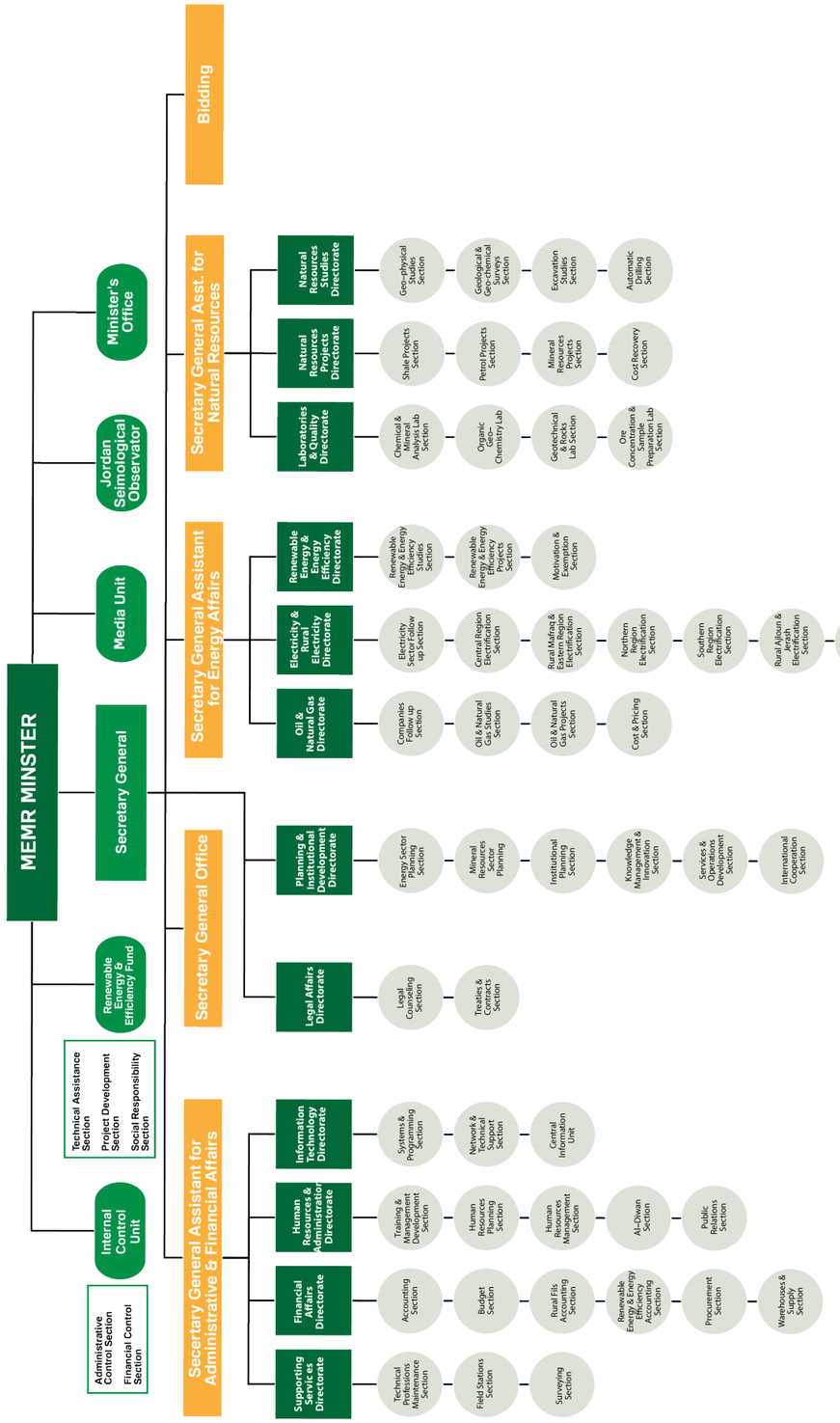
2019

The regularity bylaw of the Ministry of Energy and Mineral Resources No. (123) for the year 2019 was issued, resulting in the restructuring of the organizational units in order to effectively and efficiently achieve the tasks entrusted to them.

2021

Instructions issued to specify the responsibilities of directorates, units and departments within the Ministry of Energy and Mineral Resources No. (1) For the year 2021 according to paragraph (a) from article (7) of the Administrative Regulation bylaw for the Ministry of Energy

The Organizational Structure of the Ministry of Energy & Mineral Resources



About the Ministry of Energy and Mineral Resources

Vision

Achieving sustainable energy security and optimal utilization of natural resources.

Message

Preparing and developing appropriate policies and legislation to achieve sustainable energy security and optimal exploitation of natural resources in accordance with global best practices.

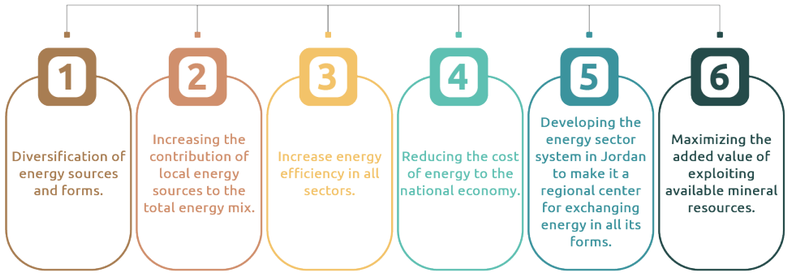
Core Values

1. Teamwork
2. Dissemination and use of knowledge
3. Integrity and transparency
4. Excellence and leadership
5. Loyalty and belonging

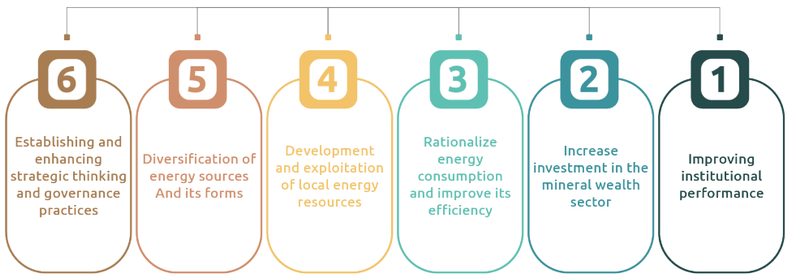
National Objectives

1. Achieving sustainable growth rates to ensure a good standard of living for all citizens.
2. Creating an attractive investment environment capable of attracting foreign capital and encouraging local investments.
3. Reducing poverty and unemployment levels and building an effective social protection system.
4. Improving the level of services provided to citizens and fairness in their distribution.

Strategic Objectives



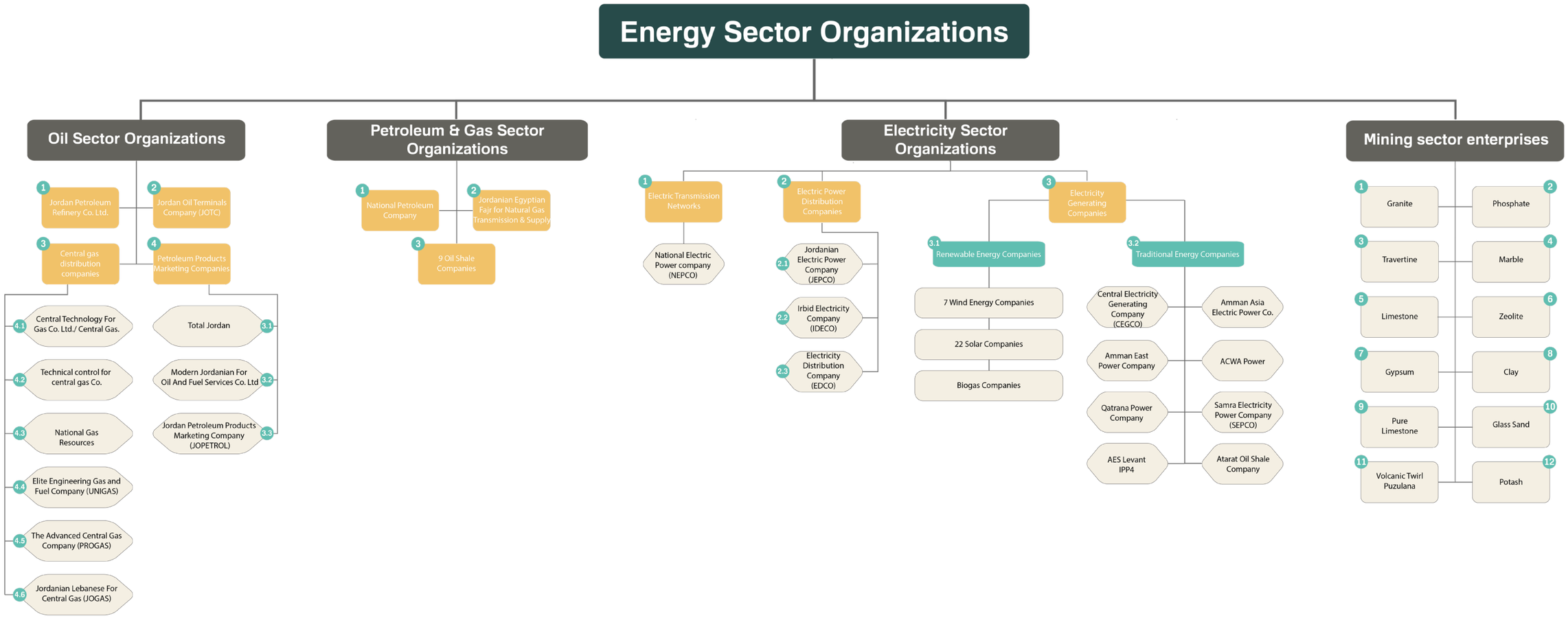
Sectoral Objectives



Programs that contribute to achieving the strategic objectives of the Ministry of Energy and Mineral Resources

Strategic Objective	Programmes which contribute to achieving the strategic goals of the Ministry
Establishing and enhancing strategic thinking and governance practices	• Developing the Ministry's strategies and decision-making mechanisms • Stimulating international cooperation
Diversification of energy sources	• Developing the oil sector and opening the oil derivatives market to competition • Maintaining the security of natural gas supply • Maintaining the security of electricity supply
Development and exploitation of local energy resources	• Expanding the use of renewable energy sources • Expanding the exploitation of oil shale to produce oil and generate electricity • Development of exploration areas for conventional and unconventional oil and gas exploration
Rationalize energy consumption and improve its efficiency	• Home Sector Program • Lighting units • Industrial Sector Program • Government Buildings Sector Program • Tourism Sector Program • Exemption Program • Energy Training Program • Awareness and education program
Increase investment in the mineral wealth sector	• Mineral exploration • Geological Surveys of the Kingdom • Geophysical studies and surveys • Geochemical surveys • Increase the accuracy and quality of laboratory tests • Seismic observatory update
Improving institutional performance	• Institutional development • Information and Communication Technology • Improving financial performance • Internal control • Human resource development, capacity building and motivation • Public Relations • Administrative services

Energy Sector Organizations

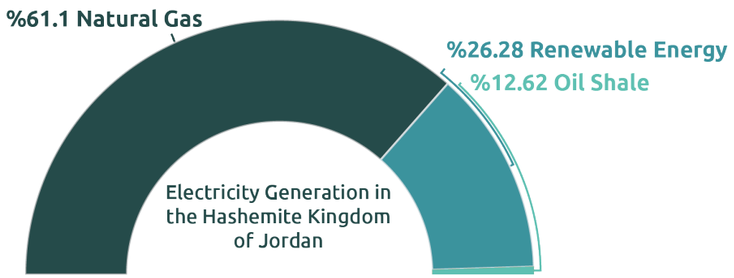


Accomplishments of the Ministry of Energy and Mineral Resources

Many achievements were made during the year 2023 in the energy and mineral resources sector despite the major challenges facing the sector, and hence this report came to present these achievements as follows:

1. Electrical Energy

Electricity was generated in the Hashemite Kingdom of Jordan using natural gas at a rate of (%61.1) and renewable energy at a rate of (%12.62) ,(%26.28) from oil shale, compared to %68 for natural gas, %27 for renewable energy and %5 from oil shale for the year 2022. The amount of energy generated from various types of fuel in power plants amounted to about (24182) GWh for the year 2023, which includes: (North Gas, Egyptian Gas, LNG, Risha Gas, Oil Shale from the Attarat Project, Renewable Energy, and Egyptian Interconnection).

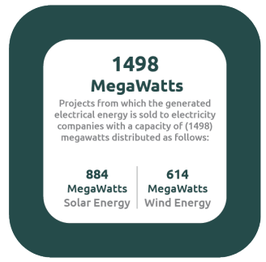


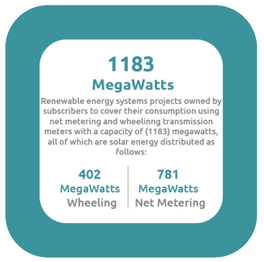
1.1 Generating electrical energy using natural gas

The quantities of natural gas consumed from its sources (imported and local) in power generation stations for the year 2023 amounted to about (115,000) million cubic feet at a rate of about (315) million cubic feet per day.

1.2 Renewable energy in electricity generation

The total installed capacity of electrical energy generation projects from renewable energy sources amounted to about (2681) megawatts, including:





Electricity Generation Projects Using Renewable Energy

Ministry of Energy and Mineral Resources

2015

TOTAL 134.5 MWac

- Azraq project/ Spanish grant — 2.5 MW
- Azraq project/ Spanish debt swap grant — 2 MW
- Al Badia Power Generation Company project — 13 MW
- Jordan wind company project — 117 MW

2016

TOTAL 270 MWac

- Hussein wind project/ Gulf grant — 66 MW
- 12 energy projects/ Direct offers at a capacity — 204 MW

2017

TOTAL 14 MWac

- Hussein wind project/ Gulf grant — 14 MW

2018

TOTAL 339.1 MWac

- FRV Solar project — 50 MW
- Dutch Empire Solar Company project — 50 MW
- Local Company for Water and Energy project — 51 MW
- Sheikh Zayed Solar Energy Complex project / Gulf grant — 92 MW
- Air force project — 10 MW
- Green Energy for Renewable Energy project — 86.1 MW

2019

TOTAL 235 MWac

- AM Solar project — 40 MW
- Risha solar project — 50 MW
- Safawi Green Energy project — 51 MW
- Azraq solar project/ European Union grant — 5 MW
- Al-Fujeij Wind Energy project — 89 MW

2020

TOTAL 345 MWac

- Mass Jordan for Renewable Energy project — 100 MW
- Baynounah solar project — 200 MW
- Shobak company wind project — 45 MW

2021

TOTAL 153.5 MWac

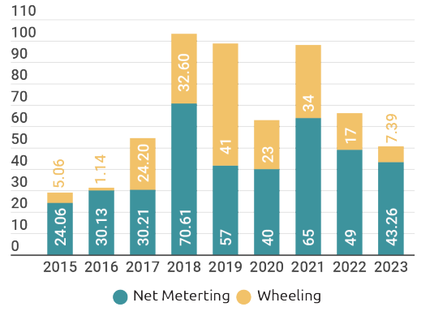
- Energy wind project in Tafila — 51.75 MW
- Daehan wind project in Tafila — 51.75 MW
- Philadelphia project — 50 MW

Direct Offers

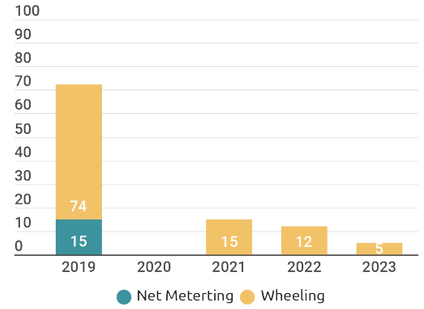
Grant

Added capacities of renewable energy systems (PV) to cover subscribers' consumption during the years) 2015 -2023 according to distribution companies (in megawatts)

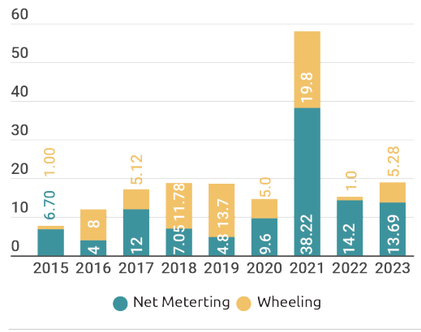
Jordanian Electricity Company (JEPCO)



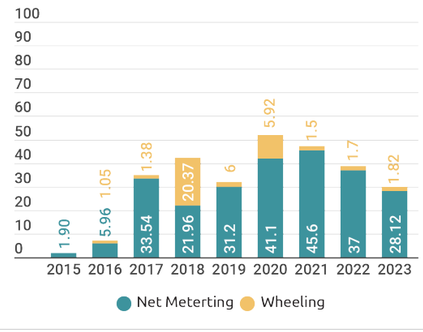
National Electricity Company



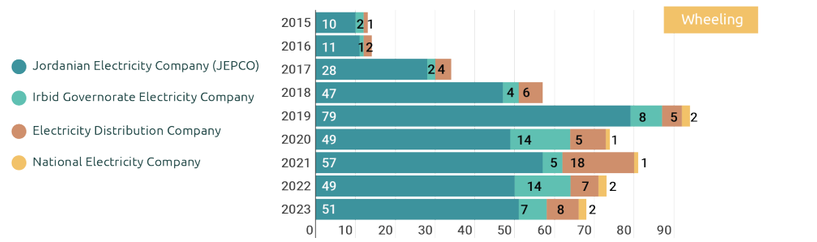
Electricity Distribution Company

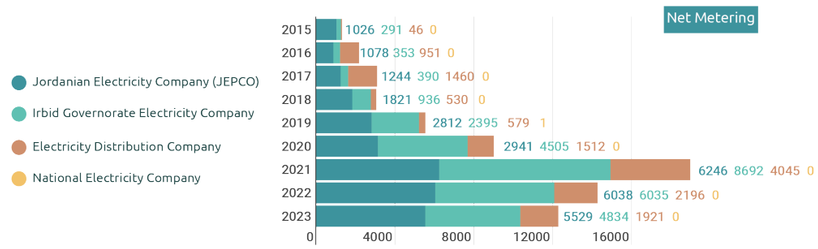


Irbid Governorate Electricity Company

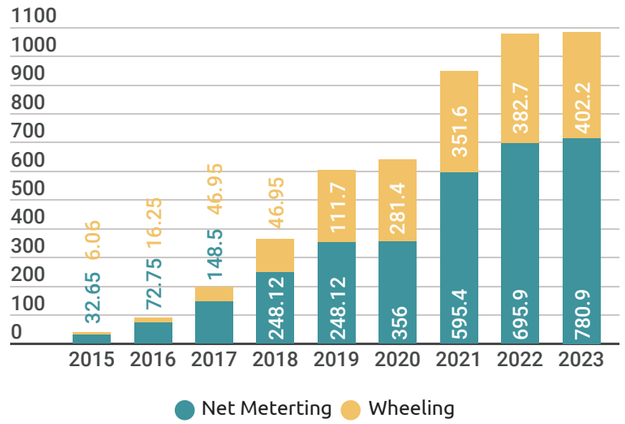


Number of renewable energy systems (PV) connected to cover subscribers' consumption during the years(2015-2023) according to companies





Cumulative capacities of installed renewable energy systems (PV) to cover subscribers' consumption during the years (2015-2023) in megawatt



Green Hydrogen

The Ministry of Energy and Mineral Resources has completed several procedures with the aim of establishing the regulatory framework for dealing with green hydrogen projects and encouraging investment in this field, as follows:

- Preparing a study that included a roadmap for the possibility of using green hydrogen in Jordan
- Preparing a reference document for green hydrogen in Jordan
- The Ministry is conducting a study to analyze existing legislation and identify the legislation required in particular.
- The National Committee for Green Hydrogen was formed from all concerned parties with the aim of following up on the preparation of legislation regulating green hydrogen and completing the procedures according to the rules, following up on any new studies required for the green hydrogen sector, evaluating investment opportunities in the green hydrogen sector or any other materials that contain hydrogen, and approving procedures
- Allocating investment sites and infrastructure for hydrogen production, transportation and storage
- During the year 11(,2023) memoranda of understanding were signed with international and local companies to study the feasibility of investing in the production of Green Hydrogen/Green Ammonia in Jordan, in addition to a Memorandum of Understanding and Framework Agreement previously signed to enable these companies to conduct the necessary studies to make a decision to invest in their projects.

1.2 Generation Electricity using direct burning of oil shale

1. Operating the second unit of the power generation station using direct burning of oil shale with a capacity of)235) megawatts, which is implemented by Al-Attarat Energy Company.
2. The station will reach full commercial operation with a capacity of (470) megawatts during the year 2023

1.4 Electrical interconnection

Jordanian-Iraqi Electrical interconnection

The first phase is to supply the Rutba area on the Iraqi side with a voltage of 132 kV.

- This phase includes supplying the Rutba area radially with a load of 40 MW and a voltage of 132 kV. This is after completing the construction of the transmission line from the Iraqi side with a length of 150 km.
- The first phase has been prepared and is awaiting the connection and approval from the Iraqi side.
- Work has been done to amend some of the terms of the contract between the National Electricity Company from the Jordanian side and the General Company for Electricity Transmission - Central Region from the Iraqi side. It is expected to be operational in the first quarter of 2024.

The second phase (supplying the Al-Qaim area on the Iraqi side with a voltage of 400 kV)

- This phase includes supplying the Al-Qaim area radially with a load of 150-200 MW and a voltage of 400 kV. This is after completing the construction of the transmission line with a length of 330 km. In addition to completing the connection, work at the Al-Qaim 132/400 kV conversion station. From the Iraqi side and the establishment of the 33/132/400 kV Al-Risha Transformer Station from the Jordanian side, where the implementation of civil works, engineering works to supply electrical circuit breakers, transformers and their accessories) and the implementation of the 400 kV electrical transmission line works began, as the expected readiness date for this stage is the first quarter of 2025 according to the workflow plan.

Jordanian-Saudi Electrical Interconnection

- Prepared all Studies Technical And economic And the agreements related to the project (connection agreement, operating agreement, and commercial agreemen).
- The loan and guarantee agreements for the electrical interconnection project between the Hashemite Kingdom of Jordan and the Kingdom of Saudi Arabia were initialed with the Arab Fund for Economic and Social Development, with a value of (22) million Kuwaiti dinars, equivalent to (71.6) million dollars , on 14/9/2023.
- Waiting for the signing of the agreements in preparation for the start of implementation.

Jordanian-Egyptian Electrical interconnection

- The Jordanian electrical grid has been linked to the Egyptian grid simultaneously since 1999 with a 400 kV submarine cable extending across the Gulf of Aqaba with a length of (13 km) and a capacity of 550 MW.
- Work is currently underway to take the necessary measures by both parties to increase the capacity of the interconnection line between the two countries, as a submarine cable will be added with two circuits, each circuit with a capacity of 1000 MW.

Jordanian-Palestinian Electrical Interconnection

- The Ramah 132/33 kV conversion station was operated and the Palestinian side was supplied with a capacity of 80 megawatts in July 2022, and the opening was attended by those concerned from both countries on 24/8/2022, where the export capacity to the Palestinian side was expanded and became 80 megawatts.
- Technical studies are currently underway between the Palestinian and Jordanian sides for high voltage electrical connection (132 kV).

Jordanian-Syrian Electricity interconnection to Supply Lebanon

- An agreement was signed to transit electricity from Jordan to Lebanon via the Syrian network, and a contract was signed to supply Lebanon with electricity since the beginning of 2021 without them entering into force.
- Waiting for the completion of procedures in preparation for the start of implementation.

2. In the field of rationalizing energy consumption and improving its efficiency And developing indigenous energy sources

The Ministry is working to implement a number of projects in various governorates of the Kingdom and in various sectors through the Renewable Energy and Energy Efficiency Promotion Fund (JREEEF) and through the Electricity and Rural Electrification Directorate in the Ministry and in cooperation with a number of partners as follows:

2.1 Residential Sector Program

2.1.1 PV installation Subsidy

The Renewable Energy and Energy Efficiency Fund provides support for the installation of photovoltaic systems for homes at a rate of %30 of the system cost in cooperation with commercial banks and local charitable and cooperative societies (CBOs) distributed across all regions and governorates in the Kingdom.
In 3,206 ,2023 photovoltaic solar PV systems were installed, out of 7,779 solar systems supported under this project, as an agreement was signed with 3 banks and 19 societies, bringing the cumulative number of connected solar PV systems since the establishment of the fund until the end of 2023 to 9,957 systems.

2.1.2 Solar Water heaters (SWH) installation support Program

JREEEF provides subsidy for the installation of solar water heater systems within several projects for the household sector. The following are the projects achievements during 2023:

1. 2,988 solar water heaters were installed in 2023, out of 4,613 solar heaters supported within the solar heater project by %30 of the system cost in cooperation with commercial banks and local charitable and cooperative associations distributed across all regions and governorates in the Kingdom, with 3 banks and 19 local associations.
2. 300 solar water heaters were installed in 2023, out of 1,200 solar water heaters, through a full grant from the United States Agency for International Development and in cooperation with the Ministry of Social Development for the homes of poor families.
3. 100 solar heaters were installed in 2023, out of 300 solar heaters, through a full grant from the Fund in cooperation with the Jordan Engineers Association within the Fazaat Ahl initiative, for the homes of poor families.

The cumulative number of solar water heater systems since the establishment of the Fund until the end of 2023 has reached 32,890 systems.

2.1.3 Project of PV installation on the expense or Rural electrification "Fils Al-Reef"

The project to install solar PV systems connected to the electricity grid with a capacity of 2 kilowatts for beneficiaries of the National Aid Fund and poor families at the expense of the rural penny began in 2019 with the aim of exploiting renewable energy sources and reducing electricity costs for needing families.of least income and to achieve the government's priorities within the solidarity principles, during the year 2023 through this program, achievement of the following:

- The fourth phase was completed, which included the installation of (800) solar PV systems distributed in the governorates of Irbid, Jerash and Ajloun.
- The number of beneficiaries of the project since its inception until the end of 2023 reached (7,382) beneficiaries.

2.1.4 Programs and Projects of JREEEF within the Small and Medium Enterprises Sector

Program for Implementing Energy Efficiency Solutions for Small and Medium-Sized Factories

As part of the support and financing program for the use of renewable energy technologies and energy efficiency applications in small and medium-sized factories, a grant is provided that includes financial support for conducting an energy audit study at a rate of %50, as well as the payment of bank loan interest for a loan of up to 350,000 Jordanian Dinars, which is provided to the factory to implement the actions proposed in the mentioned energy audit study. The loan is guaranteed by the Jordanian Loan Guarantee Corporation, in cooperation and partnership with the Jordan Chamber of Industry.
Since the start of the project until 2023, the fund has achieved the following:

- Signing of 100 joint cooperation agreements between the fund, the Jordan Chamber of Industry, and the factory wishing to benefit from the program.
- Conducting 46 energy audit studies for 46 factories.
- 8 factories were able to obtain the necessary financing from the approved commercial banks to implement the results of the energy audit studies.

JREEEF continuously works on developing and updating the standards, criteria, conditions, and mechanisms of the program. The fund also evaluates and monitors the factories benefiting from the program by conducting field visits and holding consultative sessions with factory owners and their technical staff, as well as with companies providing energy audit services to factories. The fund focuses on discussing challenges and barriers, finding appropriate solutions, and developing opportunities for program progress in a participatory manner for each factory.

Energy Efficiency Solutions Implementation Program for -4Star Hotels and lower-star Hotels

The Renewable Energy and Energy Efficiency Fund has designed an energy consumption rationalization program and improving energy efficiency for hotels classified as four stars and below in various areas of the Kingdom.
In 2023, the fund targeted hotels in the Aqaba Governorate, where it signed a joint cooperation and financing agreement with the Aqaba Special Economic Zone Authority and the United Nations Development Programme (UNDP). This agreement includes the following:

- Financing %100 of the cost of energy audit studies for 12 hotels in Aqaba by the UNDP, under the full supervision of the fund and UNDP. These studies were completed during 2023.
- Implementing the energy efficiency outcomes resulting from the energy audit studies, with %25 financing from the Energy Fund and %25 from the Aqaba Special Economic Zone Authority. The remaining %50 of the funding is provided by the hotel during the next phase of the project implementation.

2.1.5 Programs and projects The fund within the agricultural sector

Solar PV Installation Support Program for Farms

In line with the government's intentions to raise the efficiency of using natural resources in general and increase reliance on clean and alternative solar energy in particular, and to reduce the energy bill at the national level, especially in the agricultural sector, JREEEF signed a joint cooperation agreement with the Agricultural Credit Corporation to support the financing of pioneering agricultural projects for small farmers, under which the Fund covers the intrest resulting from financing the agricultural loan, amounting to 15,000 Jordanian dinars as an upper ceiling, to install, connect and operate a solar PV energy system.

9 farms benefited from the project in 2023 out of a total of 183 farms in the first phase of the project.

JREEEF signed a joint cooperation agreement with a total value of 1,140,000 JOD with the Agricultural Credit Corporation in the second phase of the project, where the foundations and criteria for benefiting from the program for the second phase were studied, and accordingly, the upper ceiling for the loan provided by the Agricultural Credit Corporation was raised to 20,000 Jordanian dinars per farm.

2.1.6 JREEEF programs for government and public buildings sector

A program to support the installation of solar PV for places of worship, mosques and churches

JREEEF continues to work on developing the project to support the installation of solar PV systems for places of worship with the aim of reducing the burden of electricity bills, which contributes to creating a suitable environment users by supporting the financing of %25 of the cost of installing the PV systems, while the Ministry of Endowments and Islamic Holy Places and the Council of Churches finance %25 of the cost of the systems.

Solar PV Installation Support Program for Humanitarian Work Institutions:

In order of JREEEF to support institutions, associations and national centers that provide shelter services and care for special segments of society such as orphans, people with special needs, the elderly, young women and others, the Fund has developed a program to support the installation of renewable energy systems PV for these institutions, to reduce the burden of monthly electricity bills on their buildings.

The Fund supported the installation of photovoltaic PV systems and they were operated for 15 associations and national centers until the end of 2023
In 2023, the implementation of the installation of solar PV systems for the Jordan Media Institute was completed with a full grant from the Fund.

Municipality Main buildings

In line with the vision of economic modernization in Jordan, the Fund has designed a program to support the installation of solar PV systems for all municipal buildings, which are total of 100 municipalities, with joint funding from the JREEEF and the Italian government represented by the Italian Ministry of Environment and Italian Energy Security, and in cooperation and joint coordination with the Ministry of Local Administration, as it is the body responsible for municipalities in Jordan, in addition to the municipalities' main role in follow-up and coordination.

The installation of solar cell systems for 29 municipalities was completed within the first phase of the program in 2023, and the rest of the municipalities in the Kingdom will be completed within the second phase.

Health centers

The health sector is one of the most important service sectors. JREEEF has designed a project to install solar PV systems for comprehensive health centers in Jordan. The project aims to provide the necessary funding for health centers to support the installation of solar PV systems, which will reduce the electricity bill resulting from the consumption of health centers, in cooperation and direct coordination with the Ministry of Health.

In 2023, the installation of 14 solar PV energy systems was completed for 14 comprehensive health centers distributed across the northern and southern governorates of the Kingdom, after applying the approved standards and foundations to the targeted health centers.

3. In The Field of Rural Electrification

Population centers and poor families through the rural electricity funded projects, as the project contributed to the development of local communities and support for various sectors. As for the achievements in the field of rural electrification, they were as follows:

3.1 The provision of supplying electricity to cemeteries has been amended to include lighting the streets leading to the cemeteries, regardless of the municipalities organizational status, at a financial cost of (10,000) ten thousand dinars per cemetery, including the installation of lighting units, and the remainder at the expense of the beneficiary party.

3.2 The number of applications submitted for the rural electrification for the year 2023 reached (2,610) applications, detailed as follows:

- The number of sites that were approved for implementation at the expense of the rural electrification (2055) at a financial cost of (10,611,698) Jordanian dinars.
- The number of sites that were completed with the electricity connection and commissioned (1,517) sites at a financial cost of (8,117,296) dinars.

Distribution Company	Financial Cost (JOD)	Number of Sites
Jordan Electricity Company (JEPCO)	2,377,903	227
Irbid Governorate Electricity Company (IDECO)	3,073,555	833
Electricity Distribution Company (EDCO)	6,665,838	457
Total	**8,117,296**	**1517**

3.3 Project to retrofit traditional street lighting units with energy-saving LED units
The number of lighting units replaced since the beginning of the project until the end of 2023 has reached (296,036) units distributed as follows:

- 105,000 lighting units in Tender No. 17/R/Works/2019 for Irbid Governorate, excluding the Northern Jordan Valley
- 82,019 lighting units in Tender No. 15/R/Works/2019 for the Southern Region, the Northern Jordan Valley, the Central Jordan Valley, the Southern Jordan Valley, and the Eastern Region
- 61,858 units in Tender No. 16/R/Works/2019 for the Central Region, excluding the Central Jordan Valley and the Azraq Region
- 47,159 units in Tender No. 18/R/Works/2019 for the Governorates of Mafraq, Jerash, and Ajloun

4. In the oil sector

4.1 Diversification of crude oil supplies

A memorandum of understanding was signed to supply Jordan from the Iraqi crude oil (Kirkuk crude oil) which was between the Ministry of Energy and Mineral Resources and the Iraqi Ministry of Oil on 5/4/2023, resulting in the following:

- Supplying the Hashemite Kingdom of Jordan with (10) thousand barrels per day ±(15)% over the course of a year, which constitutes about %7 of the Jordanian market's needs.
- The discussions held between the Jordanian and Iraqi sides resulted in a joint agreement to increase the quantities of Iraqi crude oil exported to Jordan from (10) thousand barrels/day to (15) thousand barrels per day, starting from the beginning of August 2023, and with the same contractual terms included in the memorandum of understanding to supply crude oil. Thus, the monthly quantity of Iraqi crude oil exported to Jordan will reach about (450) thousand barrels per month, instead of (300) thousand barrels per month.
- The total quantities of Iraqi crude oil supplied to the Kingdom during the year 2023 amounted to approximately (3.814) million barrels, transported by (15,117) tankers.

4.2 Oil derivatives prices during the year 2023

- Continue to determine the selling prices of petroleum derivatives based on the Petroleum Derivatives Pricing bylaw, Licensee Commissions and Tariff No. (122) of 2019 and its amendments, and announce them monthly through the Petroleum Derivatives Pricing Committee formed pursuant to the bylaw.
- 4.3 Start applying reference prices based on the Gulf markets for diesel and kerosene starting from the January 2023 pricing, which led to a decrease in local selling prices for diesel and kerosene during the year 2023, based on Cabinet Resolution No. (9863) dated 2022/28/12 approving (Amended bylaw for the Petroleum Derivatives Pricing System, Licensee Commissions and Tariff for the year 2022)

4.3 Strategic Reserve of Crude oil and petroleum derivatives

The Table below shows the strategic inventory of crude oil and petroleum derivatives during the year 2023 per thousand tons:

The Fuel	Inventory Rate During The year 2023 (Thousand Tons)	Inventory Adequacy Ratio For the year 2023 (Per day)
Crude oil	305,683	45
LPG	39,532	30
Gasoline octane 90	203,234	58
gasolin octane 95	30,365	76
diesel	267,514	67
Jet fuel	82,308	75
Kerosene	58,184	58
Asphalt	9,905	15

5. In the field of natural gas

5.1 Diversification of natural gas sources

- Natural gas supply sources in Jordan: are as follows:

Egyptian natural gas (via pipelines)	North Gas (via pipelines)	Liquefied natural gas (LNG) Floating (FSRU) LNG ship in Aqaba	Natural gas produced from the Risha gas field

- In order to reduce the operational costs of Sheikh Sabah LNG Port, which are borne by the National Electricity Power Company (NEPCO) the The Ministry of Energy and Mineral Resources and NEPCO , in cooperation with the Aqaba Development Company (ADC) are developing the Sheikh Sabah LNG Port, which will be financed through a soft loan from the Kuwait Fund for Arab Economic Development, by building a beach changeover unit and working to replace the current floating storage and regasification unit (FSRU) with a floating storage unit) FSU). Where the two bids were issued for the LNG port development project.

5.2 Encouraging the use of natural gas in all sectors

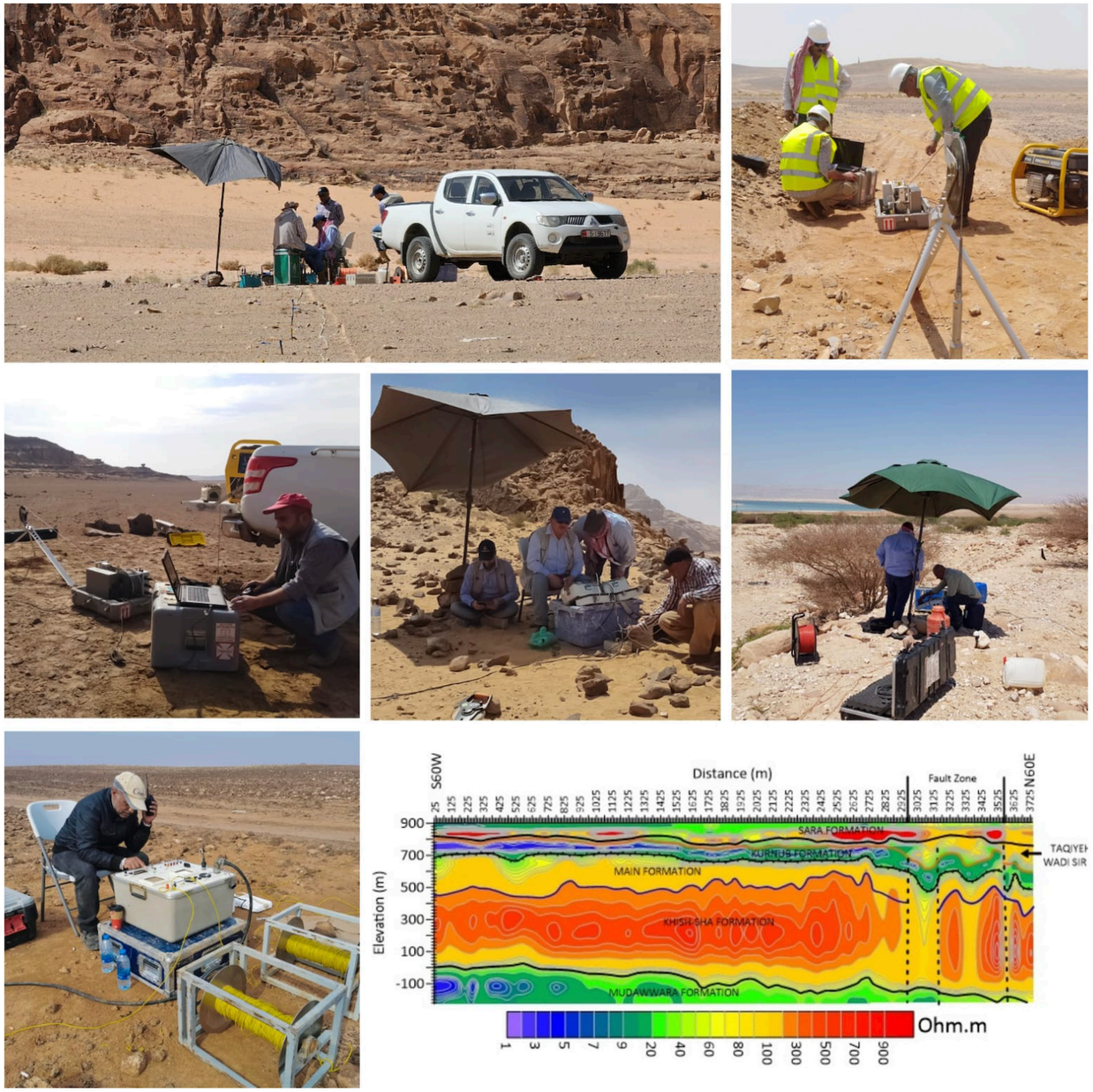
1. The Council of Ministers approved, vin light of the Resolution No. (14389) dated 2023/29/11, the foundations for dealing with the project to establish natural gas networks in Amman and Zarqa, as the project was presented as an investment opportunity on the official website of the Energy and Minerals Regulatory Commission (EMRC) .

2. A mechanism was agreed upon with the Amman Chamber of Industry and the Jordanian-Egyptian Fajr Company to implement the infrastructure required to deliver natural gas to industries from the main natural gas pipeline to the factory site through direct contracting between the end consumer and the contractors, as the mechanism included the steps required from the factory wishing to be supplied with natural gas from the stage of submitting the application with data related to fuel consumption and the required gas quantities until the completion of the project work.

3. In order to reduce production costs and increase the competitiveness of Jordanian industries, as energy costs constitute a major burden on Jordanian industry, which limits the ability of local products to compete in export markets or in the local market, the Ministry of Energy and Mineral Resources has adopted a program to support industries and move forward with procedures to deliver natural gas to cities and industrial complexes for both the Muwaqqar Industrial City and the Rawda Industrial Zone in the city of Ma'an. The project has been included in the budget of the Ministry of Energy and Mineral Resources for the year 2023.

4. The Ministry of Energy and Mineral Resources has determined the value of the commission for companies interested in the activity of distributing compressed and liquefied natural gas produced from the Risha gas field, and instructed the Petroleum Derivatives Pricing Committee to determine the selling price of compressed and liquefied natural gas to the final consumer, as the Petroleum Derivatives Pricing Committee has approved the value of these commissions with the pricing mechanism starting from the beginning of March 2023.

5. The average quantities of natural gas consumed in industries (Arab Potash and Jordan Bromine Companies, Fine Hygienic Paper Company, and Jinsheng International Ceramics Company) for the year 2023 amounted to (26.32) million cubic feet per day.



6. In the field of petroleum and oil shale

1. Signing a drilling and services agreement with the UAE's ADNOC to develop the Hamza oil field and drill new wells in the Hamza oil field.
2. Drilling (2)wells in the Sarhan and Al-Jafr areas .
3. The daily oil production rate from Hamza oil field reached (200) barrels
4. Completion of processing 3D seismic information for the Sarhan development area.
5. Signing a Memorandum of Understanding with Al Majarra Oil Shale and Natural Resources Company to exploit oil shale in the Lajjun area.

7. Geology and Mining Field

7.1 Geophysical studies

7.1.1 The General Gravity Survey Project of the Kingdom:

- Measuring the gravity values of 76 gravity points in the areas of Batn Al-Ghoul and Al-Mudawara at the southern areas of the Kingdom.
- Conducting accurate geodetic measurements, corrections, calculating the gravity anomaly of Bougier and updating the project database.

7.1.2 Detailed geophysical studies project:

- Issuing a technical report on the results of the geoelectrical survey conducted at the prospecting and exploration sites for mineral ores in Wadi Araba.

7.1.3 Geophysical studies provided to service applicant from the public and private sectors:

- Issuing a technical report on the results of the geophysical survey using the electromagnetic telluric method to support the Juthour Initiative project (one of the projects of the Royal Initiatives) at AL-Karak region to determine the depth of groundwater with the aim of drilling water wells.
- Issuing a technical report on the results of the geophysical survey using electromagnetic telluric method at the request of the Ministry of Water and the Hashemite Fund for Badia Development to evaluate the groundwater layer with the aim of drilling water wells at Onaizah Valley area in south of the Kingdom.
- Issuing a technical report on the results of the geophysical survey using electromagnetic telluric method at the request of Sumer Company for Geological and Hydrogeological Consulting in the northern Badia regions to determine the depth of deep groundwater with the aim of drilling water wells.

7.2 General Geological Survey Project:

- 40% of the geological survey work has been completed in the (Barqa Palace) panel at a scale of 1:100,000 within the General Geological Survey Project of the Kingdom.

7.3 Detailed Geochemical Survey Project of the Kingdom:

- Completion of geological and geochemical work at Disa Formation (Ras al-Naqab area) to determine the best ranges of silica sand deposits and collect representative samples for use in Jordanian silica ore upgrading projects to reach high purity.

7.4 Jordanian Geological Museum:

- 224 students were received as delegations from three different schools on scientific visits to the Jordanian Geological Museum.
- Rock and mineral samples, illustrative means about the geology of Jordan, and geological maps were prepared for two schools to establish a miniature geological museum in them through the Ministry's cooperation with educational organizations in the Kingdom.
- Receiving a delegation from the Institute of Management and Logistics Training in the General Command of the Jordanian Armed Forces.

7.5 Petrographic Studies Unit:

- A detailed petrographic report was prepared for rock slide samples for the project to prospect for metallic elements and their ores in the Sumr Al Taiyba Mountains / Wadi Araba.

7.6 Sensory geological discoveries

- With sensory surveys based on a request from official authorities for ground cracks in two areas (Qaa Sa'idin area / Wadi Araba, and Qaa Umm Salb area / North Wadi Rum) and preparing detailed geological reports.

7.7 Prospecting for natural resources

Phosphate ore prospecting project (northeastern Jordan / Risha area) first phase

The final technical report for the phosphate ore prospecting project (northeastern Jordan / Risha area) was prepared and published on the ministry's website.

Metallic elements and ores prospecting project in the Sumr Al Taiyba Mountains / Wadi Araba

- An exploration work plan was prepared to evaluate the quality and quantity of metal elements ores and estimate the initial resource for the areas promised to work on marketing them to investors in the mining sector after conducting exploratory tours
- The study of (6) areas out of (42) areas for a water drainage basin was completed.
- 234 representative rock samples were collected and analyzed to trace the geochemical anomalies. Accordingly, the results showed high concentrations of the following elements:
  1. Zinc (maximum 2380 ppm compared to the normal value of 435 ppm)
  2. Lead (maximum 547.7 ppm compared to the normal value of 44 ppm)
  3. Lithium (maximum 393.4 ppm compared to the normal value of 63 ppm).
  4. Increase in results at acceptable rates for elements such as Cu, Ni, V, Sr, Cr, Cs, Ba, Sn, Y.

7.8 Mineral Resources Exploration Areas Marketing Project:

- During 7 ,2023 memoranda of understanding and cooperation were signed with several companies, bringing the number of signed memoranda to 14 memoranda of understanding and cooperation, which aim to explore and prospect for strategic minerals, evaluate the resource, and conduct feasibility studies for their exploitation. The following table shows the mentioned memoranda of understanding:

No.	Company Name	Project	Area	Effective Date	Duration + Extension (Month)
1	Arabian Mining	Phosphate	Risha	10/4/2023	12
2	Arabian Potash	Lithium	Dead Sea	16/7/2023	19
3	Metal Bank Limited (MBK)	Copper	Malaqa	18/7/2023	24
4	Tasneem Projects	Phosphate Potash	Risha Al-Lisan	10/8/2023 10/8/2023	30 36
5	Tajanus Company for Owning and Establishing Commercial Projects Memorandum of Cooperation	Preparing a Mineral Map	Kingdom	21/4/2023	24
6	CAPITAL Company Memorandum of Cooperation	Investigation of rare earth elements associated with phosphate ore	Risha	28/5/2023 (Expired)	6
7	MBK Company Memorandum of Cooperation	Conducting studies related to mineral resources	South Kingdom	7/18/2023	24

7.9 Investment Opportunities in Mineral Resources Sector:

- Work to reclassify mining industries, both transformative and extractive, and review them with the Energy and Minerals Regulatory Commission.
- Publish the Jordanian Mining Sector Performance Report 2021 in Arabic and English
- Create an electronic platform for investment requests in petroleum, oil shale and strategic minerals.

8. In the field of maintaining the preservation and display of information on petroleum, oil shale and mineral resources

The Ministry of Energy and Mineral Resources is concerned with maintaining, preserving and displaying information on petroleum, oil shale and mineral resources through studies conducted in various regions of the Kingdom since the late 1940s until now, by establishing a natural resources information bank for projects and studies implemented by the various directorates of the Ministry or companies contracted with it in the field of natural resources. Mining project maps are also produced through Geographic Information Systems (GIS) software.

The Ministry has provided a service to provide interested public and private institutions, companies, researchers and university students with technical reports and maps of all kinds as follows:

6 Number of Digital maps geological, mineral and energy	**271** Number of Paper geological maps
5300 تقارير بترول	**122** تقارير جيولوجية

9. In the field of laboratory analysis

The Ministry's laboratories provide their services by conducting all chemical and mineral analyses and tests for various natural rock samples for the public and private sectors. In 2023, the following was completed:

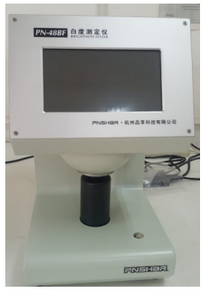
- Expanding the scope of accreditation for laboratory tests according to ISO: -17025 2017 by the Jordanian Accreditation Unit, where:

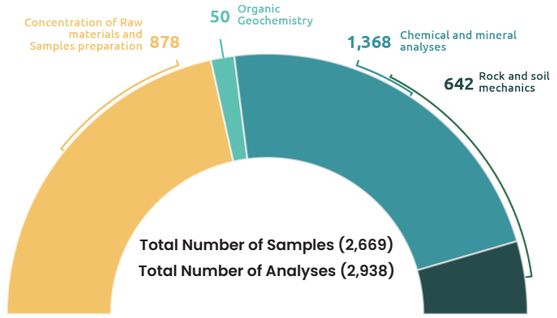
1. Accreditation of the examination of fine aggregates passing through a -75micron sieve (Materials Finer than 75µm in Mineral Aggregates by Washing) according to (ASTM: C17-117).
2. Accreditation of the examination of solid samples using an X-ray spectroscopy (XRF) device according to (BS EN 15309:2007).
3. Renewing accreditation for 15 laboratory tests that have received accreditation certifications. As a result, the Ministry now conducts 17 approved laboratory tests in total.

- Updating the equipment of the Laboratories and Quality Directorate, where the Ministry's laboratories were equipped with the following devices:

1. A device for measuring the whiteness and brightness of metals.
2. Updating the microscopic slices preparation laboratory equipment for petrographic studies.

- Number of samples and analyses conducted in the departments of the Laboratories and Quality Directorate until the end of 2023:





10. In The Field of Earthquake Monitorings

- Seismic activity coverage rate %100.
- Total recorded Earthquake Events in 2023 :1,126 Earthquake Events, categorized as follows:

426 أحداث عالمية	**469** أحداث إقليمية	**231** أحداث محلية

- Collaboration with Civil Defense and the National Center for Security and Crisis Management: 365 daily reports were provided, including seismic activity updates, local earthquake location maps, and special reports on felt earthquakes at the moment of occurrence, their magnitude, expected impact, and any potential aftershocks.
- Completion of the seismic hazard study for the Petra region and its surroundings: The final report of the study was issued.
- Maintenance and upgrade of the Tal Al-Asfar International Station: In collaboration with the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), the seismic monitoring equipment was replaced with a more advanced system, along with the upgrade of the digital processing equipment and seismic data transmission software.

- Update of velocity models: Accuracy verification was carried out by using mining explosions and comparing results with regional and distant seismic monitoring from other international observatories. This ensures the precision and reliability of seismic data and the recorded Earthquake Events locations using the seismic monitoring system.
- Sustaining the operation of the national seismic monitoring network: Regular maintenance, software upgrades, and the installation of the latest seismic monitoring devices were conducted. The network of strong motion monitoring stations was also expanded by adding new stations and integrating them into the seismic monitoring system, allowing remote access.
- Collaboration with Civil Defense: Participants of the Disaster Management Course were hosted and briefed on how earthquakes occur, high-risk seismic areas in Jordan, the risks posed by earthquakes, how to respond, and methods of communication between the Emergency Response Center and the Jordanian Seismological Observatory.
- Participation in the national comprehensive drill «Darb Al-Aman 3»: The Ministry's team contributed to preparing the drill organized by the National Center for Security and Crisis Management. The team also participated in developing the national crisis management plan related to earthquake hazards.

11. In the field of planning and institutional development

11.1 Energy Sector Planning:

- Setting the terms of reference for updating the energy sector strategy.
- Developing an electronic system to monitor the progress of projects funded by donors in the energy sector, to track the progress of each project and avoid duplication of project implementation.
- Issuing the 2022 Jordan Energy Balance in both Arabic and English.
- Overseeing the implementation of the electric transport options study in Jordan, which was conducted by the World Bank.
- Preparing periodic follow-up reports on the projects of the energy sector strategic plan (2020–2030).
- Issuing all statistical indicators related to the energy sector.

11.2 Energy Sector Planning / Crisis Management Division:

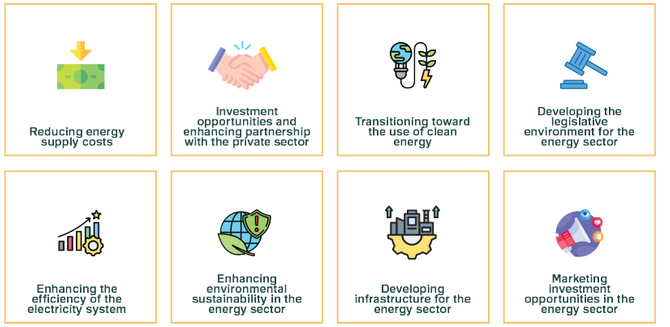
- Following up on updating emergency plans for sector institutions in partnership with the Energy and Minerals Regulatory Commission.
- Participating in the preparation of the coordinated national plan to address a crisis of shortages in oil derivatives and natural gas in cooperation with the National Center for Security and Crisis Management.
- Participating in the preparation and updating of the coordinated national plan to address earthquakes with the National Center for Security and Crisis Management.
- Participating in the comprehensive national drills organized by the National Center for Security and Crisis Management.
- Monitoring vital energy sector institutions to ensure their security and operational continuity.
- Participating in drafting the framework law for dealing with hazardous materials in collaboration with the Ministry of Interior.
- Initiating a regional project to reduce climate change risks that may affect energy sector facilities and forming a national team that includes members from key energy sector institutions to analyze risks resulting from climate change.
- Following up on identifying and analyzing strategic risks threatening the energy sector.

11.3 Institutional Planning

- Preparing the ministry's strategic plan, including formulating objectives at all levels and their associated performance indicators.
- Preparing and evaluating the operational plans for organizational units through the system for monitoring and evaluating the strategic plan.
- Working on issuing quarterly reports on the evaluation of operational plans in collaboration with organizational units through the change team.
- Monitoring the progress of implementing the Economic Modernization Vision initiatives in the energy sector.
- Preparing the second edition of the evaluation report for actions to enhance core values for the years 2022–2024.

11.4 Monitoring the Economic Modernization Vision / Energy Sector

Key initiatives for the energy sector



Key initiatives for the mineral resources sector

11.5 Managing Partner Relations

1

Preparing the 2023 partner satisfaction survey, with a satisfaction rate of %87.8 compared to %87.7 in 2022.

2

The number of partnership committees and councils with the public and private sectors and universities in the fields of energy and mineral resources reached four committees.

11.6 Managing Customer Relations

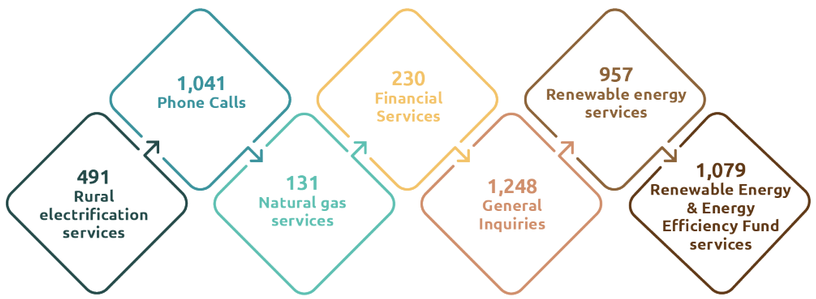
1

Issuing the updated service guide for 2023 and updating service cards.

1

Preparing the customer satisfaction survey, with a satisfaction rate of %93.2 for 2023 compared to %92.8 in 2022.

The number of customers served by the Customer Happiness Office reached 5,177, according to the following classification:

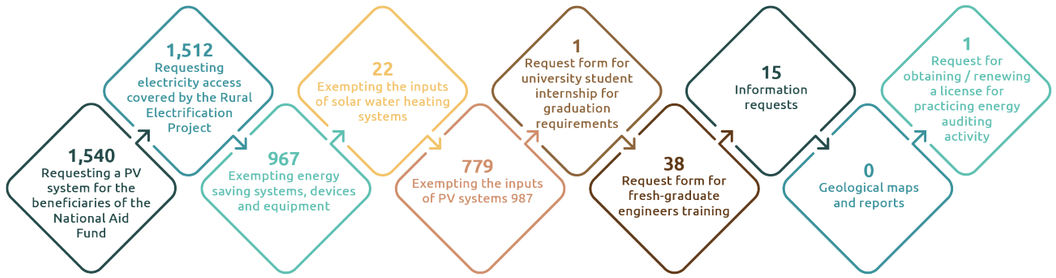


In 2023, the Ministry of Energy and Mineral Resources received the ISO 9001:2015 certification in the field of preparing and developing suitable policies and legislation to achieve sustainable energy security and optimal utilization of natural resources, according to best global practices. This certification was awarded by SGS Jordan. It is significant in supporting the ministry's work, ensuring it is based on a documented and consistent procedural system, which enhances clarity, sustainability in operations, cost reduction, and strengthens the trust of partners and customers, ultimately ensuring the satisfaction of service recipients.

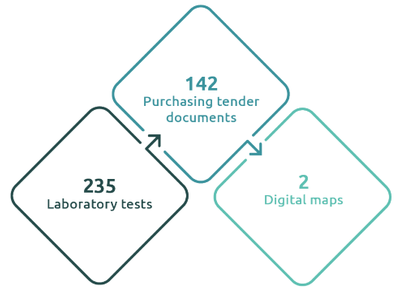
This achievement resulted from the support of the senior management, as well as the efforts of the ministry's internal audit team and SGS team. Their efforts during the preparation phase and their observations enabled the ministry to take corrective actions in line with best practices, especially since the ministry is responsible for comprehensive sector planning, setting public policies, and ensuring their implementation to achieve the overall goals of the energy sector in Jordan.

11.7 Electronic Services

Free of charge Services



Charged services



11.8 In the Field of Knowledge and Innovation Management

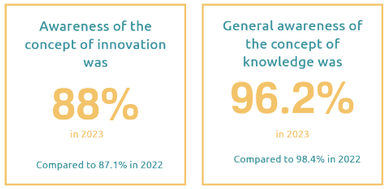
- Implementation of a specialized internal training program titled «Innovative Manager»: This program involved the participation of 15 ministry employees, supported by the Jordan-German Energy Partnership Project. Participants were divided into three innovation teams working on three projects to find innovative solutions to challenges facing the ministry. The average return rate from the training program was %89.9 in 2023.
- Employee satisfaction survey regarding lectures in 2023: A total of 12 awareness lectures were held on various topics within the «Monthly Visitor Program» for awareness lectures, resulting in the following indicators:

The average attendance per lecture was	Employee satisfaction with the lectures was	The knowledge impact of the lectures reached
31 Employees	95.7% in 2023	98.4% in 2023
	Compared to 94.6% in 2022	Compared to 97.4% in 2022

- Employee satisfaction survey regarding «Morning Knowledge Emails»:

Total Emails Sent were	Satisfaction with Morning Knowledge Emails was
217 in 2023	91.9% in 2023
compared to 248 in 2022	Compared to 95.8% in 2022

- Knowledge and innovation awareness survey:



- Creation of a database of experts within the ministry: This database aims to document the expertise and skills of long-serving employees to transfer their implicit knowledge to less experienced employees.
- Approval of the 2023 guidelines for the transfer of specialized knowledge in the Ministry of Energy and Mineral Resources.
- Approval of the second edition of the instructions for awarding the Innovation Idea Award at the Ministry of Energy and Mineral Resources for 2023.
- Preparation of the knowledge needs study for process implementers in the ministry for 2023.
- Retrieval of explicit knowledge available to upload onto the ministry's internal knowledge assets system.
- Launch of the first cycle of the Innovation Idea Award for employees in 2022: Projects submitted by four innovation teams were evaluated, and the top three teams were honored in a ceremony hosted by the Minister of Energy. The event was covered by the media and shared on the ministry's social media platforms.

11.9 In the Field of International Cooperation

Memorandums of Understanding and Agreements Signed:

1. Memorandum of Understanding (MoU) between the United States Geological Survey (USGS) and the Ministry of Energy and Mineral Resources in Jordan for scientific and technical cooperation in earth sciences. This MoU was signed in Amman on August ,31 2023.
2. MoU between the Renewable Energy & Energy Efficiency Fund and the 28 COOL UP Sustainable Cooling High-Level Program, funded by the Global Climate Initiative, aimed at setting the terms and conditions for cooperation to accelerate sustainable cooling in Jordan.
3. Renewal of the MoU with the Prince Hussein Bin Abdullah II Academy for Civil Protection/Public Security, signed on March 2023 ,27.
4. MoU between the Ministry of Energy and Mineral Resources and Masdar, UAE, proposing the signing of a joint development agreement for the establishment of wind energy projects with a capacity of 1,000 MW. The MoU was signed in Jordan on December 2023 ,25.
5. MoU regarding feasibility studies for the green hydrogen project in Jordan between the Ministry of Energy and Mineral Resources, Amaraenoo Invest in RE.Generation, and Global Energy H2 from the UAE. The MoU was signed in Jordan on November ,13 2023.

Monitoring the Work of Joint High-Level Committees

- The 29th session of the Jordan-Iraq Joint Committee, held in Baghdad.
- The 9th session of the Jordan-Algeria Joint High-Level Committee, held in Amman.
- The 9th session of the Jordan-Egypt Joint High-Level Committee, held in Amman.
- The 18th session of the Jordan-Saudi Arabia Joint Committee, held in Riyadh.
- Meetings of the Jordan-UK Subcommittee.

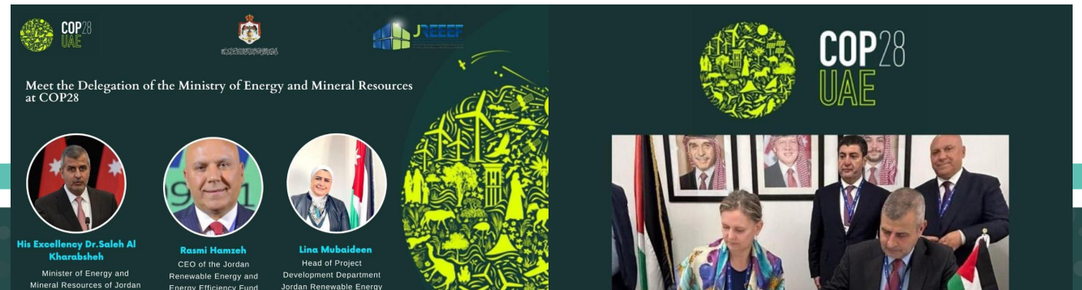
Cooperation with International Organizations

- German Energy Agency
- World Energy Council
- International Energy Charter

COP28 Climate Conference

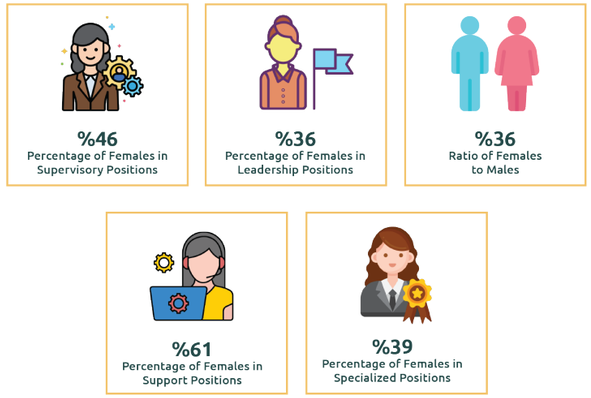
- The Ministry of Energy and Mineral Resources participated in COP28, attending various side meetings and related consultative sessions.
- The ministry signed several cooperation agreements with international entities in the fields of renewable energy and green hydrogen.
- The ministry also participated in various activities and sessions related to renewable energy and energy efficiency, including the launch of the Energy Efficiency in Buildings initiative.

No.	Discussion Points	Event/Meeting	Future Steps
1	Meeting with Saudi ACWA Power	Signing an MoU with ACWA Power to produce green hydrogen in Jordan.	Conduct preliminary feasibility studies for the project aimed at producing 150,000 – 100,000 tons of green ammonia annually.
2	Meeting with Abu Dhabi Future Energy Company «Masdar»	Signing an agreement to develop wind energy projects with 1,000 MW capacity.	Conduct necessary studies for the 1,000 MW wind energy projects and submit a proposal to the Ministry of Energy.
3	Meeting with Abu Dhabi Future Energy Company «Masdar»	Signing an MoU for producing 50,000 tons of green ammonia annually in Jordan.	Prepare feasibility studies for the green hydrogen project.
4	Meeting with Xenel International and KEPCO	Signing an MoU to produce 1 million tons of green ammonia annually.	Prepare preliminary feasibility studies for the green hydrogen project.
5	Meeting with Oscior Energy	Signing an MoU to produce 1 million tons of green ammonia annually, developed in phases.	Conduct feasibility studies for the project, starting with 100,000 tons annually, increasing to 1 million tons by 2030.
6	Meeting with Catalyst Investment Management	Signing an MoU for wind energy projects with 1,000 MW capacity.	Conduct studies for the 1,000 MW wind energy projects and submit a proposal to the Ministry of Energy.
7	Meeting with Italian Ministry of Environment and Energy Security	MoU to finance renewable energy projects through a 17€ million fund over the next four years.	Utilize the fund for renewable energy projects, continuing from a previous €4.2 million project for solar systems in 100 municipalities.
8	Meeting with the Canadian Commercial Corporation (CCC)	Signing a letter of intent for energy efficiency projects in government buildings.	Implement energy-saving projects using the ESCO model to sustain the energy services market and create new job opportunities.
9	Meeting with Guidehouse International – Germany (Energy Efficiency Program)	Signing an MoU for joint project proposals related to heating and cooling in buildings to meet NEEAP indicators.	Collaborate on joint projects to achieve NEEAP's energy efficiency targets and support Jordan's international emission reduction commitments.
10	Participation in a high-level workshop organized by the Renewable Energy Fund	Discussion on energy transition policies and financing in the MENA region, using Jordan as a model.	Explore regional cooperation opportunities in the energy transition process.
11	Participation in the "Future Energy Dialogue between MENA and Europe"	Emphasis on building future energy cooperation between MENA and Europe, following the success of the 2022 Future Energy Dialogue in Jordan.	Deepen future energy cooperation between MENA and Europe and participate in the upcoming conference in Thessaloniki, Greece in September next year.



11.10 Encouraging women's participation in the energy sector

During 2023, the distribution of ministry employees by gender was as follows:



Percentage of females in the Renewable Energy and Energy Efficiency Fund projects

Sector	Project	Total Number	Number of Females	"% of Females"
Residential Sector	Installation of water heaters for households: Number of households that have had water heaters installed	24800	4144	17%
	Installation of LED bulbs for households: Number of households that are replacing LED bulbs.	28119	3372	12%
	Installation of photovoltaic energy for households: Number of households that have had photovoltaic systems installed."	4691	236	5%
Public And Government Buildings	Installation of photovoltaic systems for schools: Number of students and staff in the schools.	70426	41000	58%
	"Installation of photovoltaic systems for public institutions: Number of beneficiaries from the institution classified by gender."	40341	22632	56%
Agricultural Sector	"Installation of photovoltaic systems for farms: Number of farm owners classified by gender."	164	10	6%
Training Programs	Number of trainees classified by gender.	1636	736.2	45%
	Total	170177	72130.2	42%

	Percentage of Women
Attendance at Lectures	72.32%
Database of Experts	60.90%
Percentage of Funds Spent From The Training Budget	55%

Project	Number of Beneficiary Households	Number of Male	Number of Females	Percentage of Females
Project for the installation of grid-connected solar cell systems for beneficiaries of the National Aid Fund and underprivileged households with a capacity of 2 kilowatts peak – Phase Four	800	440	360	45%

Activities and Initiatives Directed at Female Employees of the Ministry

- International Women's Day Celebration on March 8:
- Female employees were assigned to carry out supervisory duties in all directorates and organizational units of the ministry on behalf of their esteemed colleagues, honoring the role of women and motivating their valued peers.
- Providing Female Colleagues with an Interactive Day to Celebrate Women's Day and Mother's Day:** This included a collective iftar celebration with participation from a group of female employees from various organizational units (20 employees).
- Participation in the National Breast Cancer Awareness Campaign:** Organized by the King Hussein Cancer Center, this included participating in October (Pink Month) events, holding an awareness lecture on the subject, and providing clinical examinations for this purpose, with 26 female employees participating in the event.
- The participation rate of female employees in social responsibility activities and initiatives reached %90.*

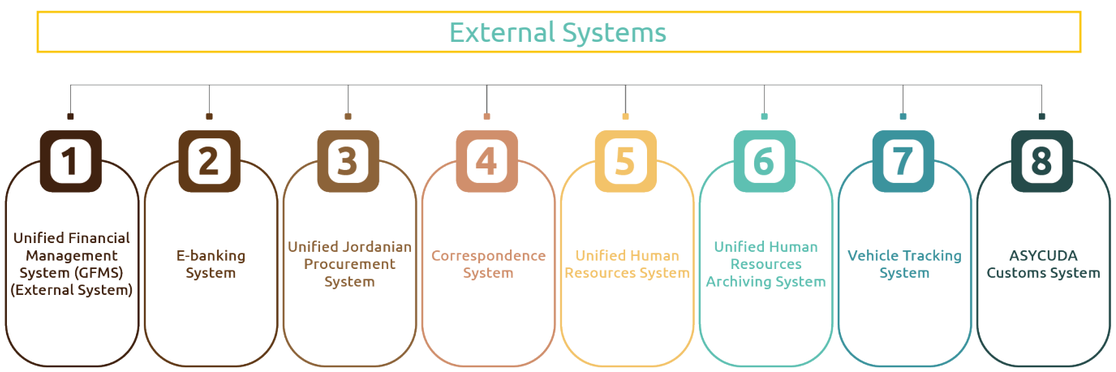
Training Programs, Workshops, Conferences, and Forums (Both External and Internal) Directed at Female Employees During 2023.

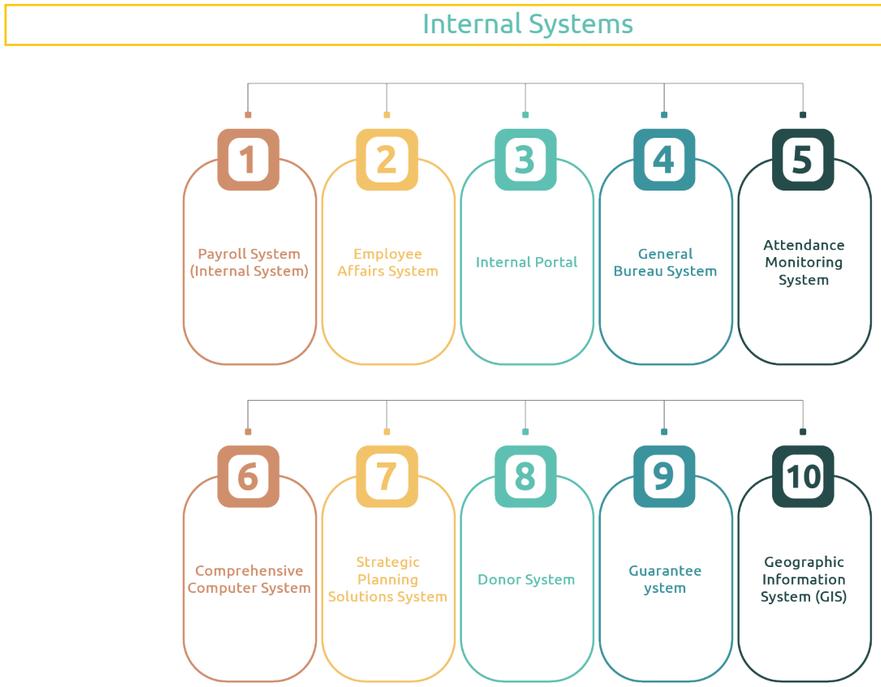
1. Workshop on Gender Integration Methodology in the Energy Sector / ESSA
2. Course on International and Regional Human Rights Standards / National Center for Human Rights
3. Awareness Course on Drug Control / Public Security Directorate – Drug Control
4. Women in the Energy Sector Conference / GIZ
5. Third Women and Climate Forum / Friedrich Ebert Foundation
6. Legislative Drafting Guides and Gender-Sensitive Drafting / Legislation and Opinion Bureau.

12. Electronic Readiness

- Providing %94.9 of employees with modern computers and ensuring %100 of these devices are equipped with internet and email services.
- Providing antivirus protection systems on all computers at a rate of %100.
- The employee satisfaction rate for electronic readiness in 2023 was %95.

Number of electronic systems: 24 electronic systems as follows:





External Websites

External Ministry Website

External Website of the Renewable Energy and Energy Efficiency Fund

Platforms

Investment Platform

Exemption Services Platform

Electronic Services Portal

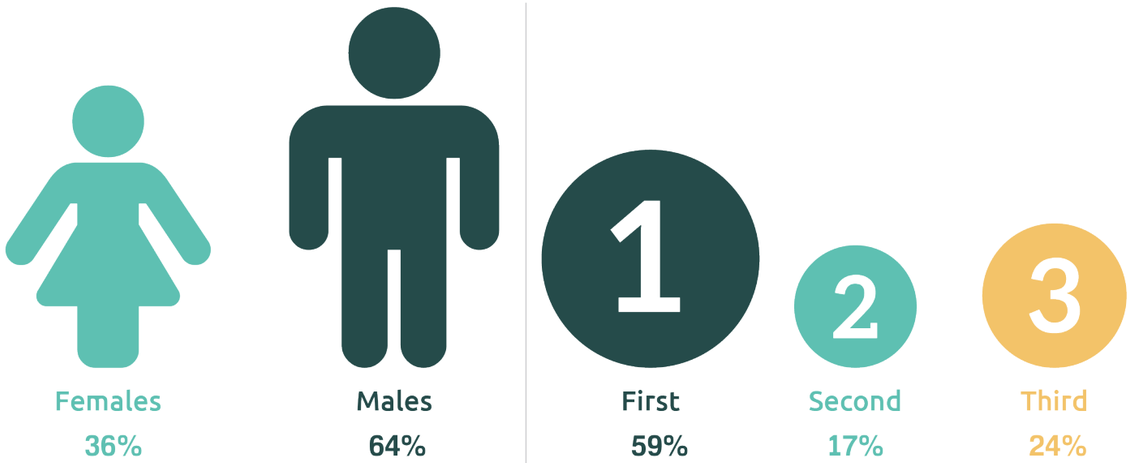
Solar Energy Support Platform for Homes

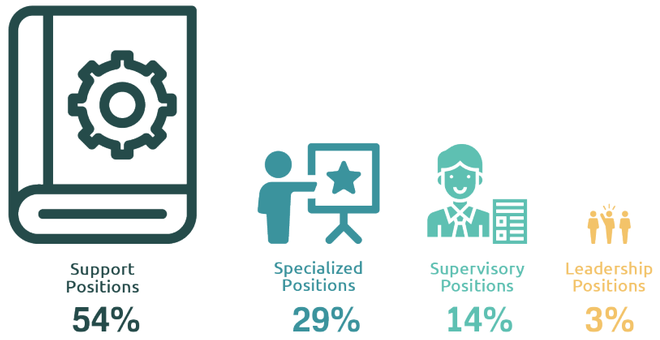
13. Human Resources Working in the Ministry

13.1 Manpower & Competencies

By the end of 2023, the number of employees in the ministry reached 392, distributed as follows:

The employee happiness rate for the year 2023 reached %90.3, compared to %89.6 for the year 2022.





The employee happiness rate for the year 2023 reached %90.3, compared to %89.6 for the year 2022.

13.2 Training and Development

A total of 170 training programs were implemented during the training plan for 2023, achieving an approximate completion rate of %90.5	Training was provided for 19 newly graduated engineers under an agreement signed with the Jordanian Engineers Association for one year.	Training was conducted for 45 geologists through the Jordanian Geologists Association.	Training was offered for 45 university graduates (from various disciplines relevant to the ministry's work) within the ministry's directorates.	Training was provided for 22 interns (unpaid) from diverse fields aligned with the ministry's work to gain experience.

The Renewable Energy and Energy Efficiency Fund offers training programs funded in collaboration with several local and international entities in the fields of renewable energy and energy efficiency improvement. The beneficiaries of these programs include:

- Employees of the Renewable Energy and Energy Efficiency Fund
- Employees from the public and private sectors, as well as from electricity distribution companies
- Employees within facilities that benefited from the programs and projects provided by the fund.

A total of 2,043 trainees have benefited from these programs since the program's inception until the end of 2023, including 408 trainees during the year 2023.

13.3 Media, Communication, and Awareness Raising

Developing a media strategy for the Ministry of Energy and Mineral Resources for the years 2024-2023, which includes key areas focusing on highlighting the ministry's identity, marketing it, and documenting relationships with stakeholders through approved channels and activities carried out by the ministry during 2023.

1. Publishing all news covering the ministry's achievements and daily activities.
2. Designing and disseminating 11 awareness messages regarding energy consumption efficiency in the household sector.
3. Responding to inquiries from journalists and media professionals regarding the energy sector.
4. Producing awareness videos about the mineral resources sector to highlight the importance of mineral materials and their investment value.

The ministry has four accounts on social media platforms, which are:

MEMRJORDAN

MEMR1GOV

Ministry of Energy and Mineral Resources-Jordan

MEMR1GOV

13.4 Government Complaints Management System (Your Service)

The ministry handled 1,415 requests through the «Your Service» platform, achieving a %100 response rate as follows:

1,149	325	31	9	0
Complaints	Ask The Government	Suggestions	Praises	Reports

The ministry achieved a %78 satisfaction rate among users of the «Your Service» platform.

13.5 Information Access Requests System

Responded to 20 information requests electronically, distributed as follows:

1	3	16
Request from Institutions	Requests from Females	Requests from Males

%100	%100	%99.6	1 يوم
Response Rate for Requests	Acceptance rate of requests by the Ministry	Satisfaction Rate for the Service	Average Response Time for Requests

Updated 59 questions under the frequently asked questions section published on the ministry's website by the Information Requests Follow-up Committee, including 17 questions of which 5 were new.

The Information Requests Follow-up Committee organized the following training activities:

Celebrating Information Access Rights Week coinciding with International Right to Know Day, during which:

- Awareness messages regarding the right to information were disseminated via email to employees
- Informative brochures about the right to information were distributed to ministry employees and several surrounding official institutions and ministries
- The units most frequently asked questions and the quickest to respond were honored, along with committee members by the .esteemed Secretary-General

Training Focus

1. External Training:

- The information officer participated in eight (8) training programs for government institutions.

2. Internal Training:

- Conducted internal training programs targeting 44 employees.
- Held 3 specialized training workshops for employees of the Ministry of Energy and Mineral Resources.

14 Awareness Lectures for Teachers and Government Institutions

14.1 Raising Awareness on Energy Consumption Efficiency

Awareness lectures are delivered by Engineer Arwa Abokashef from the Renewable Energy Directorate at the ministry. These lectures are conducted interactively with students to raise awareness among school students and government employees about energy consumption efficiency and related environmental practices, connecting these topics to the reality of global warming and the sources of renewable energy in the Kingdom.

During the year 2023, lectures were provided to schools with a total of 258 students in the following public and private schools:

- Shajarah Al-Durr Basic School for Girls / Qweismeh
- Jubilee Institute and School / King Hussein Foundation
- Yarmouk Secondary School for Girls / Amman District
- Ktam Secondary School for Girls, Al-Husn Vocational School for Girls, Al-Sarih Basic School for Girls, and Ammar Bin Yasir School for Boys in Bani Obaid District
- Samiya International Private School in Suweileh.

In October 2023, a lecture on energy efficiency was delivered at the General Administration of the Jordanian Free and Development Zones. The lecture included principles of energy conservation in the workplace and at home, methods to reduce electricity consumption, and an overview of the support programs offered by the ministry through the Renewable Energy and Energy Efficiency Fund.

14.2 Awareness of Earthquakes and Their Risks, and How to Respond

- Efforts were made to receive several schools at the Jordanian Seismological Observatory to raise awareness about earthquakes, their risks, and how to respond to them. Students were informed about the seismic situation in Jordan and historical earthquakes.
- Graduate students were trained on programs for monitoring and analyzing earthquakes, providing them with seismic information relevant to their research to complete their study requirements. Additionally, several visits from universities with related specializations were hosted to observe the mechanisms for monitoring earthquakes and analyzing them, as well as the studies conducted by the observatory.

The 2023 Energy Sector in Numbers

855 ktoe
Average Individual Energy Consumption

1,951 Kwh / Person
Average Individual Electricity Consumption

2,357 Million Dinars
Cost of Imported Energy

214 Kwh / $1000
Energy Intensity for 2021 (at constant exchange rates, with 2016 as the base year)

9,856 ktoe
Energy Intensity for 2021 (at constant exchange rates, with 2016 as the base year)

12.62%
Contribution of Oil Shale to Electricity Generation

61.1%
Contribution of Natural Gas to Electricity Generation

26.28%
Contribution of Renewable Energy to Electricity Generation

39.5%
Contribution of Local Sources to Electricity Generation.

99.9%
Rate of Electricity Supply Security

100%
Rate of Security in Supply of Crude Oil and Petroleum Derivatives

4
Number of Natural Gas Supply Sources

1,183 MW
Capacity of Renewable Energy Projects Owned by Subscribers Using Net Metering

1,498 MW
Capacity of Projects Selling Generated Electricity to Power Companies

2,681 MW
Total Installed Capacity of Renewable Energy Projects

67
Number of Days of Adequacy of Diesel Stock

76
Number of Days of Adequacy of 95-Octane Gasoline Stock

58
Number of Days of Adequacy of 95-Octane Gasoline Stock

30
Number of Days of Adequacy of Liquefied Petroleum Gas (LPG) Stock

45
Number of Days of Crude Oil Stock Adequacy.

32 Million cubic feet
Production Capacity of the Risha Gas Field

200 Barrels
Daily Production in Hamza Field

3.814 Million Barrels
Quantity of Iraqi Oil Supplied to the Hashemite Kingdom of Jordan

9.207 Million Barrels of Oil
Quantity of Crude Oil Imported through Aqaba Port

315 Million cubic feet (MMcf)
Average Daily Consumption of Natural Gas from Available Sources

20.7 yearly GWh
Production Capacity of Solar Arrays Implemented through the Fund in 2023

6.6 GWh/year Gigawatt-hour per year
Expected Reduction in Final Energy Consumption Resulting from the Fund's Energy Efficiency Projects in 2023

481,600
Number of Citizens Benefiting from Energy Efficiency and Renewable Energy Programs and Projects in 2023

800
Number of 2 kW Solar Energy Systems Installed for Low-Income Families Benefiting from National Aid (Phase III)

26.32 Million cubic feet
Daily Average Consumption of Natural Gas in Industries

13.3 MW
Capacity of Photovoltaic Systems Installed through the Fund's Programs in 2023

3,639
Number of Homes That Benefited from the Energy Fund's Support and Installed Solar Water Heating Systems

3,206
Number of Homes That Benefited from the Energy Fund's Support and Installed Solar Panel Systems

3 Million Dinars per year
Expected Savings in Total Energy Bills Resulting from the Fund's Projects in 2023

12,560 tons of carbon dioxide per year
Expected Reduction in Carbon Dioxide Emissions Resulting from the Fund's Projects in 2023

2,055
Number of Sites Approved for Implementation Funded by the Rural Fils

100
Cumulative Number of Industrial Facilities That Participated in the Energy Efficiency Program for Factories Through the Fund Since the Program's Inception Until the End of 2023

602
Number of Farms That Installed Solar Panel Systems Through the Fund in Phase One (Since the Program's Inception Until the End of 2023

183
Number of Farms That Installed Solar Panel Systems Through the Fund in Phase One (Since the Program's Inception Until the End of 2023

19
Number of Energy Audit Studies Prepared Through the Fund's Programs in 2023

24
Number of Electronic Systems in the Ministry

5
Number of Automated Electronic Payment Services

2,938
Number of Chemical and Mineral Analyses and Tests

99.6%
Satisfaction Rate of Information Request Service Recipients

1,126
Number of Earthquakes That Were Recorded

95%
Budget Performance Rate (Current Expenditures)

93.2%
Satisfaction Rate of Service Recipients

%87.8
Satisfaction Rate of Partners

15
Number of Employees from the Ministry Who Received Specialized Training (Innovative Administrative Training)

20
Number of Information Requests

82%
Budget Performance Rate (Capital Expenditures)

Special Indicators in Numbers

Imports of Crude Oil and Oil Derivatives during the Period (2019-2023) -Thousand tons-

Year	Crude oil	Liquefied gas	Diesel	Gasoline	Aviation fuel	Kerosene
2019	2321	432	963	977	305	-
2020	2074	409	910	773	0	4.8
2021	1757	377	914	899	16	23
2022	1805	475	1098	911	74	31
2023	1776	474	1002	893	41	22

The development of consumption of oil derivatives during the period (2019-2023) -Thousand tons-

Oil derivatives / Year	Liquefied gas	Petrol	Aviation fuel	Kerosene	Diesel	Fuel oil	Flux oil
2019	478	1411	462	95	1482	132	176
2020	463	1139	137	83	1313	145	135
2021	438	1342	211	77	1365	176	96
2022	480	1365	215	69	1596	189	90
2023	497	1320	265	98	1495	174	124

The local production of crude oil and gas during the period 2019-2023

year	Oil production -barrels	Gas production -billion cubic feet
2019	0	3.5
2020	9714	5.3
2021	107880	6.51
2022	94675	5.38
2023	43988	6.131

The development of electricity production and the maximum load on the electrical system during the period (2019-2023)

Year	Maximum load MW	Generated Electrical Energy GWh
2019	3380	20995.8
2020	3630	20952.8
2021	3770	22134
2022	4010	22545.7
2023	4240	24182

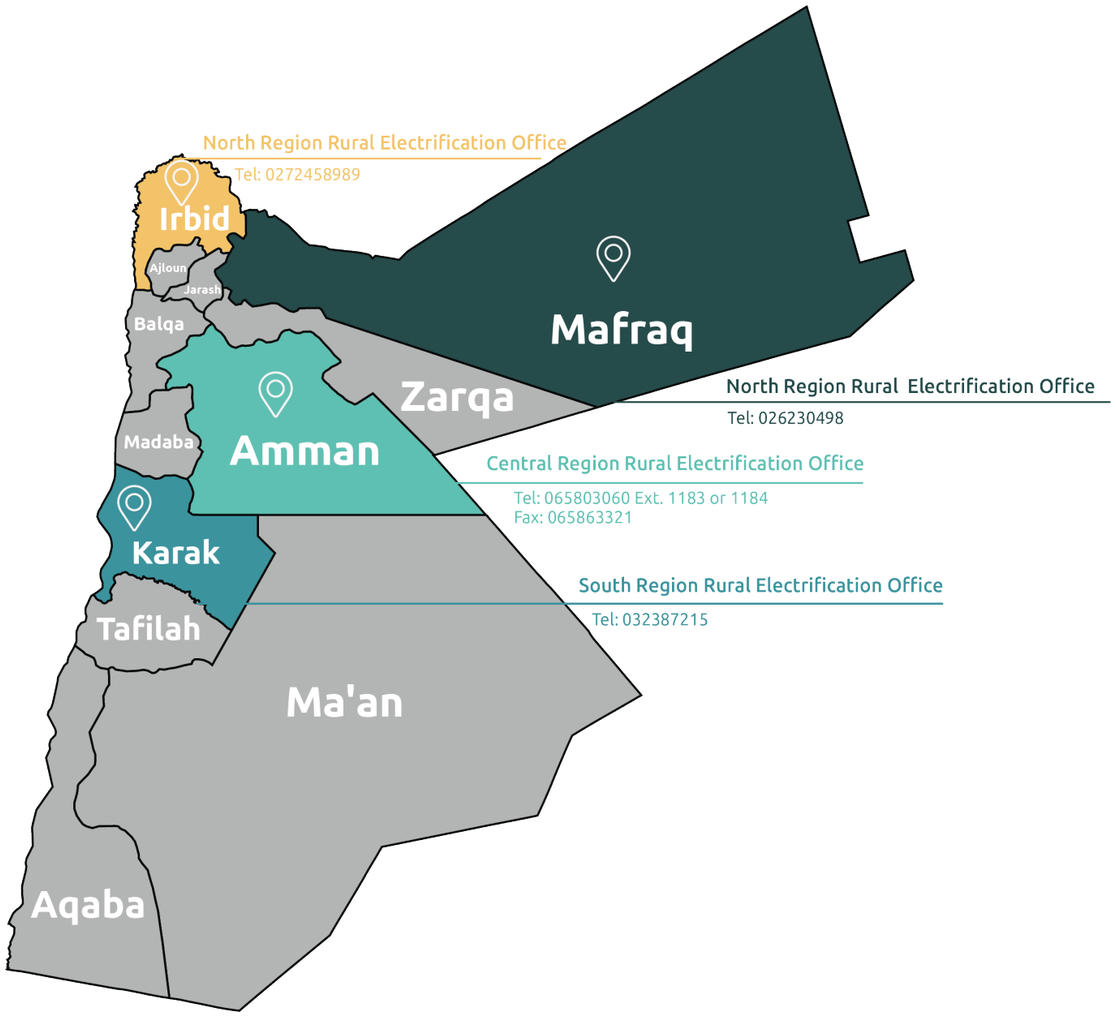
The percentage of sectoral consumption of electricity during the period (2019-2023)

Sector / Year	Residential and public buildings %	Industrial %	Commercial and hospitality %	Agricultural water pumping %	Street lighting %	Total %
2019	46	20	16	15	3	100
2020	49	19	14	16	2	100
2021	48	21	15	14	2	100
2022	48	21	15	14	2	100
2023	46	22	17	13	2	100

Financial data for the Ministry of Energy and Mineral Resources in 2023

Description	Allocation Dinars	Expenditure Dinars	Percentage expenditure %
Current expenditures No reduction	6485000	6143738	95%
Capital expenditures After reducing the amount of (5,741,000) Dinar	25745000	21155344	82%
Total for current and capital expenditures after the reduction	32230000	27299082	85%

Service Delivery Centers of The Ministry of Energy and Mineral Resources



Services of the Ministry of Energy and Mineral Resources for the year 2023

The services for connecting electricity at the expense of the "Fils Al-Reef" fund aim to provide electricity to areas without access to electricity, whether within regulated zones (municipal planning boundaries) or outside (rural and remote areas)

1. Electricity Connection Services for Approved Sectors (Inside/Outside Regulation) at the Expense of the Rural Fils:
2. Connecting electricity from existing networks to beneficiaries according to the approved bases at the expense of the rural fils (inside/outside regulation).
3. Installing solar energy systems for beneficiaries of the National Aid Fund and needy families at the expense of the rural fils.
4. Connecting electricity to individual homes located outside the boundaries of regulation using solar energy systems not connected to the grid at the expense of the rural fils

University student training service

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

Renewable energy services

1. Requesting laboratory examinations

Renewable Energy Services

1. Request for approval to exempt inputs for solar energy electric production systems
2. Request for approval to exempt systems, devices, and equipment for energy consumption rationalization
3. Granting approval to exempt inputs for solar water heating systems

Services for providing geological information and maps

1. Request for information on oil, mineral resources, and data from the oil archive
2. Providing geological maps and reports
3. Purchasing digital maps

Services to encourage renewable energy and its rational use

1. Granting a license to practice energy auditing
2. Renewing the energy auditing license
3. Renewing the energy auditing license
4. Providing energy auditing services for small and medium-sized industries and implementing the study outputs
5. Providing energy auditing services for hotels

Service for requesting information on energy and mineral resources

1. Request for information on energy and mineral resources

Seismological Information & Studies Services

1. Seismological information and studies

Geological Studies & Surveys Services

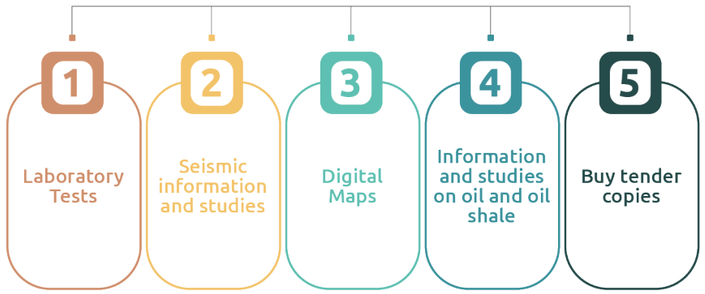
1. Geological surveys
2. Geophysical studies
3. Petrographic studies

Natural Gas Services

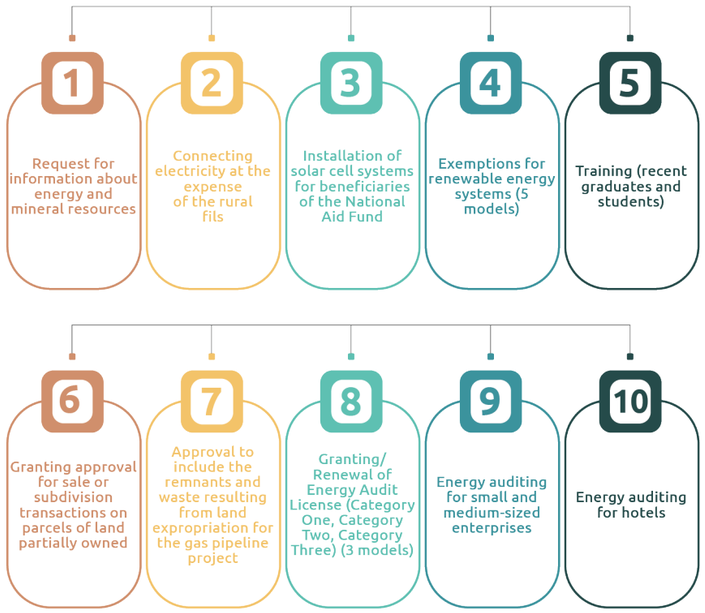
1. Request for approval of licenses for facilities on land plots that intersect or are within the boundaries of the natural gas pipeline
2. Granting approval for sales or division transactions on land plots that have been partially expropriated for the natural gas pipeline project

Electronic services gate for the Ministry of Energy and Mineral Resources

Electronic Payment Services



Free Electronic Services



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