Karachaganak

"THE ENDURING BENEFITS OF KARACHAGANAK"

KPO Sustainability Report 2018

CONTENTS

INTRODUCTION

This is the eleventh sustainability report issued annually by Karachaganak Petroleum Operating B.V. Kazakhstan Branch (KPO). The Report outlines our 2018 performance through the prism of three pillars of sustainable development: environmental, social and economic. Furthermore, here we disclose our management approach and examples of stakeholder engagement in a variety of forms including innovative partnerships, social and environmental initiatives and projects.

Our Achievements in 2018

10,953 kt
Stabilized liquid hydrocarbons produced

99.94%
Gas utilisation

60%
Local Content share in purchases

Local Content in staff:

95% professional and supervised workers

77% management

0.29
Lost Time Incident rate

0.50
Total Recordable Incident rate

0.03
Road Traffic Incident rate

Fig.№ 1. ACHIEVEMENT OF SDG THROUGH PRINCIPLES DEVELOPED IN SUSTAINABLE DEVELOPMENT CHARTER

ABOUT THIS REPORT

Our commitment to sustainable development

KPO's mission is to develop the Karachaganak field in an environmentally and economically sound manner while simultaneously increasing the socio-economic development opportunities for local communities. To support the achievement of our mission, we are embedding sustainable development thinking into the way we do business. This means that in all our activities we shall:

- look to minimise impacts and maximise opportunities linked with its presence;
- consider the consequences of our decisions in the long-term;
- engage our stakeholders in a constructive dialogue;
- incorporate strong governance and transparency.

KPO demonstrates commitment to 10 principles of sustainable development that have been identified to suit our aspirations and align with 15 Sustainable Development Goals of the United Nations.

"We are committed to the principles of sustainable development as set in our Sustainable Development Charter. These principles meet the widely acknowledged definition of Sustainable Development "development that meets the needs of the present without compromising the ability of future generations to meet their needs".

Report scope and boundaries

GRI 103-1, 102-1, 102-50, 102-51, 102-52

The boundaries of the KPO Sustainability Report relate to all Company operations in the area of the Karachaganak Oil & Gas Condensate Field and export pipeline systems to Orenburg (KOTS) and Atyrau (KATS).

The Sustainability Report is for the 2018 calendar year. This report represents an overview of our performance for 2018 and plans for the following year. The data disclosed in the Report is presented in comparison with previous years to showcase our sustainability commitments. The document traditionally describes both achievements and issues. Our material topics are reflected in the Contents of the Report and listed in the relevant chapter. For each presented material topic, we have prepared an overview of our approach and progress across the reporting period.

Our Sustainability Report for 2017 was issued in September 2018. All our previous sustainability reports are available on our website www.kpo.kz/sustainability, the GRI website www.globalreporting.org and at the Corporate Register web database, one of the largest global online directories for corporate responsibility reports (www.corporateregister.com).

Karachaganak Oil & Gas Condensate Field is operated by the Kazakhstani Branch of the Karachaganak Petroleum Operating B.V. (KPO), which was incorporated in the Netherlands in 1998 on behalf of its shareholders. Currently the international consortium comprises of Shell, Eni, Chevron, Lukoil and KazMunayGas. KPO acts in accordance with the Final Production Sharing Agreement (FPSA) signed between the shareholders and the Government of the Republic of Kazakhstan.

Funding for the Branch is provided by the shareholders, and all capital assets constructed or purchased by KPO are not depreciated, depleted or amortized given the retained right to use the assets by the shareholders as per the FPSA. The FPSA does not foresee capitalisation in terms of debt and equity. Accordingly, no turnover and results are recorded in the financial statements of KPO. Revenues from the KPO activities are shared between the Government of the Republic of Kazakhstan and the shareholders, who report about their financial accounts, including revenues, net sales, capitalisation, etc. in their own financial reports. **GRI** 102-7

Global Reporting Initiative **GRI** 102-54

This Report has been prepared in accordance with the GRI Standards: Core option. We also apply some of the GRI G4 Oil & Gas Sector Disclosures in the Report. In the period from 2013 through 2016, KPO reports were issued in accordance with the fourth Guideline of the Global Reporting Initiative (GRI G4). Earlier publications were made in line with the GRI Guidelines 3. It is worth noting that KPO was one of the first companies in Qazaqstan to have applied the requirements of the GRI Guidelines G4.

When preparing the input materials, we worked to ensure the report corresponds to the level of transparency and quality required by the GRI Standards.

Assurance of disclosed information **GRI** 102-56

This Sustainability Report is approved by the KPO Director's Committee and reviewed by the Sustainability Sub-Committee.

KPO has applied to the GRI Organisation for the review of the GRI Content Index, for which GRI Services reviewed that the GRI content index is clearly presented and the references for all disclosures included align with the appropriate sections in the body of the report.

LETTER FROM GENERAL DIRECTOR GRI 102-14

Dear Readers,

It is my pleasure to present to you the 11th issue of the Sustainability Report of the Karachaganak Petroleum Operating B.V. Kazakhstan Branch. This Report reflects our 2018 performance in operational, social, environmental and economic areas across the topics material to us. GRI 102-15

The year 2018 was both exciting and challenging for our company. Exciting because of our business performance as well as investments sanctioned for the construction of a number of large projects to extend our production plateau. Challenging because one of our contractor colleagues lost his life in a fatal road traffic accident. We will learn from this and relentlessly implement the necessary improvements.

The analysis of the Karachaganak reservoir's dynamics in its long-term operations showed the change of oil-gas ratio and increasing water content in the producing horizons. These changes lead to decline in wells productivity and overall production performance. In the next few years, KPO will progress on a number of development projects and activities in order to solve this and maintain stable operations. Some of the projects, like Karachaganak Gas Debottlenecking Project and Karachaganak Expansion Project 1, are ongoing with objectives to build new facilities designed to reduce risks to personnel, the environment and the assets.

Among the key achievements in 2018, I'd like to mark our production that reached 147.5 mln BOE, quite high considering our shutdown activities. Five wells were brought into production, with effective well clean-up activities resulting in significant reduction in GHG emissions: up to 307 kt of CO_2-equivalent.

KPO environmental performance in 2018 has remained at the world class level, including gas flaring of 0.06% out of the total volume of produced gas, and the specific indicator of CO_2 emissions totalling 69 tonnes per thousand tonnes of hydrocarbons production. Apart from multiple environmental initiatives and projects, we will continue the activities initiated under the Uralsk Green Forum, our established platform for broader communication with stakeholders to deal with challenges in this area.

In the years of 2019-2021, we will work on the Infrastructure Consolidation project related to transition from Aksai to Uralsk, which will eventually have an impact on the ways of work across the company in terms of quality.

In detail, our performance in sustainability areas is presented in the Executive Summary and relevant chapters of this Report.

In the long run, to continue developing the Karachaganak Field in an environmentally and economically sound manner, we need to remain competitive in the O&G industry by evolving long-term relationships and communication with our neighbours, the authorities and other key stakeholders. As new projects develop, KPO will provide new opportunities for professional partnerships and socio-economic development.

As a responsible operator, KPO will continue working diligently towards the provision of a safe and fulfilling workplace for the employees, support of the local communities and protection of the environment. All of us in KPO are committed to contribute to this. GRI 102-14

Edwin Blom
KPO General Director

EXECUTIVE SUMMARY GRI 102-15

KPO sustainability report provides the disclosures on the Venture's sustainable development aspects and its main achievements in environmental, economic and social areas. We report on the issues that matter most to our business and our stakeholders and can be seen from the Contents of this report. GRI 103-1

During the past year 2018, KPO commenced construction of a number of large scale projects in order to extend our production plateau. It was a challenging year in terms of safety. We are implementing what is necessary to adapt to the changing demands and to continuously drive improvements and transparent reporting. Protection of health, safety and the environment in the areas of our operations will always be our top priority.

In late 2018, second time in a row, the KPO Sustainability Report 2017 was awarded with the 1st place in the VIII Contest of Annual reports in the category 'Best Disclosure of Sustainability Information'. The contest of annual reports aims to promote Kazakh companies and enhance national reporting. It is conducted by a specialized rating agency RAEX supported by the Qazaqstan Stock Exchange. We also became a finalist in the Asian Sustainability Reporting Awards (ASRA) 2018 in the nominations 'Best Environmental Reporting' and 'Best Workplace Reporting'. We hope the participation in the Asian contest will help us further raise the bar in sustainability reporting.

Health and Safety performance

Health and safety performance is delivered by everyone at KPO, including our contractors. We work towards no harm to anyone and no leaks from our facilities.

Our HSE Management System is independently audited to international standards, and we report health and safety statistics that are consistent with international best practice established by IOGP.

In 2018, KPO had 14 recordable incidents, one of which was a road traffic fatality. The lost time injury (LTI) rate in KPO and its contractor companies increased from 0.08 in 2017 to 0.29 in 2018. The total recordable injury (TRI) rate reached 0.50 compared to 0.11 in 2017. The rate of high potential incidents made 0.25. Our Road Traffic Incident rate (RTI) decreased from 0.05 in 2017 to 0.03, with one RTI in 2018 versus two in 2017. One of KPO's priorities is to focus on transparent reporting. Only when we learn from the smaller events, we can avoid the events with a bigger impact.

In the middle of the year, KPO commenced a train service for personnel between Aksai and Uralsk to try to ensure safer way of transportation.

Our business is the production, processing and transportation of hydrocarbons. Our reservoir contains highly toxic sour gas H_2S. We have a systematic approach to maintaining the safety of our processes and assuring the integrity of our assets by applying multiple barriers, and ensuring plant, procedures and people work together.

KPO recognizes that the oil and gas industry presents some inherent health hazards in its operations and products. Despite the chemical, physical, biological and psychosocial challenges of our remote and complex field, our health performance remains strong with no recorded occupational illnesses in 2018. Our efforts in the past year covered not only health protection, but also enhancement of human performance. KPO's Resilience programme has been successful in enhancing our people's ability to bounce back from difficult circumstances, whilst our Care for People programme helps people perform at their best because they feel valued, respected and cared for.

Operations, sales and development projects

In the past year, we continued our programme of drilling wells and hooking them up to our production facilities with a focus on production optimisation. Three new wells were successfully drilled, and two old wells were given a new life upon side-tracking and completion as horizontal producers. We had two new records in drilling. One of the side-tracked wells was drilled to the depth of 6700 m, the longest well drilled in the history of KPO. Another record was the fastest rate of penetration (ROP) in 16" x 17-1/2" section with a record net value of 54.81 m/hr achieved with a drilling bit locally made in Qazaqstan. We continuously apply innovations in our drilling processes. One of the wells in 2018 was classified as top quartile as the result of analysis and a new Stinger Bit trial that improved the bottom hole assembly (BHA) stability, and hence bit durability and performance.

GRI 102-15

In 2018, we produced 147.5 mln barrels of oil equivalent (BOE) in the form of stable and unstable liquids and gas. The total sales reached 143.5 mln BOE. Some 95% of liquid production was sold as stabilised oil to the Western markets via the Caspian Pipeline Consortium pipeline, the Atyrau – Samara pipeline and further through the Transneft system. Delivery of raw gas reached 9.5 bln m^3, which was all sold to KazRosGas for processing at the Orenburg Gas Plant.

For maintaining the reservoir pressure and enhancing the liquids recovery rate in 2018 KPO re-injected ~8.6 bln cubic meters of gas into the reservoir, a volume equivalent to about 45.4% of the total gas extracted.

It is worth noting that in 2018 KPO successfully defended the Karachaganak Field Design Project Update to the Central Exploration and Development Committee of the Ministry of Energy of the Republic of Qazaqstan (RoQ). This document, last approved over 18 years ago, would allow KPO and the RoQ to move forward in developing a unique Karachaganak gas-oil-condensate field using advanced technologies with the aim to maximize liquid hydrocarbon production.

Last year maturation of the Plateau Extension projects continued. Final investment decision was taken on the KPC Gas Debottlenecking Project with some civil works completed. The fifth trunk line and gas reinjection wells component of the Unit 2 Gas Injection Upgrade Project has commenced the construction phase and a drilling campaign in late 2018. Stage 1 of the Karachaganak Expansion Project passed the Value Assurance Review 2 and started the Front End Engineering Design.

As of end 2018, the Karachaganak Partners have invested US$ 24 bln in the development of the Karachaganak Field, whilst direct payments to the RoQ have reached US$ 17 bln. In 2018, KPO paid taxes totalling US$ 1.9 bln.

Environmental performance

GRI 102-15

Emissions reduction, waste management and application of new technologies are among the company's focus areas. KPO achieved a world-class gas utilisation rate of 99.94%. Gas flaring was 0.06% of the total gas produced (or 0.38 tonnes per 1 kt of hydrocarbons produced), which is an excellent achievement in O&G sector, compared to the IOGP indicators. Alongside with this, we managed to reduce GHG emissions by 307 kt of CO_2-equivalent, 23% higher than planned. This was achieved mainly owing to the use of technologies for oil and gas recovery while well testing and clean up.

In February 2018, KPO was named the 2nd most environmentally responsible oil & gas company in the First Environmental Transparency Rating of Environmental Responsibility among O&G companies in Qazaqstan. In January 2019, KPO's commitment and responsibility in environmental protection was confirmed by receiving another award for the 2nd place in the same rating. The contest had been launched in 2017 by the WWF Russia and CREON Group supported by the RoQ Ministry of Energy in conjunction with the UN Environment Programme (UNEP) for Central Asia, CREON Capital and National Rating Agency. Apart from that, in June 2018 KPO received an award from the American Chamber of Commerce for outstanding environmental performance.

Since the singing of the FPSA in 1998 to date, KPO has invested US$ 380 mln into various environmental protection measures and initiatives, including a full range of waste reduction measures. One of the technical solutions found has allowed KPO to send 2 kt of construction waste for further recycling.

The established annual 'Uralsk Green Forum' has become an effective communication tool to discuss environmental issues with the key stakeholders in this area: authorities, contractors and NGOs. In May 2018, a cooperation and partnership agreement was signed between KPO, the WQO Akimat and the International Centre for Green Technologies and Investment Projects for initiation of various projects on green economy and low-carbon technologies, researches and innovations.

In the year, KPO actively engaged in the RoQ law-making activities through working groups on environmental protection and subsoil management, particularly on development of proposals for improvement of environmental legislation. In 2018, KPO took part in the Rating of environmental and energy efficiency among the leading companies of Russia and Qazaqstan that was organized by the "Interfax" Information Agency jointly with the "Association of Environmental Organizations of Qazaqstan". Based on the results, KPO has been awarded with an Environmental disclosure mark confirming that its environmental responsibility is up to standard.

Employee development GRI 102-15

Fair and trusting relationships with employees is the goal for every company. We are competitive and innovative only as long as we can attract and retain highly qualified employees.

As part of the Local Content in Staff programme, 12 expatriate positions were nationalised, i.e. substituted by local employees. Three positions previously held by expatriates were abolished. As of end 2018, Qazaqstan employees accounted for 95% of technical staff and supervisors, and 77% of managers, with a total national headcount of 92%.

Since the FPSA signing, over US$ 218 mln has been invested in the training of the national workforce using best international training and development institutions and the Company's own training facilities. The training and development programmes initiated earlier were continued in 2018, among which there were the Enhanced Development Programme, Professional Development Programme in production and maintenance, international qualification programmes in drilling, emergency response and C&P.

Digitization GRI 102-15

As part of the Programme of Innovative Development 'Digital Qazaqstan' launched by the government of the Republic of Qazaqstan, KPO developed the Digitization and Technology Innovation Roadmap aimed at near, medium and long-term implementation of digitalisation opportunities with the key common objective of simplifying, improving and enhancing its processes and organization.

The Digitization Programme incorporates an approach for the foundational digital capabilities 'must have' to remain competitive. It is also envisaged that digitalisation initiatives will stimulate local content by targeting local enterprises with the long-term objective of creating an IT industry cluster in WQO and developing local resources.

In November 2018, jointly with the WQO Akimat KPO held the first Digitization Forum in Uralsk. KPO presented its own Digitization Roadmap outlining the transition to digital technologies aimed at improving processes in the areas such as production, well operations, future projects, local content and production infrastructure. At the forum a Memorandum of Cooperation was signed between KPO, WQO Akimat and the RoQ Ministry of Education & Science on further development of local content through training new personnel and start-ups support.

The current work streams are focused on the areas of production optimization, well surveillance, smart plant and digital transformations for project delivery, minimization of paper-intensive processes and maximization of the automated workflows, warehouse management, improvement of the monitoring and intervention activities, and collaboration with Qazaqstan's universities and institutions to stimulate digital ecosystem and development of local resources.

Investment into economy and community engagement

GRI 102-15

KPO puts significant efforts to maximize local content in the Karachaganak project and supports local manufacturers.

In the reporting year, the share of local content in KPO's procurement of goods, works and services reached 60%, which in monetary terms amounted to some US$ 474 mln. The overall KPO local content share in goods, works and services has reached some US$ 7 bln since the signing of the Final Production Sharing Agreement in 1997.

We continued to focus on interregional cooperation and localization of goods, works and services identified under a number of initiatives, such as KPO Local Content Development programme, Memorandum of Understanding on National Industry Development, the Aktau Declaration and other. In 2018 KPO started localisation of eight types of goods worth US$ 70 million and eight types of complex services worth US$ 390 mln. KPO is the first company in Qazaqstan, which has placed an order for refurbishing high-pressure gas turbines at a service centre in Uralsk and the first international consortium that used locally produced drilling bits in its daily business.

Upon agreement with the WQO authorities, KPO annually implements a number of Social infrastructure projects in the West Qazaqstan Oblast. These include construction and repairs of roads, streets, bridges as well as healthcare, education, culture and sports facilities. Only Qazaqstani contractors are involved. In 2018, KPO supervised the implementation of 36 social infrastructure projects, the highest number in the history of the company, of which 31 projects were successfully completed.

As of end 2018, KPO's investments in the WQO social infrastructure reached the total of US$ 368 mln. In 2018, it was agreed to increase the annual social spend from today's 20 to 30 million for the period from 2019 to 2023.

KPO works on adding value to the local communities through local capacity building and community development initiatives. As part of community development programmes, 200 vouchers for Akzhaik resort were provided for elderly community members and 80 vouchers for schoolchildren's rest at Talap Summer camp. During the year, we continued monitoring the resettled communities of Berezovka and Bestau. The concerns raised by the ex-villages mostly related to fixing of minor construction defects and requests for additional facilities, playgrounds and soil for vegetation.

Throughout 2018, 13 Village Councils' meetings were held in the six communities neighbouring the Karachaganak Field including Priuralnyi, Uspenovska, Zhanatalap, Zharsuat, Karachaganak, Dimitrovo. Social, environmental and emergency evacuation issues were the main topics of KPO engagement with communities. Besides, 10 Public Hearings were held by KPO in cooperation with the local authorities on the Environmental Impact Assessment for well tie-ins and construction projects.

MATERIAL TOPICS GRI 102-44, 102-46, 103-1

Success of the corporate sustainability reporting depends on effective dialogue of business with its stakeholders.

KPO has been publishing the Sustainability Report annually since 2008. While working on the report KPO draws on the extensive experience of its Parent Companies and follows the requirements of the universally recognized best practice in the field of non-financial reporting. This report is one of the main tools for building effective communication with stakeholders. The aim of this document is to communicate to stakeholders the issues, which are of interest to both the organization and stakeholders, and how they are resolved through engagement of the two.

The Report's content and material boundaries are defined according to the Standard (Guideline up to the 2018) of the Global Reporting Initiative (GRI), and the Key Performance Indicators are disclosed in comparison with those of the International Association of Oil and Gas Producers (IOGP). We disclose our performance standards against the applicable GRI standards taking into account management approaches and Key Performance Indicators of the Company. At the same time, we develop goals and comparative criteria that allow us to quantify the contribution to sustainable development by various KPO units. While devising the content, we also analyse risks and opportunities.

The Sustainability reporting process involves an information exchange, data gathering and interdisciplinary communication both internally and externally. GRI 103-1 For over 11 years we have been identify a number of topics material for us and continue sharing their dynamics. In 2018, we reviewed the list of material topics in order to select the most material for us and had the list approved by KPO Directors' Committee. The topics were also checked against the GRI Standard's definitions and the overlapping of three main areas (Social, Economic, Environmental) was outlined (see figure № 2).

Material topics tend to address issues related to the economic, environmental and social impact of KPO's activities in aggregate, as well as separately be it in the process of implementation of particular production operations or as part of the company's interaction with regulators, contractors, community or any other party, who are popularly referred to as stakeholders. There are internal or/and external manifestations of such impacts. GRI 102-43

The significance of material topics can be seen from the stakeholders' level of interest in them (figure №3).

The changes made to the topics agreed during the reporting period are identified annually in the process of multilateral interaction with KPO Parent Companies, the PSA LLP Authority, various regulatory bodies, contractors, business partners, local communities and the media. The stakeholders raise their issues at various sessions, from meetings of the Village Councils to forums, conferences, public hearings, open days, audits, and social surveys and by directly addressing them to the Company.

As part of the Report's preparation, we aim to continuously raise our stakeholders' awareness of the material topics disclosed in the Report, both internal and external.

Inside the printed copies of the Sustainability Report 2017 and 2018 there are loose-leaf feedback forms for readers to fill in. We have also placed an online feedback form on our website.

Fig.№ 2. MATERIAL TOPICS OF SUSTAINABLE DEVELOPMENT

GRI 102-47, 102-44, 102-46

- Labour Protection and Safety
- Protection of health
- Asset Integrity and Process Safety
- Community Emergency Preparedness – mechanisms of engagement
- Community Grievance Redress
- Community Relations – impact assessment and mitigation

- Increase of local content in staff
- Social investments in the territories with our presence, including support for local communities
- Supply of electrical power to local communities
- Local content development and its share in procurement of goods and services
- Employment and compensation
- Anti-corruption

- Energy efficiency
- Environmental compliance
- Environmental investments
- ISO 14001 and 50001 Certification

STAKEHOLDER ENGAGEMENT

GRI 102-42, 102-43, 102-44

As recognized by the world practice, engagement with stakeholders sets the basis for sustainable development and is the key to successful business. We are bound with our stakeholders by multiple ties and are interested to hear their opinions.

The Sustainability Report is our major tool of engagement with the stakeholders. Given the scale of the KPO's activities, our stakeholders are a large number of diverse groups and organizations. The most significant groups and forms of interaction are presented on the figure № 3.

Our interaction with stakeholders is a daily practice as part of the current activities and is carried out in accordance with the legislation and internal policies. This is an organized and regulated process, which involves planning and documenting. KPO departments determine their stakeholders on their own, and share their experience of engagement in this Report.

Feedback on the the issued Sustainability Reports is obtained using different channels, including telephone and e-mail communications through Sustainability@kpo.kz address, as well as KPO's official website www.kpo.kz. All comments and suggestions are reviewed in preparation of the next Report.

Fig.№ 3. KPO ENGAGEMENT WITH STAKEHOLDERS IN 2018

GRI 102-40, 102-42, 102-43, 102-44

PARENT COMPANIES
(Eni, Shell, Chevron, Lukoil, KazMunayGas)
- Board of Directors meetings
- ConCom meetings
- OpCom meetings
- ConCom Sub-Committees meetings
- OpCom Sub-Committees meetings

ROQ MINISTRIES/ AGENCIES
- Ad hoc meetings and visits
- Foreign Investors Council sessions
- Working Group sessions

LOCAL AUTHORITIES
- Ad hoc contacts & visits
- Forums, conferences
- Public events & celebrations
- JOC meetings

REGULATORS
- Inspections, audits, status update reports and meetings
- Integrated emergency exercises
- Litigations

EMPLOYEES
- Meetings, written applications
- Corporate events, contests, award ceremonies
- Communication and training on the Code of Conduct and Conflict of Interest Policy
- Application by employees about operational and social and labour matters to HR and via the Hotline
- Quarterly and annual HSE Awards ceremony for KPO employees and contractors
- Safety Stand Down meetings
- Online training on health, safety, security, civil defence topics
- Electronic surveys of employees' opinion on various topics (employees' opinion, medical insurance, internal support services)
- Meetings and forums with students
- Professional holiday celebrations
- Communication via corporate media, corporate intranet portal, issuing and distribution of brochures, electronic screens/displays in KPO offices

TRADE UNIONS
- Grievance mechanism for employees' appeals on social and labour issues to the HR Employees Relations unit
- Collective Agreement discussions
- Sport and cultural events

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MEDIA (national, regional, local)
- Regular interaction by correspondence, briefs/statements/press releases, meetings, public events and VIP visits
- Communication via social networks (LinkedIn, Facebook, YouTube, Instagram, Vkontakte), website, publications, interview, videos in different media, corporate videos, corporate magazine.

PSA LLP AUTHORITY
- Technical budget and operations meetings
- Joint Operating Committee (JOC) meetings
- Joint Procurement Committee (JPC) meetings
- Joint Marketing Committee (JMC) meetings
- Local Content Sub-Committee meetings

COUNTERPARTIES
(suppliers/contractors, customers, banks)
- Forums, conferences
- Business meetings, familiarization visits

BUSINESS PARTNERS
(O&G companies, business associations)
- Conferences, forums, visits
- Joint meetings with RoQ authorities and in working groups

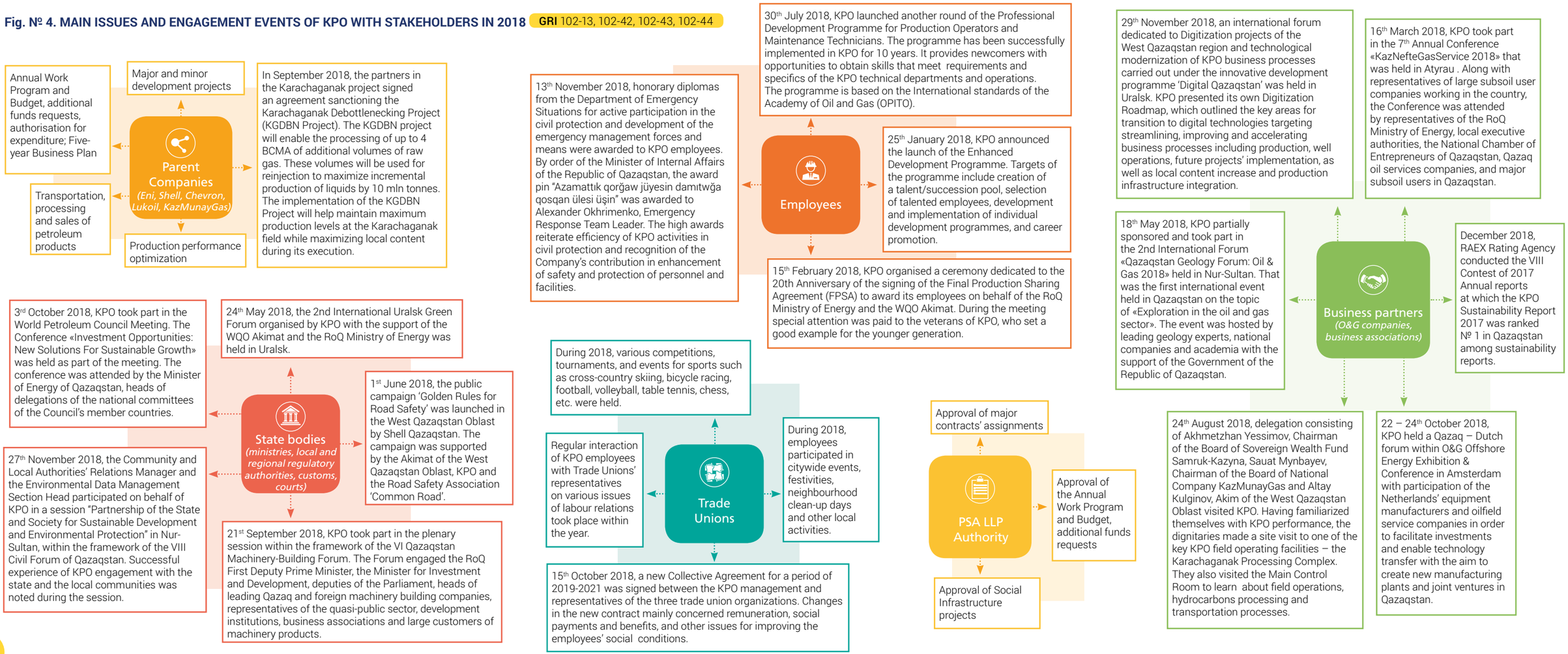
LOCAL COMMUNITIES
(residents of Aksai town and nearby rural districts)
- Advisory councils, meetings, complains, grievance mechanism,
- Public hearings
- Charity and community outreach events

NGOs
(non-profit organizations, initiative groups, public foundations)
- Public hearings
- Charity events
- Community grievances
- Direct queries

Material topic	Parent Companies	PSA LLP	Employees	RoQ Government	Regulators	Local authorities	Counterparties	Business partners	Media	Local communities	Trade Unions	NGOs	Total
Corporate governance and management approach	●	●	●										3
Labour protection and safety	●		●	●	●	●	●	●			●		8
Technologies and innovation	●	●		●			●	●					5
Management systems: ISO 14001, ISO 50001 and OHSAS 18001 certification	●		●		●		●					●	5
Asset Integrity and process safety	●	●	●	●	●	●	●						7
Community emergency preparedness	●	●	●	●	●	●			●	●		●	9
Protection of health	●	●	●	●	●	●					●		7
Employment and compensation	●		●	●	●					●	●		6
Personnel development and training	●	●	●		●						●		5
Social, cultural and gender diversity, equal opportunities	●		●				●			●	●		5
Labour / Management relations	●		●								●		3
Freedom of association and collective bargaining	●		●								●		3
Security practices	●		●		●		●		●		●		6
Human Rights training for contractors	●						●						2
Anti-corruption	●		●	●			●	●	●			●	7
Environmental protection	●		●	●		●	●		●	●		●	8
Environmental compliance	●	●	●	●	●	●			●	●		●	9
Community Relations – impact assessment and mitigation	●								●	●			3
Grievance mechanisms: impacts on local communities, labour practices, environmental topics	●		●			●				●	●	●	6
Procurement practices and supply chain	●	●					●	●					4
Increase of local content in staff		●	●	●	●	●	●			●			7
Local content development and its share in procurement of goods and services		●		●		●	●		●				5
Social investments in the territories with our presence	●	●	●	●		●			●	●			7
Supply of electrical power to local communities		●	●			●			●	●			5
Transparency of payments to the government (EITI)	●	●		●	●				●			●	6

Figure № 4 provides a brief overview of the issues and ways of engagement with different stakeholder groups during the 2018. This chapter does not disclose all interactions.
Point-by-point examples of interaction on material topics are disclosed directly in the Report chapters (see references in GRI 102-44 of the GRI Standards Content Index).

Fig. № 4. MAIN ISSUES AND ENGAGEMENT EVENTS OF KPO WITH STAKEHOLDERS IN 2018 GRI 102-13, 102-42, 102-43, 102-44



GRI 102-13, 102-42, 102-43, 102-44

26th June 2018, KPO senior management led by General Director Edwin Blom had a business lunch with the Qazaqstan Union of Oilfield Service Companies "KazService" in Nur-Sultan. Representatives from over 30 leading domestic and international companies attended the event. The topic of discussion was the engagement of oilfield service companies in the upcoming Karachaganak expansion projects and KPO requirements on vendor registration and preliminary evaluation.

18th January 2018, a market Forum on Karachaganak Expansion Project was held in the KPO Office in Uralsk wherein over 80 participants from both local and international companies participated. The Forum was hosted by the Project Development Directorate with the support of Local Content and Supply Chain Departments. Participants were provided with the latest information regarding scope, general layout and status of the KEP-1 project and further plans.

26th May 2018, KPO delegation headed by General Director Edwin Blom visited the East Qazaqstan Oblast (EQO) in order to attend an expanded meeting with the Akims of the EQO and the WQO, and the producers of commodities in the host region. As part of the trip, KPO delegation visited major industrial enterprises of the Eastern Qazaqstan to learn about their production capacities.

27th September 2018, KPO top management held a business meeting with representatives of the key national media. Detailed information about the development of the Karachaganak project, and KPO's contribution to the social and economic development of the West Qazaqstan region was provided at the meeting.

30th July 2018, KPO received the first of the two three-phased super heavy thick-walled separators manufactured in Qazaqstan. The separator was delivered from Atyrau to one of the field's key production facilities, the Karachaganak Processing Complex, for the upgrade of Oil Treatment System. KPO placed orders for manufacturing three-phase separators with local companies - LLP «Belkamit» and LLP «Atyrauneftemash» as a follow-up of the interregional cooperation visit to the Atyrau oblast in April 2016.

1st October 2018, the annual KPO Contractors' Compliance Workshop took place in the office of Uralsk. The Workshop was attended by 34 delegates from 29 companies including the Operator representatives.

7th September 2018, KPO announced the completion of Depo Bridge reconstruction in Uralsk. The parameters of the 536 m long bridge were brought in line with modern requirements for traffic capacity, load capacity and road safety. Earlier completion of the reconstruction by contractor allowed to relieve pressure on the Uralsk main roads.

September 2018, a new playground for the boarding school #5 was opened in Aksai. The project has taken four years of active fundraising by the Karachaganak Children's Welfare Committee through a variety of means, such as raffles, quizzes, discos, music evenings and a football competition to allow this magnificent playground to be constructed.

13 Village Council meetings were held with the local communities of the villages located along the perimeter of the Karachaganak field to discuss social and infrastructure support for them in 2018.

4th September 2018, KPO announced the commissioning of a new kindergarten in Aksai. A total investment into this social facility has exceeded US$ 2 mln.

17th October 2018, a business meeting between KPO management and representatives of the Atyrau-based O&G equipment plant "ZhigerMunaiService" LLP in order to discuss the outcomes of their drill bits' trial at the Karachaganak field.

23rd January 2018, KPO delegation headed by General Director Renato Maroli visited the city of Nur-Sultan. In the scope of the visit, an extended meeting was held engaging the Akims of Nur-Sultan and the West Qazaqstan Oblast, KPO management, PSA LLP Authority and the City leading companies in the fields of mechanic engineering, metalwork and metal ware, building materials, power engineering, manufacturing of effluents treatment equipment, and information technologies.

7th September 2018, KPO held a Local Content Forum in Nur-Sultan, supported by the Republic of Qazaqstan Ministry of Energy and the PSA Authority. The focus areas at the Forum were the forthcoming Karachaganak Expansion Project Phase 1 (KEP-1), KPO requirements to vendors in provision of goods, works and services and Local Content strategy and procurement plans for the KEP-1.

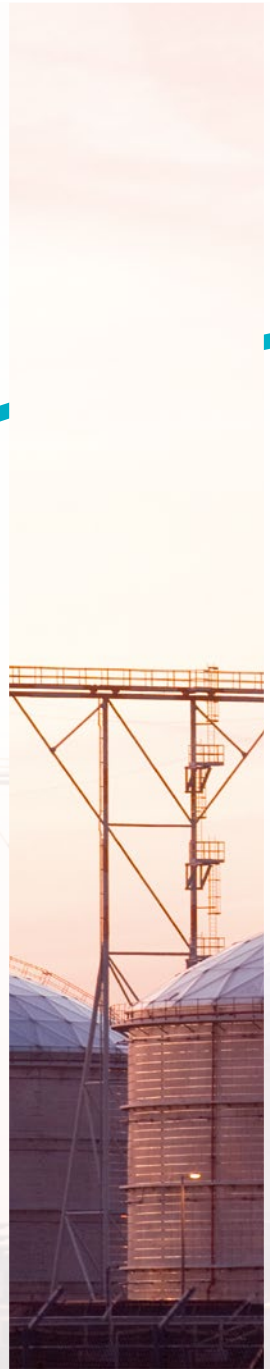
17th October 2018, KPO announced the commissioning of a new Sports and Wellness Centre constructed in the Burlin village as part of the Social Infrastructure programme.

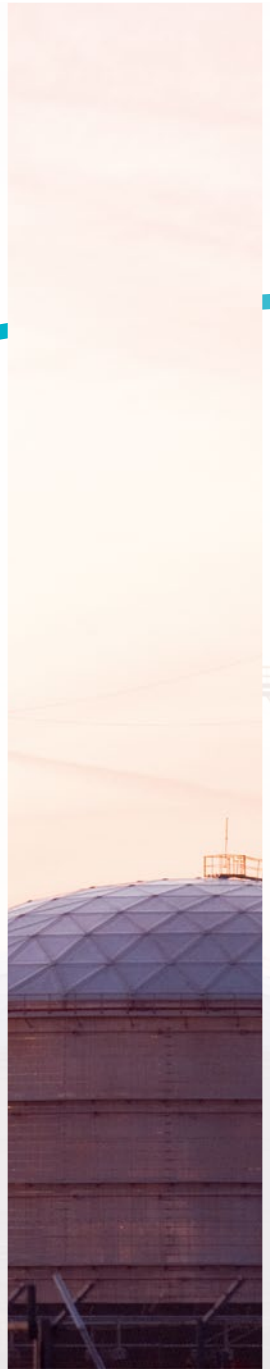
During 2018, the KPO Community relations team held regular meetings with citizens of the Berezovka and Bestau villages on matters of the resettlement.

During 2018, KPO conducted 10 public hearings engaging the region's general public including representatives of the Burlin District Akimat, deputies of the Maslikhat, interested state agencies, the regional and district media on the construction of new and modernization of existing production facilities and assessment of their potential environmental impact. All hearings were considered implemented.

25th January 2018, KPO announced the completion of construction of a secondary school for 300 seats in micro district Araltal in Aksai, which was implemented as part of the resettlement project of the Berezovka and Bestau villages.

4th June 2018, KPO took an active part in the annual city celebration of the International Children's Day in Aksai organized jointly with contractors and supported by the Burlin District Akimat. The holiday under the slogan «Our main concern is the safe future of our children» was dedicated to road safety. The festival program included quizzes, vocal and dance performances, and a play by the Ostrovsky Theatre's artists. All children-participants received awards and gifts.





OVERVIEW OF OPERATIONS

The Karachaganak Field contains

13.3 billion barrels of liquids and

60.23 trillion cubic feet of gas, of which approx. 12% has been recovered

In 2018, KPO produced

147.5 mln barrels of oil equivalent (BOE) in the form of stable and unstable liquids and gas, of which total equivalent stable oil reached

10,953 Kt and total gas –

18,913 Mscm

As of end 2018,

114 producing and

17 re-injection wells were online at Karachaganak from a total well stock of 462 wells

In 2018, KPO sold

9.5 bln m^3 of raw gas for processing at the Orenburg Gas Plant – the record sales of raw gas via Karachaganak-Orenburg Transportation System

In 2018, KPO exported a record

10.26 mln tonnes of stabilised oil through Caspian Pipeline Consortium

The Kazakhstan Branch of Karachaganak Petroleum Operating B.V. (KPO) is an international oil and gas condensate company with production and exploration activities in Qazaqstan. KPO operates Karachaganak, one of the world's largest oil and gas condensate fields. It is located in north-west Qazaqstan covering an area of over 280 km^2. **GRI** 102-3, 102-4, 103-1

The Karachaganak field is situated in a remote and challenging working environment with the ambient temperature ranging from minus 40° Celsius in winter to plus 40° in summer. The field is some 1,600 m thick and very complex and unique with its top at a depth of around 3,500 m. The hydrocarbons contain up to 4.5% of highly toxic and corrosive hydrogen sulphide (H_2S), as well as carbon dioxide (CO_2) which can be highly corrosive in certain conditions.

To date, the Contractor of the Karachaganak Field is represented by the five Parent Companies – Eni, Shell, Chevron, Lukoil and KazMunayGas – jointly working under the Final Production Sharing Agreement (FPSA) and the Karachaganak Settlement Agreement.

According to the latest Reserves Re-Determination Report for the Karachaganak field accepted by the RoQ State Reserves Committee (GKZ) on 17.11.2017, it is estimated that the Karachaganak Field contains 13.3 billion barrels of liquids and 60.23 trillion cubic feet of gas, of which approximately 12% has been recovered to date. **OG-1**

The total investment in the development of the Karachaganak oil & gas condensate field since the signing of the FPSA in 1997 to 31.12.2018 has totalled over USD 24.4 bln. The funds were invested in the application of leading-edge technologies to maximize sustainable economic value and minimise environmental impact. As of end 2018, 4,493 people worked in the KPO organisation. **GRI** 102-7

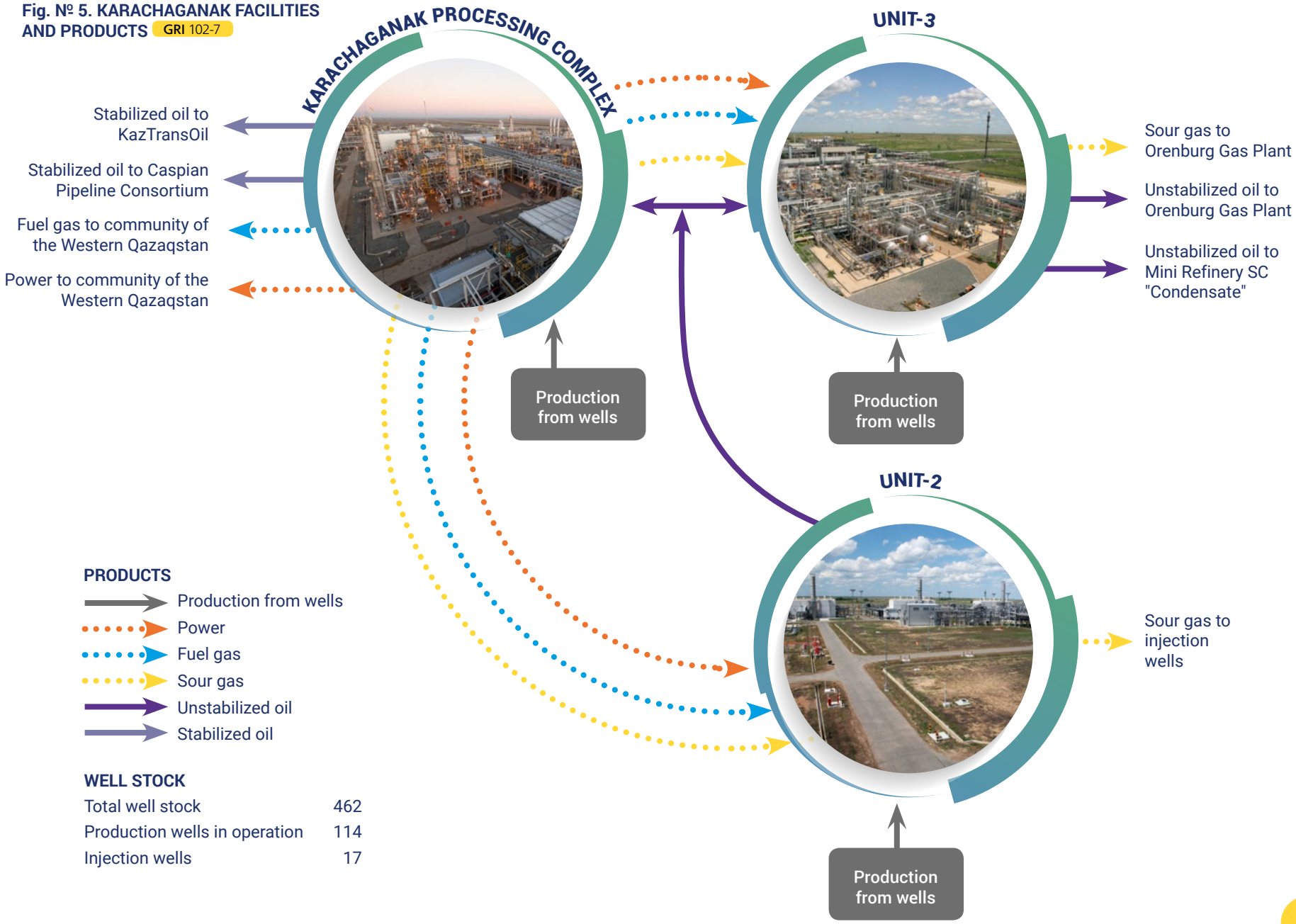
KPO FACILITIES **GRI** 102-7, 102-4

Hydrocarbon production and processing occurs at the three major interconnected units: the Karachaganak Processing Complex (KPC), Unit 2 and Unit 3. Approximately 2,000 kilometres of pipelines make up the infield system linking the major facilities and allowing efficient flows of production from the wells and among the units. Amongst the facilities, there is an Early Oil Production Satellite (EOPS) and Eco Centre. An overall view of the facilities is graphically presented on the figure №5.

The transportation system operated by KPO includes the main export route for stabilised liquid hydrocarbons Karachaganak - Atyrau Transportation System (KATS) with two pumping stations: one at KPC and the other at Bolshoi Chagan, and a receiving and storage facility in KPO Atyrau Terminal. The other export route is the Karachaganak – Orenburg Transportation System (KOTS), which is used by KPO for transporting hydrocarbons to Orenburg Gas Plant in the Russian Federation.

As of end 2018, 114 producing and 17 re-injection wells were online at Karachaganak, from a total well stock of 462 wells. The increase in well stock of 21 wells with respect to the previous year was mainly due to drilling of new horizontal wells (production well stock) and drilling of shallow monitoring wells (special well stock).

Fig. № 5. KARACHAGANAK FACILITIES AND PRODUCTS GRI 102-7



WELL STOCK

Total well stock	462
Production wells in operation	114
Injection wells	17

OUR PRODUCTS AND EXPORT ROUTES GRI 102-2, 102-6

KPO extracts and processes stabilised and unstabilised liquid hydrocarbons, raw gas and fuel gas. The majority of hydrocarbons produced in the Karachaganak Field are exported to maximize net sales revenues.

In 2018, around 95% of liquid production was sold as stabilised oil to the Western markets via the following routes:

- the Caspian Pipeline Consortium (CPC) pipeline and
- the Atyrau - Samara pipeline and further through the Transneft system.

The CPC pipeline delivers KPO oil to the Black Sea port of Novorossiysk (Yuzhnaya Ozereevka), whereas the Atyrau-Samara pipeline is used to deliver oil to the Ust-Luga port in the Baltic Sea (see Fig. № 6).

The key marketing objective was to maximize oil exports and sales via CPC, the highest netback route. The Atyrau-Samara route, although providing slightly lower netbacks than CPC, was important as an insurance back-up in case of disruptions in CPC exports.

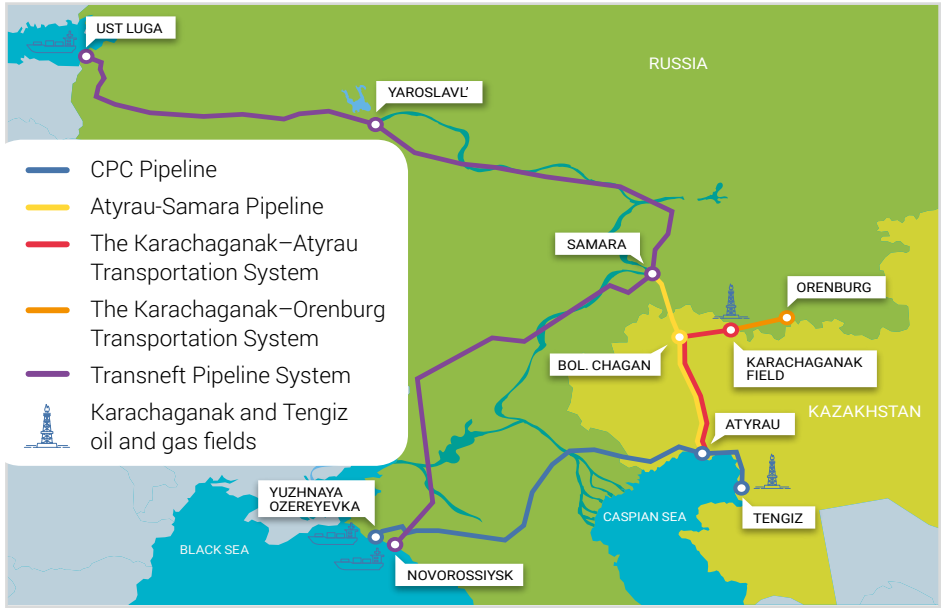
In 2018 continuous focus on oil sales optimization enabled KPO to export a record 10.26 mln tonnes of stabilised oil out of total 10.37 mln tonnes through CPC, the more profitable export route. Thus, nearly 0.10 mln tonnes of oil were exported via the Atyrau-Samara pipeline in that period – a record low volume in KPO history. The remaining liquids were exported as unstabilised condensate to Russia via Orenburg and delivered to the local market.

The gas produced from the field is either re-injected into the reservoir to maintain reservoir pressure, sold as raw gas to KazRosGas LLP under the long-term Gas Sales Agreement, or sweetened (i.e. cleared from hydrogen sulphide) to generate electricity for KPO facilities and for local power distribution companies.

In 2018, KPO sold 9.5 bln m^3 of raw gas to KazRosGas for processing at the Orenburg Gas Plant, which was the record sales of raw gas to Orenburg.

KPO ceased the delivery of unstabilised condensate to Orenburg starting from 17 September 2018 due to the Delinking Project completion. Accordingly, a record low annual volume of unstabilised condensate (499 thous. tonnes) was delivered to Orenburg in 2018 resulting in the increased sales revenue due to diversion of liquids from Orenburg to the CPC route and processing facility of Condensate JSC.

Fig. № 6. OUR EXPORT ROUTES GRI 103-1



OPERATIONS IN 2018 GRI 102-2, 102-7

In 2018, KPO produced 147.5 mln barrels of oil equivalent (BOE) in the form of stable and unstable liquids and gas. Delivery of gas in 2018 reached 9.5 bln m^3.

Tab. № 1. Production in 2018

	Unit of measure	2016*	2017	2018
Total Production**	Mboe	139.7	145.8	**147.5**
Total equivalent stable oil	Kt	10,466	11,247	**10,953**
Total gas production	Mscm	17,659	18,924	**18,913**
Gas Injection *Gas re-injected into a reservoir, not sold*	Mscm	8,040	9,289	**8,589**
Sweet Gas *used at KPC for internal needs*	Mscm	605.4	739.5	**723.6**

* Shutdown year
** The total figure of production does not include the volume of gas injection

Tab. № 2. Sales in 2018

	Unit of measure	2016	2017	2018
Total Sales	Mboe	137	142.3	**143.5**
Unstable Liquids *Condensate to Orenburg Gas Plant*	Kt	898	657	**615**
Stable Liquids *Oil and stabilised condensate to CPC and Atyrau-Samara*	kt	9,697	10,715	**10,365**
Raw Gas *to Orenburg Gas Plant*	Mscm	8,934	8,782	**9,493**
Sweet Gas *to the WQO community*	Mscm	50.8	97.7	**95**

Drilling activities in 2018

The year 2018 began with one drilling unit working for Karachaganak operations. In September 2018, a second rig was mobilized upon approval to carry out sidetracking activities.

Three new producing wells were delivered in 2018, as well as two old wells were given a new life after they were sidetracked and completed as horizontal producers. One gas injector well and one more sidetrack producer were spudded in 2018 with the plan to complete in January–February 2019. Five wells were brought into production.

During the year 2018, the following achievements were made in drilling:

- Safety remains our main priority as almost every man-hour out of total of 2.5 mln man-hours in the Well Operations department was with significant safety exposure, ranging from personal safety and road transport to H_2S hazard and process safety. Throughout 2018, we had zero Lost Time Injuries (LTI) and in total drove more than 3 mln km incident-free. However, despite all our efforts, two minor recordable injuries and one high potential incident took place at our locations. We aim to strengthen HSE performance through close collaboration and partnership between KPO and contractors. We continued pursuing peer-to-peer intervention culture, re-enforcing our coaching efforts on hazard awareness and change management and looking for new opportunities for improvement, new technics and new processes.

- The drilling performance remained solid last year with two new records. One of the sidetracked wells was drilled to depth of 6,700 m, the longest well drilled in the history of KPO. Another record is the fastest rate of penetration (ROP) in 16" x 17-1/2" section with a record net value of 54.81 m/hr achieved with a drilling bit locally made in Qazaqstan.
- As wells become longer the more challenging it gets to maintain high performance without continuous innovation. One of the wells in 2018 had been classified as top quartile as the result of analysis and new Stinger Bit trial that led to improved bottom hole assembly (BHA) stability, and therefore bit durability and performance.
- Karachaganak field has a number of unique challenges, one of which is a presence of depleted zones with abnormally low formation pressure. To achieve high quality of zonal isolation a special light-weight cement slurry was designed by KPO engineers and our cementing contractor. The light slurry technology enables additional improvement opportunities allowing significant reduction of well construction time and cost.

KPO continues working to minimize a negative impact on the environment from drilling and well services operations:

- Well construction activities require a lot of energy and resources, therefore contributing to environmental pollution. In KPO, we use horizontal and directional drilling, as well as drill sidetracks from old wells in order to produce oil from a single well from much larger area. This approach reduces the number of wells required to develop an oil reservoir and as a result lowers the pollution.
- We continue evolving our strategy to minimize greenhouse gas (GHG) emissions during well clean-up processes. In addition to our earlier developments, such as use of hydrocarbon displacement fluid and tractor robotic systems for downhole milling operations, in 2018 we added a re-designed Well Testing package. Incorporated high gas volume factor (HGVF) pump allows us to reduce substantially the flaring on depleted or low gas/oil ratio (GOR) wells by injecting well fluid into the high-pressure production line.

Shutdown

The KPO Shutdown strategy remains focused on optimisation of production and minimisation of cost by extending intervals between shutdowns and reduction of actual shutdown durations whilst ensuring safe continuous operation and regulatory compliance.

In planning the shutdown activities KPO applies a risk based inspection (RBI) approach. Extending the shutdown intervals is made on adoption of risk-based intervals covering all main equipment types while meeting applicable requirements in Qazaqstan. Other activities include installation of new or upgraded equipment and 'engineering out' shutdown activities through necessary modifications.

In 2018, the planned shutdown activities were successfully executed on schedule and incident free. This involved partial shutdown of the KPC and Unit 2 and the KOTS network in May, September and October; and a full shutdown of Unit 3 in September-October.

Water management strategy

Managing produced water is one of the main challenges facing the Karachaganak field where increasing produced water rates combined with a production facility, which is not designed for these rates, is resulting in production losses, risks to asset integrity and mandatory environmental compliance. An additional challenge for KPO is locating sources of sufficient technical water required for production as well as potable water, both for production personnel and personnel engaged on the construction of new facilities.

In the short, medium and long term KPO's field wide water management strategy addresses the issues primarily of produced water, but also continuous supply of technical water. This strategy is being implemented through a number of small projects and operational initiatives. One such project is the Upgrade of Oil Treatment System (UOTS), which started up in January and provides the opportunity for further debottlenecking activities and projects. As far as the long term is concerned, KPO is currently evaluating the opportunity to increase water-handling capacity such that the incremental produced water does not restrict oil production and revenue generation. This long-term water treatment project successfully reached Value Assurance Review (VAR) 1 in September 2018 and is currently in concept selection, with VAR2 expected in first half of 2019.

Additional water management projects related to safety and asset integrity were also progressed in 2018, with replacement filter housings at KPC planned for start-up in second half of 2019, which will reduce operator exposure and contract award for a new caustic neutralisation unit expected in 2019.

Power generation strategy

Throughout 2018 KPO has been producing electrical power at the Gas Turbine Power Plant for production needs within the Karachaganak Field and for the Karachaganak-Atyrau transportation system covering the oil pumping station at Bolshoi Chagan and block valve stations 1-26.

KPO continues supplying electrical power for the needs of the West Qazaqstan Oblast community with a capacity of some 42 MW in winter and from 27 to 42 MW in summer. In 2018, the total electrical power supplied to the WQO amounted to 305.7 mln KW/h.

In 2018, KPO continued an overall study of existing and additional power supply opportunities for future KEP-1 projects, including by means of renewable power sources. The study has progressed in 2018 and successfully reached the Value Assurance Review (VAR) 1 in Q4 2018 and is currently in concept selection phase (expected VAR2 in Q4 2019).

FIELD DEVELOPMENT PROJECTS

As the Contractor to the Republic of Qazaqstan (RoQ), KPO has an obligation to conduct all operations necessary to carry out the development and production of petroleum in the contract area in accordance with International Good Oil Field Practice[1]. Following the completion of the Karachaganak Phase II Initial Programme, since 2003 KPO has been funding and implementing the Phase II Maintenance Programme (Phase IIM). This phase includes the further activities, such as drilling new development wells, undertaking workovers on existing wells, upgrading production facilities and other projects required to maintain a high production level to the economic benefit of the RoQ.

These additional facilities, field infrastructure and wells are required to avoid the increasing gas-oil-ratio causing the existing facilities to become gas constrained and thus cause a liquids production decline. In response, a programme of production Plateau Extension Projects (PEP) has been developed in 2014.

In 2018, KPO continued the maturation of the PEP projects portfolio. The 5th trunk line and gas reinjection wells component of the Unit 2 Gas Injection Upgrade Project has commenced the construction phase and a drilling campaign in 4 QTR 2018. The start-up with two of the three wells in total is foreseen for the end of 2019.

The Unit 2 Fourth Gas Injection Compressor Project was matured, with the Front End Engineering Design (FEED) was completed for the Final Investment Decision (FID) expected within 2 QTR 2019.

For the KPC Gas Debottlenecking Project, the Define phase was accomplished with the Final Investment Decision taken in September 2018. The contractor has been mobilized and part of civil works has been completed in the year.

Karachaganak Expansion Project

KPO works to continue the development of the Karachaganak field via the Karachaganak Expansion Project Phase 1 (KEP-1), scheduled in a phased manner.

The KEP-1 project creates additional value for the Karachaganak Parent Companies and the Republic of Qazaqstan by maintaining the stabilised liquid plateau through the provision of additional wells, process facilities and gas reinjection to manage the increasing gas oil ratio (GOR) of the field.

Concept assessment and selection activities envisaged the delivery of all those activities to test the concepts and confirm their feasibility, including the development of a quantitative risk assessment model to evaluate the risk exposure of personnel during the construction and operation phases for the proposed new facilities. The outputs from the model will be used in the demonstration that the layout, segregation and design of the new facilities will reduce risks during these activities to the lowest practicable level. The main objects in KEP-1 will cover:

- Inherent safety features in the design of systems and equipment to minimise the exposure of personnel to process safety risks (including toxic gas risks) throughout the life of the new facilities.
- Environmental impact minimization. Best practices in air dispersion modelling of KEP-1 emissions are being undertaken to assess any impact on the boundary of the Sanitary Protection Zone (SPZ) around the field.

In 2018, the studies were further progressed with the objective to optimize and freeze the configuration of the future KEP-1 facilities. Studies had the focus to optimize the capital spending over the time (phasing the installation of compression capacity), reduce the overall capital costs and maximise recovery in order to improve the project economics.

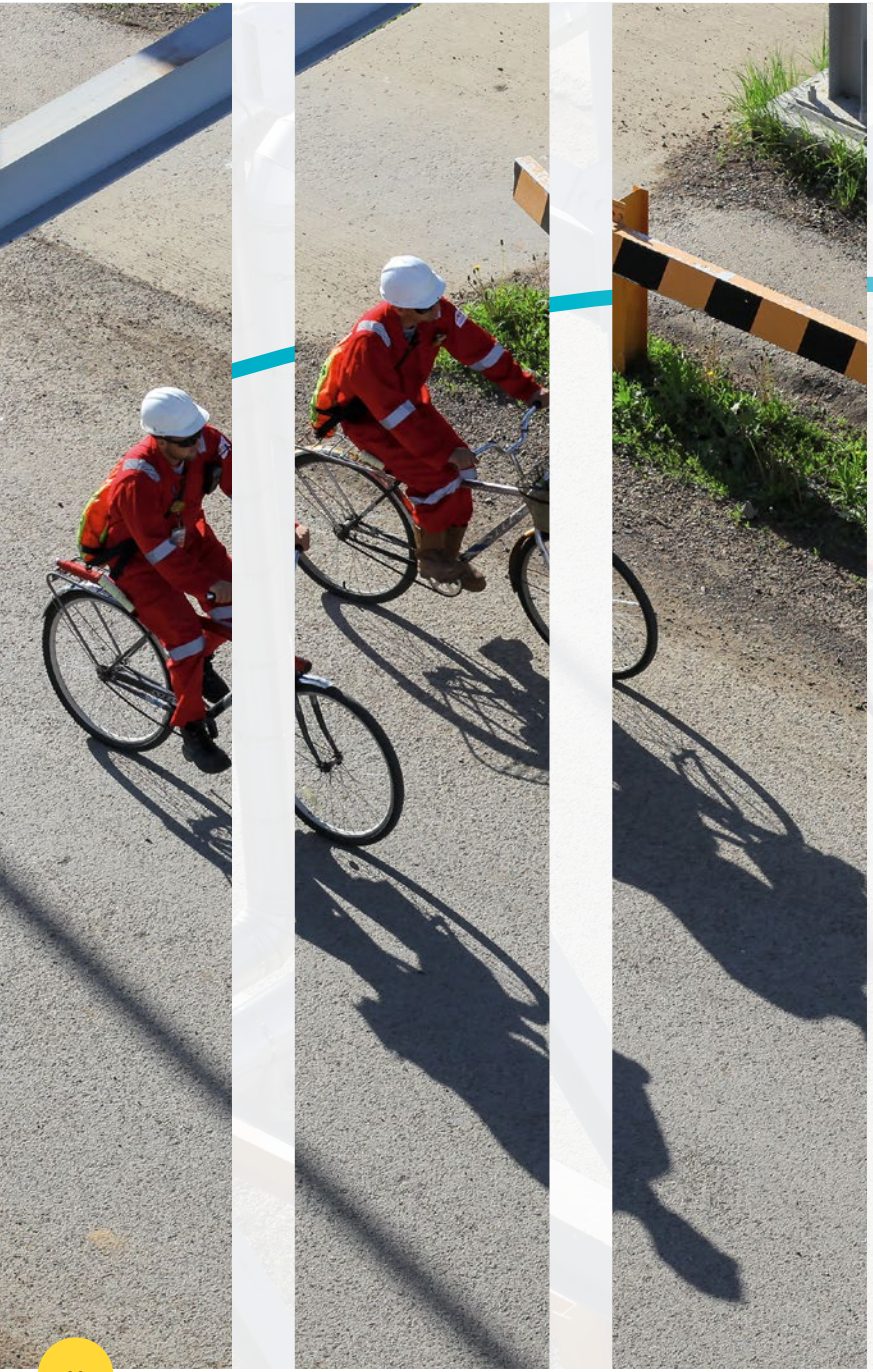
[1] ***International Good Oil Industry Practices*** *means the good, safe and efficient operations and procedures commonly employed by sensible and diligent operators in the international petroleum industry, mainly regarding aspects related to the use of adequate methods and processes for obtaining maximum economic benefit in the final recovery of reserves, for minimizing losses, for operational security and for environmental protection.*

General Director Edwin Blom speaks at the Local Content Forum on Karachaganak Expansion Project

In 2018, the project successfully passed the milestone of value assurance review 2 (VAR2) and started the Front End Engineering Design (FEED), currently ongoing. The FEED aims at achieving incremental maturity with a more detailed understanding of the project risks in activities, such as brownfield works, SIMOPS (simultaneous operations) activities, Long Lead Items definition, compression unit, gathering system design and Early Works identification. The engineering is being developed in order to propose the project for sanction.

In the course of 2018, KPO pursued several initiatives in the context of KEP-1 local content development:

- Market Engagement forum was held in Uralsk in January 2018 with the aim of early engaging national and international contractors in the opportunities for provision of services for KEP-1.
- Local Content forum was held in Astana in September 2018 to communicate about the KEP-1 status and follow-up on engagement of local and international contractors.
- Workshop with international and local manufacturers of valves and linepipe was held in Uralsk in November 2018.
- Several site visits to fabrication yards in Uralsk and Aksai were held in November 2018.



RESPONSIBLE OPERATOR

GOVERNANCE AND MANAGEMENT APPROACH

KPO management

Edwin Ronald Blom

General Director

Edwin has been working for Shell since 1989. He has considerable experience within O&G industry including domestic and international assignments such as Venezuela, Gabon, Malaysia, Germany, UK and the Netherlands.

Apart from rich production and multidisciplinary expertise, Edwin has years of exposure to a large variety of business environments and cultures. In his most recent assignment Edwin held the position of Vice President HSSE & Social Performance Assurance and Reporting, at Shell in Netherlands.

Gabriele Giona

Operations Director & Deputy General Director

Gabriele has almost 18 years of international experience in a number of overseas assignments in different countries, including Russia, Iran, Egypt, Congo, Nigeria, Iraq and Qazaqstan (Agip KCO).

Apart from rich O&G operations, Gabriele has been extensively exposed to various business environments; this allows him to work effectively in multi-cultural organizations. In his previous role, Gabriele worked as General Manager at Eni – Zubair (Iraq), the biggest oil reservoir operated by Eni worldwide.

Marat Karimov

Vice General Director

Marat Karimov has joined KPO as Vice General Director in August 2015. Prior to this assignment, Marat worked as Deputy Akim of the Western Qazaqstan Oblast. Marat graduated from the Atyrau Institute of Oil & Gas, studied at the universities of Oklahoma and Louisiana in the US. His professional career in O&G industry started up in 1994. In previous years, Marat worked at various positions in the North Caspian Project, as Director of North-Caspian Project Department and later as First Deputy General Director of JSC OOC KazMunaiTeniz, Deputy General Director of KMG Kashagan B.V., General Manager of exploration projects of KazMunayGas National Company.

Koert Alexander Vonkeman

Marketing Director

Koert has been working for Shell and its subsidiaries since 1985. Before this appointment, he held the position of Vice President for Carbon Capture and Sequestration in Den Haag, Shell Head Office.

Koert has extensive experience in marketing, commercial and business development. His professional background includes managerial roles in Shell affiliates in Netherlands, UK, Brazil, Oman, Japan, Indonesia and Russia.

Edoardo Stefano Mauri

Finance Director

Edoardo has been working with Eni since 2010. Prior the current appointment he held the post of Director of Finance at Eni Algeria. Edoardo has worked at various managerial positions in the last decade, during which he has gained an extensive international experience in the area of IFRS accounting, taxes, planning and reporting. Edoardo has also worked as Finance Director in various countries worldwide including Algeria, Iraq, Congo and Iran.

Matteo Grassani

Legal Director

Matteo gained an extensive cross-industry experience throughout the value chain by managing legal governance, risk and compliance, working on large infrastructure projects and by leading legal teams in multinational and multicultural organizations. Over the years, he has occupied a number of senior legal roles, including Vice President Legal and Branch Director for BG Kazakhstan between 2013 and 2016. Matteo is qualified both as Solicitor of England and Wales and as Italian advocate.

Luca Mori

Project Execution Director

Luca has more than 19 years of experience across operational, technical areas and over 10 years in management roles on a number of Eni assets in different countries, including Kashagan Project in Atyrau (Qazaqstan), ZOHR Project in Port Said (Egypt), Western Libya Gas Project (Libya), Borouge 1 Polyolefins Project in Abu Dhabi (UAE) and other O&G engineering projects.

In his last role, Luca worked as ENI S.p.A Vice President Operational Interface for Execution Phase (OPIE).

Pierluigi Ameno

Project Development Director

Pierluigi has been working with Eni since 2005. Prior the current appointment he was a KPC Gas Debottlenecking Project Manager at KPO.

Pierluigi has worked at various managerial positions in the last 10 years, having gained extensive international experience in engineering. Pierluigi has also worked as Engineering Manager in various countries worldwide including Algeria, Italy and Qazaqstan.

Laura Schmidt

Supply Chain Director

Laura started in Shell in 1990, and has worked in a variety of roles across the globe. Her experience includes various engineering, operations and commercial positions. Laura has considerable experience within O&G industry including domestic and international assignments such as USA, Russia, Nigeria and Netherlands.

Laura holds a B.S in Mechanical Engineering, an M.S. in Environmental Engineering, and a J.D. specializing in environmental law and patent law. She is a licensed Professional Engineer (Mechanical), Patent Attorney and General Attorney in Colorado and Texas and a Member of the Chartered Institute of Procurement and Supply (MCIPS).

Aigerim Sarguzhiyeva

Infrastructure Consolidation Project Controller

Aigerim has started her career with KPO in 2006 having held various roles within the Contracts and Procurement department. She was appointed as the Contracts and Procurement Controller in 2015 and in that capacity she managed a team of 50 responsible for contracting and procuring various materials and services for both base business and projects.

Aigerim holds a B.A. in Marketing from West Qazaqstan University and M.S. in Supply Chain Management and Logistics from Cranfield University, UK.

Joost Van Helden

Corporate Governance Controller

Joost has worked for Eni since 2013 where his last assignment was Vice President Operational Excellence.

Joost holds a MSc in Chemical Engineering and has worked internationally in various technical and managerial positions in production, advanced process controls and project engineering within the petro- and specialty chemicals industry. Before joining Eni, Joost has worked with Petroleum Development Oman in Field Operations and Production Chemistry.

Fidan Goktas Traufetter

Corporate Governance Controller

Fidan started in Shell in 2002 and worked in a variety of roles across upstream around the globe, and led cross-disciplined teams. Her last assignment was in Internal Audit, and her experience includes field development and business planning, well planning and execution, subsurface models and studies, and E&P technology strategy. Fidan holds a Diploma in applied physics, a Doctorate in physics and anorganic chemistry, and a general MBA from Imperial College, UK. She is a member of the Society of Petroleum Engineers.

Graham Roberts

Safety and Asset Integrity Controller

Graham has been working for Shell since 2016. Prior to that, he worked for BG Group since 2002. His most recent position before joining KPO was Head of Asset Integrity at BG Group Reading, United Kingdom.

Graham is a Chartered Engineer, with a professional background that includes managerial roles in the area of Asset Integrity, HSSE, Combined Heat & Power, Power Generation and Transmission.

Ilaria Zappacosta

Safety and Asset Integrity Controller

Ilaria joined Eni in 2006. Her previous assignment was HSEQ Manager at Eniprogetti. Ilaria's professional experience spans over different technical areas such as environment, process safety, occupational and technical safety, emergency response, permitting and stakeholder management, sustainability projects, regulatory compliance in O&G offshore and onshore plant, FPSO, green refinery and renewables project. Ilaria occupied managerial roles in development (Venezuela, Indonesia and Australia) and R&D projects and training programmes. Ilaria holds an MD in Environmental Engineering from University of L'Aquila (Italy).

Suriyanarayana Rajagopal

HR Controller

Suriyanarayana has over three decades of experience in HR leadership roles across multiple industries. His last assignment at Royal Dutch Shell was HR Vice President, Change & Engage for Project & Technology 2020 Programme, based in the Netherlands. Suriyanarayana joined Shell in 2011 as HR Vice President - India Operations after seven years at BG Group in the UK and India as Vice President HR BG Asia. Earlier his leadership roles included the Director HR at Carrier Aircon, United Technologies and the hospitality sector in India.

Davide Mazzucchelli

HR Controller

Davide brings vast international experience in the area of HR Management. His last appointment was Division Manager Organization Development & Service Manager at Nigerian Agip Oil Company (ENI E&P Division Subsidiary) in Abuja (Nigeria).

Over the past years, Davide has occupied a number of senior positions in the industry, including International HR Manager for Europe, Iraq and Middle East (Eni Spa - Upstream), HR & Services Manager at Eni East Africa Spa (Maputo, Mozambique), Training & Development Manager at Eni North Africa B.V. (Tripoli, Libya) and other international projects.

Governance structure GRI 102-18

Karachaganak Petroleum Operating B.V. Kazakhstan Branch (further as KPO) was established in 1997 as a Joint Venture to operate the Karachaganak Oil and Gas Condensate Field (further as Karachaganak Field or the KOGCF) in accordance with the Final Production Sharing Agreement (FPSA). GRI 102-5

KPO brings expertise from five international oil and gas companies (hereinafter referred to as the Contracting or Parent Companies):

29.25%	29.25%	18%	13.5%	10%

KPO established an integrated and effective system of governance, risk management, internal control and compliance. This is a key to achieving sustained organizational success. The integrated management approach enables appropriate decision-making and provides control mechanisms to ensure strategies, directions and guidance from senior management are carried out systematically and effectively.

KPO organisational structure was designed to enable KPO to meet its business objectives for the benefit of the Republic of Qazaqstan (the Authority represented by the PSA LLP) and the Contracting Companies by continuously considering current external environment. GRI 102-44

KPO's two main governing bodies, the Joint Operating Committee (JOC) and the Joint Marketing Committee (JMC), which are formed by representatives of each of the five Contracting Companies and representation of the Authority under the FPSA. At the JOC the Authority has one vote and the Contracting Companies, as a whole, have one vote. An affirmative vote on both sides is required for a decision. The JMC has the same voting structure as the JOC.

Joint Operating Committee

The JOC is responsible for the overall supervision of petroleum operations and of social and infrastructure projects to ensure that activities are carried out in accordance with the FPSA. Matters pertaining to the JOC include: review and approval of the annual Work Programme and Budget, social and infrastructure projects, and any changes to the Field Development Plan. JOC meetings take place normally three times per year. In 2018, the JOC meetings were held in March, July and November. The JOC is chaired by a representative from the Authority. The Akim of the West Qazaqstan Oblast attends the JOC meetings as the community representative, but without voting rights.

Joint Marketing Committee

The JMC is responsible for all activities relating to the marketing of hydrocarbon and non-hydrocarbon products under the FPSA. This Committee approves proposals concerning transport, processing, swaps and the sale of petroleum products. Decisions are taken with the objective of maximising net revenues. The JMC is chaired by a representative from one of the Contracting Companies. The KPO Marketing Director has the right to participate in JMC meetings without voting rights.

JOC Sub-Committees

The JOC has established several sub-committees, such as the Joint Procurement Committee (JPC) and the Local Content Sub-committee (LCS).

The JPC is responsible for the approval or endorsement of the main contracts to be awarded by KPO, and acts in accordance with the JOC Tender Procedures as approved by the JOC. Membership and voting rights for the JPC are similar as for the JOC, and its decisions also need to be unanimous.

The LC Sub-committee consists of KPO representatives and the Authority. The LCS is responsible for the provision of assistance to the JOC on issues related to local commodities, works and services, increase of local staff employment, training and development of Qazaqstani employees. The LCS is also involved in discussions and reviews of plans and programmes related to local content as proposed by the Republic, the Authority, or Contracting Companies.

Contractor Committee and Operating Committee

As defined by the Joint Operating Agreement (JOA), the Karachaganak Joint Venture operates utilising two bodies for management and decision-making. The first body is the Operating Committee (OpCom), which oversees the management of the Venture and ensures compliance with the FPSA requirements. The other body is the Contractor's Committee (ConCom), which is responsible for determining the Contracting Companies' position on all matters subject to the decisions of the JOC.

The general governance framework is as represented in figure №7.

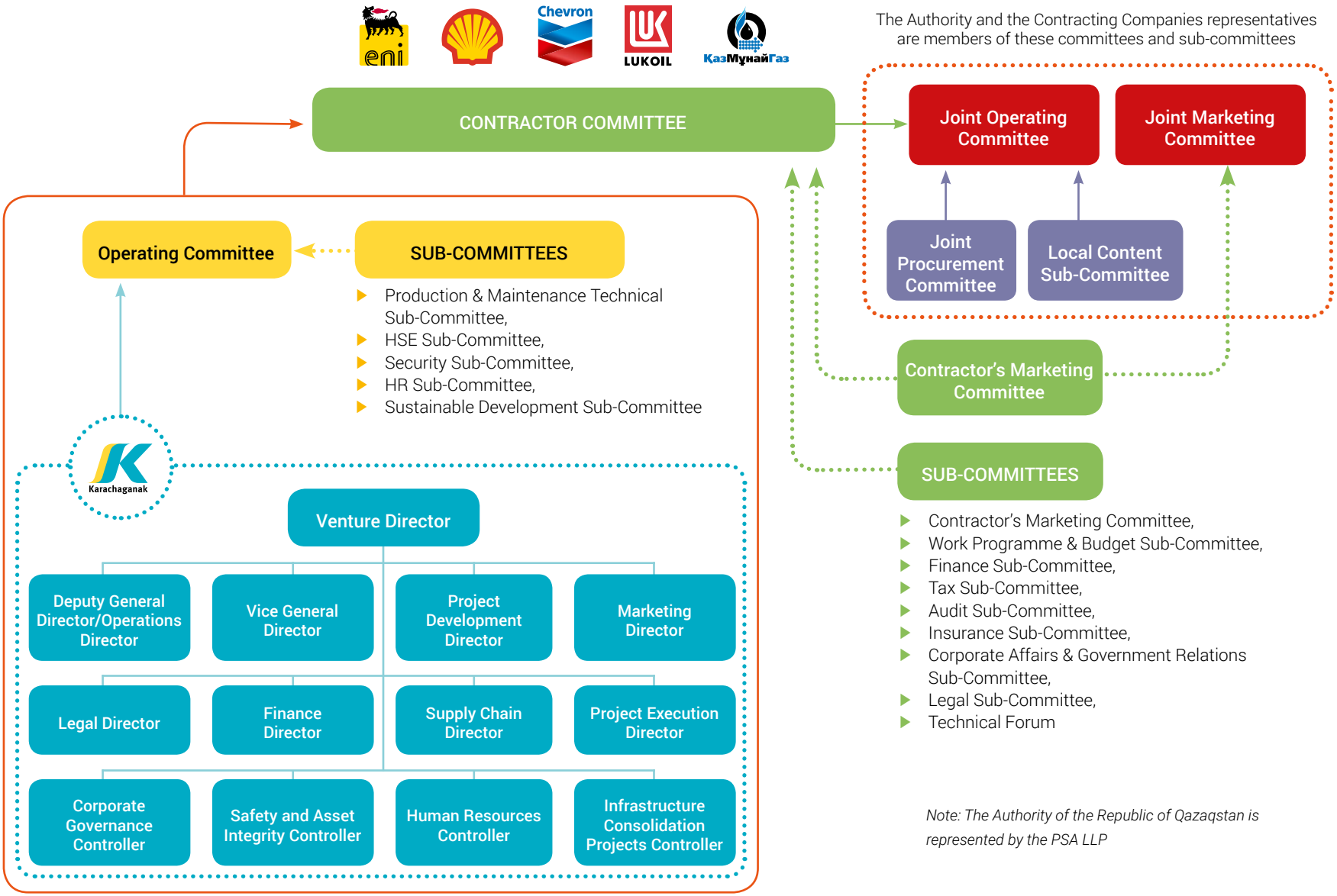
A number of specific sub-committees are in place to provide professional advice, assurance, supervision and recommendations to KPO. Depending on the sponsor, each sub-committee comprises one representative of ConCom or OpCom.

Sub-committees have written terms of reference and report on key issues to the Contractor's Committee or the Operating Committee. Sub-committee meetings take place during the year in accordance with a planned schedule. In 2018, the functions of the Corporate Affairs and Government Relations Sub-Committee and Sustainable Development Sub-Committee were split into separate Sub-Committees.

The Sustainable Development Sub-Committee comprises representatives of the Operator companies and KPO representatives. This Sub-Committee reviews issues of social performance, including post-resettlement monitoring of the former Berezovka and Bestau communities, engagement with Burlin District and Karachaganak field-adjacent communities, NGOs, sustainability reporting and communicates to OpCom identified issues/concerns and impacts of KPO business on communities living in KPO's direct impact area.

GRI 102-18, 102-44

Fig. № 7. KARACHAGANAK VENTURE SENIOR MANAGEMENT STRUCTURE (as of 31.01.2019) GRI 102-18, 102-44



Note: The Authority of the Republic of Qazaqstan is represented by the PSA LLP

KPO Management Systems GRI 103-2

In all aspects of its activities and in accordance with the FPSA, KPO operates to internationally recognized standards, which are implemented through a number of policies, procedures and appropriate best practices embedded in KPO's management systems.

KPO management systems related to sustainable development are shown in the table № 3.

- **Karachaganak Corporate Management System**

Karachaganak Corporate Management System Manual sets out a common understanding of the way that KPO is organised and how the business is managed through its processes, assets and people. This document defines the Assurance and Compliance control framework to provide clarity to KPO management and shareholders that the principles of conducting business in KPO align with the foreign practices applicable to the shareholders and legislation of Republic of Qazaqstan and to ensure that KPO employees are aware of their responsibilities under the Code of Conduct and KPO compliance framework.

- **Corporate Governance Controllership Management System**

This Management System provides a structure to maximise contribution to the business by everyone involved in the activities of the Corporate Governance Controllership. The document describes its mission, objectives and deliverables, such as assurance of KPO's internal control framework as well as value assurance reviews of projects; external document and correspondence management, business planning and performance monitoring, and translation services.

Tab. № 3.

Corporate Governance	Operations	HSSE and Asset Integrity	Social Performance	Ethics & Compliance
▶ Karachaganak Corporate Management System Manual; ▶ Corporate Governance Controllership Management System.	▶ Management Systems Manual for Operations Directorate; ▶ Marketing Directorate Management System; ▶ Finance Directorate Management System; ▶ KPO Competency Management System Policy.	▶ Health, Safety and Environmental Management System Framework and HSE Policy; ▶ KPO HSE Annual Improvement Plan; ▶ Occupational Health and Health Promotion Policy; ▶ Energy Management System Manual and Energy Policy; ▶ Security Management System Framework.	▶ Local Content Policy ▶ Astana Office Controllership and JOC Secretariat Management System; ▶ KPO Social Performance Policy and Standards; ▶ KPO Sponsorship and Donations Policy; ▶ HR Management System Manual; GRI 103-2 ▶ Social Projects Department Management System.	▶ KPO Code of Conduct; ▶ Conflict of Interest Policy; ▶ Compliance Assurance Policy.

Risk management GRI 102-15

Petroleum operations must be carefully managed with respect to people, the environment, assets, whilst managing risks to personal and process safety and water and soil pollution, air emissions, and generation of waste. For KPO, as a responsible oil and gas operator, sustainably managing risks is of paramount importance. Such risks include, but are not limited to:

- Personnel safety: potential emissions of hydrogen sulphide (H_2S);
- Asset integrity risk from illegal taps;
- Environment: potential spills, generation of waste, and emissions to air;
- Ethics & Compliance of our own personnel, our contractors, and subcontractors;
- Attracting and retaining qualified local Qazaqstani personnel.

Within KPO a formal Risk Management process is in place to identify and effectively manage business risks. The Risk Management Procedure defines and describes this process, as well as roles and responsibilities.

Corporate Governance Controllership facilitates the development of a risk management system and is responsible for maintaining the Corporate Risk Register. The Corporate Risk Register contains a list of potential risks, as well as relevant action plans aimed to mitigate those risks. GRI 102-29

All risks are reported to and discussed in the quarterly KPO Risk Committee meetings participated by KPO senior management. After each Risk Committee meeting, the Corporate Governance Controller provides the ConCom with the Quarterly Risk Register, outlining the details on the KPO's top risks. GRI 102-33

Detailed disclosure on measures for specific risks' reduction is given in the relevant chapters of this Report.

Assurance GRI 103-3

KPO utilises audit as one of the tools to provide assurance. The KPO Internal Audit Department provides an assurance designed to reveal the organisation's control gaps and failures in mitigating its risks. It supports KPO to deliver its business objectives by bringing a systematic, disciplined approach to evaluate and improve the design and operating effectiveness of risk management, control, and governance processes.

KPO implements its annual audit plan, which includes topics, such as efficiency of business processes, compliance with law, regulations and internal procedures, reliability of financial and management reporting, and follow-up of audit actions. In addition, KPO Parent Companies conduct an annual audit to provide additional assurance to the areas of risk management, control, and governance. The results of the audits are reported to KPO management and Parent Companies at the Audit Sub-Committee.

Another tool that KPO utilises is Value Assurance Review (VAR). This tool is applied to all relevant KPO Projects and is performed by the Value Assurance Department, as per the KPO Value Assurance Framework (VAF). Value Assurance is a scalable process assisting project leaders to maximise the value of investments for the venture. Besides, Value Assurance Reviews, functional technical reviews, peer assists and workshops are held to assure projects go through the necessary stage gates from 'Identification' to 'Operation'. Parent Companies' representatives are involved in value assurance for larger capital projects, whilst for smaller projects the value assurance is performed by independent teams within KPO.

Extractive Industries Transparency Initiative

KPO supports the Extractive Industries Transparency Initiative (EITI), which focuses on ensuring transparency of incomes and overall chain of value creation in the management of the natural resources of the Republic of Qazaqstan (RoQ).

In 2018, KPO paid taxes in the amount totalling US$ 1.9 bln (at the RoQ National bank exchange rate on 31.12.2018) as reported in the 14th National Report on Implementation of the Extractive Industries Transparency Initiative for 2018.

The latest KPO report for 2018 was provided to the Committee for Geology and Subsoil Use of the RoQ Ministry of Industry and Infrastructure Development and to the Republican State Enterprise 'West Qazaqstan Interregional Department of Geology and Subsoil Use' ('Zapkaznedra') reporting to the above Committee on 29 April 2019. KPO has been solely submitting the EITI reports on its tax obligations to the RoQ authorised bodies since 2014. In table № 4 one can see the history of KPO payments in the period from 2014 to 2018 GRI 102-13.

Submission by Subsoil Users of the EITI Reports has been carried out through the web portal of the integrated information system of the Single National Management System of Subsoil Users in Qazaqstan. The Final EITI National Reports are available online to any stakeholder on the website of the Ministry of Industry and Infrastructure Development at http://eiti.geology.gov.kz/en/national-reports.

Data about taxes paid by KPO to the state budget is publicly available at http://egsu.energo.gov.kz (section 'Final Report on tax and non-tax payments / incomings from payers of oil & gas and mining sectors of the Republic of Qazaqstan').

Tab. № 4. Taxes and mandatory payments paid by KPO to the RoQ Budget in 2014-2018 (in US$)

2014	2015	2016	2017	2018
2.1 bln	1.2 bln	369 mln	897 mln	1.9 bln

ETHICAL CONDUCT GRI 102-16

Code of Conduct GRI 103-2

The KPO Compliance Framework regulates and provides guidance on all aspects of compliance throughout the Company. The fundamental document within the Compliance Framework is the Code of Conduct, which establishes the core ethical principles, values and behaviours in the process of working inside and outside of the Company and when contracting with vendors, suppliers or other counterparties.

Our corporate values are presented in Fig. № 8.

Awareness training on the Code of conduct and anti-corruption GRI 412-2, 205-2

KPO insists on creating a fair and equitable business environment where the ethical business principles in the KPO Code of Conduct are the foundation for all its relationships.

All new starters in KPO receive an introductory training course on the Code of Conduct. Each KPO employee is required, on an annual basis, to make a Compliance Declaration acknowledging their familiarisation with their personal compliance obligations. The Code of Conduct and other ethical compliance policies and practical tests are available on the KPO intranet for each employee. By the end of December 2018, 95% of KPO employees had completed their Compliance Declaration.

As part of raising awareness on ethical compliance and engagement amongst the contractor companies, KPO held its annual Contractor Ethical Compliance Workshop in October 2018. The workshop was attended by 34 delegates from 29 contractor organisations, together with Operator representatives from Shell and Eni.

Fig. №8. KPO FUNDAMENTAL VALUES

Hotline and other compliance measures

GRI 102-17, 103-3, 102-16

To support the Company's legal compliance programme, KPO has a toll-free, anonymous and confidential Hotline in place since 2012.

The Hotline provides an important tool for KPO's employees, contractors and stakeholders to ensure a fair and safe working environment. The topics may include discrimination, sexual harassment, conflicts of interest, safety or environmental violations and/or improper financial practices or bribery. The caller can report on the alleged misconduct either by telephone or by completing an online report form. The report is then sent to the KPO Legal Compliance Counsel and Compliance Coordination Manager for review and to determine the appropriate action. In some cases employees report concerns directly to the Legal Directorate.

All the reports received during 2018 were duly considered and where the matter has been concluded appropriate action taken when justified. The complaints mostly related to Human Resources issues, and these were addressed in accordance with KPO's Regulations on Individual and Collective Labour Disputes and Discipline Handling Policy, depending on the nature of the situation. Those matters that related to allegations of ethical misconduct were investigated in terms of the Compliance Assurance Investigations Guidelines and were reported to the KPO Compliance Committee.

Anti-corruption due diligence process

GRI 205-2, 102-16

Since 2012, KPO has implemented an Ethical Due Diligence programme to determine the risks associated with each potential business partner and to identify appropriate mitigation measures for those aspects that may pose a risk.

Each potential business partner receives a questionnaire asking information about its ownership, management and conduct of business including its ethical business practices. KPO also uses international Dow Jones risk and compliance database and other databases (including tax and court databases) to confirm the company's corporate information and whether there were any negative reports regarding its business conduct. A risk assessment is performed to determine the acceptability of the business partner and, if relevant, mitigation measures to be applied to any residual risks.

KPO also requires its business partners to comply with applicable Qazaq and international laws combatting corruption and bribery through obligations incorporated in KPO's standard contracts.

We are confident that these activities have alerted our business partners to KPO's high standards of ethical business. We cooperate with and support our business partners to prevent corruption and bribery.

SAFETY, SECURITY AND ASSET INTEGRITY

Safety

GRI 102-15

In developing and operating such a technically complex field like Karachaganak, safety, security and asset integrity are critical success factors. As a socially responsible company, KPO is fully committed to maintaining fair and effective HSE culture.

Our aim is that everyone goes home safely, and that there are no leaks in our facilities.

KPO 2018 Lost Time Injury Frequency was 0.29 vs 0.08 in 2017

2018 Total Recordable Incident Frequency was 0.50 vs 0.11 in 2017

Road Traffic Incident Frequency (RTIF) per mln km driven decreased from 0.05 in 2017 to 0.03 in 2018

Over 28,000 HSE observations were raised throughout 2018

Over 13,000 interventions raised through HSE cards mechanism, of which 99% corrective actions were closed

Tab. № 5. Our targets in safety GRI 103-2

Our 2018 targets	Target achievement	Actions taken in 2018	Targets for 2019
SAFETY			
▶ Conduct Parent Companies' (Eni and Shell) audit in May 2018; ▶ Conduct a Surveillance audit for ISO 14001:2015 and OHSAS 18001:2007 in June 2018; ▶ Conduct gap analysis of HSE Management System's compliance to the new ISO 45001 standard requirements.	Completed	▶ On 3-15 May 2018, Eni and Shell conducted a Joint Operator HSSE audit. ▶ On 10-14 June 2018, the certification competent authority carried out the first HSE Management System surveillance audit to verify KPO's compliance with the ISO 14001:2015 and OHSAS 18001:2007. ▶ In September 2018, the first stage of the GAP analysis of the KPO HSE Management System was performed.	▶ Conduct a Surveillance audit for ISO 14001:2015 and OHSAS 18001:2007 in May 2019; ▶ Conduct a second stage of gap analysis of HSE Management System's compliance to the new ISO 45001 standard requirements; ▶ Organise training for relevant staff on ISO 45001; ▶ Conduct a Management Review before certification.
Integrate Supervisors' HSE competence activity into the Production & Maintenance Competency Assurance System	Partially implemented	▶ In August 2018, KPO Operators, Eni and Shell, conducted a review of the KPO Competency Management System and issued recommendations for improvement. ▶ Competency standards and assessment guide for front line supervisors in Production & Maintenance department were developed and assessment process were launched. HSE Competencies guidelines reviewed.	Implement HSE competency assessment of the KPO front line supervisors (40% planned for 2019)
Amend the Contractor HSE Performance Management Strategy to include requirements for contracts with high and medium HSE risks specific for offsite construction (e.g. buildings, roads) when contractor executes works within its own HSE management system not interacting with KPO MS (contract modes as per the IOGP guidelines).	Completed	Schedule D to KPO standard template contacts on HSE requirements specific for high or medium HSE risks related to off-site civil construction was prepared and issued for use, and referenced in KPO Contractor HSE Performance Management Strategy.	Maintain contract owner's awareness on the HSE requirements in contract management process
	New target		Implement Safety Continuous Improvement Journey
	New target		Implement short term actions of the Road Safety Implementation Plan
HSE RISK MANAGEMENT GRI 102-15			
Deliver the Declaration for Safety for Industrial Units (DSIU) in line with the RoQ requirements for the following facilities: ▶ Eco Centre, ▶ Unit 3/KOTS, ▶ Unit 2, ▶ Well Stock.	Completed	DSIU documents for Unit 3/KOTS, Unit 2 and Well Stock were updated and approved by the regulator authority. Eco-Centre DSIU is pending the workpacks from Engineering Department. This scope will not be carried forward to 2019, as it is not expected that the issue with separation distances will be resolved in 2019.	Update the Declaration of Safety (DSIU) for Unit 3 / KOTS, Unit 2 and Well Stock

Tab. № 5. Our targets in safety (continued) GRI 103-2

Our 2018 targets	Target achievement	Actions taken in 2018	Targets for 2019
HSE RISK MANAGEMENT GRI 102-15			
▶ Obtain endorsement of the Unit 3 ALARP Demonstration by the PSA Authority. ▶ Issue the KPC ALARP Demonstration. ▶ Issue the Unit 2 ALARP Demonstration.	In progress	▶ Endorsement of the Unit 3 ALARP Demonstration was transferred into the 2019 Plan; ▶ ALARP Demonstration is carried out through Quantitative Review Assessments (QRA) and Escape, Evacuation and Rescue Assessments (EERA). KPC QRA report is in progress, EERA has been completed. Unit 2 QRA and EERA reports are in progress.	▶ Obtain endorsement of the ALARP Demonstration report for Unit 3 by Parent Companies; ▶ Issue the Quantitative Review Assurance Reports for KPC and Unit 2
Update the Escape, Evacuation and Rescue Assessments, Strategies and Implementation Plans for Unit 2 and KPC	In progress	KPC Escape, Evacuation and Rescue Assessment was completed; the update of the Unit 2 Assessment was transferred into the 2019 Plan.	Update the Escape, Evacuation and Rescue Assessments for Unit 2 and Unit 3
Update the Risk Management Framework	Implemented	The document was updated.	Update the Risk Management Framework to introduce the guideline for the risk register and arrange training
Conduct the Unit 2 Assurance HAZOP Study (new target)	Implemented	Unit 2 Assurance HAZOP Study was completed.	Conduct Unit 3 Assurance HAZOP Study
Maintain and adopt principles of Field Manning Strategy to maintain the POB levels in the KOGCF to a practicable level whilst ensuring the lowest risk to personnel through the provision of appropriate systems to alert, protect and evacuate personnel within the field boundary in the event of a major accident	Implemented	The following activities were made as part of the Field Manning Strategy: ▶ Regular monitoring of the Unit 3 POB Time Fraction (EACS); ▶ Strategy for Protection of People in H2S Emergencies in the Field has been developed; ▶ ALARP Demonstration Roadmap was agreed and approved.	▶ Continue regular monitoring of the Unit 3 POB Time Fraction (EACS); ▶ Implement total Shutdown to reduce H2S exposure to people; ▶ Implement 'Strategy for Protection of People in H2S Emergencies in the Field'.
Develop software/process for efficient Unit 3 Time fraction EACS data reporting while GPS use is fine-tuned	Implemented	The software was successfully developed and introduced. KPO Risk Department monitors the Time Fraction and reports to Eni and Shell. In addition, the software generates the latest reports used for the OpCom and ConCom meetings.	Provide more usability of the Time fraction EACS software based on the users' feedback
Review the Unit 2, KPC and infield (EOPS) Safety Case[2]	In progress	The action was transferred into the 2019 Plan.	▶ Complete the review of the Unit 2, KPC and infield (EOPS) Safety Case ▶ Review the Unit 3 Safety Case

[2] *Safety Case is a document produced for a facility to identify the hazards and risks, describe how the risks are controlled and how safety management system ensures that the controls effectively and consistently applied.*

Safety performance GRI 103-3, 403-2

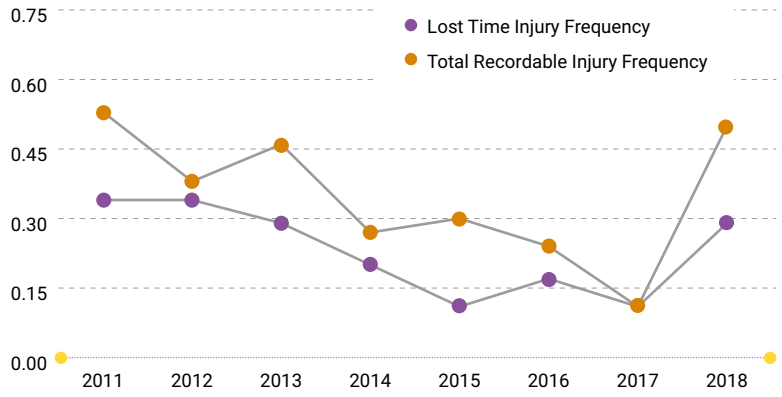
We present our safety performance covering the period of 2011–2018 with some highlights for 2018. This allows us to study trends and analyse dynamics of data in the longer term. We measure our success by frequency of incidents occurred over a set amount of work performed in man-hours.

The Graph № 1 shows both Lost Time Injury Frequency (LTIF)[1] and Total Recordable Injury Frequency (TRIF)[2].

In 2018, KPO experienced significant increase in a number of Lost Time and Total Recordable injuries. KPO LTIF was 0.29 versus 0.08 in 2017 and TRIF – 0.50 versus 0.11 in 2017.

We investigate all incidents with a view to preventing their recurrence. We also share lessons learned from our incidents with our contractors and other interested parties, and take lessons from other businesses to improve safety in KPO.

Graph № 1. LTI Frequency and TRI Frequency: KPO and Contractors, 2011–2018 GRI 403-2



Note: Calculation method applied in KPO for LTI and TRI frequencies:

1 *LTI Frequency (LTIF) = Number of LTIs (Lost Work Day Case + Fatality) x 1,000,000/man-hours;*

2 *TRI Frequency (TRIF) = Number of TRIs (Lost Time Injury + Medical Treatment Case + Restricted Work Day Case) x 1,000,000/man-hours.*

Table № 6 shows KPO LTIF versus contractors LTIF. It should be noted that the data of KPO and contracting organizations is presented here separately and may not be added together to get a joint number, but a formula is to be applied.

Tab. № 6. Lost Time Injury Frequency: KPO versus contractors, 2011–2018

GRI 403-2

Performance Indicators	2011	2012	2013	2014	2015	2016	2017	2018
Lost Time Injury Frequency (KPO)	0.71	0.42	0.58	0.14	0.14	0.00	0.14	0.53
Lost Time Injury Frequency (Contractors)	0.21	0.30	0.17	0.22	0.10	0.23	0.05	0.20

Table № 7 shows KPO TRIF versus contractors' TRIF.

Tab. № 7. Total Recordable Injury Frequency: KPO versus contractors*, 2011–2018

Performance Indicators	2011	2012	2013	2014	2015	2016	2017	2018
Total Recordable Injury Frequency (KPO)	1.00	0.42	0.58	0.14	0.27	0.27	0.14	0.66
Total Recordable Injury Frequency (Contractors)	0.36	0.36	0.41	0.32	0.31	0.23	0.10	0.44

* *Note: First Aid Cases are not included in occupational injury calculations.*

KPO strives for an injury-free workplace; however, during 2018 we had thirteen (13) incidents resulted in fourteen (14) injuries, as shown in table № 8.

Tab. № 8. GRI 403-2

Type of injury	Description	Quantity
8 Lost time injuries	Finger injury during electrical motor disconnection	1
	Foot injury as a result of stumbling	1
	Leg injury caused by a broken stem piece	1
	Arm injury as a result of falling onto the fixed access platform grating	1
	Twisted ankles injuries	2
	Injuries as a result of severe road traffic incident (one serious and one fatal injury)	2
6 Other recordable injuries to personnel, who could continue work after medical treatment (4) or being transferred to light duties (2)	Minor leg burn in the canteen	1
	Pinched fingers	2
	Irritation of the eyes after painting work	1
	Shoulder injury caused by a dropped object	1
	Minor cut of the hand	1
TOTAL:		**14**

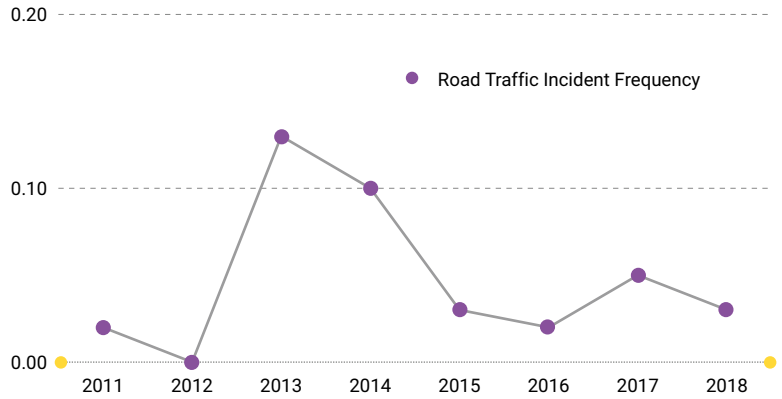
Out of the fourteen injuries, nine related to contractor employees and five – to KPO employees.

In 2018, KPO vehicles travelled a little over 38 mln km as opposed to 39 mln km in 2017.

Road Traffic Incident Frequency (RTIF) per mln km driven decreased from 0.05 in 2017 to 0.03 in 2018 due to occurrence of one severe RTI in 2018 versus two in 2017 – head-on collision of two contractors' heavy trucks resulting in contractors' drivers serious injuries; one of them had a fatal outcome.

Graph № 2. Road Traffic Incident Frequency: KPO and contractors, 2011–2018

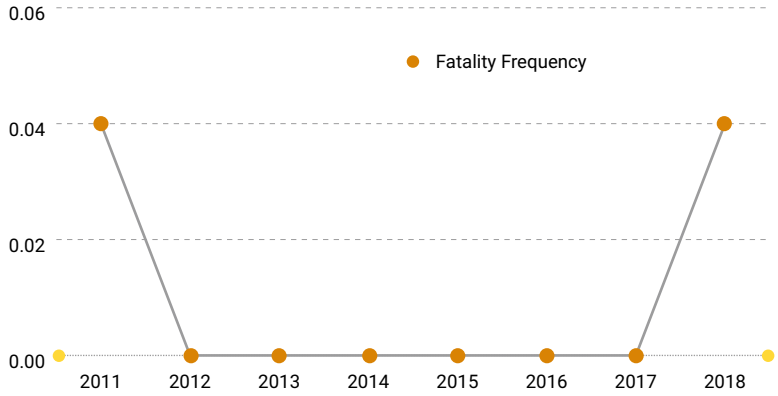
GRI 403-2



Note: Our calculation of RTIF: Road Traffic Incident Frequency = number of RTIs (severe) x 1,000,000/kilometres driven.

Graph № 3. Fatality Frequency: KPO and contractors, 2011–2018

GRI 403-2



Note: Our calculation of fatality frequency: Fatality frequency (per million man-hours worked) = Number of fatalities x 1,000,000 / man-hours worked. KPO had 1 fatality in 2011 and 1 fatality in 2018.

Tab. № 9. Road Traffic Incident Frequency: KPO versus contractors, 2011–2018

GRI 403-2

Performance Indicator	2011	2012	2013	2014	2015	2016	2017	2018
Road Traffic Incident Frequency (KPO)	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00
Road Traffic Incident Frequency (Contractors)	0.02	0.00	0.14	0.10	0.02	0.02	0.06	0.03

Note: Prior to 2017 the Contractors' RTIF was based on all km by contractor vehicles, whether on KPO business or not. From 2017 on, the RTIF aligns to IOGP guidance in taking account of km driven on KPO business only.

Tab. № 10. Fatality Frequency: KPO versus contractors, 2011–2018

GRI 403-2

Performance Indicator	2011	2012	2013	2014	2015	2016	2017	2018
Fatality Frequency (KPO)	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fatality Frequency (Contractors)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05

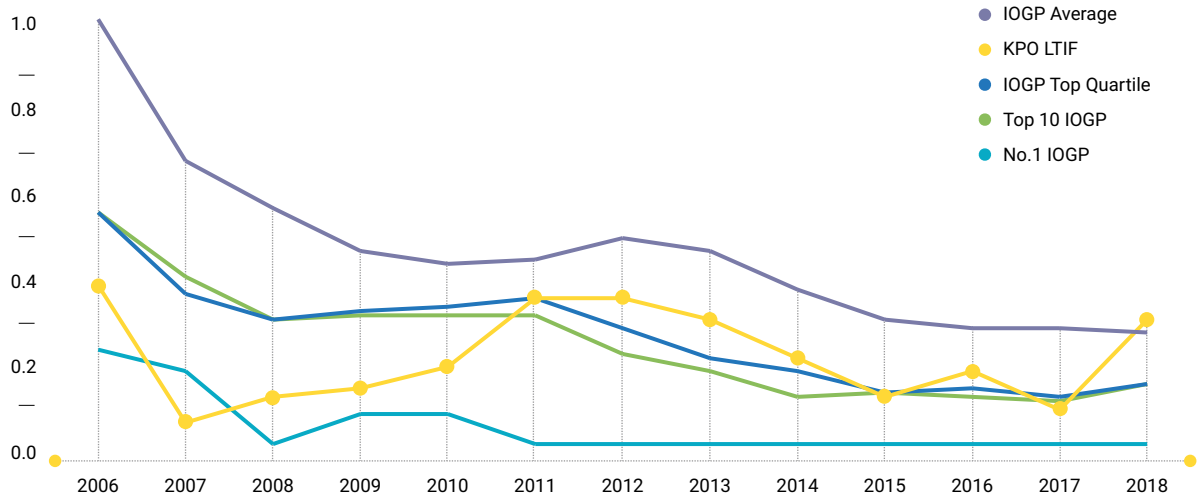
GRI 103-3

PEER Comparison GRI 103-3

We annually review our safety performance against other Oil & Gas production operators. KPO Key Performance Indicators (KPIs) are compared to the data annually published by the International Association of Oil and Gas Producers (IOGP) based on the operators' performance collected worldwide.

In 2018, the number of our LTIs has increased significantly. Thus, when compared to other peers, KPO LTIF stands above the 2018 IOGP Top 10 and IOGP Average (see Graph № 4). IOGP Safety Performance Indicators are posted annually at www.iogp.org.

Graph № 4. KPO Performance versus IOGP, 2006–2018 GRI 103-3, 403-2



Integrated HSE Management System GRI 103-2

Since the initial system certification, annual surveillance audits are being carried out at KPO by accredited third parties. The latest re-certification audit against ISO 14001:2015 and OHSAS 18001:2007 was held in July 2017 and the first surveillance audit for these standards in June 2018 by Bureau Veritas. KPO Integrated Management System (IMS) proved itself as mature and fully compliant with the requirements of both standards, with certification granted until September 2020. GRI 103-3

The new ISO 45001:2018 Standard for Occupational Safety and Health replacing OHSAS 18001:2007 was issued in March 2018. KPO management supported certification of the HSE IMS to the latest version, and the transition plan was prepared.

In September 2018, KPO performed a review of internal HSE documentation as part of the first stage of GAP analysis of the HSE Management System. The second stage has been scheduled for 2019. Regular audits were held to ensure that activities are carried out in line with the set targets and in compliance with the established corporate and HSE management systems. In 2018, KPO held five internal audits and 15 audits of contractors.

HSE Risk Management

GRI 102-15, 103-3

KPO has an HSE Risk Management Department responsible for assessing key hazards that may contribute to major accidents and provide documented demonstration of reducing risks to as low as reasonably practicable. The activities also include development and update of the Declaration of Industrial Safety for the Karachaganak Gas and Condensate Field in accordance with the requirements of the Qazaq industrial safety legislation. In achieving the set goals in 2018, the activities conducted are disclosed herewith.

Declaration of Industrial Safety (DSIU)

Required by the RoQ Law on Civil Defence, the Declaration of Industrial Safety reflects all latest modifications and new projects introduced in the year. In 2018, KPO developed safety declarations for the Karachaganak Field well stock, Unit 2 and Unit 3/Karachaganak-Orenburg Transportation System (KOTS).

Unit 3 ALARP Demonstration

As part of the Unit 3 ALARP demonstration, one of the key Risk Reduction Measure was to ensure minimum exposure of our staff to H_2S or as low as reasonably possible. Worker groups' exposure time or time fraction data for the duration that worker groups spend in the units' process areas is a key assumption in the Quantitative Risk Assessment. To achieve this goal, KPO started monitoring data accumulated using the Electronic Access Control System (EACS) in place since 2016. Special software for data monitoring was developed to eliminate potential human errors. In 2018, the software was successfully introduced and able to generate automatic reports as and when required. Apart from that, KPO initiated the Fire & Gas Detection mapping study process for Unit 3.

Strategy for Protection of People from H_2S

KPO faces a risk of potential exposure of its personnel, contractors, visitors and authorized third parties working within the Karachaganak Field to highly toxic H_2S gas. In 2018, we developed a Strategy for Protection of People in H_2S Emergencies in the Field initiated in 2017 as part of the field-wide H_2S protection and emergency response system. The strategy outlines the ways of personnel protection from an unplanned release including detection, emergency response, protective equipment, evacuation and rescue, and maintenance policies. The strategy also covers the minimum requirements for development of H_2S management plans, procedures and instructions of processing units and other affected specific workplaces.

Escape, Evacuation and Rescue Methodology

In line with the Emergency Response Plan, KPO established the criteria for safe evacuation and mustering in case of any emergency as part of the commitment to provide safe and effective emergency response for all KPO staff including contractors. In 2018, in consultation with Operator Companies Eni and Shell KPO has developed Guiding Rules and Methodology and implemented these at the Karachaganak Processing Complex (KPC).

Risk Management Framework

KPO Risk Management Framework sets up the process for managing health, safety, environmental and business risks within KPO and describes its place in the Karachaganak Management System. The document provides guidance on:

- Determining the level to which HSE risks must be reduced so that they may be considered tolerable;
- Applying criteria for further risk reduction to achieve risk levels that may be considered to be As Low As Reasonably Practicable (ALARP);
- Risk Tolerability Criteria.

In 2018, the Risk Management Framework was revised to include a standard risk matrix across KPO at all levels to ensure a consistent approach in its application to HSE management processes and better alignment with operations and projects.

HAZOP Study

We conduct a Hazard and Operability (HAZOP) Study, examination of planned or existing processes or operation in order to identify and evaluate problems that may represent risks to personnel or equipment, or prevent efficient operation. In 2018, the Unit 2 Assurance Hazard and Operability study was finalized.

Off-site Risk Assessment (E-Rainbow)

With support from Eni, KPO initiated the review of the field-wide blowout risk assessment using the e-Rainbow software package to account for the Quantitative Risk Assessments methodology, rule-sets and assumptions, thus allowing for a review of the field-wide Escape, Evacuation and Rescue requirements and, hence, the Emergency Response controls, particularly in case of H_2S effects. 018 HSE

2018 HSE Improvement Plan GRI 102-11, 103-3

Annually KPO plans a number of HSE activities, which are over and above the day-to-day work, to create the HSE Improvement Plan for the following year. The Plan is based on the lessons learned in the past year and on the international best practices. The Plan's overall structure includes nine elements related to specific area. The progress of the HSE Improvement Plan is monitored and reported on a monthly basis.

I. Compliance with HSE Management system;
II. HSE Leadership and Supervision;
III. Contractor HSE Management;
IV. Asset Integrity & Risk Management
V. Occupational Health;
VI. Environmental Management;
VII. Road Safety Management;
VIII. Project HSE Management;
IX. Security.

The 2018 HSE Improvement Plan consisted of 55 key actions and improvements distributed and shared throughout all company directorates. Over 87% of the Plan was implemented with a few activities postponed to 2019.

Fig. № 9. KPO GOLDEN RULES

HSE Engagement and Communication GRI 102-11

KPO as a socially responsible company is fully committed to maintaining a fair and effective culture in Health, Safety and Environment. A number of multiple level engagement is conducted at KPO, including:

- KPO introduced three Golden Rules, 11 Life Saving rules and 10 Process Safety Fundamentals. The Golden Rules provide a framework for how all KPO and Contractor employees must behave:
  - Comply with the law, standards and procedures;
  - Intervene on unsafe or non-compliant actions;
  - Respect each other and the community.
- In 2018, KPO focused on raising hazard awareness and reporting culture of KPO and contractors employees. This included awareness workshops, development and distribution of awareness posters to all work sites, coaching of site KPO HSE personnel to improve proactive safety engagement. HSE network between the executives of Tengizchevroil (TCO), KPO and North Caspian Operating Company (NCOC) was established with the aim to initiate cross-ventures collaboration and sharing experience in HSE and advocacy.
- **HSE meetings** are regularly held at various levels in the Company to share lessons learnt and to discuss HSE topics and concerns. KPO contractors are also engaged in the discussions.
- The **KPO and Contractor Senior Management HSE Forum** 'Getting to Zero' on 2nd October 2018 was attended by the senior representatives from KPO and 49 contracting companies. The Forum was a great opportunity for KPO and Key contractor companies` leaders to understand criticalities, share experience and hold discussions on ways to improve and further strengthen an HSE culture within KPO and Contractor companies.
- **'KPO in Safety'** is a cultural change programme built on the example of the previously applied 'Eni in Safety' behavioural change programme and Shell initiative. 'KPO in Safety 2018' programme was focused on discussions in small groups about the importance of everyone's involvement in the safety culture focusing on the three themes: 'Care' (looking after each other), 'Complacency' (Risk Normalisation) and 'Dilemmas'. The programme was launched on 22nd May 2018 and continued through August, having involved over 6,000 KPO and contractor employees in 300 sessions.

The **Winter Safety campaign** continued in 2018 once again to remind employees and contractors about precautions to stay safe in winter time, whether working, walking or driving.

HSE Leadership and Management Tours programme encouraged KPO Managers to be visible in the workplace and interact with the workforce. In 2018, the number of the HSE leadership tours exceeded the minimum target set for the year: 82 leadership tours were conducted by Directors and Controllers against the planned 60 tours. 551 HSE management tours were held by facility and department managers against the planned 350 (the estimate was made assuming that one tour corresponds to one person's visit to a location). The benefit of the HSE Leadership and Management Tours programmes for the workforce is that they had an opportunity to raise their HSE concerns and issues directly with top management.

Hazard Awareness and Incident Reporting campaign was launched in 2018 to increase awareness and engage contractors to correctly identify and report hazards as well correctly classify and report near misses and incidents in a timely manner. The campaign covered three levels:

1. Clear and simple posters for workers were developed and placed for workers on sites. In total, seven posters with different topics were published.
2. Workshops were conducted for foremen and supervisors including practical tasks and a hazard hunt exercise covering incident classification, the importance of near miss and incidents reporting, hazard identification and reporting, intervention techniques etc. In total, over 450 people were trained. The sessions were held in a form of two-way discussion.
3. Hazard awareness and the importance of incident reporting was discussed at a KPO and Contractor Senior Management HSE Forum.

HSE cards programme

GRI 102-11, 103-3

The HSE Card Programme has been in place at KPO since 2012. The programme performance in 2018 included:

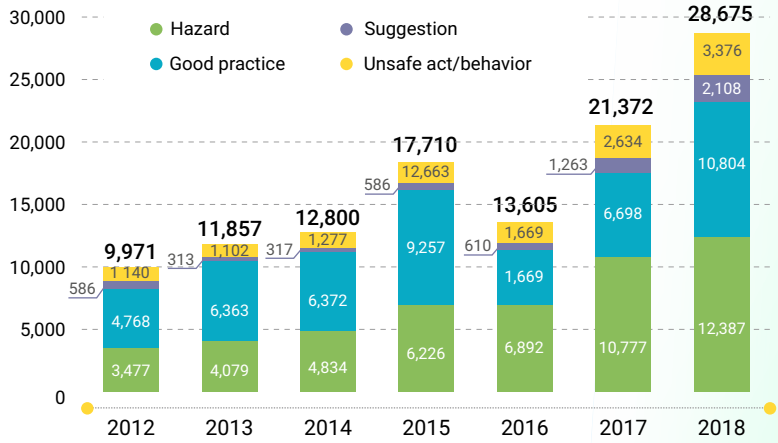
- over 28,000 observations were submitted throughout 2018;
- over 13,000 interventions were made and corrective actions assigned out of the received HSE Cards, 99% of actions were closed by the year-end;
- 27 Near Misses were reported via the HSE Card and further investigated thus potentially preventing more serious events from happening;
- 13 HSE Card Committees functioned in 2018 supporting the HSE Cards processing and analysis over all units / sites / offices.
- 142 HSE Card Committee meetings were held and 164 additional actions/ initiatives were introduced based on observations data analysis;
- 1,785 new observers were trained.

Fig. №10. KPO SAFETY POSTER EXAMPLE

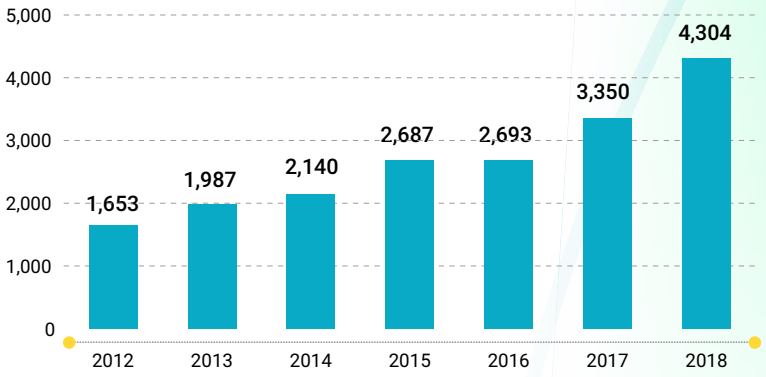
GRI 102-11

GRI 103-3

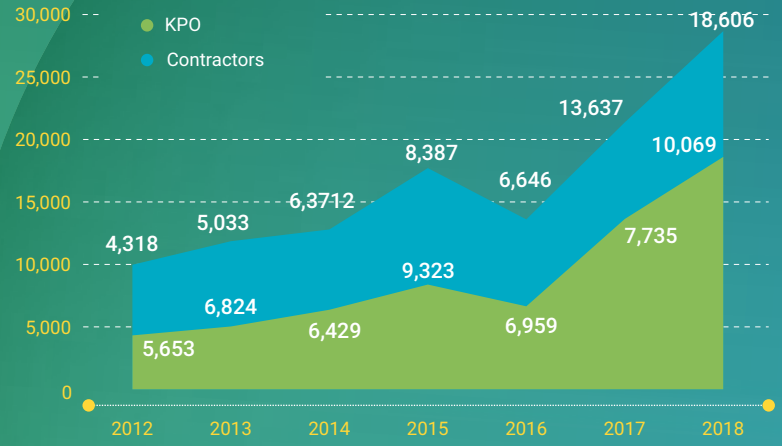
Graph № 5. HSE Cards by type of observations, 2016–2018



Graph № 6. Personnel engagement in the HSE Card Programme, 2012–2018



Graph № 7. Engagement of KPO vs Contractors in HSE Cards Programme, 2012–2018



In 2018, the contractors' involvement in the HSE Card programme made 65% of the total number of observations. KPO granted 14 contractor companies access to the Synergi database for registering their own HSE observations. This resulted in increase of the HSE cards reported by those contractors – in total they logged over 9,500 observations.

HSE Card Revision GRI 102-11

With the intention to extend the Company's focus on process safety, the HSE Card was revised to improve personnel awareness on Process Safety Fundamentals and give an opportunity to report relevant hazards as well as to allow effective analysis of Process Safety related observations. In addition, a distinction in the categories was made to reflect those related to KPO Life Savers and common HSE Management System requirements. The Asset Integrity team conducted 32 roll out sessions for the 1,191 KPO and contractor operating staff at all KPO facilities.

Incentive Scheme

Results of the KPO Incentive Scheme aimed at encouraging personnel to focus on safe performance are the following:

- Over 500 Company and contractor employees were awarded with promo gifts for active participation in the HSE Card Programme and for making significant observations /eliminating hazards/unsafe acts;
- 75 employees were rewarded with monetary prizes for the best observations and valuable HSE improvement suggestions upon the quarterly results.
- New Quarterly Award categories were introduced: "The Best Process Safety related observation" to reward for reporting critical issues relating to Process Safety Fundamentals.

Emergency Response management

GRI 102-11, 103-1, 103-2

As the KOGCF Operator, KPO has a special focus on the emergency response and prevention.

KPO is responsible for ensuring personnel's readiness to respond to any potential emergency in the short and long term. This also includes monitoring of the Company's effectiveness in implementing the business contingency planning.

KPO has a robust 3-level Emergency Response system in place to encourage prompt actions in case of any incident, accident or emergency, and to assess their scale and work out solutions for their containment and control. The system is presented on the figure № 11.

Each year, our system is tested with the various exercises in line with the Company's Level I, II and III Emergency Response Training and Exercise Plan. In addition to regular onsite emergency response drills, there were four larger scale exercises conducted in 2018 with the involvement of different level of emergency response organisation.

In the year, weekly table top exercises with the Incident Management Teams were held both in the Field and Aksai, where various emergency scenarios were discussed.

Monthly theoretical sessions were conducted by Emergency Response Team specialists at KPO units: Unit-2, Unit-3, KPC, Gathering, Eco Centre and wells. Subjects of the sessions were selected based on the annual training session plan.

According to the annual Drill Schedule, theoretical sessions and practical drills have been performed on a weekly basis with engagement of the KPO Emergency Response System teams, including Fire Fighting Service, Gas Rescue Team, Voluntary Gas Rescue Team and medical staff.

Fig. № 11. KPO EMERGENCY RESPONSE SYSTEM **GRI** 103-2

Throughout the 2018, KPO continued training of staff on civil protection via an e-learning system, as required by the RoQ legislation. The KPO management team and leaders of emergency rescue teams and units passed training on civil protection at the WQO Department of Emergency Situations and had refresher courses at the Emergency Situations Committee's training centre under the RoQ Ministry of Internal Affairs. In addition, 36 members of emergency management teams have passed specialised training on major emergency management during the year. The list of emergency response activities is provided in detail in Table № 11.

GRI 102-11, 103-3

Tab.№ 11. Emergency response exercises conducted in 2018

Exercise type / name	ER Levels involved	Date	Description of activities
KPO Unit Drills	I	Monthly	126 Unit Drills were conducted during the year according to the Emergency Response Drill Plan and targeting response to scenarios identified in the Unit's Emergency Response Plan
Practical drills for donning Escape and Evacuation Breathing apparatus	Unit's personnel	February, March, April, May	Theoretical and practical training of escape sets donning procedure
Steppe fire extinguishing drill	FERS	May	Steppe fire extinguishing drill was held at well 347 aimed at practicing interaction of Fire Service personnel, Plough tractor drivers, ECC Operator, checking availability and condition of the grass fire-fighting equipment prior to the fire hazardous season.
Table Top exercises at Unit-2, KPC, Unit-3	II and III	April, June, September	Table Top exercises aimed at practicing interaction between Incident Control Team and Field Incident Management Team. Scenarios were selected from the Units' Emergency Response Plans.
Casualty rescue from confined space Emergency Rescue Drills	I, Emergency Rescue Services	June, July, September	The drills were held at the well site and targeted at practicing emergency rescue operations from confined space, and interaction between Well Ops, Gathering, ECC Operator, Emergency Response Services, including Voluntary Gas Rescue Team.
Special tactical training exercise 'Oil Spill at the crossing of Ural river and KATS Pipeline'	I	July	Oil spills elimination in the waters of the Ural river, at the points of its crossing with Karachaganak-Atyrau pipeline by deployment of booms and equipment for oil gathering
Multilevel Integrated Exercise 'TITAN'	I, II, III and Operator Companies	July	Simulation of Rig 249 blowout, loss of well control that leads to explosion. The exercise involved Crisis Management Teams of the Parent Operator companies, KPO Crisis Management Team, the Field and Aksai Incident Management Teams, Well Operations Incident Control Team, fire-fighting, gas-rescue and medical services. The aim was to exercise all teams' response to a major incident in the field.
Table Top exercise 'URANUS'	I and II	October	Table Top exercise simulating KATS export pipeline rupture, which mostly offered team members the opportunity to think their way through a series of problems, identifying issues and proposing solutions to them.
Table Top exercise 'VENUS'	II and III	November	The scenario of this table top exercise postulated a series of, escalating terrorist incidents within the RoQ culminating in the need for KPO to commence planning for, and evacuating Expat staff within the company, at Aksai, Astana and Uralsk.

Community preparedness GRI 102-11, 103-3

With the view to maintain continued readiness of the public alarm stations in the settlements around the perimeter of the Karachaganak Field, throughout the 2018 KPO emergency response specialists have performed monthly testing of the alarm signals.

Maintenance and technical services of diesel generators and infrastructure were conducted.

Furthermore, KPO specialists held a number of meetings with the officials of the rural districts located in vicinity of the Field and the KATS pipeline. Beyond that, KPO has regular engagement with the local authorities in the periods of high water, fire hazard and in winter. The details of engagement are given in the Table № 12.

Tab.№ 12. KPO engagement on emergency response with the officials of the rural districts by the Karachaganak Field, 2018 GRI 102-44

№	Purpose	Quantity	Engaged community groups
1	Raise awareness of the emergency response system, roles and purposes of the village alarm stations and emergency actions to be taken in case of activation of the alarms	37 meetings with engagement of 214 people in total	Akims and employees of the Rural District Akimats, responsible persons and officials, residents
2	Operation of the village alarm stations, communication order and actions of residents upon alarm activation, including evacuation of the residents in case of an emergency in the Field.	6 training sessions with engagement of 64 people in total	Akims and employees of the Rural District Akimats, responsible persons and officials, community members, residents
3	Meetings with the officials of settlements located along the export pipeline Karachaganak – Bolshoi Chagan – Atyrau (KATS), about interaction procedure in case of an emergency on the KATS export pipeline.	10 meetings with engagement of 68 people in total	Akims and employees of the Rural District Akimats, responsible persons and officials

In 2018, KPO has initiated a project to enhance the public alarm system in the villages of Priuralny, Zhanatalap, Uspenovka, Zharsuat and Karachaganak by installing additional loud speakers in order to enable communication of verbal instructions to village residents. The project is planned to be finalised in 2019.

Loss of primary containment (LOPC) in 2018:

Tier 1 1 case,

Tier 3 15 cases

31 risks identified, of which

23 reduced or eliminated

KPO Barrier Model has involved over

200 users via Intranet in 2018

Asset Integrity

GRI 103-2, 102-11, OG-13

KPO is committed to monitoring potential threats to its operations and seeking ways to mitigate high risks through the safety barrier system. KPO's Asset Integrity department continuously assess the 'health status' of the safety barriers to identify 'holes in the barriers' and to prevent major accidents from materializing.

The Asset Integrity Management System (AIMS) of KPO is a set of measures to prevent major accident hazards (MAH) and to raise hazard awareness amongst the KPO employees, all contractors and subcontractors working at the Karachaganak field.

Implementation of the AIMS commenced in 2014 and is facilitated by the Asset Integrity Department. The following core tools are used in the process:

1. Barrier Model;
2. Asset Integrity Key Performance Indicators (KPIs);
3. Management of Change system for brownfield modifications (eMoC);
4. Process Safety Fundamentals campaign.

The four asset integrity tools were further implemented, applied and developed in 2018.

Tab.№ 13. Targets in Asset Integrity GRI 103-2, GRI 102-11

2018 targets	Target achievement	Actions taken in 2018	Targets for 2019
Finalise the procurement process of the new Barrier Model tool; start new software implementation in 2019	Achieved	The procurement process of the new Barrier Model tool was finalised and implementation was started in 2019.	Finalize implementation of the new Barrier Model software and start a test phase
Start implementation of Performance Standards into the Computerised Maintenance Management System (CMMS) to strengthen management of physical barriers	Partially achieved	36 Performance Standards were developed in total 2017/2018. Implementation was delayed due to need for impact assessment on KPO operations.	Finalize impact assessment and define scope for enabling use of Performance Standards
Introduce new Asset Integrity Key Performance Indicators (KPIs) based on a gap assessment (new target)	Achieved	The new KPO AI KPIs Scorecard was introduced in March 2018. In line with AI KPI Scorecard a Process Safety Dashboard was developed to show the status of main KPIs graphically.	Initiate the Scope market for digitization tool for collection and presentation of Asset Integrity KPIs. To be finalized in 2020.
Start up and pursue full Alarm rationalization, targeting end of 2019	In progress	Phase I – Initial evaluation – was completed. Alarm Rationalisation Methodology was issued. Phase II – Alarm Rationalization exercise is ongoing.	Finalise phase II and prepare phase III (implementation of changes) of the Alarm Rationalization Project (in 2020).
Continue the Process Safety Awareness campaign and develop an action plan based on the analysis of the feedback collected to reinforce barrier control and monitoring	In progress	Process Safety Fundamentals (PSF) contractor management roll out sessions were conducted. Six PSF categories were added in the HSE card and "Best Process Safety card" award category was introduced. Action plan for barrier reinforcement was developed.	▶ Embed the Process Safety Fundamentals in the 2019 Shutdown activities and daily work; ▶ Start implementation of action plan for barrier reinforcement.

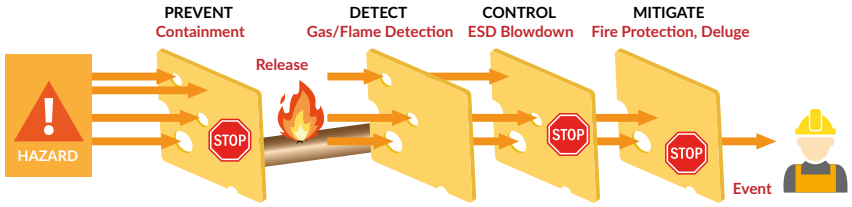
KPO Asset Integrity Barrier Model

GRI 103-2, 102-11

KPO Barrier Model is a database which applies a widely-used 'Swiss Cheese' model that provides a visual risk-oriented analysis of each KPO process facility. Today, the Barrier Model covers all significant risk areas and is notably used for decision-making.

Available on the KPO portal, the tool has involved over 200 users in 2018. Throughout 2018, the KPO Asset Integrity department has continuously upgraded the process of integration and interaction between all KPO departments to enable communication, escalation and follow-up of KPO's significant risk issues.

Fig. № 12. APPLICATION OF THE 'SWISS CHEESE' MODEL



Overall 2018, KPO has identified 31 risks, 23 of which were reduced to the manageable level or eliminated.

In 2018, the Asset Integrity department has been working on a film to introduce an explanation of general principles applied in KPO Barrier Model with regard to process safety risk management. The aim of the film is to improve the Process Safety awareness of operations personnel that is one of the keys to preventing major accidents.

In 2019, the new Barrier Model software will be rolled out with increased functionality, thus enabling KPO to improve efficiency of the process with increasingly "live data" and reduce the response time to potential hazards.

Monitoring of Asset Integrity KPIs

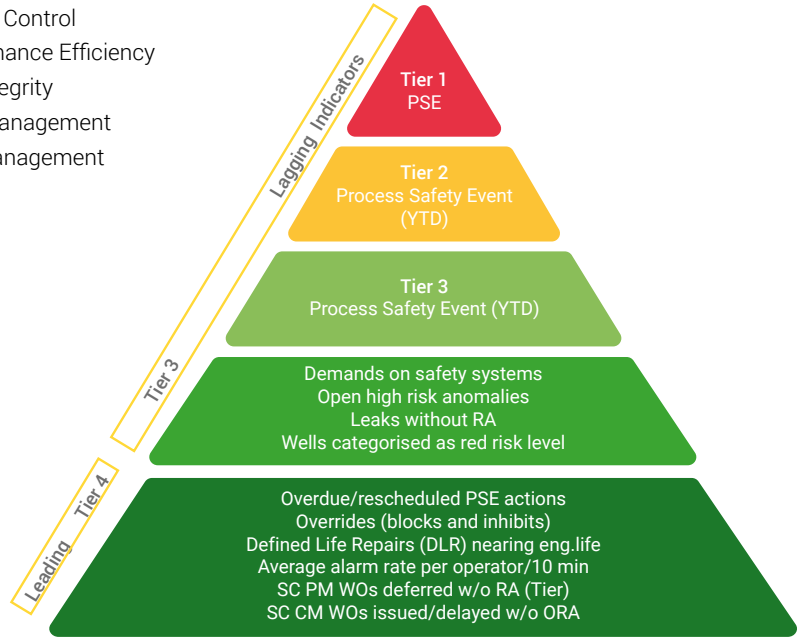
GRI 103-3

The objective of the KPO Asset Integrity KPIs is to identify and prevent events or conditions that could lead to higher level consequences. KPO monitors both lagging and leading indicators in line with relevant industry standards based on the API Recommended Practice API RP 754, OGP recommendations, ENI and Shell guidelines on the Asset Integrity KPI reporting. Properly defined and interpreted AI KPIs give KPO and its stakeholders confidence that the identified risks are being managed to prevent of major incidents.

The AI KPIs are used to evaluate the conditions of the Physical Assets in terms of Process Safety and they provide the status of the following areas:

1. Process Containment
2. Safety Systems
3. Static Equipment Integrity
4. Alarm Management
5. Ignition Control
6. Maintenance Efficiency
7. Well Integrity
8. MOC Management
9. Risk Management

Fig.№ 13. PROCESS SAFETY KPI PYRAMID



A gap analysis of KPO Asset Integrity KPIs against the industry practice resulted in a revision of KPO AI KPIs Scorecard as of March 2018. In line with AI KPI Scorecard a Process Safety Dashboard was developed to show the status of main KPIs graphically over time to identify trends and act on them. GRI 102-11

Based on these KPIs, internal/external audits, and incidents, several projects were started or scaled up, such as the Alarm Rationalization project, material vulnerability checks and replacement, and development of an enhanced Pre Startup Safety Review process. GRI 103-3

The following results were achieved by the proactive use of KPIs in 2018:

1. Despite the reduction of the Safety Critical Element (SCE) Work Orders backlog grace window from 28 days to 7 days, zero overdue SCE maintenance Work Orders were registered in the backlog for almost the whole year, showing a clear step up in SCE management;
2. In 2018, Number of Tier 1 Loss of Primary Containment (LOPC) events decreased from two to one in comparison with the 2017 performance;
3. A series of Gap Analyses in the Alarm Rationalisation Programme were completed for each Production Facility. The Alarm Rationalisation Methodology document (Phase I) was issued.

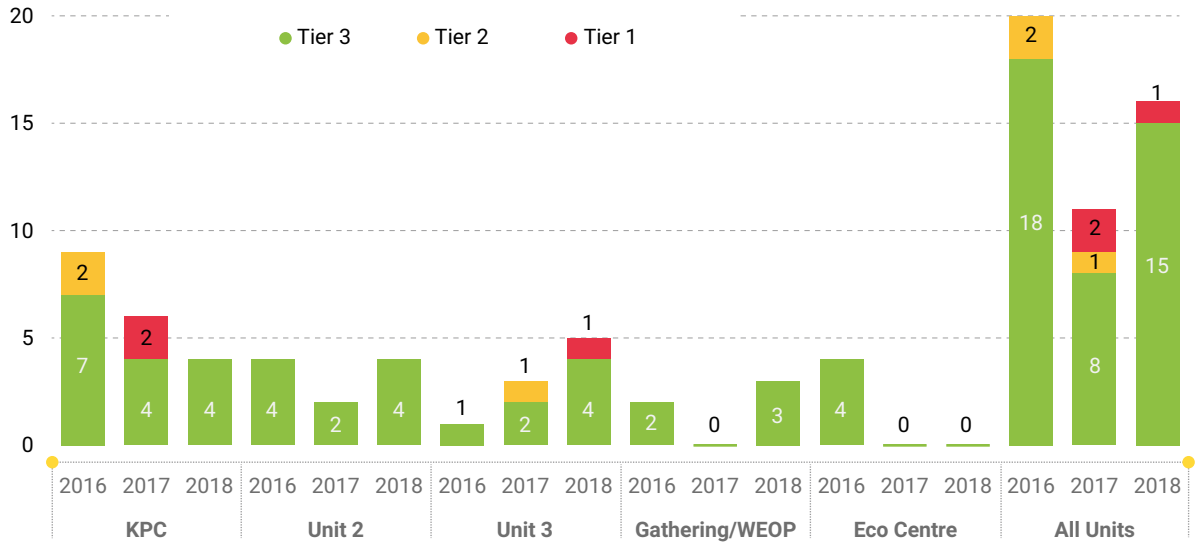
Loss of Primary Containment OG-13

Management and analysis of major accident hazards is the key to prevent or reduce the likelihood and severity of process safety events. Once a Process Safety event occurs, the investigation process is started with logging in the KPO Synergi database. KPO investigation team analyse the root causes and develop recommendations and an action plan. Further implementation of actions is monitored via Synergi.

The statistical analysis for 2016–2018 shows that the number of Loss of Primary Containment (LOPC) events increased 30 % in 2018 against the 2017 performance; however, the incidents severity reduced – only one Tier 1 and no Tier 2 Process Safety events were registered.

In 2018, one Tier 1 event occurred in Unit-3. The stem of a 3" valve, in a high pressure sour gas line, broke off and was ejected having injured an operator's leg. The root cause of this incident was the vulnerability of the valve stem material (17-4PH steel) to Sulphide Stress Corrosion Cracking (SSCC).

Graph № 8. Loss of Primary Containment by process facilities, 2016–2018



Note to Graph № 8: For Process Safety Event definition (Tier-1/2/3) please refer to International Standard IOGP 456

Alarm Rationalisation Project

GRI 103-3

KPO initiated the Alarm Rationalisation Project in 2017. The objective of this project is (1) to define consistent criteria for specifying process alarms and their priorities, (2) to apply these criteria in the existing assets of KPO, and (3) to implement the required changes to all relevant systems. All activities were split into three phases:

- **Phase I** – Initial evaluation (completed): series of Gap Analysis were performed for each Production Facility (KPC, Unit-2, Unit-3, EOPS, Bolshoi Chagan and Atyrau Terminal), and an Alarm Rationalisation Methodology document (Phase I) was issued;
- **Phase II** – Alarm Rationalization exercise (started in 2018, ongoing): a series of workshops based on the Phase I review;
- **Phase III** – Implementation (planned for 2020): the outcome of the Rationalization exercise will be physically implemented in the existing automation systems by Maintenance department.

After completion, the Alarm Systems will be in full compliance with international standards (IEC 62682 & ANSI/ISA–18.2 – Management of Alarm Systems for the Process Industries). This prevents alarm flood and will enable the Control Room Operators to focus on critical alarms.

Management of Change

Based on internal and external reviews by the KPO Parent Companies, further improvements were implemented in the process of change management. Enhancements in efficiency, design reviews (including official sign-off), and pre-startup checks were done to ensure robustness in any change before going live.

Process Safety Fundamentals campaign

GRI 103-3, 102-11

Process Safety Fundamentals (PSF) are the learnings from significant Process Safety incidents in the O&G industry. KPO adopted the Shell PSF campaign materials and launched the campaign in August 2017.

The aim of the PSFs is to reduce the number of process safety incidents by putting extra emphasis on the routine on-site activities and requirements to reduce unsafe acts and conditions. The campaign was targeted at the frontline operations personnel both of KPO and contractors. To deliver this message, the Asset Integrity team conducted the roll-out presentations along with dissemination of visual materials (billboards, posters and plastic cards) across the field locations.

The Process Safety Fundamentals' campaign achievements of 2018 year are the following:

- PSF management roll out sessions were conducted for the contractors;
- Six new PSF categories were added in the HSE Card, and 'Best Process Safety card' award category was introduced to the HSE Incentives programme;
- PSF popup messages have been displayed on every KPO PC screen twice a week.

In 2019, further efforts will focus on embedding the Process Safety Fundamentals into our daily work including newcomers in projects implementation and increased maintenance activities.

KPO will continue building a process safety oriented culture and reinforcing a proactive approach to managing major accident hazards. The final objectives are:

- to develop and lead the Asset Integrity and Process Safety activities as a joint effort of all KPO functions, able to avoid major accidents;
- to establish and operate practical and effective Barrier Management principles that are understood, implemented and seen as the preferred choice by front-line users.

Security

KPO is highly committed to providing security for both its own and contractors' personnel. KPO makes every effort to protect and safeguard the integrity of assets in line with best international practices and in compliance with the applicable laws and regulations of the Republic of Qazaqstan.

Tab. № 14. Our targets in security GRI 103-2

Our 2018 targets	Target achievement	Actions taken in 2018	Targets for 2019
Maintain zero illegal taps in the KPO export pipelines	Implemented	Continuous monitoring of export pipeline sections was provided by security mobile patrol crews and 'Optasense' alarm system.	▶ Maintain zero illegal taps in KPO export pipelines; ▶ Upgrade software and hardware of the Optasense system
Continue training on Human Rights and Security Principles for Security service providers, including newly hired employees	Implemented	As of the end of 2018, the percentage of trained Security personnel including newcomers reached 100%.	Continue training on Human Rights and Security Principles for Security service providers, including newcomers and ensure that the Principles are complied with in full
▶ Complete fence installation at KPC and Unit 3; ▶ Award the engineering, procurement and construction contract; ▶ Provide support to Project Execution Directorate in implementation of the new projects.	Implemented	▶ Fence installation at KPC and Unit-3 was completed; ▶ Contract for engineering, procurement and installation of electronic security systems as part of Phase 2 (strategic field facilities) was executed; ▶ Assistance to Project Execution Directorate for installation of the fence included consultations and interface with security department staff to bring the project in line with security requirements.	▶ Complete the design and start installing the Security Management System (Phase-2); ▶ Install and put the Electronic Access Control System in operation at all the Company facilities; ▶ Upgrade and revamp two check points in the field; ▶ Provide digital access control for vehicles to the Company facilities.

KPO Security Department regularly conducts risk assessment based on lessons learned and trends of security events. Based on the results of these assessments, security measures are embedded and improved in order to prevent potential risks. In line with findings by our Parent Companies Security representatives, not single security risk in KPO was ranked as high in 2018.

Over 800 professional security personnel are deployed to provide security for the Company's facilities, offices and pipelines by way of continuous access control at the gates and patrolling temporary security posts. 18 cases of misuse of the KPO assets were investigated during 2018. Security staff discovered 46 suspected violations of the Policy prohibiting the use of alcohol, drugs and psychotropic substances, which resulted in dismissal of four employees and one person being subjected to disciplinary action.

With significant efforts made to ensure pipeline security, no any illegal tap has been registered in KPO export pipelines over the last nine years.

We highly value the engagement and support by the local communities in security patrolling of our export pipelines. In 2018, KPO Security personnel visited four towns and 50 villages located along the pipeline. The aim of such visits is raising awareness of officials and citizens about potential risks and consequences of any incident. In this regard KPO stakeholders include the officials of district akimats and the Emergency Situations department, the schools' staff and the communities. During the meetings KPO inform the stakeholders about the evacuation procedure in case of an incident and emergency response exercises. We recommend that community members proactively and immediately inform us about any suspicious activities near the pipeline. **GRI** 102-44

Since 2015, KPO has been supporting an initiative of the Parent Companies in following the Voluntary Principles on Security and Human Rights (VPSHR). In 2018, the newcomers of the two KPO Security contractors providing security services for KPO facilities in the Field, Aksai, and export pipelines received a dedicated training on human rights policies and procedures relevant to KPO operations. As of end 2018, 100 % of security personnel have completed the training. **GRI** 410-1

Implementation of the Security Management System was continued in 2018. The Unit 3 and KPC fence design and installation activities were completed and a new 6.5 km long fence was installed. The overall length of the fence installed at Unit-2, Unit-3, KPC and EOPS during 2017–2018 comprised 12 km. **GRI** 103-2, 103-3

In addition, state-of-the-art electronic security management systems were installed at the checkpoints to simplify and accelerate access control to the KPO facilities.

Throughout the 2018 KPO has continued the awareness campaign about security activities and emerging issues for all KPO personnel. This included six personnel evacuation drills at the units, offices, actions of officials in case of terrorist attacks and one e-learning course for KPO staff to comply with the Qazaq Law on Counterterrorism. This was organised jointly with the KPO Civil Defence Team.

As part of the preventive measures in relation to extremism or other illegal actions KPO regularly liaises with RoQ law enforcement authorities at the local, regional and national levels.

PROTECTION OF HEALTH

KPO is focused on protecting its employees from workplace health hazards and promoting healthy lifestyles.

Tab.№ 15. Targets in health protection GRI 103-2

Our 2018 targets	Target achievement	Actions taken in 2018	Targets for 2019
Implement a cardiovascular health promotion programme with the focus on awareness enhancement activities	Completed	The cardiovascular health promotion programme was completed. The 2019 Health Promotion Plan will cover some of the core topics related to cardiovascular health.	
Continue health promotion with the focus on resilience, fatigue management and cardiovascular diseases	Completed	Health promotion activities were carried out including tool-box presentations, awareness posters, health bulletins, and intranet posting.	Continue health promotion with the focus on resilience, fatigue management and cardiovascular diseases
Continue Health Risk Assessments	Completed	257 Health Risk Assessments were carried out at Bolshoi Chagan and Atyrau Terminal.	Continue Health Risk Assessments
Implement the Legionella risk reduction plan	Completed	Risk assessment was conducted. Legionella risk reduction plan has been developed and implemented.	Continue Legionella risk assessment
Develop and implement a Resilience Programme	New Target	The Resilience Programme has been developed and implemented.	Continue the Resilience Programme implementation
Develop and implement a “Care for People” Programme	New Target	“Care for People” Programme has been developed and implemented, including the development of the Charter and a survey.	Set up “Care for People” (CfP) committees to monitor and coordinate CfP activities in KPO and ensure Programme integration and coverage in all directorates.
Launch a Fatigue Risk Management Programme	New Target	Fatigue Risk Management (FRM) Programme has been developed and implemented. The FRM training was made available through e-learning (KPO Intranet), or face-to-face sessions provided by the Health Department.	Continue the Fatigue Risk Management Programme implementation
Start the Automated External Defibrillators (AED) installation programme	New Target	AED Installation Programme has been launched.	Continue to implement the AED Installation Programme

Primary health care at workplaces

KPO Medical Support team provides emergency medical care to the Company employees from on-scene first aid to medical evacuation and repatriation through five fully equipped clinics functioning 24/7. There are regular and all-terrain heavy ambulances equipped as resuscitation units.

Medical support staff perform pre-shift check-ups of the safety-critical personnel, including random alcohol testing.

In 2018, 9 medical staff successfully passed mandatory Emergency medical training. In 2019, Health department plans to continue mandatory Advance Cardio Life Support, International Trauma Life Support and Base Life Support training for the medical staff in line with set international standards.

Apart from that, KPO Health department finalized an ambulance driving risk assessment in 2018, and published the document 'Speed Limits and Unconventional Driving Tactics for KPO'.

In 2018, KPO launched AED Installation programme. The aim of installing Automated External Defibrillators (AEDs) at the workplace is to provide the emergency help to employees as soon as possible within three minutes. AED's deployment within KPO field premises to help resuscitate potential victims of sudden cardiac arrest. The first steps of the Programme implementation involved the purchase of training equipment for using AED, certification of one training instructor and the start of first aid training with the use of AED.

Tab.№ 16. Medical support indicators, 2018

Medical Support Indicators	
Number of patients, visited clinics	1,859
Number of patients, transported to medical facilities	73
Exercises and drills participated	421
First aid training provided for Company employees	365
Pre-shift medical examinations (drivers/operators/electricians)	
No. of visits	91,283
Unfit	7
Random alcohol tests	1,235
Positive random alcohol test results	0

Management of ill health

GRI 403-3, 403-4

The medical insurance service provider submits daily hospitalisation and patient follow-up reports to the KPO Health Department. The Health Department also monitors sickness absence by analysing sickness certificates, which is then used to identify trends. The medical insurance is part of the Collective Agreement between KPO and Trade Unions.

Absenteeism monitoring

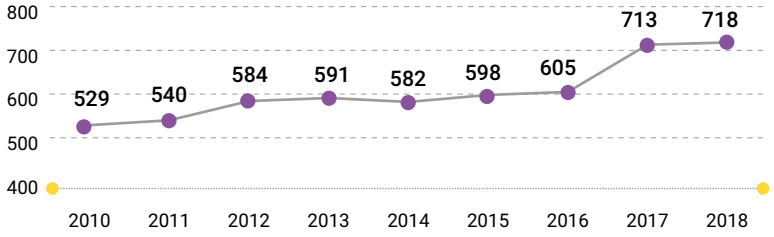
GRI 403-2, 403-3

Absenteeism rates in KPO remain stable as given in graph № 9. The small increase over the last seven years may be explained by the gradually increasing uptake of medical services, and a change in legislation.

The growth of systemic diseases compared with preceding years has been marked by the following types of diseases:

- Acute respiratory infections J 06,
- Acute pharyngitis and angina (tonsillitis) J 02-05,
- Diseases of eye and its appendages H 00-59,
- Diseases of skin L 00-99.

Graph № 9. KPO Absenteeism rate, 2010–2018



Note: The following method is applied in KPO to calculate the Absenteeism rate:

- *The absenteeism rate = actual number of days lost due to absence in the workplace (because of illness) x 100 / total quantity of workers. Data of days missed for other reasons is not available.*
- *Calculation method for absenteeism adopted in KPO is based on the number of employees (not man-hours) as required by regulatory authorities.*

Tab.№ 17. KPO Absenteeism rate, 2010–2018

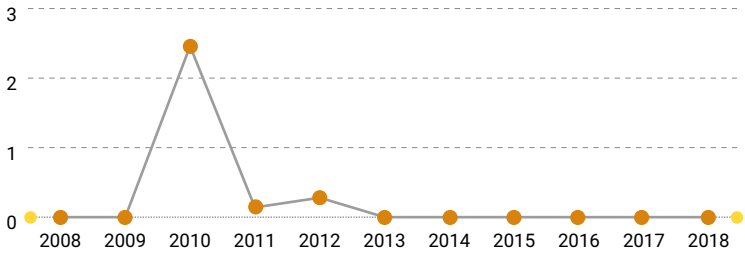
Year	Number of employees	Days lost	Absenteeism
2010	2,689	14,224	529
2011	2,655	14,344	540
2012	2,764	16,149	584
2013	2,911	17,215	591
2014	3,067	17,855	582
2015	3,187	19,066	598
2016	3,173	19,181	605
2017	3,126	22,277	713
2018	3,128	22,462	718

Occupational Diseases

GRI 403-2, 403-3

There were no occupational illnesses observed in KPO in the period of 2013–2018.

Graph № 10. Occupational diseases frequency in KPO, 2009–2018



Note: KPO applies the frequency of occupational diseases calculated as follows: Occupational diseases frequency (per million of man-hours) = number of occupational diseases x 1,000,000 / man-hours.

Health risk assessments

GRI 403-3, 403-4

Health risk assessment (HRA) is a key element of KPO health management system. All KPO operational activities are subject to HRA with regular reviews and re-assessments. We evaluate similar exposure groups (or job groups) by a team consisting of the assessment unit representative, HSE professional and Occupational Health and Hygiene specialist. Line management implements the HRA mitigation measures, and their closure is monitored through the Synergi action tracking system.

In 2018, KPO conducted 257 Health risk assessments (HRA). These included HRA of safety critical positions, ergonomics assessments and changes to workplace risks. The approach on conducting HRAs was updated in 2018 with a focus on units. The 2018's assessments covered Bolshoi Chagan and Atyrau Terminal. Other units' assessments will follow in 2019 and further.

Fitness to work

KPO Fitness to Work procedures were reviewed to match the IOGP guidelines, and to merge with local regulatory requirements. OGUK Fitness to Work evaluation performed by internationally accredited doctors and will be made available in Aksai and Uralsk by 2019.

In 2018, the Health Department started three new initiatives to implement in the next years:

- Resilience Programme,
- Care for People Programme,
- Fatigue Risk Management Programme.

Health Promotion

GRI 103-2

Health promotion in 2018 was comprised of the regular activities such as toolbox presentations, posters and bulletins, and new initiatives, such as the Resilience programme.

Tab. № 18. KPO Health Promotion activities in 2018

Tool–box talk	Posters	Bulletin	Course
First aid for frost-bites and hypothermia; eye injury first aid; H_2S poisoning first aid; falls from heights/head and spine injury; crash syndrome first aid; heat stress and stroke; intestinal infections: prevention and treatment; burns first aid; back pain causes and prevention; cardiac emergencies; limb injuries first aid.	Heat stress and stroke; World No Tobacco Day; healthy food; hand hygiene; flu vaccination; beware of spiders; wasps and bees; snakes; World Diabetes Day; heart attack; World Heart Day; stress at work; obesity; World Cancer Day; air conditioning.	Heat stress and stroke; hand hygiene; beware of spiders; wasps and bees; chicken pox; snakes; common cold and flu.	Allen Carr Stop Smoking Method; Dr. Bormental weight reduction method.

Resilience Programme

Resilience is the ability to cope with pressure and stressful events. It is a skill worth developing to maintain KPO's performance. Industry experience demonstrates that resilience training not only increases individual resilience, but also improves team leadership, and Company's employee engagement levels.

The KPO Resilience Programme is a free, voluntary, modular programme developed for small teams. The aim of the Programme is to develop a resilient workforce in KPO and to minimise the risk of stress-related illnesses (e.g. depression, alcoholism, suicide risk). Participating employees can choose to become resilience facilitators by undertaking a short and engaging training class run by Health Department. Following the training, facilitators run the modules for their colleagues during normal business meetings, supported by Health Department. In 2018, Health Department trained 105 facilitators, who then carried out 137 sessions.

Health Department also conducts monitoring of participation and teams' resilience levels. Teams' resilience levels are measured by a validated test (Dispositional Resilience Scale, DRS-15) administered by facilitators at the start and end of the programme.

Intermediate progress tests are planned in mid-2019 in order to check the changes in teams' scores and overall effectiveness of the programme. The final control scoring is scheduled at the end of the programme in late 2019.

Care for People programme

Care for People (CfP) is a shared organizational value that drives individuals' behaviors, and attitudes towards HSE and business performance. It is a way of working, where every effort is taken to ensure that every individual has what he needs in terms of both 'hardware' (e.g. facilities, equipment) and 'software' (e.g. respect, recognition) to perform his job best. KPO's Care for People programme is based on six activities (see figure № 14) aiming at facilitating a cultural shift.

Fatigue Risk Management programme

Fatigue is the feeling of drowsiness or lack of alertness caused by lack of sleep. Fatigue Risk Management (FRM) Programme outlines the management processes that minimize the risks of work-related injury or incidents due fatigue, through:

- Identifying and recording HSE critical positions where fatigue risk may occur;
- Conducting a fatigue risk assessment for those identified above;
- Implementing fatigue risk controls and keeping fatigue risks as low as reasonably practicable (ALARP); Providing the FRM training for individuals identified as supervisors, who are in roles that apply FRM including potential contribution of fatigue risk as a consideration when investigating significant and high potential incidents.

As part of the FRM Programme implementation in 2018, KPO developed a FRM Procedure and FRM Training available to all employees through e-learning (via KPO Intranet), or face-to-face sessions provided by Health Department. The training is divided into 3 modules: Introduction to Fatigue, Fatigue Self-Management, and the Principles. The materials on Module 1 were developed and disseminated to all employees in 2018. The Programme will be continued in 2019.

GRI 103-2

Fig. № 14. KPO ACTIVITIES OF THE CARE FOR PEOPLE PROGRAMME

"In KPO, we care for each other's health, safety and wellbeing. Our employees and contractors perform at their best when they feel valued, respected and cared for. Care for people is our normal way for working, and we expect everyone in KPO to demonstrate it. It drives our HSE and business performance and benefits the Republic of Qazaqstan."

Operational control of industrial facilities

The operational control of industrial facilities is a regulatory compliance activity, which includes an industrial hygiene monitoring programme.

As shown in table № 20, the number of exceedances has been steady over the last two years with the majority of non-compliance attributed to low lighting and high levels and electromagnetic fields. KPO conducts a phased replacement of the old illumination sources with brighter energy-saving equivalents. The high noise facilities are subject of the Hearing Conservation Programme, a range of activities aimed at reducing the worker exposure to noise.

Tab.№ 19. Monitoring of physical factors, 2018

Physical factors	2017		2018	
	No. of surveys	No. exceeding MPL[3]	No. of surveys	No. exceeding MPL[3]
Noise	426	106 (24.8%)	400	93 (23.3%)
Vibration	81	19 (23.4%)	69	14 (20.3%)
Electromagnetic fields	3,936	11 (0.2%)	3,888	44 (1.1%)
Electrostatic fields	2,133	0	2,129	0
Lighting	2,741	765 (27.9%)	2,879	815 (28.3%)
Microclimate	6,630	387 (5.8%)	6,522	336 (5.2%)
Total	**15,947**	**1,288 (8.0%)**	**15,887**	**1,302 (8.2%)**

Tab. № 20. Workplace air testing in 2018

Monitoring activities	Number of tests
Planned measurements	15,564
Completed measurements	14,595[4]
Number of exceedances	0
Percentage of measurements exceeding maximum permissible limits (MPL)	0

[3] *MPL – maximum permissible level*

[4] *The difference between the number of completed and planned measurements is due to such events as a drilling rig move to another location, introduction of a new restricted access procedure, unplanned machinery/equipment maintenance or repair, which eliminates exposure conditions, etc.*

PEOPLE & SKILLS

The success in achieving the Company's business objectives depends primarily on the professionalism and dedication of its people. Our employees are essential and fundamental for the development and operations of the Karachaganak Field. KPO pursues various alternatives for personnel development such as application of our Parent Companies' expertise and mandatory professional training by educational institutions, both local and international. GRI 103-1

In 2018, KPO made

93% compliant to competency standards for technical personnel

878 employees with technical qualification have completed initial assessments and received CMS certificates

In 2018, the overall salary increase made up

7.1%, as per the 2017 inflation rate

In 2018,

12 positions held by expatriate personnel were nationalised

In average, in 2018 KPO spent

US$ 133 per employee for training

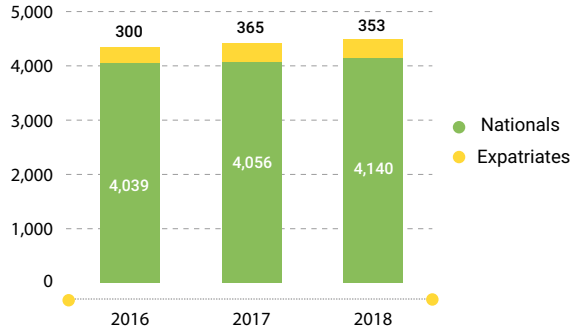
New Collective Agreement was signed for 2019-2021

Tab. № 21. Our targets in personnel development and remuneration GRI 103-2

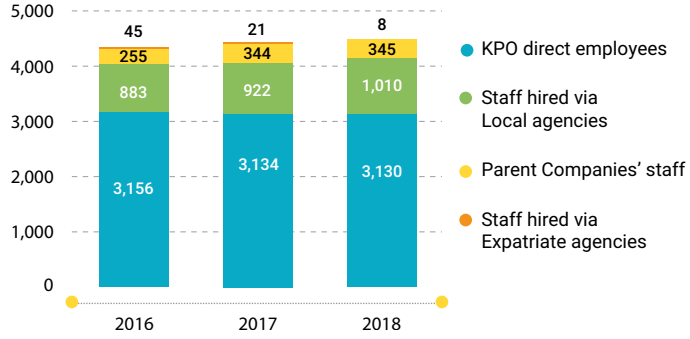
Our 2018 targets	Target achievement	Actions taken in 2018	Targets for 2019
▶ As part of the Enhanced Development Programme, implement training programmes for 173 participants as scheduled in their Individual Development Plans; ▶ Continue implementation of the Programme for increased Local Content in staff for 2015–2020 and maintaining performance ⩾ 75% in Category 1+2 for executive management and their deputies, department/unit management.	Completed	Training activities split in three years were set in the Individual Development Plans for each participant. Training and development activities scheduled in 2018 were successfully completed. In 2018, 77% of local content in staff was achieved in the Category 1+2 (executive management and their deputies, department/unit management).	▶ Continue implementation of training as per the Enhanced Development Programme; ▶ Programme for increased Local Content in staff for 2020–2025 developed and approved by the PSA Authority.
▶ Finalise the new Collective Agreement by 31.12.2018 ▶ Maintain constructive relations with Trade Unions and employees	Completed	New Collective Agreement for 2019–2012 was signed between KPO and three Trade Unions.	▶ Demonstrate care for KPO contractors' employees by ensuring extension of their statutory entitlements and provision of freedom to express their concerns; ▶ Support contractor companies in developing their healthy industrial relations to avoid social unrest and potential impact on KPO
Implement annual benchmarking of KPO salaries against the RoQ Oil & Gas Industry based on the salary survey and initiate adjustments, if required.	Completed	Salary benchmarking was carried out based on the RoQ Oil & Gas Market Review. The comparison showed that KPO salaries are aligned and no corrections are required.	Implement annual benchmarking of KPO salaries against the RoQ Oil & Gas Industry based on the salary survey and initiate adjustments, if required
Support the optimization of HSE functions across the Company including review of organizational structure, job descriptions, employee's work conditions, etc.	Completed	Optimized organizational structure and relevant job descriptions were prepared and approved. Non-operational part of the change was fully implemented in 2018 whereas optimization of HSE functions in Operations was scheduled for 2019.	Complete optimization of the HSE functions in operational units

The total number of employees in KPO, both within the company and those working on temporary projects, as of end 2018 made up 4,493 people with 4,140 of them being Qazaq nationals and 353 expatriates. GRI 102-7

Graph № 11. KPO employees, 2016–2018

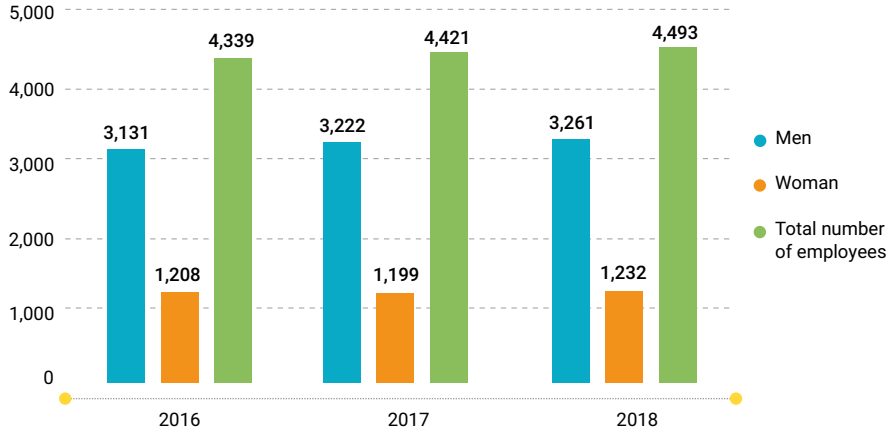


Graph № 12. KPO employees by type of employment, 2016–2018 GRI 102-8



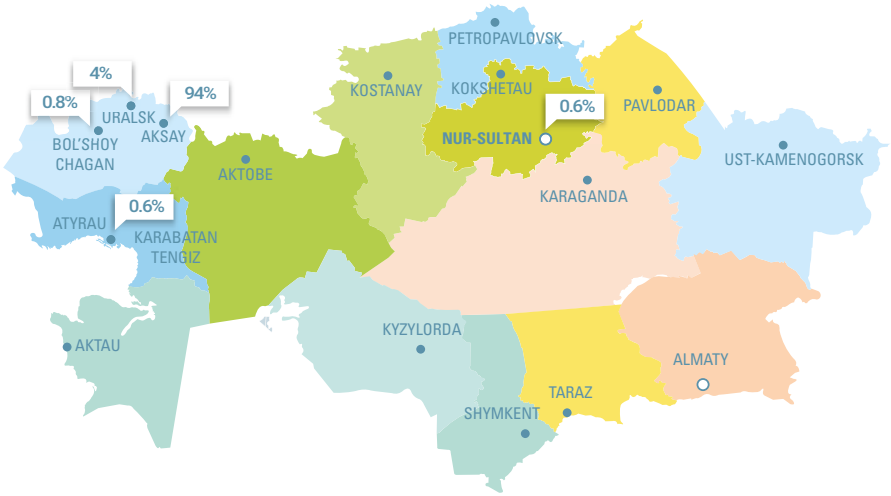
Graph № 13 shows the ratio of employees by gender. In 2018, 3,261 men and 1,232 women worked at KPO. GRI 102-8

Graph № 13. KPO employees by gender, 2016–2018 GRI 102-8



The map describes the geography of where KPO employees reside across the country.

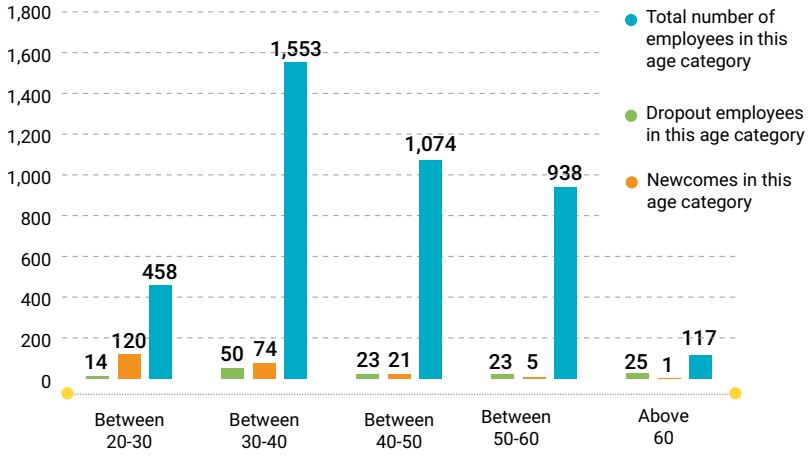
Fig. № 15. KPO EMPLOYEES BY REGION, % GRI 102-8, 103-1



In 2018, the number of temporary employees [5] totalled to 125. GRI 401-2, 102-8

Graph № 14 shows the turnover of local employees in 2018 broken down by age groups, regardless of the type of contract. GRI 401-1

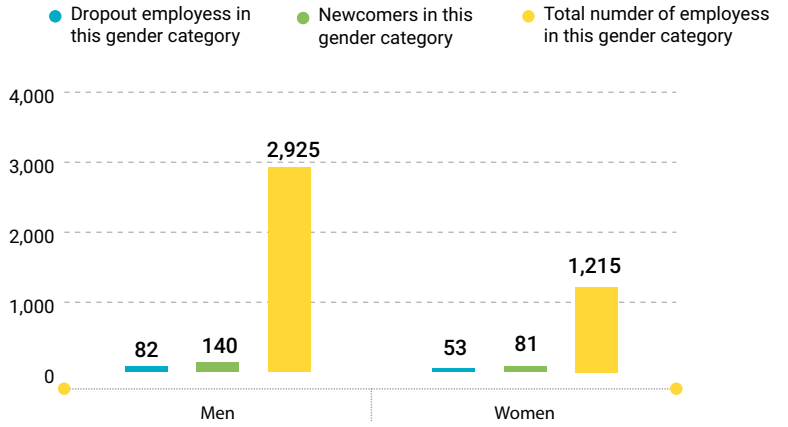
Graph № 14. Personnel turnover by age, 2018 GRI 401-1



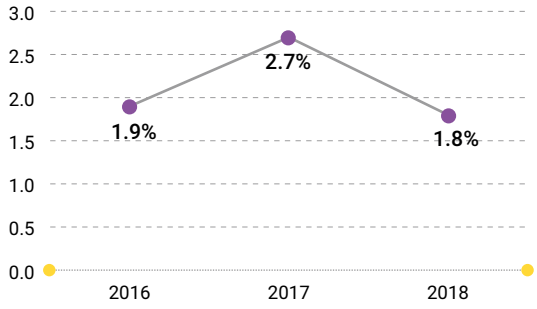
Graph № 15 shows the total number of employees by gender for 2018. The newly hired employees made up 5.4% of the average number of employees throughout the year. The turnover made 1.8% in 2018 versus 2.7% in 2017 (see Graph № 16 on turnover). GRI 401-1

According to the RoQ legislation, the turnover indicator includes the number of employees who resigned on a voluntary basis.

Graph № 15. Personnel turnover by gender, 2018 GRI 401-1



Graph № 16. Dynamics of local personnel turnover, 2016–2018 GRI 401-1, 103-3



[5] *Temporary employees are external candidates, hired for a limited time to replace a directly hired employee, who is on unpaid or maternity leave or seconded to a Parent Company.*

Development of national personnel GRI 405-1, 103-3

Professional competency in KPO is maintained and developed through the system of continuous training and improvement of skills.

KPO continues implementing its 2015–2020 Programme for Increased Local Content in Staff, which is aimed at maximizing job opportunities for local communities and investing in local workforce. In 2018, 12 positions previously held by expatriate personnel were nationalised, three positions were abolished. Local employees made up 92% of the total staff as of December 2018.

Generally, more than 190 expatriate specialists were replaced with national employees and 180 positions held by expatriate employees were abolished during the 1999 – 2018 period. The breakdown by categories is presented in Table № 22. GRI 103-2

Tab. № 22. Progress update with the KPO Plan for Increased Local Content in Staff by categories of employees GRI 202-2, 103-3

Category	Description	RoQ legal requirements	2018
1+2	Executive management and their deputies, Department / Unit management	Minimum 74%	77%
3+4	Professional staff / Qualified workers	Minimum 92%	95%

Enhancing local content in staff is an important element in the creation of the KPO lasting economic heritage. We apply various tools for developing and promoting our staff across all business units. The main focus is made on the development of talented and high-potential local employees. It is expected that the Programme will allow achieving the following goals:

- Enhanced effectiveness of the training and development process ;
- Increased number of local employees within KPO, as well as contractors and subcontractors.

Seitaliyeva Aigerim, Major Contracts Specialist, recogized as the Best Performer during the Festival of Languages of the people of Kazakhstan

Ruslan Kassymov, Environmental Compliance Section Head, receives an award from KazEnergy Association

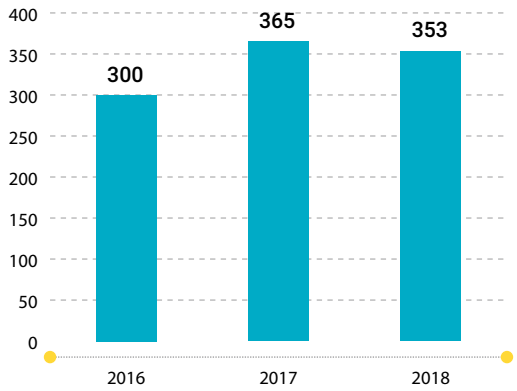
Moreover, in accordance with the goals set in this Programme, KPO keeps the track of the local content in contractors registered in the West Qazaqstan Oblast. Monitoring has been conducted in 47 companies on a quarterly, biannual and annual basis. The results are presented in Table № 23.

Tab. № 23. Aggregated share of local content with KPO contractors registered in WQO in 2018 GRI 405-1

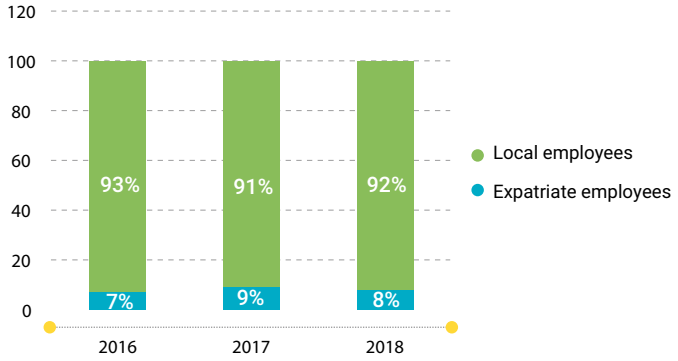
Category	Description	2018
1+2	Executive management and their deputies, Department/ Unit management	76 %
3+4	Professional staff / Qualified workers	92 %

Graph № 17 shows the total number of expatriates in KPO including personnel involved in temporary projects as per the KPO Programme for Increased Local Content in staff for 2015–2020. The number of KPO local and expatriate staff is given on Graph № 18.

Graph № 17. Number of expatriate staff, 2016–2018

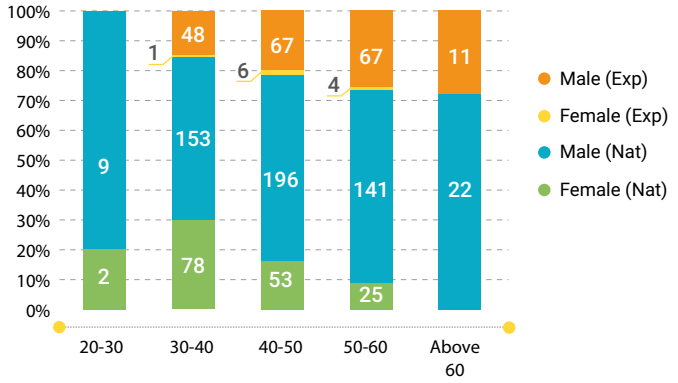


Graph № 18. Share of local and expatriate staff, 2016–2018



Graph № 19 presents the total number of expatriate and local senior and middle management split by age and gender. This includes KPO core structure and temporary projects.

Graph № 19. Number of local and expatriate managers by age and gender, 2018 GRI 405-1



Training and development GRI 103-1, 103-3

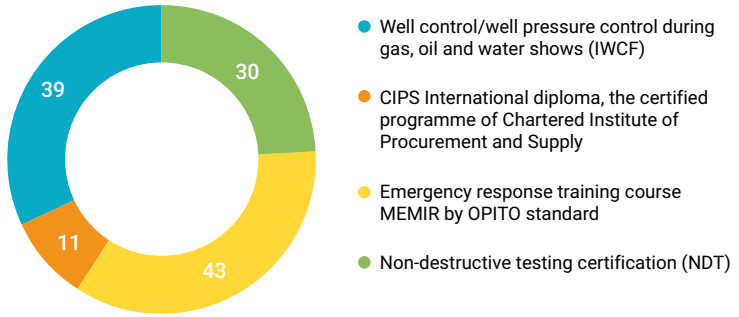
Training and development of human resources has recently skyrocketed on the agenda for international O&G companies due to an ever-increasing value of technologies in all aspects of day-to-day life. Continuous professional advancement and development of national employees remains one of the highest priorities for our Company. This is implemented by means of either borrowing expertise from the Parent Companies or mandatory training by contracted educational institutions.

In keeping with the FPSA terms and conditions, training in KPO is conducted on the basis of operational needs and industrial safety requirements. In 2018, additional funds were allocated for development programmes that target high-potential employees. GRI 103-2

KPO training and development programmes create opportunities for the employees to improve their competencies and fill in the skill gaps identified while benchmarking with the Parent Companies' strategic plans. These include training, re-training and advanced training.

In 2018, KPO implemented several specialized certified training programmes (see Graph № 20) as well as professional and HSE mandatory training professional development.

Graph № 20. Number of personnel trained on the International Qualification certified programmes in 2018

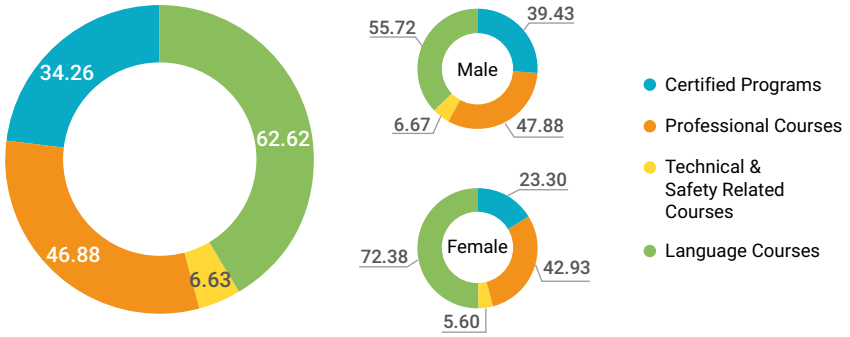


Training statistics GRI 404-1

In 2018, 454,470.97 hours of training (380,923 hours in 2017) were held, of which 286,788.97 were provided to KPO employees (220,706 in 2017). The remaining 167,682 hours (185,696 hours in 2017) were spent on the HSE mandatory courses for the employees of KPO contractor organizations.

On average, in 2018 KPO spent US$ 133 (US$ 106 in 2017) for training per employee. Average training hours by employee are given in Graph № 21.

Graph № 21. Average number of training hours per employee by type, 2018
GRI 404-1



Training arranged for KPO employees in 2018 by categories is shown in Table № 24. In total in 2018, 46,155 courses were conducted, of which 32,502 man-hours were designated for the employees of contractor organizations.

In 2018, the Internship Programme was renamed into the Qualification Improvement Programme for National Staff in the Parent Companies' assets. In line with the assessment needs, during the year, the candidates went through a rigorous selection in line with the assessment needs, and the plans for their engagement with the Parent Companies' projects were drawn up looking forward.

GRI 103-1

Table № 24. Training of employees by categories, 2016–2018 GRI 404-1

Category	2016	2017	2018
1. Managers and supervisors	293 people (52.91 hours per 1 employee)	125 people (29.27 hours per 1 employee)	172 people (54.84 hours per 1 employee)
2. Qualified specialists / supervisors	1,019 people (41.85 hours per 1 employee)	1,749 people (59.64 hours per 1 employee)	1,364 people (67.96 hours per 1 employee)
3. Technical personnel	1,233 people (105.94 hours per 1 employee)	1,356 people (113.43 hours per 1 employee)	1,494 people (121.07 hours per 1 employee)
4. Office and administrative personnel	265 people (38.99 hours per 1 employee)	138 people (18.96 hours per 1 employee)	84 people (44.99 hours per 1 employee)

Enhanced Development Programme for 2017–2020

For the period of 2017–2020 KPO launched the Enhanced Development Programme (EDP) aimed at identifying high-potential local employees and further developing their skills to reach maximum potential. The programme creates conditions to obtain knowledge and skills necessary for sustainable professional development and career growth. This would help the Company successfully reach its set goals and objectives.

Implementation of the Enhanced Development Programme is an integral part of the process of creating a personnel reserve and ensuring continuity in planning human resources as well as supporting the Programme for Increased Local Content in Staff for 2015–2020.

Since early 2018, KPO Training and Development Department has carried out a number of activities related to training and development of the EDP participants in line with their individual development plans, which also included quarterly meetings with KPO directors and the leaders from Parent Companies. The process of the EDP is based on applying development tools, such as coaching, internship at the Parent Companies' assets, formal training, certified programmes and mentoring.

The successful performance of the programme has translated into positive changes at the participants' work, and may be evaluated through their further career development; this is also true for those who went through the 2018 training activities.

Mentoring is practiced as an additional development tool associated with the Enhanced Development Programme. This process is implemented through sharing of skills by Parent Companies' employees with the national staff. Mentoring helps employees develop their personal and managerial skills by coaching and experience exchange both with tutor and other programme participants. In career development the primary responsibility rests with an employee. However, active support of an experienced tutor is extremely helpful for skill development. The main themes of this training are leadership, interpersonal interaction and communication, career development.

GRI 103-1

Dual education in KPO

The programme for dual education programme has been practiced in KPO since 2005. In 2018, 50 graduates of higher and professional educational institutions, residents of the West Qazaqstan Oblast, have started training in the Professional Development Programme for production operators and equipment operation technicians in accordance with the international standard of the OPITO Oil & Gas Academy. Participants' selection for the programme was carried out using the special abilities tests, technical tests and panel interviews with engagement of KPO domain experts and technical specialists, and tutors from the Qazaqstani universities.

The training programme consists of theoretical and practical modules and will be culminated with internship at the KPO production facilities. KPO plans to employ all participants who will successfully complete the training in the respective specialties.

Competency Management System

GRI 103-2, 103-3

Effective competency management ensures that workflow is operated safely and in an efficient way, maximising productivity and ensuring employees capabilities. Management system encompassing performance and professional development of all staff members provides the organisation better qualitative control over risks and costs at every step of the competency management lifecycle (selection, assessment, training and development, staff deployment and carrying out job duties).

This system defines the requirements for personnel's training and development allowing setting the following objectives:

- Support in better planning of funds for training and development;
- Development of an effective planning tool for training and development of employees with involvement of line managers;
- Improvement of safety culture of all personnel involved in operations while reaching the required level of competency at workplace.

KPO Competency Management System (CMS) was approved and accredited by OPITO in 2013, and afterwards extended until June 2019 subject to conduction of annual surveillance audits.

KPO was accredited by the following four specialized aspects: production department operators, electrical technicians, instrument technicians, mechanical technicians and foremen. The selected for audit units and departments included KPC, Unit-3, Unit-2, Eco Centre and Central Maintenance, and Gathering departments.

In 2018, pursuant to the approved "Competency Management System – Expansion Plan for 2018–2022", the Production Department group responsible for the CMS, jointly with the Training & Development and Corporate Safety departments developed a standard for competency assessment for industry supervisors. The standard was developed for personnel working at the hazardous production facilities with the aim to mitigate risks of injuries, incidents, accidents, and to maintain asset integrity.

For launching this assessment, KPO developed the plan of integration with further accreditation by OPITO organization on the main three aspects of work: mandatory technical skills and knowledge, personal and managerial competency, and HSE competency. The process of the competency assessment of supervisors successfully commenced in November 2018 and is planned to be completed by end 2019. The re-assessment is scheduled every five years.

In 2018, KPO reached 93% of the competency standards' compliance required for technical personnel. As a result, 878 employees with technical qualification have completed initial assessment and received CMS certificates.

Employee relations GRI 102-44

Collective bargaining plays an important role in the Company. KPO respects the rights of its employees to organize a trade union and participate in negotiations of the collective agreement.

The following three Trade Union organizations represent the interests of Company employees: Public Association "Local Trade Union of KPO employees", Public Association "Karachaganak local professional union of KPO employees and contractors" and Public Association "Local trade union of Karachaganak Petroleum Operating B.V. employees "TRUST" and contractor companies". As part of their duties, Trade Unions develop a draft Collective Agreements addressing various aspects of social and labour relations. The provisions of the Collective Agreement are applied to all KPO employees regardless of their membership in the Trade Unions. GRI 103-2 ,103-3

In the end of 2018, a new Collective agreement for 2019–2021 was signed between KPO and Trade Unions. GRI 102-41 Amendments in new agreement primarily referred to payment issues, social compensation and benefits as well as other issues related to the improvement of social conditions of employees. More detailed information on amendments will be described in the Report for 2019.

KPO has two feedback mechanisms for grievance: applications to HR Controllership either directly or through Trade Union and the Hotline. In 2018, HR received 30 grievances and 16 applications. The grievances received addressed such issues as dereliction of labour discipline, employment, resolving conflict situations, abuse of authority in job duties, misconduct with contractor employees. All received grievances have been reviewed and resolved. GRI 102-17, 103-2

In accordance with the Collective agreement, KPO has the obligation to raise a minimum 2 months' (8 weeks) notice to Trade Unions in case of liquidation of the company with subsequent reduction in staff or change of the system or amount of remuneration leading to deterioration of employees' conditions. GRI 402-1

In 2018, 24 KPO employees applied for the voluntary dissolution of labour relations (45 employees in 2017) as part of the Voluntary Dissolution of Employment Relationship Programme of Collective Agreement, pursuant to the RoQ Labour Code dated 2017 (Art. 52).

In order to prevent any risks of forced labour and/or violations of employees' rights to hold meetings or to have a collective bargaining, KPO regularly provides clarification sessions for contractor organisations on legislation requirements, internal procedures and policies. Such violations could not be excluded in case of lack of monitoring over observance of legislative requirements in some contractor and subcontractor organisations. GRI 407-1

Compensations and benefits

Company values its employees and strives to create decent working conditions including provision of a competitive salary and various benefits.

KPO provides a package of benefits to all employees, who had signed an employment agreement with the Company. The package is an essential part of the employment conditions and consists of monetary and non-monetary rewards. No changes were introduced in KPO benefits package in 2018; the former is described in detail in 2017 Karachaganak Sustainability Report. GRI 401-2

For the employees hired by KPO via recruitment agencies, the collective agreements of these agencies are applied. Independently planned benefits that deal with allowances for such employees are agreed between KPO and the agencies as part of the approved budget.

Non-monetary rewards are of great importance for maintaining personnel efficiency and moral. KPO has different ways of rewarding its personnel such as participation in corporate events, personal performance award ceremonies and professional holidays, awarding with Certificates of merit, Letters of gratitude etc. For example, in 2018 KPO employees from various departments were recognized by medals and diplomas from "Kazenergy», a trade association for Qazaqstan's oil and gas industry. The RoQ Ministry of Energy designated its own awards such as a medals "For the contribution to the development of oil and gas industry», «Veteran of Labour» and others.

Pursuant to the Collective Agreement, the minimum salary of newcomers in KPO in 2018 remained the same as in 2017 – KZT 155,000. According to the 2018 annual benchmarking, the average salary in KPO is 3.3 times higher than then average salary in the Western Qazaqstan Oblast (WQO) GRI 202-1. No additional salary adjustment was therefore proposed in 2018.

Every year Company offers an upgrade on the employees' remuneration, including the cost-of-living salary increase at the beginning of the year, annual performance review bonus, as well as individual pay rises and additional lump sum payments.

In 2018, the overall salary increase was 7.1 % and it was offered to make it up for inflation during the previous year 2017. In addition, in January 2018 the Company paid all its national employees a bonus for the excellent HSE performance in 2017.

The annual review of the employees' remuneration is yet another motivation tool. Individual performance evaluation allows the most efficient members of the team to advance irrespective of their position within the grade range. For the employees, who had achieved the maximum level of salary within their respective grade, a lump sum payment is envisaged.

Personnel development review GRI 404-3, 103-3

With the view of continuous improvement of labour performance, KPO conducts a Personnel Development Review on an annual basis. The process covers Qazaqstani employees who have an employment agreement with KPO for no less than half a year. In 2018, the review was focused on employees demonstrating greater level of performance.

For those employees holding managerial positions there is a separate process to monitor their Key Performance Indicators against the set targets.

Optimization of organizational structure and work processes GRI 103-3

In order to ensure effectiveness of the organizational structure and work processes, the Company runs an optimization process.

In 2018, a reorganization process was launched in order to improve effectiveness of HSE departments. Phase 1 includes changes in organizational structure of the departments within the Safety and Asset Integrity Controllership and Government Relations Directorate by means of consolidating these departments into a single structure. This change will allow eliminating ineffective subordinate lines, duplication of work duties and is aimed at driving more consistency during introduction and implementation of HSE standards. This phase also encompasses change in job descriptions, working conditions of company personnel, etc.

At the HR Away Day

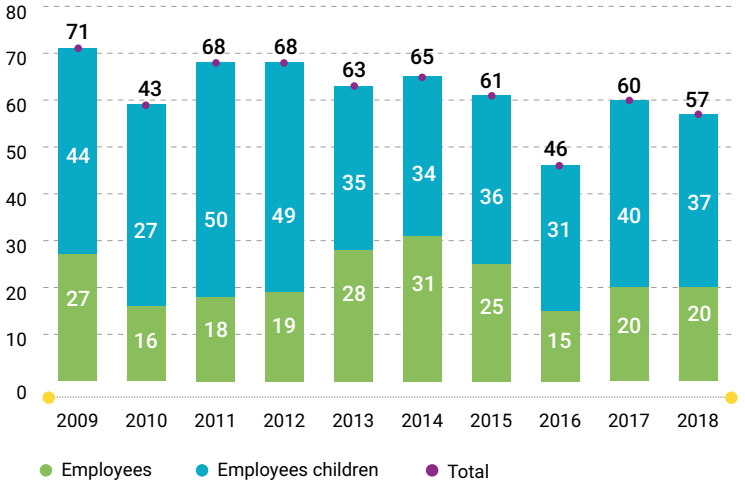
HR Coordinator Marziya Almagambetova receives a Gratitude Letter to KPO from Rector of the West Kazakhstan Agrarian & Technical University Sergaliyev N.Kh.

Scholarship Programmes for national employees and their children GRI 404-2

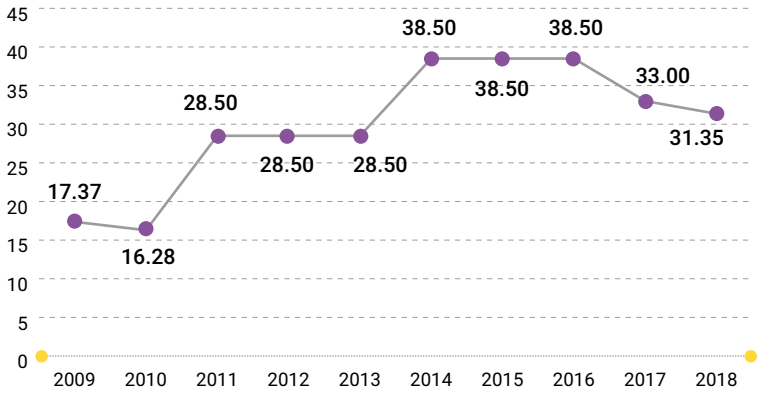
KPO Scholarship Programme for national employees and their children is one of the important incentives for professional development and further education of employees.

In 2018, in the framework of the above programmes KZT 31.35 mln (equivalent to US$ 97.969 k) was allocated to sponsor scholarships for 20 KPO employees and 37 children.

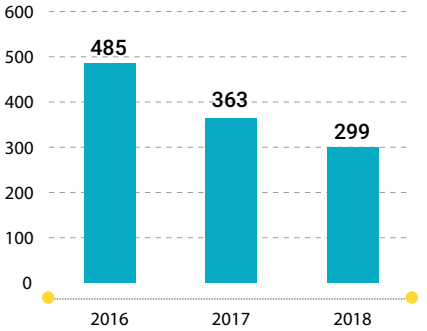
Graph № 22. Dynamics of participation in the KPO Scholarship Programme, 2009–2018



Graph № 23. Funds allocated by KPO for the Scholarship Programme, 2009–2018 (KZT MM) GRI 404-2



Graph № 24. Number of students who completed internship at KPO in 2016–2018



KPO partnership with Qazaqstani universities GRI 102-44

KPO continues its cooperation with the Qazaqstani universities in order to attract young specialists. Interaction with universities is carried out through the Student Placement Programme based on the relevant agreements.

In 2018, 299 students from 31 educational institutions had practical and pre-graduate internship with 29 specialties in various departments of KPO. In the period from 2013 to 2018, the Company has employed 140 people out of those, who had passed the student placement.

Besides, KPO is involved in the National Youth Placement Programme, thereby supporting those graduates, who are residents of the Burlin district. In 2018, 20 graduates passed the youth internship; some of them will continue working in the Company. Since the start of this programme in 2009, 175 young professionals completed such internship in KPO. In 2018, 10 graduates out of 20 who had completed internships were hired at KPO. The Company also provides job placement assistance for graduates within its contractors. Four of the 20 graduates were hired by KPO contractor organisations.

In the framework of cooperation with educational institutions, KPO took part in the following events: “Career Day” at the Qazaq-British Technical University and Almaty Management University; “Job Fair” in the West Qazaqstan Agrarian Technical University named after Zhangir Khan and the West Qazaqstan State University named after Utemisov. KPO has been receiving letters of gratitude from these universities for contribution to the national personnel development and support in graduates’ employment.

CARING FOR THE ENVIRONMENT

KPO's activities for production and processing of hydrocarbons impose high accountability on KPO in terms of environmental protection. Sustainable development of such a technically complex oil & gas condensate field as the Karachaganak is a continuous challenge. We apply advanced techniques and world-class technologies to succeed in this area. GRI 103-1

KPO carries out its operations by ensuring the principles of sustainable development and complying with the high environmental standards.

The key commitments of the Company's HSE Policy are:

- prevention of the environmental pollution,
- continuous improvement in environmental performance,
- conservation of biodiversity and ecosystems, rational use of natural resources.
- ensuring environmental safety.

GRI 103-2

In 2018, the total amount of flared gas was only

0.06%

of the total volume of gas produced

In 2018, the total amount of air emissions decreased by

10%

compared to 2017

GHG emissions were reduced by

307 hous. tonnes

of CO_2-equivalent

Specific GHG emissions amounted to

63 tonnes

of CO_2 per 1 thous. tonnes of produced hydrocarbons

Since 2011, about

440 tonnes

of the waste paper collected for further recycling

The Company is focused on reduction of greenhouse emissions and conservation of natural resources by applying the best available technologies. Operational targets for ensuring the environmental protection principles are listed in Table № 25.

Tab. № 25. Our targets in environmental protection GRI 103-2

Our 2018 targets	Target achievement	Actions taken in 2018	Targets for 2019
MANAGEMENT SYSTEMS			
Organize and conduct an external surveillance audit against the ISO 14001:2015 standard	Completed	First surveillance audit for compliance with the international ISO 14001:2015 standard was conducted. Following the audit, Bureau Veritas company had validated the compliance of KPO Management System with all requirements of ISO 14001:2015 in order to achieve all goals set within the HSE Policy.	Organize and conduct a second surveillance audit against the ISO 14001:2015 standard
AIR EMISSIONS & GHG			
Achieve reduction of GHG emissions by 250 thous. tonnes of CO_2-equivalent	Completed	Greenhouse gas emissions were reduced by 307 thous. tonnes of CO_2-equivalent.	Achieve reduction of GHG emissions by 280 thous. tonnes of CO_2-equivalent
Ensure that specific GHG Emissions do not exceed 68 tonnes CO_2 per one thous. tonnes of produced hydrocarbons	Completed	Specific GHG emissions amounted to 63 tonnes of CO_2 per 1 thousand tonnes of produced hydrocarbons	Ensure that specific GHG Emissions do not exceed 67 tonnes CO_2 per one thous. tonnes of produced hydrocarbons
Ensure that the throughput losses do not exceed 3.7%	Completed	2018 throughput losses amounted to 3.41%.	Ensure that the throughput losses do not exceed 3.82%
Develop feasibility study for implementation of the continuous emission monitoring system at stationary sources	Completed	Public hearings were held on the preliminary environmental impact assessment (EIA) of the developed "Feasibility study for implementation of continuous emission monitoring system at KOGCF stationary sources" with the subsequent issue of conclusion by Oral Expertise LLP	
ENERGY EFFICIENCY			
▶ Organize and conduct a surveillance audit in accordance with ISO 50001:2011 to confirm the certification of the KPO Energy Management System. ▶ Develop an energy efficiency improvement and GHG reduction strategy. ▶ Review and improve the energy accounting process at KPC.	Completed	On June 11-12, 2018, a surveillance audit of the KPO Energy Management System for compliance with ISO 50001 standard was conducted. Following the audit, a conclusion on the compliance of the KPO Energy Management System with the requirements of the standard was received. Energy efficiency improvement and GHG reduction strategy project was developed. Fuel gas metering units were repaired and calculations were updated. Justification for allocating budget for purchase and placement of the flow meter at the KPC fuel gas dehydration unit outlet was approved.	▶ Conduct a surveillance audit of the Energy Management System for compliance with the ISO 50001:2011 standard. ▶ Bring the KPO Energy Management System in line with the requirements of the new ISO 50001:2018 standard version. ▶ Implement an Agreement on Cooperation among the WQO Akimat, KPO and International Center for Green Technologies and Investment Projects, signed at the II International Environmental Forum "Uralsk Green Forum".

Tab. № 25. Our targets in environmental protection (continued) GRI 103-2

Our 2018 targets	Target achievement	Actions taken in 2018	Targets for 2019
EFFLUENTS AND WASTE			
Develop a plan for further use of the settling pond, taking into account the mothballing of BIO-50 and the Unit-3 risk reduction concept	Ongoing	The use of the settling pond for collecting melt and rain water from the KOGCF sources is under consideration.	Develop a plan for further use of settling pond at Unit-3
Reuse the treated wastewater for irrigating forest plantation, dust suppression, making drilling muds, hydraulic testing, in the amount no less than 10% of the total water consumption	No	The reused treated wastewater amounted to 4.4% of the used fresh water taken from the surface source. The reuse of treated wastewater was reduced due to the decrease in the wastewater used for the drilling needs.	Reuse the treated wastewater for irrigating forest plantation, dust suppression, making drilling muds, hydraulic testing, in the amount no less than 10% of the total water consumption
Develop a feasibility study for the installation of a stripping column at Unit-3 to ensure environmental safety and reduction of the H_2S concentration in the injected wastewater. Conduct research and selection of H_2S scavenger for the use at Unit-3 to reduce H_2S concentration in the wastewater injected into the subsurface at Polygon #1.	Completed	▶ 'Feasibility Study for the installation of a stripping column at Unit-3' was submitted for the state expert review and discussed at the public hearings. ▶ The Report on H_2S Scavenger trial in the Unit-3 water-methanol mixture treatment system was submitted to the WQO Environmental Department in August 2018.	▶ Develop a single concept for treating injected industrial wastewater as alternative to the stripping column. ▶ Develop a design of the stripping column for the H_2S removal from the industrial wastewater at Unit-3 (design to be completed and approved in 2020).
Carry out additional exploration activities and studies at Polygon 1 in order to justify higher volumes of injected industrial wastewater and ensure that the receiving aquifer is properly sealed off (according to the schedule of the Roadmap for the revision of the Project of KOGCF Industrial Wastewater Injection into deep-laying aquifers and EIA to it)	Completed	Geological report on the completed exploration and research activities was drawn up and submitted to the Committee for Geology and Subsurface Use for state subsurface expert review in November 2018.	▶ Deliver the Roadmap schedule for revision of the Project of KOGCF Industrial Wastewater Injection into deep-laying aquifers and Environmental Impact Assessment to it; ▶ Write a geological report on the completed additional exploration works (follow-up exploration) at Polygon № 1; ▶ Develop Appendix #2 to the KOGCF Industrial Wastewater Injection Project concerning the revision of the project parameters and the section of EIA to it.
Ensure implementation of the activities scheduled for 2018 as per the 2018–2020 Waste Management Programme	Completed	Nine scheduled measures were implemented throughout the year, including segregation, sorting, reuse, treatment, reduction of quantities and hazardous properties in waste, and also scientific and research activities for development of methodologies of reuse of certain waste types.	Implement activities scheduled for 2018 as per the 2018–2020 Waste Management Programme

Tab. № 25. Our targets in environmental protection (continued) GRI 103-2

Our 2018 targets	Target achievement	Actions taken in 2018	Targets for 2019
SOIL			
Undertake mechanical planting activities in the area of 28 ha along the Aksai-Priuralnyi motor road with post-planting tending	Completed	All scheduled activities were completed including planting of tree seedlings, furrowing for irrigation, tending to plants, ploughing and cultivation of firebreaks.	Undertake tending to earlier planted trees
The work on further SPZ development will continue once tender is completed and contractor is selected	Completed	Technical evaluation of potential contractors for technical environmental support of the Sanitary Protection Zone in Karachaganak Field was performed.	▶ Carry out survey works on locating and studying historical and cultural heritage sites within the KOGCF and SPZ areas; ▶ Commence development of the project for organisation and improvement of the estimated SPZ in the Karachaganak Field.
Carry out sanitary cutting of forest plantations to improve the sanitary state of forest and ensure its fire protection	Completed	As recommended in the 2017 Forest Pathology Study, KPO carried out sanitary cutting of forest plantations within the KOGCF. The works included the removal of dried trees.	
Continue the research studies into the development of methods for the reuse of clay drill cuttings of the oil and water-based drilling mud	Ongoing	KPO carried out radiological examinations, chemical and physical-chemical studies of soil samples. Methodologies for laboratory studies and tests to find options of using wastes were developed. Optimal ways and methods of using wastes were defined.	Continue research studies for development of methods of reuse of clay drill cuttings of the oil and water-based drilling mud
BIODIVERSITY			
Carry out monitoring of fauna, including additional studies of ichthyofauna in the KOGCF water basins	Completed	Monitoring of fauna and ichthyofauna was carried out in Berezovka river and Kochubai gully within the KOGCF. Accounting of rare and endangered species of Eurasian beaver was performed.	Perform monitoring of flora within the KOGCF including rare and endangered plants; conduct laboratory analyses of soil and plants for contamination

In 2018, total actual costs of the environmental measures implemented at Karachaganak Field amounted to KZT 7.57 bln.

2018 ENVIRONMENTAL PROTECTIVE MEASURES PLAN

GRI 103-2, 102-44

To achieve the goals set in environmental protection, KPO develops an annual Environmental Protective Measures Plans (hereinafter referred as the EPMP).

In order to obtain an Environmental Emissions Permit, KPO sends the authority an EPMP developed for the permit's validity period, as provided by the RK Environmental Code (chapter 8). The Plan's measures focus on ensuring the environmental safety, improving environmental protection methods and technologies, ensuring rational use of nature and maintaining compliance with the ISO 14001 and ISO 50001 international standards.

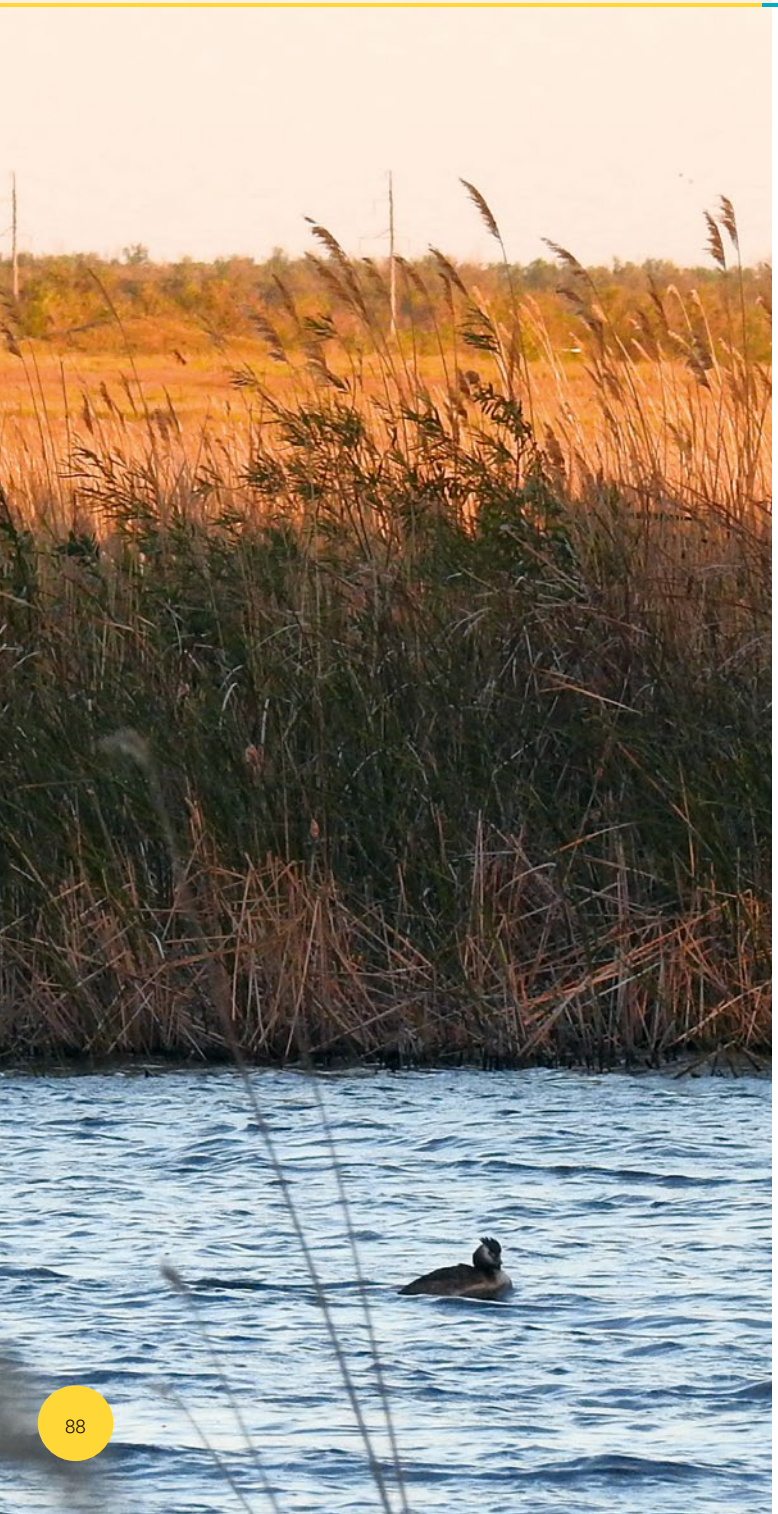
In 2018, KPO performed its operations in accordance with the obtained Environmental Emissions Permits and developed EPMPs as presented in table № 26. The KPO 2018 KOGCF Environmental Protective Measures Plan (EPMP) was developed for the duration of the Environmental Emissions Permit (EEP). Environmental Emissions Permits with the validity period until 2020 for the WQO Bolshoi Chagan OPS and the Atyrau Terminal OPS export pipeline facilities were received in 2015, as shown in table № 26. The 2016–2020 Environmental Protective Measures Plans were scheduled according to the validity terms of the received permits.

Tab. № 26. KPO 2018 Environmental Protective Measures Plans and issued Permits GRI 307-1

No.	Developed and agreed 2018 Environmental Protective Measures Plans	Valid 2018 Permits	Permit issuing Authority
1	2018 KPO EPMP for the Karachaganak Field	Environmental Emissions Permit No. KZ02VCZ00146243 dated 22.12.2017 (validity: 01.01.2018 – 31.12.2018)	Committee for Environmental Regulation and Control of the RQ Ministry of Energy
2	2016–2020 KPO EPMP for the KPC-Bolshoi Chagan-Atyrau export condensate pipeline in the West-Qazaqstan Oblast (WQO)	Environmental Emissions Permit No. KZ68VDD00021755 dated 12.08.2015 (validity: 01.01.2016 – 31.12.2020)	WQO Akimat, West-Qazaqstan Oblast Administration of Natural Resources and Nature Use Control
3	2016–2020 KPO EPMP for the Atyrau Oblast	Environmental Emissions Permit No. KZ87VDD00021510 dated 07.08.2015 (validity: 01.01.2016 – 31.12.2020)	Atyrau Oblast Akimat, Atyrau Oblast Administration of Natural Resources and Nature Use Control

In 2018, the total actual costs of the environmental measures implemented at Karachaganak Field amounted to KZT 7.57 bln. The 2018 target costs for KOGCF amounted to 11.9 bln tenge. Variance between the 2018 target and actual costs results from the partial completion of the planned measures under the "Air Conservation" section (79%), namely:

- The capacity of several wells was lower than expected, which in turn resulted in the limited production of liquid hydrocarbons (LHCB). As a result, the use of high-pressure pump helped reduce the amount of flared LHCB by 3.560 thousand tonnes of the target amount – 10 thousand tonnes. The implementation progress of this measure was 35%.
- The mobile gas compressor units were not used throughout the year due to a delay in selecting a supplier of equipment and parts for the gas compressor units that are used for well test and clean-up.
- Due to water cut in the wells, the reservoir stimulation with hydrocarbon-based fluid was done on 6 wells instead of the planned 8 wells. The implementation progress of this measure was 68%.
- The implemented well work-over activities resulted in the decrease in radiological examination of tubing due to the reduced number of respective requests. The implementation progress of this measure was 15%.



Implemented measures broken down by of the 2018 EPMP are sections shown in table № 27.

Tab. № 27. 2018 Environmental Protective Measures Plan implementation, % GRI 103-2, 102-44

No.	Sections of Environmental Protective Measures Plan	KPO measures implementation:		
		– within Karachaganak Field	– on the KPC–Bolshoi Chagan–Atyrau export condensate pipeline (West Qazaqstan Oblast)	– on the KPC–Bolshoi Chagan–Atyrau export condensate pipeline (Atyrau Oblast)
1	Air conservation	79%	100%	100%
2	Conservation and rational use of water resources	98%	N/A*	N/A*
3	Land conservation	95%	N/A*	N/A*
4	Subsoil conservation and rational use	100%	N/A*	N/A*
5	Flora and fauna conservation	100%	0%	100%
6	Production and consumption waste management	169%	19%	46%
7	Radiation, biological and chemical safety	15%	N/A*	N/A*
8	Introduction of management systems and best safe technologies	100%	N/A*	N/A*
9	Scientific researches and design and survey works in environmental protection	93%	100%	100%
10	Environmental awareness and promotion	112%	100%	100%
TOTAL:		**96% (7,568,501 thous. tenge)**	**80% (9,304.237 thous. tenge)**	**89% (26,259.414 thous. tenge)**

** N/A – measures are not applicable.*

Tab. № 28. Results of KPO's Environmental Protection measures implemented in 2018 GRI 102-44

Air emissions	▶ Use of high pressure separators during the test and clean-up of 11 wells helped reduce the amount of air polluting emissions by 8,474 tonnes; ▶ Use of high pressure pump for pumping oil helped reduce the amount of air polluting emissions by 245 tonnes; ▶ Use of hydrocarbon-based fluid for the reservoir operations (Lamix or Deisel) helped reduce the amount of air polluting emissions by 586 tonnes.
Waste and wastewater management	▶ 736.5 tonnes of municipal and production waste was sorted and sent for incineration in General Purpose Incinerator (GPI); ▶ The following was sorted and sent for processing and reuse as recyclable materials: ■ 95.6 tonnes of waste paper, which is by 6.3% less compared to 101.98 tonnes in 2017; ■ 8.5 tonnes of scrap metal, which is by 30% less compared to 12.08 tonnes in 2017; ■ 25.2 tonnes of plastic, which is by 40% more compared to 18.04 tonnes in 2017. ▶ In 2018, the total volume of treated liquid waste amounted to 7,004.62 tonnes, wastewater – 7,960 m^3 ▶ In 2018, the transfer of accumulated waste from the Solid Waste and Spent Drilling Mud Site to the Solid Waste Burial Landfill continued. 6,156.16 tonnes of waste was treated and disposed at the Landfill throughout the year (5,266.26 tonnes in 2017). ▶ In 2018, the volume of treated wastewater reused at the KOGCF for making drilling muds, irrigation of planted trees and dust control amounted to 18,241 m^3 (50,476 m^3 in 2017). The volume of reused wastewater amounted to 4.4% of the total consumption of fresh technical water, which was 417,232 m^3.
Land reclamation GRI 304-3	In 2018, 71 ha of land disturbed because of well operations and construction activities was reclaimed.

Environmental fines GRI 307-1

KPO runs its business in accordance with the RoQ Environmental Legislation. As part of its production activity the Company annually requests and obtains Environmental Emissions Permit (EEP) in the RoQ Energy Ministry, this permit sets limits for air emissions, discharges and storage of production and consumption waste.

It is worth highlighting that in 2018 as in previous years the Company did not exceed the emissions limits set by the Environmental Emissions Permit. At the same time in 2018, following random inspection to check compliance with environmental regulatory requirements the Company was subject to administrative fine totalling to 59.8 mln KZT. The Company partially disagreed with charged violations and appealed the fines in the superior authority and court following established procedure, however the superior authority and the court did not uphold Company's appeal.

In 2018, there were no payments of civil claims on environmental matters.

AIR EMISSIONS GRI 305-7

KPO manages air emissions based on the limits established in the Environmental Emissions Permit. Most emissions are generated as a result of combustion of fuel gas in gas turbine units, boilers, process heaters, compressors, and gas and liquid flaring.

In 2018, the total amount of air emissions decreased by 10% compared to 2017, totalling 7.7k tonnes. This reduction of emissions is explained by a significant decrease in the volumes of gas and liquid combusted at well flares. Table № 29 shows data on the permissible and actual KPO's emissions for the period of 2016–2018.

Tab. № 29. Permitted and actual volumes of pollutants emissions, 2016–2018

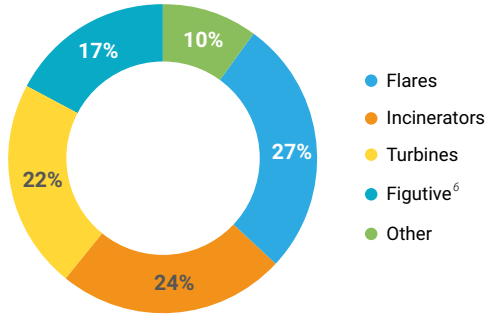
Annual volume of emissions by pollutants, in tonnes:	2016	2017	2018
Permitted:	**21,876**	**26,538**	**19,986**
Actual, including:	**11,421**	**8,569**	**7,759**
Nitrogen oxides	1,934	1,967	1,931
Sulphur dioxide	5,819	3,641	3,138
Carbon monoxide	1,850	1,266	1,249
Volatile organic compounds	1,449	1,533	1,315
Hydrogen sulphide	28	27	3
Solid particles	89	48	65
Other	252	87	58

Note: Emission volumes data are provided in accordance with the data of statistical reports '2-TP Air'.

In KPO, pollutants' emissions are estimated using the calculation method based on the initial data on fuel consumption and composition, and equipment operation time. The flow rate of the combusted fuel is calculated by applying the method of continuous measurements and fuel balance; diesel fuel consumption – based on the data of statutory accounting, and the equipment operation time – based on the daily operator reports. The oil and gas composition is determined by the certified internal laboratory. Emissions are calculated by each component and type of emission sources using the methods recommended for application in the Republic of Qazaqstan.

Graph № 25 shows pollutants emissions broken down by main air pollution sources.

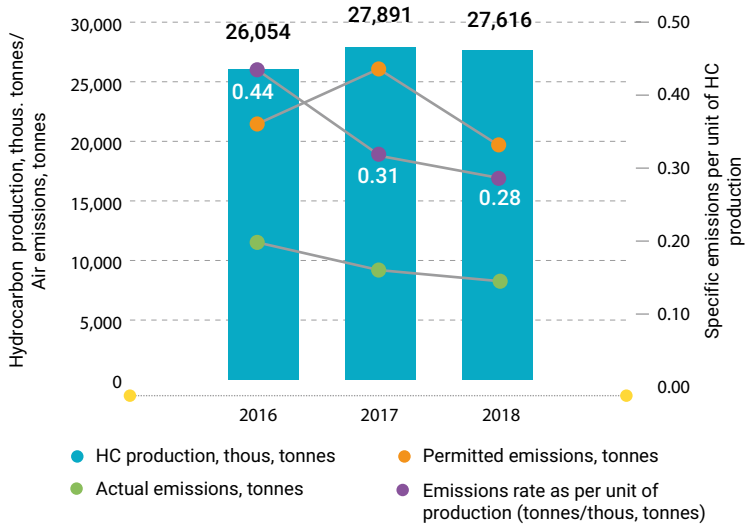
Graph № 25. Distribution of pollutant emissions in KPO in 2018 by main air pollution sources



In 2018, the specific emissions per unit of production amounted to 0.28 tonnes per 1,000 tonnes of hydrocarbons (HC) produced. The decrease in specific emissions in 2018 as compared to 2017 was due to smaller volumes of flared mixture at wells and production facilities, and larger production volumes.

[6] *Figutive emissions - industrial emissions in the atmosphere as non-directional gas flows (according to the State Standard GOST 17.2.1.04-77)*

Graph № 26. Volume of HC production and environmental emissions in 2016–2018

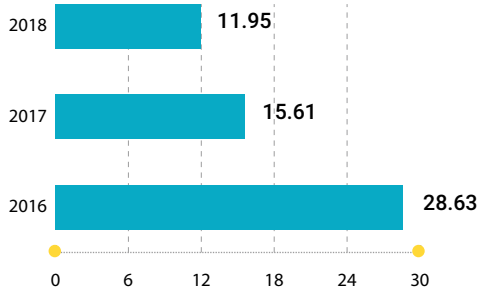


Gas flaring OG-6

In 2018, the total amount of flared gas was only 0.06% of the total volume of gas produced by KPO or 0.38 tonnes per thousand tonnes of produced hydrocarbons. Such an emission rate as a result of flaring in 2018 is an evidence of a very high performance when compared to the worldwide industry average of 12.1 tonnes per thousand tonnes and European average of 2.9 tonnes per thousand tonnes[7], as stated in the 2017 IOGP report.

In 2018, KPO continued using high-pressure separators, high-pressure pumps and hydrocarbon-based fluid contributing to reduction of air emissions when cleaning up (completing) the wells. As a consequence of using this equipment and materials, the volume of liquids flaring decreased by 60 thousand tonnes, which was 94% of the volume produced during the wells clean-up. The volume of flared gas during the wells clean-up decreased by 40 mln m³ (or 77% of the volume produced during the wells clean-up).

Graph № 27. Volume of associated gas flared, mln. m³

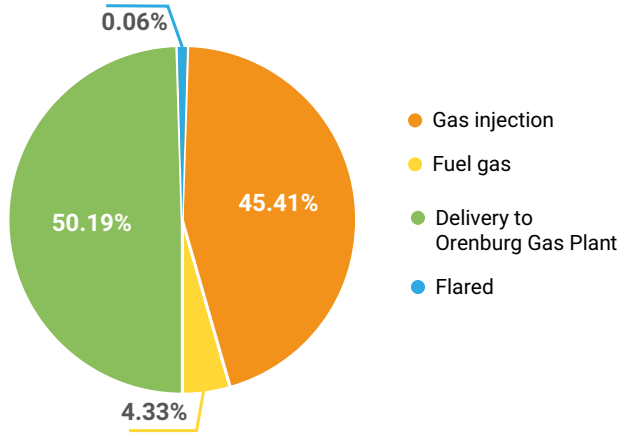


[7] *Data source: the RoQ Energy Minister's Order No. 571 dated 28 December 2016 On the Strategic Plan of the RoK Ministry of Energy for 2017 – 2021.*

Gas Utilization OG-6

In 2018, the KPO gas utilization rate reached 99.94% (99.92% in 2017). The performance target approved by the RoQ authority under the 2018 Associated Gas Processing Development Programme is 99.4%. Gas utilization in the Republic of Qazaqstan in 2016 amounted to 97.5%[8]. In 2018, the total amount of flared gas was only 0.06% of the total volume of gas produced

Graph № 28. Gas utilization and flaring in 2018



[8] *Data source: the RoQ Energy Minister's Order No. 571 dated 28 December 2016 On the Strategic Plan of the RoQ Ministry of Energy for 2017 - 2021.*

Direct greenhouse gas emissions GRI 305-1

Across KPO the direct greenhouse gas (GHG) emissions are regulated under the national quotas trading system in place since 2013. In 2017 KPO obtained quotas for 2018–2020 GHG emissions in the amount of 6,927,159 tonnes.

Quota was granted to KPO on the basis of specific emissions indicators (benchmark). Respectively, no base year for obtaining the quota has been officially established. To compare the GHG emissions dynamics and maintain the principles of reporting in this issue, we assumed the year 2017 as the base year (i.e. the year preceding the reporting year).

In accordance with the approved Monitoring Plan for 2018–2020, KPO performs quarterly assessment of GHG emissions for carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). The emissions were assessed using the calculation method on the basis of the Company's operations data (in terms of fuel consumption and laboratory data on fuel composition).

According to the verified GHG Emissions Inventory Report for 2018, the total volume of GHG emissions amounted to 1,893,447 tonnes in CO_2-equivalent, of which CO_2 contribution equalled to 1,730,915 tonnes of CO_2-equivalent (91.4%), CH_4 – 154,042 tonnes of CO_2-equivalent (8,1%), N_2O – 8,490 tonnes of CO_2-equivalent (0.5%).

The information on the dynamics of generated GHG emissions is provided in Table № 30. Compared to 2017, some decrease of the GHG emissions in 2018 was observed due to less running hours of injection compressors gas turbines due to increase in volumes of sour gas supply to Orenburg GPP. The main contributors (up to 82%) are emissions generated through combustion of the fuel gas at the gas turbines of the gas re-injection system, power plant gas turbines and high-pressure steam generation plant.

Tab. № 30. Dynamics of GHG emissions generated as a result of KPO production activities

Total volume of greenhouse gas emissions (tonnes of CO_2 equivalent)					
From fuel combustion at flares and incinerators	From fuel combustion at stationary sources	Fugitive emissions	Total GHG emissions in 2018	Total GHG emissions in 2017	Total GHG emissions in 2016
140,105	1,601,941	151,401	1,893,447	1,928,700	1,870,041

Indirect greenhouse gas emissions GRI 305-2

KPO has its own Gas Turbine Power Plant aimed to provide electrical energy to its processing complex in the field and to the nearby settlements.

In 2018, KPO did not use electricity from the state electricity network. Accordingly, the volume of indirect GHG emissions at KPO was zero ton of CO_2-equivalent.

At the time of the shutdown of the power plant, KPO field facilities may get connected to the electricity network of the West Qazaqstan region, which had occurred in previous periods. For instance, in 2017 the volume of indirect KPO GHG emissions out of total volume of GHG emissions amounted to 0.01%. The calculation of indirect GHG emissions is made by multiplying the actual volume of purchased electricity (MW/h) by the international emission factor (0.684 tonnes/ MW/h) for Qazaqstan.

As part of the GHG emission quota system of the Republic of Qazaqstan, such emissions are not accountable and not included in the KPO environmental reporting.

Specific greenhouse gas emissions

GRI 305-4

In 2018, the specific greenhouse gas emissions amounted to 69 tonnes per 1,000 tonne of hydrocarbons produced, which is similar to performance in 2017. Dynamics of specific GHG emissions is shown in Graph № 29.

Graph № 29. Dynamics of specific GHG emissions per unit of produced hydrocarbons (HC)

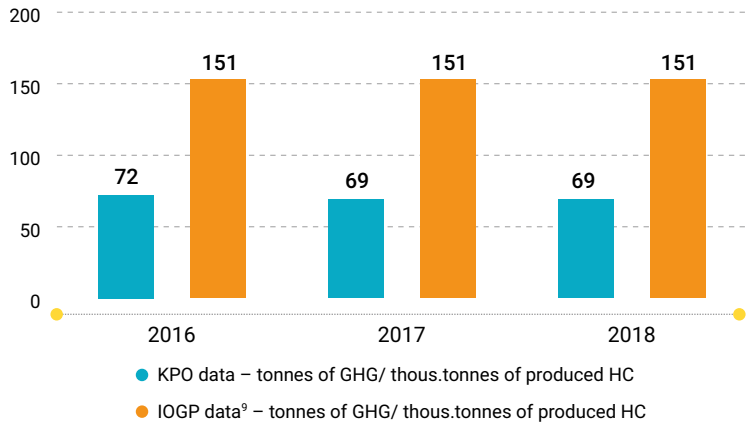


Table № 31 shows the KPO GHG specific emissions comparing them with the specific emissions data provided by the IOGP. The actual specific GHG emissions in the Karachaganak Field in 2018 were lower than the European indicators by 25% and lower than the averaged international indicators by 54%.

Tab. № 31. Comparative analysis based on the specific GHG emissions per unit of produced hydrocarbons (HC), in tonnes per 1,000 tonnes of produced HC

GHG description	IOGP data[9] (Europe)	IOGP data[9] (in total)	KPO data		
	2017	2017	2016	2017	2018
$CO_2 + CH_4 + N_2O$ (CO_2e)	92	151	72	69	69
CO_2	83	133	66	63	63

Reduction of greenhouse gas emissions

GRI 305-5

In view of consistent reduction of GHG (CO_2) emissions, KPO set the following objectives for 2018:

- to reduce the direct emissions of CO_2 by 250 thous. tonnes through implementation of a number of production optimization and energy efficiency projects;
- to ensure that the volumes of specific emissions do not exceed 67 tonnes of CO_2 per thous. tonnes of hydrocarbons production.

In 2018, the KPO's specific indicator of CO_2 emissions totalled 63 tonnes of CO_2/ thousand tonnes of HC production (Table № 31). Owing to implementation of the six projects listed in Table № 32, the actual reduction of the GHG emissions exceeded the target by 23%. Methods and factors proposed in the validated GHG Emissions Reduction Programme for 2016–2020 have been used to calculate actual CO_2 emissions reduction.

9 *The data was sourced by Annual reports of the International Associations of Oil and Gas Producers (IOGP) – 'Environmental Performance Indicators – 2017 Data'. The 2017 data was used for comparison purpose, as the 2018 IOGP Report was not available at the time this issue was prepared.*

Tab. № 32. GHG emissions' reduction measures in 2018 GRI 305-5

No.	Measures	Emissions reduction, tonnes/year		Status of completion in %
		Target	Actual	
1	Use of high-pressure separator when cleaning up the wells	181,972	236,047	130%
2	Use of high-pressure pump when cleaning up the wells	11,761	10,452	89%
3	Use of hydrocarbon-based fluid to stimulate the formation (new)	15,337	15,458	101%
4	Repair of valves of KPC flare headers	12, 299	26,414	215%
5	Adjustment of the steam flowmeter at processing train No. 4	6,502	11,209	172%
6	Upgrade of piping of Unit-2 compressors	22,129	7,778	35%
	Total:	**250,000**	**307,358**	**123%**

Due to the use of high-pressure separator when cleaning up the wells, emissions reduction reached

236,047 tonnes per year

SANITARY PROTECTION ZONE

Effective 1st January 2019, a new sanitary protection zone (SPZ) has been established within the Karachaganak Field.

The area of the new SPZ (2018) is 513.7 km^2, and covers the territory between the line of the outermost impact sources and the external SPZ boundary. The new SPZ is by 95.1 km^2 bigger than the previous SPZ that was officially in place until 01.01.2019. Meanwhile, the area within the line of the outermost impact sources (according to the 2018 data) is now 208.3 km^2, i.e. by 56.1 km^2 bigger compared to the data of 2011. The length of the boundary along the SPZ perimeter is 98.96 km, which is by 11.16 km longer than the old SPZ boundary. Foremost, the SPZ was changed due to the expansion of the area within the line of the outermost sources due to the planned construction of new facilities and drilling of new wells within the SPZ, as well as due to the increasing volumes of air pollutants and the maximum simultaneous gas flaring scenario that was used in calculations.

The dimensions of the Karachaganak SPZ are not the same in different directions and vary from 5,000 m on south-west to 9,440 m on south-east. In other words, size of the estimated SPZ is between 5,007 m and 7,579 m from the line of the outermost sources. The SPZ dimensions towards the neighbouring villages are shown in table № 33.

Tab. № 33. Distance from the SPZ boundary to the nearest settlements

Settlement name	Distance from the SPZ boundary to the settlement, m
Zharsuat	4,317
Zhanatalap	2,887
Karashyganak	3,287
Karakemer	4,778
Aksay	7,569
Priuralnoye	6,660
Dimitrovo	4,812
Uspenovka	6,278

Because the villages of Berezovka and Bestau fell within the boundaries of the estimated SPZ (2018), in late 2017 the villagers were resettled to locations with more favourable housing conditions in terms of the sanitary and hygienic standards.

In 2018, KPO started upgrades at Unit 2 and drilling of new wells located within the old SPZ boundary (2011). Prospective facilities of the future field development – KEP-1A and KEP-1 are scheduled post 2020.

Based on the sanitary and hygienic requirements, the SPZ boundary has been defined by:

- the line of the estimated zones of surface concentrations of pollutants beyond which the MPC is not exceeded on any of them,
- the line of maximum permissible levels (MPL) of physical impacts beyond which the MPL of physical impacts is not exceeded;
- the line of acceptable health risk to the population beyond which the risk to human health is assessed as acceptable.

In addition to conditions determining the new SPZ dimensions as stated in the 2015 Sustainability Report, a cumulative line was identified beyond which the MPC is not exceeded and there is no risk to human health. Calculations were made with account for the normal operation of all KPO production facilities and the maximum simultaneous gas flaring involving all flares at the existing and prospective field facilities as well as the simultaneous gas flaring at the four wells.

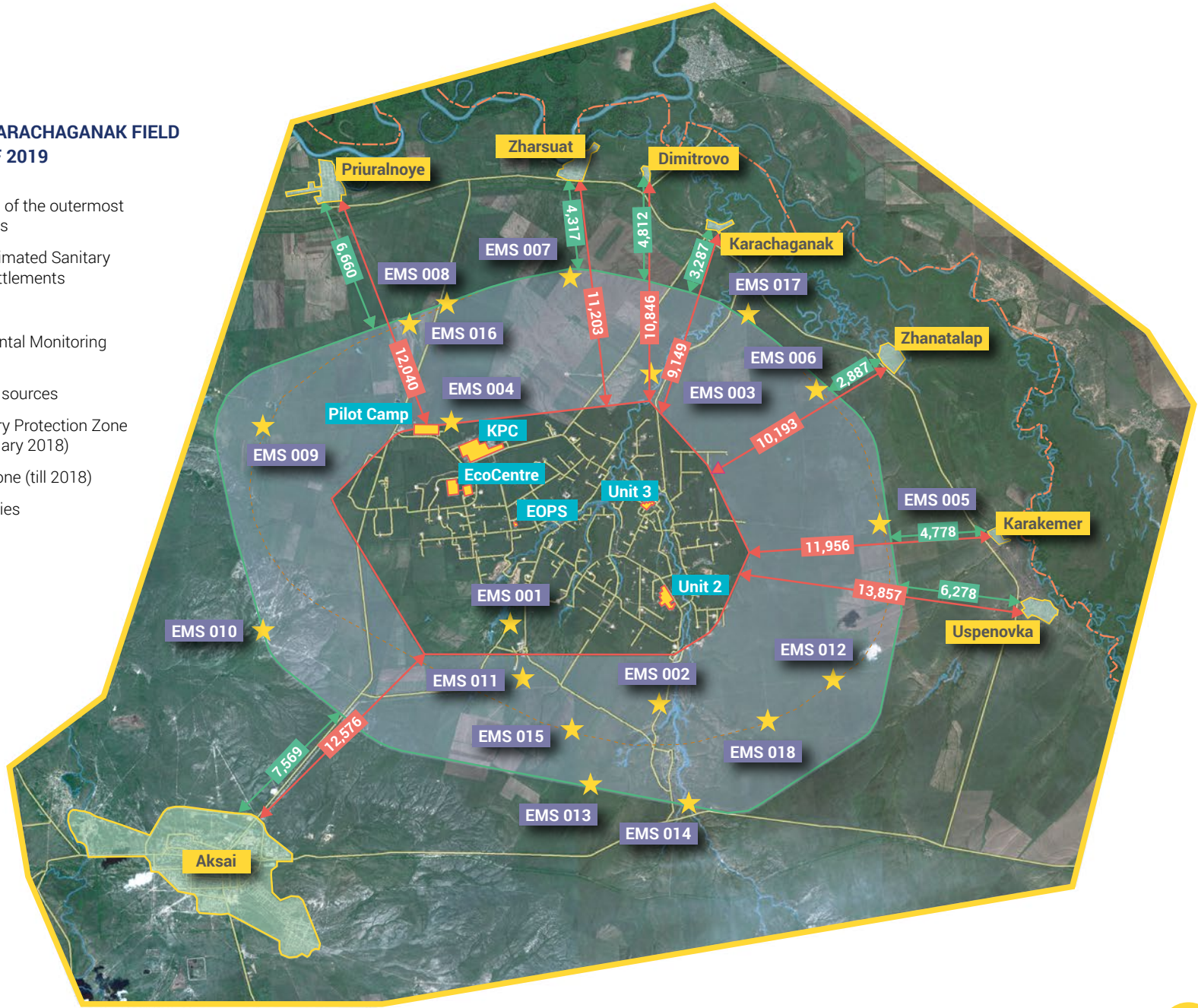
As part of the SPZ expansion project, in 2018 KPO started a phased move of the existing environmental monitoring stations (EMS) to the new SPZ area. In total, 11 EMSs are subject to relocation.

In December 2018, three existing EMS (Nos. 10, 13, and 14) were moved and hooked up. The relocated stations function as normal.

In 2019, KPO plans to relocate three more stations – Nos. 11, 16, and 18. The remaining five stations will be moved once the project documentation is completed and subject to technical capability.

Fig. № 16. MAP OF THE KARACHAGANAK FIELD WITH SPZ MARKED AS OF 2019

- Distance from the line of the outermost sources to settlements
- Distance from the estimated Sanitary Protection Zone to settlements
- State boundary
- Automatic Environmental Monitoring Stations (EMS)
- Line of the outermost sources
- The estimated Sanitary Protection Zone (effective from 1 January 2018)
- Sanitary Protection Zone (till 2018)
- KPO production facilities
- Settlements
- Roads
- Hydrography



ENVIRONMENTAL MONITORING

GRI 413-1

In order to assess the potential environmental impact of a company's operations, KPO performs monitoring as set in the Production Environmental Control (PEC) Programme. Monitoring of both the environmental emissions – emissions to air, discharge of wastewater, and the treatment and disposal of wastes; and the quality of environmental components – air, surface and underground water and soil is conducted. The PEC Programme determines the sampling and measuring locations, the list of components to be identified and the monitoring frequency.

The Production Environmental Control is conducted within the Karachaganak field, at the boundary of Sanitary Protection Zone, in the nearby villages, along the KPC – Bolshoi Chagan – Atyrau condensate export pipeline route and its facilities.

KPO conducts air monitoring through sampling and analysis by accredited laboratory and, in addition, by means of 18 automatic Environmental Monitoring Stations (EMS) continuously run at the KOGCF and SPZ perimeter. Each station has four (4) analysers designed for continuous measurement of hydrogen sulphide (H_2S), sulphur dioxide (SO_2), nitrogen dioxide (NO_2) and carbon monoxide (CO) content in the air. The EMS also activates a warning alarm in case of high concentration of emissions in the air.

Mobile air monitoring is conducted when required at individual sites using one of two fully equipped mobile environmental monitoring stations.

To evaluate the air quality, the health-based exposure limits or maximum permissible concentrations (MPC) are used. Recorded concentrations of controlled components are compared with the maximum permissible concentrations, indicating the level of pollution in parts. MPC of an air pollutant is a concentration, which does not cause a direct or indirect lifelong negative impact on the present or the future generations, does not reduce the working capacity of a person and his/her health and does not deteriorate the sanitary and living conditions of human beings.

Air monitoring at the boundary of the SPZ of the Karachaganak field

Along with the continuous air quality monitoring run by the 18 EMS, the accredited Contractor laboratory conducts air sampling made per 8 compass points (rhumbs) at the boundary of the KOGCF SPZ. Sampling at the border of the SPZ is performed at route monitoring stations[10] daily with the following frequency:

- at sampling points N, E, S, W – 4 times a day;
- at the sampling points of NE, SE, SW, NW – 1 time per day.

The samples are analyzed for the content of the same components measured at the EMSs: hydrogen sulphide (H_2S); sulphur dioxide (SO_2); nitrogen dioxide (NO_2); carbon monoxide (CO). Additionally, air samples are analyzed for methane (CH_4) and methylmercaptan (CH_3SH) content.

In 2018, according to the results of air monitoring at eight route monitoring stations at the KOGCF SPZ no exceedance of the maximum permissible concentration of the monitored components was recorded.

Average concentrations of the monitored air components at the boundary of the SPZ for 2018 are given in the table № 34. The column 'Actual annual average concentration' shows the minimum and maximum values of average concentrations of the controlled air components per 8 points.

KPO transmits online data of air quality monitoring from

18

automatic EMS to the Western Qazaqstan Environmental Department

[10] *The route station is intended for regular sampling of air at a fixed point in the area during observations carried out with the help of portable equipment.*

Tab. № 34. The average annual concentrations of the monitored air components recorded at route monitoring stations at the SPZ boundary in 2018

Monitored components	Actual annual average concentration, mg/m³	MPC one-time[11], mg/m³	Exceedance of MPC
H_2S	0.002	0.008	no
SO_2	0.003	0.5	no
NO_2	0.025 – 0.027	0.2	no
CO	below MDL*	5.0	no
CH_4	1.107 – 1.136	50**	no
CH_3SH	not detected	0.006	no

* *Measurements recorded were below the method's minimal detection limit (MDL). MDL for CO is 0.6 mg/m³.*

** *Determined approximate safe level of impact. MPC for methane is not determined.*

Atmospheric air monitoring in the villages adjacent to the Karachaganak field GRI 413-1

There are stationary air monitoring posts in six settlements located around the field: Zharsuat, Zhanatalap, Dimitrovo, Karachaganak, Priuralnoye, Uspenovka, and in the city of Aksay. At these posts, the certified contractor laboratory makes sampling 4 times a day (at 1, 7, 13 and 19 hours according to the State Standard). Air sampling is carried out by the permanent personnel of the contracted laboratory, who reside in the villages.

Air samples are taken to the laboratory in the town of Aksai where the samples are chemically tested for the content of the 5 main components in accordance with the State Standard and Ruling Documents: hydrogen sulphide (H_2S), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO) and methylmercaptan (CH_3SH). In addition, once in 10 days the air is monitored for concentration of volatile organic components: benzene (C_6H_6), toluene (C_7H_8), xylene (C_8H_{10}).

Monthly results of air monitoring are published in local printed media and sent to the villages for posting on public information boards.

In case of complaints from the communities on a smell of gas, unscheduled air sampling is performed at stationary posts.

While the average monthly concentrations of NO_2 did not exceed MPC in 2018, there were a total of two exceedances of the daily average MPC of NO_2 average daily concentration registered in Zhanatalap:

- 1 occurrence of NO_2 exceedance by 1.075 times – registered in II quarter 2018 (23.06.2018). The average daily concentration was 0.043 mg/m³ while the daily average MPC is 0.04 mg/m³;
- 1 occurrence of NO_2 exceedance by 1.1 times registered in IV quarter 2018 (21.12.2018). The average daily concentration was 0.044 mg/m³ while the daily average MPC is 0.04 mg/m³.

MPC exceedance of other monitored components was not recorded.

[11] *MPC one time - maximum permissible one-time concentration of chemical substance [mg/m³] in the ambient air of settlements. This concentration should not cause a reflex response in human bodies (delay of a breath, irritation of the eyes, upper respiratory tract and other) in case of 20-30 minutes of inhalation.*

Air sampling using the mobile Environmental Monitoring Station

Annual average concentrations of monitored air components in the seven villages in 2017 are given in table № 35. The column 'Actual annual average concentration' shows the minimum and maximum values of average concentrations of the controlled air components.

Tab. № 35. Annual average concentrations of monitored air components in the villages adjacent to KOGCF in 2018 GRI 413-1

Monitored components	Actual annual average concentration, mg/m^3	MPC daily average[12], mg/m^3	Exceedance of MPC daily average
H_2S	0.002	0.008[14]	no
SO_2	0.003 – 0.004	0.05	no
NO_2	0.025 – 0.029	0.04	no
CO	below MDL[13]	3.0	no
C_6H_6	below MDL[13] – 0.149	0.3[14]	no
C_7H_8	below MDL[13]	0.6[14]	no
C_8H_{10}	below MDL[13]	0.2[14]	no
CH_3SH	not detected	0.006[14]	no

[12] *MPC daily average - maximum permissible daily average concentration of chemical substance [mg/m3] in the ambient air of settlements. This concentration should not have direct or indirect adverse effect on human body in case of inhalation during indefinitely long-term period (years).*

[13] *Measurements recorded were below the method's minimal detection limit (MDL). MDLs for monitored parameters are the following:*
CO is 0.6 mg/m^3; C_6H_6 – 0.14 mg/m^3;
C_7H_8 is 0.14 mg/m^3; C_8H_{10} is 0.14 mg/m^3.

[14] *MPC one-time. MPC daily average for hydrogen sulphide and methylmercaptan is not established, therefore, MPC one-time is referred to for comparison purpose; MPC one-time is also applied in order to evaluate the concentration of benzene, toluene and xylene in the air given the frequency of components analysis of the samples, which is once every 10 days.*

Air monitoring by automatic Environmental Monitoring Stations

GRI 413-1

KPO automatic Environmental Monitoring Stations (EMS) that perform continuous air monitoring are an additional source of information on the air condition at the boundary of the SPZ.

Annual average concentrations of monitored components recorded by EMSs in 2018 are given in Table № 36. The column 'Actual annual average concentration' in both tables shows the minimum and maximum values of average concentrations of the controlled air components per each EMS.

Tab. № 36. Annual average concentrations of monitored components in 2018 recorded by EMS

Monitored components	Actual annual average concentration, mg/m³	MPC one-time, mg/m³	Exceedance of MPC
H_2S	0 – 0.001	0.008	no
SO_2	0.003 – 0.009	0.5	no
NO_2	0.003 – 0.009	0.2	no
CO	0.2 – 0.4	5.0	no

Note: Criteria of air quality at the SPZ boundary is MPC one-time.

All existing 18 EMSs measure four main pollutants (H_2S, SO_2, NO_2, CO) on a continuous basis, i.e. 24 hours per day. According to the data received from the EMSs in 2018, the actual annual, quarterly and daily average concentrations of H_2S did not exceed the MPC; although a one-time short-period (measured during 20 minutes) exceedance of MPC was registered. It is worth noting that most part of exceedances shown in Table № 37 are not related to KPO operations, which was confirmed at meetings with local citizens.

Other ingredients did not exceed the MPC level in 2018.

Tab. № 37. Exceedances of one-time MPC of hydrogen sulfide (H_2S) recorded by EMS in 2018

EMS No.	Actual one-time concentrations recorded in 2018, mg/m³		Number of exceedances	Frequency ratio of MPC exceedance, one-time*
	min	max		
EMS-007	0	0.022	21	1.125-2.75
EMS-008	0	0.016	23	1.125 – 2.0
EMS-013	0	0.010	1	1.25
EMS-017	0	0.012	3	1.125 – 1.5

* *One-time MPC is 0.008 mg/m³.*

In June 2018, KPO launched an automated system for online transmission of air quality monitoring data from all 18 automatic EMS to the West Qazaqstan Oblast Environmental Department. This allowed to increase the transparency of air monitoring data conducted by KPO. This project was done as part of implementation of the Environmental Protection Measures Plan for 2018.

ENERGY EFFICIENCY

Energy management system GRI 103-2, 103-3

In 2018, KPO conducted surveillance audit for compliance with ISO 50001:2011 'Energy management systems' standard requirements. The audit confirmed KPO's compliance with the requirements of this standard. The ISO 50001 certificate is valid until September 2020 (the year of next certification audit). Certification will further contribute to enhance business reputation of KPO as a reliable partner of the Republic of Qazaqstan, taking appropriate actions to meet both regulatory requirements and international standards.

Energy consumption GRI 302-1

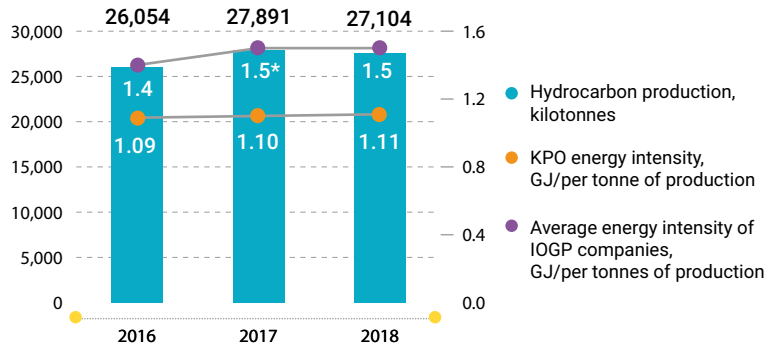
In 2018, the energy consumption totalled 1,040,603 tonnes of coal equivalent compared to 1,051,285 tonnes of coal equivalent in 2017. Table № 38 shows the energy consumption volumes broken down by energy type.

In 2018, the energy consumption was relatively stable and was not significantly different compared to 2017. In 2018, the energy intensity indicator was 1.11 GJ/tonnes of hydrocarbons, which was below the average energy intensity indicator of the companies that submit their reports to the IOGP (1.5).

Tab. № 38. KPO energy consumption in 2016–2018 GRI 302-1

Type of energy	Unit of measure	Energy consumption, physical units			Energy consumption, tonnes of coal equivalent			Energy consumption, GJ		
		2016	2017	2018	2016	2017	2018	2016	2017	2018
Fuel gas	K m³	785,007	850,765	841,943	967,129	1,048,142	1,037,274	28,346,542	30,721,053	30,402,505
Electric power (purchased)	MW/h	10,841	6,892	6,707	1,333	848	825	39,085	24,846	24,181
Diesel fuel	m³	1,436	772	839	1,811	911	1,058	53,074	26,696	30,997
Gasoline	m³	264	287	245	291	316	271	8,535	9,274	7,934
Heating (in rented offices)	Gcal	7,943	7,468	8,219	1,136	1,068	1,175	33,292	31,301	34,449
Total					**971,700**	**1,051,285**	**1,040,603**	**28,480,528**	**30,813,170**	**30,500,065**

Graph № 30. Dynamics of energy intensity in 2016–2018 GRI 302-3, 102-48



* *The average energy intensity indicator of the companies that submit their reports for 2017 to the IOGP was updated in accordance with the IOGP Report "Environmental Indicators for 2017" issued in October 2018.*

Energy Saving and Efficiency Action Plan

Pursuant to the approved KPO's Energy Saving and Energy Efficiency Improvement Action Plan, the following actions were taken in 2018:

- The studies of the electric power quality indicators in the distribution network of the infield gathering system were carried out and recommendations to improve the quality of electric power consumption were developed. The recommendations were included in the Action plan.
- Replacement of traditional lighting with LEDs bulbs at production and ancillary facilities has been continued.
- The air intake filters were replaced on the Unit-2 re-injection compressor turbine. By improving filtration, the turbine capacity is increased and fuel consumption is reduced.
- The sensor taps were installed for water saving purposes.
- The GTPP staff were provided with the training on the topic "Energy Efficiency and Energy Saving during the Operation of Gas Turbine Plants".

KPO environmental experts at the International Uralsk Green Forum 2018

In the course of the II Environmental Forum "Uralsk Green Forum" held by KPO, the West Qazaqstan Oblast Akimat, KPO and International Center for Green Technologies and Investment Projects NJSC signed an Agreement on Cooperation and Partnership. One of the items of cooperation is the implementation of the green economy scientific, educational, environmental and innovative projects. At the beginning of 2019, as part of this agreement, the West Qazaqstan Oblast Akimat and KPO announced an innovative environmental ideas contest among the WQO universities and college students. This contest was dedicated to the Year of Youth in Qazaqstan. The Contest results will be announced during the III Environmental Forum "Uralsk Green Forum" in June 2019.

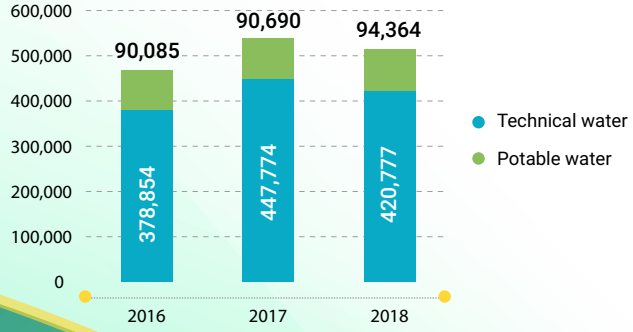
WATER USE

Our target is to use water resources rationally with the aim to preserve them. KPO controls the use of clean water at the company by undertaking a set of measures on conservation of water resources and re-use of treated water, wherever possible.

In 2018, the total water consumption in the Company amounted to 515,141 m³, of which 420,777 m³ was the technical water and 94,364 m³ was the potable water.

GRI 303-1

Graph № 31. KPO water consumption, 2016–2018



In 2018, water used by KPO for technical needs was

6% less than in 2017

Technical water

In 2018, the volume of water used by KPO for technical needs was 420,340 m³, which is 6% less than in 2017 (447,445 m³).

The main source of water supply for technical needs in the Karachaganak field is a holding pond No.1 at the Konchubai gully. As per the Special Water Use Permit for water intake for industrial needs valid until 22.09.2020, the annual intake limit is 595,047 m³. The total volume of water intake from the Konchubai gully in 2018 amounted to 417,232 m³. In this case, KPO is the primary water user.

The Konchubai gully is not included in the list of local fishery water bodies, neither fed by ground water; it is replenished only during spring by melting snow and rainfalls.

The Kigach water intake facility supplies the Atyrau Terminal Oil Pumping Station (OPS) with technical water via the Astrakhan – Mangyshlak trunk pipeline, where it is used for domestic and technical purposes.

Domestic water

The sources for KPO domestic water supply are Zharsuat water intake – at the Karachaganak field, Serebriakovskiy water intake – in the Bolshoi Chagan OPS, and Kigach water intake – at the Atyrau Terminal OPS. The water intake is ensured through contracts with potable water suppliers. In these cases, KPO is the secondary water user.

The potable water is used exclusively for domestic needs of the KPO facilities. At the Bolshoi Chagan OPS the potable water is supplied by the RSE KazVodKhoz WQO Branch and, due to absence of alternative sources of water supply, is used only to replenish the fire tanks for fire safety purposes.

In 2018, the volume of water consumption for KPO domestic needs totalled 94,801 m³, which was 4% higher compared to the water consumption in 2017 (91,019 m³).

Water is accounted at the facilities by means of water metering devices and is recorded in the logbooks according to the RoQ primary accounting rules.

Table № 39 shows KPO's water consumption broken down by sources.

Tab. № 39. KPO's water consumption in 2016–2018 broken down by sources, m³ GRI 303-1

No.	Source	Facility	Water quality	Consumption		
				2016	2017	2018
1	Zharsuat water intake facility	KOGCF	groundwater, potable	88,415	89,034	92,888
	Domestic needs			88,415	89,034	92,888
2	Serebryakovskiy water intake facility	Bolshoi Chagan OPS	groundwater, potable	1,670	1,656	1,476
	Domestic needs			1,165	931	980
	Production needs			505	725	496
3	Konchubai gully water pond	KOGCF	surface water, technical	374,956	445,591	417,232
	Production needs			374,956	445,591	417,232
4	Kigach water intake facility	Atyrau OPS	surface water, technical	3,898	2,183	3,545
	Domestic needs			1,053	1,054	933
	Production needs			2,845	1,129	2,612

Discharge of treated wastewater GRI 306-1

Once used for production or domestic needs, water obtains additional impurities that change its primary composition or physical properties, and it turns to wastewater. Water running from industrial facilities during atmospheric precipitation and water produced along with hydrocarbons is also considered as wastewater.

KPO uses special man-made facilities for collecting treated domestic and industrial wastewater and storm runoffs shown in Table № 40. These facilities exclude a possibility of contaminants soaking into the soil and reaching groundwater as well as allow collecting the treated wastewater for their re-use for technical needs, thereby reducing the fresh water intake.

Tab. № 40. KPO wastewater collection facilities

Type of wastewater	Treated domestic wastewater	Industrial wastewater and storm runoffs	Rainfall and snow melt wastewater
Facility/ Location	▶ KCC holding ponds No. 1 and 2 ▶ evaporation ponds at Bolshoi Chagan OPS and Atyrau OPS	▶ KPC sediment pond ▶ Unit-2 sediment pond ▶ Unit-3 collecting ponds (two)	▶ KPC irrigation lagoons (two) ▶ KCC irrigation lagoon ▶ Unit-2 irrigation lagoon ▶ Eco Centre holding ponds (two)

Formation water, produced with crude hydrocarbons, and process wastewater are treated and injected into the deep-lying formations of the KOGCF industrial wastewater burial sites 1 and 2. Wastewater injection is the international practice of disposing wastewater, avoiding the formation of salt-containing waste on the surface during the treatment. Due to the reliable water shutoff and soil properties, which are ideal for the injection of wastewater, the migration of wastewater into upper aquifers is ruled out.

Generated wastewater is not discharged into the natural water bodies in result of the KPO economic and production activities.

Table № 41 shows the KPO 2016–2018 discharge volumes indicating wastewater types and receiving facilities.

Tab. №. 41. Total discharge volume by wastewater type and receiving facility, 2016–2018, m³ GRI 306-1

Receiving facility	Type of wastewater	2016	2017	2018
Holding ponds	Treated domestic wastewater	62,767	63,935	68,752
Subsurface Waste Water Disposal Polygons	Industrial wastewater, process and associated formation wastewater	413,399	582,400	663,706
Terrain of Bolshoi Chagan and Atyrau Terminal OPSs	Rainfall and snow melt wastewater	5,543	2,862	2,694
TOTAL DISCHARGE		**481,709**	**649,197**	**735,152**

In 2018, the volume of discharged wastewater increased by 11.6% as compared to 2017. In 2018, the volume of injected industrial wastewater increased by 12.3% as compared to 2017. The increase in industrial wastewater results from the increase of formation water volume appeared because of the high water cut in producing wells. The increase in contaminants is due to both increase of formation water volume and high concentration of soluble salts in the associated water produced with hydrocarbons as well as in wastewater re-injected into the formation. The types of treated wastewater and contaminants were presented in the 2017 Sustainability Report (p. 93).

Table № 42 shows the amount of contaminants discharged with wastewater in the period of 2016–2018.

Tab. № 42. Contaminants in discharged wastewater, 2016–2018

Facility	Limit, tonnes			Actual, tonnes		
	2016	2017	2018	2016	2017	2018
KOGCF	57,272.71	57,274.87	76,796.183	17,094.78	32,930.47	42,277.12
Bolshoi Chagan OPS	3.66	3.66	3.66	0.99	1.23	1.72
Atyrau OPS	2.37	2.37	2.37	0.85	1.36	1.19
TOTAL:	**57,278.74**	**57,280.9**	**76,802.213**	**17,096.62**	**32,933.06**	**42,280.03**

In 2018, the discharge of contaminants amounted to 42,280.03 tonnes, which was 1.3 times higher compared to 2017 – 32,933.06 tonnes. Of them, 39,695.33 tonnes were discharged within the MPD limits, while the excess discharge amounted to 2,584.70 tonnes. The excess discharge of contaminants results from the exceeded MPD concentration in the I quarter on ammonium nitrogen, sulphates and chlorides contained in domestic wastewater discharged into the holding ponds. The injected wastewater contained excessive MPD concentrations in Quarter 3 mainly on suspended solids in Polygon No.1.

The increased volume of industrial wastewater at the industrial wastewater burial site No. 1 resulted in the exceeded annual MPD limits of suspended solids, oil products, sulphides, hydrogen sulphide, iron, copper, aluminium, zinc, sulphates and chlorides, and in excessive discharges. As provided by the RoQ Tax Legislation, the Company effected necessary payments for the exceeded discharges of contaminants.

In general, wastewater injection has no effect on the environmental components such as soil, flora and fauna, as wastewater is injected into effectively isolated deep horizons with high-mineralized groundwater that is not used for domestic and potable, balneological, process needs, irrigation or livestock farming. The industrial wastewater is pumped into the Permo-Triassic oversaline deposits. The depth of the wastewater subsurface disposal site No.1 is 2,001 m, the depth of the wastewater subsurface disposal site No.2 – up to 2,900 m.

Reuse of treated wastewater

KPO uses treated domestic, production storm wastewater and storm runoffs for such works and operations like drilling, making drilling muds, watering of planted trees, dust suppression on roads and constructed sites. The wastewater is re-used at the Company facilities in line with the 2018–2022 Operating Procedure.

The volume of wastewater reused for technical needs by KPO in 2018 amounted to 4.4% of the technical water consumed from the Konchubai gully. Table № 43 shows the activities that utilize treated wastewater.

Tab. № 43. Reuse of treated wastewater in 2016–2018, m³ GRI 303-3

	2016	2017	2018
The total volume of re-used treated wastewater, including:	**48,023**	**50,476**	**18,241**
For drilling and drilling mud preparation	30,655	32,130	8, 825
Irrigation, hydro tests, and replenishing of fire tanks	1,553	6,506	1,040
Dust suppression	15,815	11,840	8,376

In 2018, the Company reused 18,241 m³ of treated wastewater for technical needs, mostly for making drilling mud. Compared to 2017, the reuse of treated wastewater in 2018 was reduced due to one drilling rig operation shutdown and, accordingly, a decrease in wastewater use for the drilling needs.

WASTE MANAGEMENT

Waste handling in KPO is focused on reducing the real and potential hazards the generated waste may impose on people and the environment.

The KPO Waste Management Programme for 2018–2020 provides indicators and measures to gradually reduce the accumulated and generated waste volumes and level of hazardous properties.

The Company applies the following waste management methods:

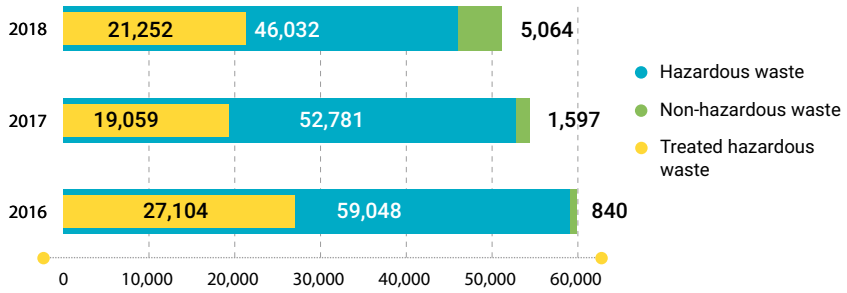
- waste recovery to process stream;
- waste treatment at the Eco Centre facilities;
- waste disposal at the Eco Centre facilities;
- waste handover to specialist contractor organizations for further disposal, processing and destruction. OG-7

The Graph № 32 shows the dynamics of waste generation for the last three years. In 2018, the volume of waste generated at KPO facilities totalled 51,096 tonnes. The volume of waste generated at KPO facilities in 2018 decreased due to the reduction of drilling volumes, if compared to 2017.

According to the Unified republican form of the waste information reporting system, the total volume of waste generated in 2018 included both waste generated and waste after its treatment. Due to the change in reporting, the volume of waste in this chart increased in comparison with the data presented in the KPO Sustainability Report for 2017 (see p.96) and 2016 (see p. 87).

Graph № 32. Waste generated at KPO facilities in 2016–2018, tonnes

GRI 102-48



Waste treatment and disposal

The company production and consumption waste treatment is carried out at the Eco Center facilities or waste management complex. The facility ensures cost-efficient and environmentally safe recycling and treatment of drilling cuttings and fluids and is truly considered to be an example of the leading drilling waste management practice in the West-Qazaqstan Oblast. The technologies applied at the KPO Eco Centre facilities for treating production and consumption waste allow not only reducing the volume and hazards of waste, but also extracting valuable components as well as treating waste for further reuse. Waste recovery to the process stream exercised by the Company is the best possible way to re-use the waste generated in drilling operations.

The KPO Eco Centre comprises six waste treatment facilities presented at table №44.

Tab. №44. KPO Eco Centre treatment facilities

	Function	Performance in 2018
1. Thermo-mechanical cutting cleaning facility (TCC)	Treatment of oil-based drill cuttings with the separation of base oil and water	Owing to separation of base oil and water from the treated oil-based drilling cuttings, the quantity of KPO disposed waste was reduced by 17% in 2018 (from the originally generated volume). In 2018, 12,683.433 tonnes of waste were treated; 1,670.588 tonnes of base oil and water were separated; and 9,638.38 tonnes of waste treated at the TCC were disposed at the Solid Industrial Waste Landfill. The selected base oil is used for preparing a new oil-based drilling mud, the selected water is used for dust suppression of the solid part produced after treatment.
2. Rotary Kiln Incinerator (RKI)	Treatment and neutralization of drilling and production waste	By applying the technology of the treatment and neutralization of drilling and production waste at the RKI, the volume of waste (from the originally generated amount) was reduced by an average 24%. In 2018, 7,530 tonnes of drilling and production waste were treated; 6,133.78 tonnes of waste treated at the TCC were disposed at the Solid industrial waste landfill. In 2018, the volume of the treated waste was significantly increased as compared to 2017, when the RKI was stopped for a long-term repair.
3. General Purpose Incinerator (GPI)	Incineration (neutralization and destruction) of waste	Incineration of waste in the General Purpose Incinerator helps reduce the waste volume by 88% at the outlet. In 2018, 736.5 tonnes of waste were sent for incineration, following which 75.28 tonnes of ash were disposed at the Solid industrial waste landfill.
4. Liquid treatment plant (LTP)	Treatment of liquid waste and wastewater for the reuse of treated products in making drilling muds and brines	In 2018, 7,004.62 tonnes of liquid waste were treated. The process resulted in 4,641.82 treated brines and muds, which were sent for re-use – preparation of drilling brines and muds.
5. Waste Segregation Unit (WSU)	Sorting of the Company's municipal waste aimed at reducing the quantity of waste to bury, separating reusable components such as paper, textiles, plastic bottles, glass, polyethylene, ferrous and non-ferrous metals	In 2018, out of 1,256 tonnes of solid domestic waste, 736.5 tonnes were sent to GPI for incineration, 150 tonnes, including waste paper, metal scrap, glass and plastic were sorted for handing over to the specialist organizations for treatment and reuse. In 2018, owing to the segregation and sorting of waste paper, the total quantity of the Company municipal waste sent to the city dump decreased by 95.6 tonnes.

Tab. №44. KPO Eco Centre treatment facilities (continued)

	Function	Performance in 2018
6. Solid Industrial Waste Landfill	The solid waste generated at the Eco Centre waste treatment facilities (TCC, RKI, GPI), as well as water-based drilling muds, are safely disposed at the landfill. The Landfill has 24 cells, with a capacity of 7.5 thousand m^3 each. Safety of the Landfill is ensured by cells comprising a geomembrane placed over the clay layer disallowing the waste or infiltrate from penetrating into the environment. Once filled with waste, the cells are covered with a sealing layer, and a drain system is installed for collecting the landfill gas. The Landfill has a snowmelt and rainfall water drainage system.	Since the Polygon was opened in 2011, there have been 230,697.26 tonnes of waste disposed. The cells are shut-off once filled. In total, 12 cells were shut off as of end 2018.

Specialised contractors make their own decisions on the further waste handling methods once the waste is accepted from KPO. They report to KPO on a quarterly basis on the waste handed over to third parties. Depending on the type, specialised enterprises hand over the waste for treatment with subsequent production of consumer goods, demercurization, regeneration, heat treatment, incineration, physical and chemical treatment, dismantling into component parts with further transfer to concerned enterprises as recyclables.

Since 2011, for the whole period of the waste paper segregation, about 440 tonnes of the waste paper has been collected and transferred to local enterprises to produce consumer goods. The segregation of spent batteries was arranged in all company office premises. 200 kg of batteries were collected in 2018.

Due to Article 301 of the RoQ Environmental Code which has become effective since 01.01.2019, prohibiting the disposal of waste plastic, plastic, polyethylene and polyethylene terephthalate packaging, waste paper, cardboard, paper waste, cullet at the landfills, the company carries out the segregation of these types of waste in the buildings leased for company offices to hand over to specialized enterprises that use them as recyclables.

KPO has been continuing the transfer of the waste generated at the old Solid Waste Storage Site and spent drilling liquids to the Eco Centre Solid Industrial Waste Landfill. In 2018, the waste was continued to be moved from the old Site for further treatment at the TCC, and RKI facilities and disposed at the Solid Industrial Waste Landfill. The waste is disposed at the Landfill according to the RK environmental legislation requirements.

In 2018, 6,156.16 tonnes (as compared to 5,266.26 tonnes in 2017) were sent for treatment from the Solid waste and Spent Drilling Liquids Storage Site. In 2019, further processing of waste from the Site is planned.

Tab. № 45. KPO waste treatment methods in 2018, in tonnes GRI 306-2

No.	Waste treatment techniques	Generated hazardous waste	Generated non-hazardous waste	Municipal waste	TOTAL
1	Availability at the enterprise as at the beginning of 2018	309,665	11	0	309,676
2	Generated during the reporting year	44,916	5,064	1.116	51,096
3	Reused at the enterprise	5,979	0	0	5,979
4	Treated at the enterprise facilities	23,977	148	40	24,165
5	Incineration in the GPI	35	0	701	736
6	Disposed and buried at the enterprise waste disposal facilities	22,547	0	0	22,547
7	Handover to specialised contractors	3,335	2,855	401	6,591
8	Availability in the enterprise as at the beginning of 2018	321,255	2,073	0	323,328

The KPO waste is mainly produced in the process of the wells drilling and workover activities. Concurrently, the water or oil base of the drilling cuttings depends on the type of the drilling mud used for the well operations. The solid and liquid drilling waste generated in 2018 amounted to 18, 682 tonnes (63% from the initially generated waste, i.e. initial waste volume before treatment).

Table № 46 shows the main types of drilling waste broken down by the handling methods. As the table shows, only water-based muds and cuttings are subject to disposal. Oil-based drilling cuttings are subject to be buried after pre-treatment and extraction of the oil base.

Tab. № 46. Waste generated from well operations by handling methods, 2016–2018 OG-7

No.	Waste description	Generated quantity, tonnes			Handling method
		2016	2017	2018	
1	Spent water-based drilling mud	950	2,943	324	Sent for treatment at Liquid treatment plant (LTP)
		4,188	4,471	1,251	Disposal
2	Water-based drilling cuttings	1,994	2,554	546	Burial
3	Spent oil-based drilling mud	2,156	2,043	1,618	Sent for treatment at the TCC and Liquid treatment plant (LTP)
4	Oil-based drilling cuttings	12,026	12,808	8,049	Treated at the TCC with extraction of oil base, water and followed by the burial of the solid part
5	Spent brines	3,802	3,546	6,309	Treated at the Liquid Treatment Plant
		984	353	578	Disposal
6	Oil cuttings	60	0	7	Heat treatment in the Rotary Kiln Incinerator (RKI)
7	Off spec oil	0	2	0	Handover to a specialised contractor

BIODIVERSITY

The Karachaganak Oil and Gas Condensate Field (KOGCF) is located in the dry steppe zone in the north-west of Qazaqstan covering an area of over 280 km^2. The area around the KPO facilities belong to various landowners, which limits the company's capabilities to take either practical actions or full responsibility for the environmental impact on this site. However, KPO carries out biodiversity monitoring activities to capture the changes in the external environment and assess the potential impact of its activities on the environment. GRI 304-1

The Biodiversity Action Plan (BAP) is one of the measures aimed at preventing the ecosystem destruction and biodiversity loss. This plan is based on the assessment of the risks of activities and potential environmental impact and developed in accordance with the methodology stipulated in Standard 1.3.1.47 ESHIA and the Guide to developing biodiversity action plans for the oil and gas sector published by IPIECA / IOGP.

One of the BAP requirements is to assess the potential impact of the company's production activities on biological diversity and ecosystem services. The BAP application at KOGCF started in 2010. Since then, this document has renewed every three years ensuring the assigned regularity of studies. Within the scope of the BAP, there was a guidance document developed with regard to the actions recommended for sensitive ecosystems in the coastal zones of rivers, as well as the flora and fauna database established and updated after each year of studies.

The KOGCF main ecosystems can be divided into three large groups: agricultural, steppe, aquatic and coastal ecosystems. Whereby, the rest of the field area is man-made zones: roads, production facilities, and infrastructure.

Tab. № 47. Ecosystems of the Karachaganak Field GRI 103-2

Agricultural ecosystem	Steppe ecosystem	Aquatic and coastal ecosystems
Agricultural and fallow lands are the dominant type of ecosystems at KOGCF and adjacent areas. This area includes the fields that are intensively cultivated for crops, and fallow fields. Fallow lands are characterized by different stages of natural vegetation cover restoration, ranging from weed to wormwood and steppe communities. The forecast restoration period of natural steppe vegetation lasts about 25-30 years.	Steppes are one of two major ecosystems characterizing the natural state of the KOGCF territory (the second one is coastal ecosystems). At present, the distribution of steppe ecosystems varies considerably, and mainly, confined to the gullies and river valleys, i.e. areas remained unploughed. Plant communities have a varied floristic set and provide a habitat for different wild animals. There is a significant diversity of ornithofauna, both permanently and temporarily inhabiting steppe ecosystems. Due to the reduction of steppe ecosystems on an international scale, even small steppe areas found within the KOGCF are important for nature conservation.	The KOGCF area is located in the basin of Berezovka river, which flows between the Ilek and Utva rivers. The Konchubai gully is supplied with water from two main tributaries, the largest of which is the Kalminovka. Coastal ecosystems are a habitat for a wide range of plant and animal species, including the rare ones.

In 2018, KPO carried out the following activities as part of the BAP for 2018–2020:

- Fauna and ichthyofauna monitoring (Berezovka river, Konchubai gully);
- Update of the species diversity database within the KOGCF.

The fauna monitoring included:

- Herpetological studies – monitoring of the number and species composition of amphibians and reptiles;
- Ornithological studies – monitoring of the number and species composition of birds;
- Theriological studies – monitoring of the number and species composition of mammals;
- Studies of the dynamics of number and prevalence of significant animal species – a river beaver.

Based on the results of fauna studies, the following conclusions were made:

- The species composition of amphibians and reptiles within the field does not differ from the adjacent territory.
- The number of bird species is stable or within the natural long-term dynamics.
- From 2010 to 2018, there were no visible changes in the species composition of mammals inhabiting the field. Significant changes in the number and ratio of species in biocenotic relationships were also not detected.
- The number of river beavers decreased within and in the vicinity of the KOGCF area, but continues to remain at a high level. This may be linked, above all, to the natural conditions of 2018 (high water levels in water bodies).

In the course of the monitoring of fauna and analysis of the number of species comparing to the previous years, carried out in the KOGCF area in 2018, there was not any significant negative impact detected from the KOGCF production activities in the studied territory. The presence of the protection regime within the KOGCF area provides favourable conditions for the fauna development in the places that are not affected by the company activities.
GRI 304-2

It is worth highlighting that in 2018, for the first time, KPO carried out the biological research studies on small rivers flowing through the KOGCF area, which included:

- Monitoring of the Berezovka river and Konchubay gully ichthyofauna;
- Hydrobiological studies, including studies of phytoplankton, zooplankton and bottom deposits;
- Toxicological studies of the fish and mollusc tissues to define the pollutant content.

The analysis of biological indicators and structures of fish populations showed a satisfactory level of their state. Nevertheless, KPO is planning to continue these studies to obtain the most objective assessment of biological status of the KOGCF water bodies. A set of combined studies of the water and bottom deposits quality and biodiversity of aquatic organisms, etc. will give an opportunity to identify consistent patterns of development of biocenoses[15] and their sensitivity to adverse impact, which subsequently will minimize the company adverse impact, if any, and develop measures to mitigate the impact and restore the biocenoses if necessary.

[15] *Biocenosis is a historically established community of animals, plants, fungi, and micro-organisms inhabiting a relatively homogeneous living space (a certain part of the land or water area), connected with each other and their environment.*

SOCIAL & ECONOMIC IMPACT

KPO held

13 meetings

in the six village communities living around the Karachaganak Field

Since the FPSA signing in 1997 by end 2018, the Local Content share in goods, works and services in KPO's procurement had exceeded

US$ 7 bln

As part of community development programmes,

200

vouchers for Akzhaik Health Resort were provided to the elderly, and 80 schoolchildren were placed with the Talap Summer Camp

Electrical power supplied to the West Qazaqstan Oblast in 2018 reached

305.06 mln GWh

During 2018 KPO achieved completion of 31 Social Infrastructure Projects worth

₸ 15.9 bln

SOCIAL INVESTMENT

Supporting social infrastructure GRI 203-1

KPO implements social and infrastructure projects in the West Qazaqstan Oblast (WQO) on the annual basis under the terms of Annex 5 to the Final Production Sharing Agreement. GRI 103-2

Following the decision of the Joint Operating Committee (JOC), since 2010, KPO has been allocating US$ 20 mln per year for social and infrastructure projects in the WQO. For the period from 2014 to 2016, the JOC took a decision to allocate additional funding of US$ 30 mln for social and infrastructure projects in Burlin district, US$ 10 mln each year. The actual spend of those projects was completed in 2018.

The list of social projects for implementation is annually approved between KPO and the West Qazaqstan Oblast Akimat based on priorities of the Oblast's social development. The list is compiled by the WQO Akimat in accordance with state priorities and programmes and considering the needs of developing the Uralsk city infrastructure, education and healthcare systems, and sports in the region.

KPO is responsible for the projects' design, procurement and management of the full process up to completion of construction and the subsequent handover to the Republic of Qazaqstan. All social projects are to be implemented by local companies. In case of failure to complete implementation of the projects by the end of the year as scheduled, the unspent funds are carried over the next calendar year.

Within one calendar year, KPO managed to complete 31 Social Infrastructure Projects as per set timelines for the cost of KZT 15.9 bln (equivalent to US$ 47.3 mln). 17 out of 31 projects were started in previous years. This is the highest performance for such number of implemented projects in the KPO history since 1998. The list of projects completed in 2018 is provided in Tables № 48 and № 49.

Tab. № 48. Social infrastructure projects in Uralsk completed by KPO in 2018
GRI 203-1

Area	Project name	Actual costs (mln KZT)*
Civil and Industrial Construction	1. Arrangement of equipped ball hockey ground at the Yunost Stadium	**1,015.9**
	2. Construction of School for 198 children in Shabdarzhap village of Akzhaik district	**802.7**
	3. Replacement of street lighting at Dostyk Avenue from Mametova Str. to Nekrassov Str.	**169.6**
	4. Replacement of street lighting at Ikhsanov street from Rubezhinskaya street to Chagano-Naberezhnaya street	**180.3**
	5. Capital repair of Depovskoy bridge	**2,216.8**
	6. Engineering design of the kindergarten in Uralsk for 350 seats	**101.2**
	7. Engineering design of the school in Uralsk for 450 seats	**124**
Construction and Repair of Roads	8. Medium repair of pavement of the motor road at Zhangir Khan Str. (from Azerbaijanskaya Str. to the WQO boundary (the 8th km))	**926.9**
	9. Medium repair of the roads traffic way with asphalt-concrete pavement in Saikhin village	**339.6**
	10. Medium repair of the road traffic way with asphalt-concrete pavement in Zhanibek village	**484.7**
	11. Capital repair of the road at Dostyk avenue in Uralsk (from Pugachev to Mametova str.)***	**1,201**
	12. Reconstruction of the road at Ikhsanova Str. (from Ch.Naberezhnaya to Rubezhinskaya Str.)***	**737.9**
	13. Construction of driveways in 7-9 micro-districts (Str. No.2)	**257.7**

Tab. № 48. Social infrastructure projects in Uralsk completed by KPO in 2018 (continued) GRI 203-1

Area	Project name	Actual costs (mln KZT)*
Construction and Repair of Roads	14. Capital repair of the road at M.Mametova str. (from Neussypova str. to Petrovskiy str.)	**624.1**
	15. Medium repair of the road at Abulkhair Khan str. (from S.Datov str. to Kyzalzharskaya Str.)	**657.6**
	16. Capital repair of the road at Gagarin str. from S.Datov str. to 2nd base overpass	**393.7****
	17. Capital repair of the road at Kurmangazy str. (from A.Moldagulova str. to Pugacheva str.)	**1,186.9****
	18. Capital repair of the access road to Krugloozernoye village from Uralsk-Atyrau road	**225.4**
	19. Reconstruction of motor roads at Listvennaya str., Volnaya str., Ramayev str. from Moskovskaya street to S.Datov street in Uralsk	**190.6**
	20. Capital repair of the motor road to Novenkii village from Zhelayevskaya road to the Uralsk boundary	**166.2**
	21. Medium repair of Neusypova Str.	**257.9**
	22. Capital repair of Masina Str.	**294**
	23. Capital repair of Kokchetavskaya Str.	**246.6**
	24. Capital repair of Shtyby Str.	**360.6**
	25. Capital repair of Chuikova Str., Gastello Str. with arrangement of access road to School No.16	**221.3**
	26. Capital repair of Dosmukhamedova Str., Kerderi Str., Akhmirova Str.	**176.2**
TOTAL		**13,561.2**

Uralsk Sports Stadium post renovation


Wedding Palace in Uralsk

Note:

* *Amounts are VAT including.*

** *In 2018, payment for this project was not made in full.*

*** *This project was started in previous years and fully completed in 2018.*

Opening of a new kindergarten in Aksai

In the Sports & Health Centre, Burlin village

Tab. № 49. Social infrastructure in the Burlin District of the West Qazaqstan Oblast completed by KPO in 2018 GRI 203-1

Area	Project name	Actual costs (mln KZT)*
Civil and Industrial Construction	1. Construction of a building of the Command and Control Centre building for the District Department of Internal Affairs	**146.1**
	2. Construction of Sports & Health Centre in Burlin village	**400.1**
	3. Construction of kindergarten for 240 children in the north part of Aksai	**715.6**
	4. Construction of 120-apartment residential house in micro-district 10 in Aksai	**607.2**
Construction and Repair of Roads	5. Construction of Dostyk road in Burlin village	**469.3**
TOTAL		**2,338.4**

*Note: * Amounts are VAT including.*

Energy supply to Western Qazaqstan

GRI 203-1

KPO generates and supplies electrical power to the West Qazaqstan Oblast in addition to the own primary needs to maintain operations in the Karachaganak Field. This is implemented in accordance with the terms of the Karachaganak Final Production Sharing Agreement (Art.I Section 1.1) providing for sale to Aksai and surrounding villages no less than 20 MW power generated at the KPC Gas Turbine Power Plant. The implementation mechanism of this obligation was set in the Joint Operating Committee's Resolution of March 2005.

Four generators are installed and operated at the KPO Gas Turbine Power Plant (GTPP), whilst three generators are dual-fuelled.

Power generated at the KPO GTPP is transmitted to the own units throughout the Field, which include KPC, Unit-2, Unit-3, Gathering system, Eco Centre, Pilot Camp, Bolshoi Chagan pumping station and block valve stations 1-26. The power is also transmitted to the two energy supply organisations: Batys Energoresursy LLP and Aksaienergo LLP. These organisations supply electrical power to the final consumers in the WQO.

During the 2018, KPO has been supplying up to 40-45 MW of electrical power to the regional network. The supplies of electrical power and fuel by KPO in the period of 2016–2018 are presented in Table № 50.

In 2018, the volume of electric power supplied to the WQO has slightly decreased (less than 1%) compared to the 2017 because of increased scope of maintenance works at the GTPP turbines and generators.

At the same time, in order to maintain high-level electricity production for the region, for the first time in KPO practice, there were two different types of major concurrent repairs of the turbine and generator. Due to the two-shift work arrangement, the total repair duration was reduced from 60 to 44 days. This made it possible to carry out the early launch of Turbine No. 2 and keep the electricity production for WQO as close as possible to the previous year levels.

Tab. № 50. KPO supplies of electrical power and fuel gas, 2016–2018

Description	2016	2017	2018
Electrical power supplied to the WQO (in GWh) including the volumes supplied to:	**294.1**	**307.64**	**305.06**
▶ Aksaienergo LLP	35.49	35.04	29.90
▶ Batys Energoresursy LLP	258.61	272.60	275.16
Fuel gas used for generation of power supplied for WQO needs (in Mscm), including:	**98.064**	**102.63**	**101.82**
▶ sales of own gas for power generation at the GTPP for WQO	50.808	97.72	94.91
▶ purchase from third party supplier for power generation at GTPP for WQO	47.256	4.91	6.91

It should be noted that the volume of electricity supplied for Batys Energoresursy LLP in 2018 was slightly higher than in 2017.

In 2018, in addition to the above overhauls of Turbine No. 2 and Generator No. 2, there were an inspection (repair) of the hot gas section of Turbine No. 4 as well as small inspections of generators No. 2 and No. 4.

In 2018, electricity was generated mainly using our own gas, produced at the KPC plant. Gas purchases from a third-party supplier for the electricity production for the region needs amounted to less than 7% of the total gas consumption at the GTPP.

In the past year, KPO did not experience production losses due to the influence of external power grids.

COMMUNITY ENGAGEMENT

Our strategy on work with communities

GRI 102-44, 103-2

KPO works to prevent or minimize the negative impacts and maximize the benefits from its presence by strengthening engagement with local communities, thus creating opportunities for societal development. Our policies, standards and procedures in the area of corporate social responsibility are based on the Performance Standards of the International Finance Corporation (IFC). KPO's Stakeholder Engagement Operating Procedure, Involuntary Resettlement Operating Procedure, Grievance & Suggestion Management Procedure are guidelined by the IFC standards. GRI 102-12, 103-2

To develop confidence and trust, KPO pays its utmost care to establishing a dialogue with its stakeholders. As part of the exisiting Village Councils, 13 meetings were held in the six communities around the Karachaganak Field (Priuralnyi, Uspenovka, Zhanatalap, Zharsuat, Karachaganak, Dimitrovo) in 2018. Social, environmental and emergency evacuation issues were the main topics. Special consideration was given for socially vulnerable groups of the community. As part of community development programmes, 200 vouchers for Akzhaik Health Resort (Uralsk) were provided to the elderly, and 80 schoolchildren were placed with the Talap Summer Camp.

Furthermore, in conjunction with the Burlin District authorities KPO hosted four public hearings on Environmental Impact Assessment (EIA) of its wells tie-in and construction projects. The session was attended by local and regional regulators, media, general public and KPO contractors. People in the audience had an opportunity to raise their questions concerning the projects including such issues as waste management, post-construction land re-cultivation, etc. KPO representatives took the floor to address those questions in full.

Tab. № 51. Targets for community engagement GRI 103-2

2018 targets	Target achievement	Actions taken in 2018	Targets for 2019
Implement the community development projects as per approved budget for 2018	Completed GRI 413-1	200 elderly people received health treatment vouchers for Akzhaik Health Resort. 80 vouchers to Talap Summer Camp provided for schoolchildren from the nearby villages (Priuralnyi, Zharsuat, Uspenovka rural districts) GRI 413-1	Implement the Community Development Programmes by 100% as per approved budget
Hold 12 Village Council meetings on social, environmental and economic topics with the village communities (Priuralnyi, Zharsuat, Uspenovka rural districts)	Completed	13 Village Council meetings hosted by KPO GRI 413-1	12 meetings
Review and respond to community grievances in accordance with Community Grievance and Suggestion Procedure	Completed	309 grievances were registered in 2018 of which 286 were effectively closed.23 grievances related to relocation construction deficiencies were deferred till early 2019 due to weather condition.	Review and timely close all in-coming community grievances
Implement the post-resettlement monitoring of the resettled households in Aksai and Araltal, address their grievances as per the Grievance Procedure and facilitate the livelihood restoration efforts	Completed	The Company reviewed all grievances of the residents related to construction defects and referred them to relevant construction companies for closure. As part of the post-resettlement livelihood restoration support, the Araltal residents were Companysupplied black soil for their vegetable gardens.	Continue the post-resettlement monitoring of the households in Aksai and Araltal, and assess whether additional livelihood restoration support is required

Monitoring of resettled communities and grievance redress

GRI 103-2, 103-3, 413-1, **OG**-12

KPO has a formal policy in place for handling complaints related to the Venture's operational activities. Any resident of the six Karachaganak neighbouring villages grouped in three rural districts (Priuralnyi, Zharsuat and Uspenovka) has the right to raise a complaint, either verbally to KPO Community Liaison Officer or in writing using dedicated forms and boxes installed in public places in those villages. The boxes are accessible to community members, if they wish to lodge a complaint. Community members may also contact a KPO Community Liaison Specialist by phone. The contact numbers of the Specialist were communicated to local residents during community engagement activities and displayed on the KPO Information Boards installed in public places in those communities. In the course of our regular engagement with local community members over past and recent years we understood that contacting a Community Liaison Specilaist by phone is the most preferred way of lodging complaints or raising enquiries for community members. Company reviews all grievances/suggestions and undertakes to resolve the issue.

The mentioned Grievance Procedure also applies to the ex-residents of Berezovka and Bestau who had been relocated to the town of Aksai and the suburbian microregion of Araltal at the end of 2017. In Araltal the resettlers were moved into 100 detached houses and in Aksai they received flats in several apartment blocks located in Karachaganak-1 Neighbourhood. In total, 465 households were resettled in the period of 2015-2018.

Currently KPO carries out post-resettlement monitoring in both locations, including their livelihood restoration. 267 grievances were registered in 2018 (Graph № 33) predominantly related to minor defects in their new houses in Araltal and flats in Aksai. KPO forwarded all such grievances to construction companies responsible for the warranty maintenance. The remedial works included repairs to the roofs, septic tanks, installation of children playgrounds and heating meters at the entrances of the two 9-storey apartment buildings in Karachaganak-1 Neighbourhood.

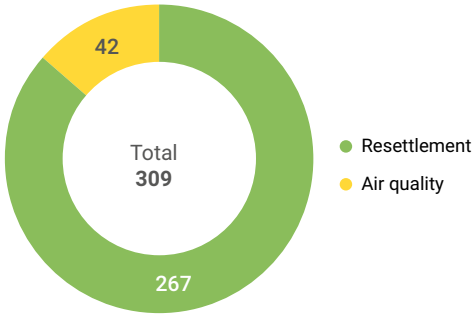
During the contacts and through the grievance mechanism, the residents of Araltal had requested KPO to provide additional volumes of soil for their vegetable gardens. KPO supplied 280 trucks of soil for the residents of Araltal in 2018 to support the livelihood restoration and kitchen gardening activities on the individual land plots.

Community and Local Authorities Relations Manager Zulfiya Muzafarova with pupils of the Araltal school

Inside the new kindergarten in the Karachaganak-1 microdistrict in Aksai

Socially vulnerable community members, who moved to Aksai and Araltal are under special surveillance in KPO's monitoring process. KPO Community Liaison Specialist visits the lonely elderly residents in order to provide assistance and resolve their issues including municipal social care and construction defects. For example, KPO helped an elderly woman with registration at the Aksai Hospital and her health examination. The lady was resettled from Berezovka in 2017 and now lives alone in one of the flats in Aksai. With KPO's help she also got a nurse designated to visit her for regular check-ups. OG-12

Graph № 33. Grievance and suggestions received from the local community in 2018 GRI 103-3



In accordance with Gas Odour Management Procedure for Communities Adjacent to the Karachaganak Field, the Company had been working to ensure all in-coming community grievances are timely addressed. Once received, every grievances is thoroughly reviewed and responded through the KPO Community Liaison team.

In total, 42 gas odor related grievances were registered in 2018. A follow-up meeting was subsequently held with each individual who made the complaint, with Community Liaison Specialist sharing information as to what exact actions had been taken as part of the grievance investigation and the environmental monitoring details. Communities, who expressed a concern about the gas odor, were also briefed on KPO's ongoing monitoring activities as part of Operational Environmental Monitoring Programme.

KPO has deployed 18 Environmental Monitoring Stations (EMS) across the Karachaganak Field and around the Sanitary Protection Zone and two truck-mounted mobile EMS. Please see more about KPO's air quality monitoring in the Environmental Monitoring section of this Report.

Complaint filed with the OECD GRI 102-44

In our Sustainability Reports for 2014 (p.113) and 2015 (p. 93) we already mentioned that an NGO called Crude Accountability lodged a complaint against KPO with the Organisation for Economic Cooperation and Development (OECD) in 2013.

KPO and its Partner companies engaged with the UK National Contact Point (NCP) during the review process in 2014–2017, and in December 2017 the UK NCP published its Final Statement.

Although the OECD dismissed all substantial claims made against the KPO Parent Companies, in the view of the OECD, two former households of Berezovka should qualify for compensation arrangements. In the Final Statement, the National Contact Point recommended KPO to "regard both households as entitled to resettlement arrangements consistent with the current IFC standard for Involuntary Resettlement, and follow the steps identified in the standard to remedy any deficiencies in the arrangements actually offered to them, completing any action required by May 2018".

With the view to follow up the above recommendation, in 2018 KPO engaged with Burlin District authorities on the issue of compensations for the two households mentioned in the NCP Statement.

In May, 2018 KPO sent a letter to UK NCP informing the latter of the formal steps undertaken by the Consortium regarding the two households. We will inform our readers on the outcome of this process in our Sustainability Report 2019.

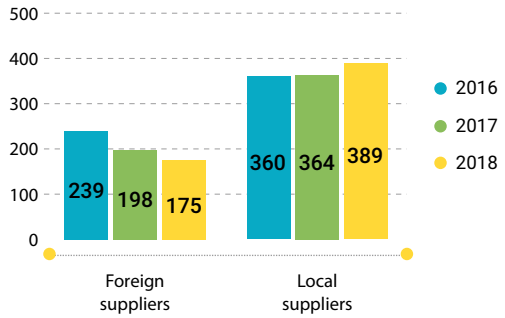
SUPPLY CHAIN GRI 102-9, 102-44

KPO is committed to conducting its business ethically and in compliance with all applicable laws and regulations in the Republic of Qazaqstan. Therefore, KPO enters into contractual relationships with suppliers, who operate in accordance with our values and who maintain high standards and demonstrate commitment to the personal and process safety, ethics and compliance and sustainable growth. These fundamental principles are incorporated in and are evaluated at every stage of contract and procurement process until closure of the contract.

KPO has an extensive supply chain with over 700 current suppliers with a pool of sub-contractors that perform a significant proportion of activities.

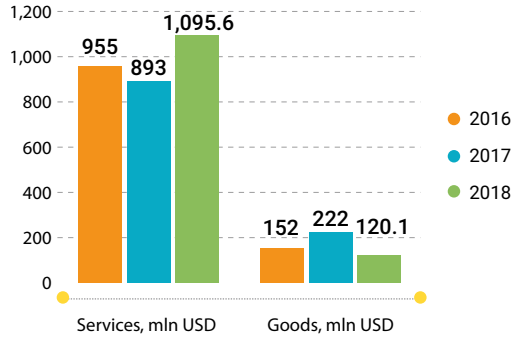
In 2018, KPO awarded contracts and contract amendments to 564 contractors and suppliers, of which 389 (69%) – local entities; 175 (31%) – foreign entities.

Graph № 34. Contractors and suppliers engaged by KPO, 2016–2018



In 2018, KPO signed 982 contracts for delivery of goods worth US$ 120.1 mln, 604 contracts for services worth US$ 1,095.6 mln.

Graph № 35. Dynamics of turnaround by awarded values through contracts and contract amendments, 2016–2018



It is important to know that KPO Ethics and Compliance requirements also apply to everyone in KPO, including all officers, employees and agents or other intermediaries acting on KPO's behalf. To promote the tone at the top, since 2015 KPO has been conducting annual compliance workshops with major KPO suppliers in order to reinforce KPO Ethics and Compliance requirements.

KPO performs its contracts and procurement activities in compliance with the RoQ legislation and approved Karachaganak Joint Operating Committee's Tender Procedures, providing a set of clear rules for the procurement of goods, works and services for the Karachaganak Project. In order to promote awareness of these rules and ensure better competition, KPO has been working to increase a number of structured pre-tender engagement sessions to clearly explain its tender requirements to the tenderers as well as to share lessons learned, such as past tenderers' rejections or disqualifications due to typical mistakes and inaccurately submitted information. **GRI** 103-2

Starting from 2018, to extend its reach towards the contractor/supplier community KPO has launched pre-tender webinars (using KPO-designated YouTube channel), simplifying the process of communication, especially with the tenderers from remote locations and enabling provision of clarifications to multiple tenderers at the same time.

Particular focus is given to the RoQ market development. At KPO dedicated workshops and when communicating with Atameken, KazService and other organisations or associations within the oil and gas sector, KPO presents its requirements to the local market participants and encourage their development through cooperation with internationally recognised and experienced suppliers of goods, works and services. This becomes especially important in view of the upcoming Karachaganak Expansion Projects.

Delivering Local Content targets is important as a commitment to the RoQ and is well recognized by KPO as an opportunity to keep our costs lower in a sustainable manner.

As a transparent operator, KPO annually publishes its procurement plans at the website www.kpo.kz.

Potential suppliers interested in participating in KPO tenders for the provision of goods, works and services are encouraged to register or update their "vendor's profile" in KPO Vendor database (details are available at www.kpo.kz) or directly in Kazakhstan Unified Vendor ALASH Database, which is growing and becoming one of the biggest vendor data sources in RoQ. It is therefore very important for potential vendors to provide accurate and relevant information on their technical competencies and experience to be considered for inclusion into the appropriate tender.

GRI 102-9, 102-44

LOCAL CONTENT DEVELOPMENT GRI 203-2, 102-44

KPO Local Content Policy is designed to maximise procurement of local goods, works and services in order to increase KPO's contribution to the sustainable development of Qazaqstan's economy as a whole and that of the West Qazaqstan Oblast (WQO), the region where KPO operates by pursuing the following activities:

- Identify potential local manufacturers and services suppliers to cover KPO needs;
- Assist in building local capabilities for the manufacture of materials and equipment in Qazaqstan, including high-tech manufacturing;
- Facilitate creation of joint ventures that would enable for technology transfer and new jobs;
- Foster cooperation with the authorities and associations in charge of local content development.

By achieving the above objectives, KPO would contribute to the enhancement of local capabilities and the reduction of imported goods, works and services procured for the Karachaganak Project. The KPO Local Content Policy and Programme were developed in line with the RoQ State and Sectorial Programmes, such as the Industrial–Innovative Development Programme, the programmes for machine-building development, the industrialization and digitization programmes. GRI 103-2

As part of the KPO Local Content Development Programme for 2018 and 2019 endorsed by the KPO Parent Companies and the Authority, in 2018 KPO accomplished the following activities focused on supporting the WQO based manufacturers:

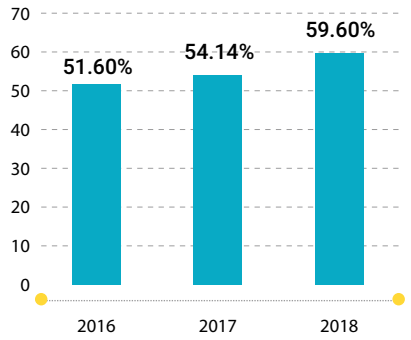
- In a bid to facilitate technology transfer and localization, the West-Qazaqstan Machinery Company was given an opportunity to carry out the repair of the GE HP Frame 5 rotor at their service centre in Uralsk, under the contract between KPO and General Electric.
- KPO initiated a "Qazaqstani tender" for the fabrication of six vessels amongst the six fabrication yards in the Western Qazaqstan. The same approach was applied in another tender for provision of the specialized services for machining and manufacturing of metalware and component parts for process equipment involving three machinery plants in the Western Qazaqstan.

KPO's local content development initiatives commenced in the years of 2016-2017 have yielded considerable results: by the end of 2018 the Company's overall Local Content performance had risen by 5.5% Karachaganak Project reaching 59.6% (US$ 474 mln) as shown in the graph № 36. Since the beginning of the FPSA in 1997 by the end of 2018, the local content share in goods, works and services procured by KPO had exceeded US$ 7 bln. GRI 204-1

Local Content Development Team at the Forum in Nur-Sultan

Graph №. 36. Local Content share in total KPO purchases, 2016-2018

GRI 204-1



During 2018, KPO continued the implementation of several long-term initiatives approved under the company's biennial Local Content Development Programme, such as Aktau Declaration[16] and the Memorandum of Understanding (MoU) on the national industry development[17] which had laid the foundation for the localisation of goods, works and services. Those are detailed in case studies №№ 1 and 2.

In 2018, KPO conducted the 29 so called 'Qazaqstan tenders' exclusively among local companies for an overall value of US$ 108 mln, which resulted in KPO awarding 14 contracts to local companies for a total value of US$ 29 mln as of 2018 year-end (while remaining is under tender processes). Such option as "Qazaqstan Tender" aims to boost local capability development and encourage competitiveness in the local market. KPO had carried on with the strategy of partnerships and/or minimum Local Content level as imperative requirements, which were applied to six major works and service tenders within the Operations' demand for an estimated value of US$ 330 mln.

GRI 102-44, 203-2

KPO progressed further with communicating valuable information about the existing opportunities within Karachaganak Project to the wide audience of vendors, authorities and non-governmental associations. This had predictably boosted an interest on the part of the national business community for the Karachaganak Project in general and localization opportunities in particular – a theme that featured in numerous forums and workshops, such as:

- KEP-1 Local Content Forum, held in Nur-Sultan on 7th September 2018 - it introduced international and local business communities with the KEP-1 Projects scope, anticipated demand in goods, works and services and supply engagement opportunities and requirements. The Forum attracted more than 160 local and international Engineering, Procurement and Construction (EPC) services companies and local manufacturers, interested in establishing joint ventures.
- A Joint Forum for localization of production chemicals, initiated by the parties to the Aktau Declaration, was hosted by KPO in Almaty on 19th November 2018, with support of the Ministry of Energy and the Authority. The Forum brought together delegates from over 50 local and international companies specialized in chemical production and associated services. The objective of the forum was to stimulate growth of the domestic chemical products' market due to high and stable demand in O&G projects by providing a platform for the exchange of information from demand and search for effective chemical solutions to the emerging opportunities for the development of chemical production sector in RoQ.

While strongly encouraged by the previous rounds of interregional cooperation engagements, KPO carried on with touring various RoQ regions to familiarize with the capabilities of local manufacturers and service providers and also share information about KPO's current and future needs, including technical specifications, procurement and local content requirements, etc.

The table № 52 lists the activities carried out in 2018 under the framework of interregional cooperation.

[16] *Aktau Declaration signed in 2012 by major oil and gas operators KPO, NCOC, TCO and NC KazMunayGas on coordinated joint actions for local content development*

[17] *Memorandum of Understanding on the National Industry Development signed between KPO, PSA LLP and KAZENERGY Association*

Tab. № 52. Interregional cooperation activities in 2018 GRI 102-44, 203-2

Visited region	Outcomes
Nur-Sultan city	KPO shared information on perspective opportunities for local content engagement in the supply chain of goods, works and services at the extended meeting attended by around 15 Nursultan-based companies. KPO overview included future project demands, expansion project scopes and requirements to potential contractors willing to cooperate with KPO. KPO has identified locally produced H_2S gas escape filter hood masks for further study of the potential supply of such goods for Operation needs.
East Qazaqstan oblast	KPO management visited manufacturing plants of the region, focusing on prioritized category of goods for localization of supply and expansion project needs: ▸ "Ust-Kamenogorsk valve plant" (UKAZ), API Q1 certified valve manufacturer, ▸ "Ust-Kamenogorsk Industrial Plant" (UZPA), manufacturer of valves, and oil and gas industry equipment, ▸ "Silumin-Vostok", manufacturer of valves, electrical equipment and pumps, automation services supplier, ▸ JSC "KEMONT", manufacturer of electrical equipment. During the visit, KPO signed a MoU on cooperation in Local Content development with the Akimat of East Qazaqstan oblast, and as for the implementation of the MoU, KPO plans site visits of technical experts to the plants in 2019.

Super heavy thick-walled separator manufactured in Qazaqstan and supplied to the Karachaganak Processing Complex

CASE STUDY № 1 (continued from 2015): Implementation of Early Tenders and Trial Orders under the Memorandum of Understanding (MoU) on national industry development

The launch of the initiative for development of production and service clusters was reported in the previous KPO Sustainability Reports for 2015 -2017. The scope of the MoU included identification of goods, works and services at early stages of KPO projects for creation of clusters and initiation of Early Tenders and/or placement of Trial Orders to provide additional time for local production of goods, works and services.

The 2018 MoU performance highlights are:

- Early tenders for the procurement of consumables – gaskets, flanges, fastening materials, process filters started in 2018, with mandatory condition of partial manufacturing of goods (frequently demanded items) in the RoQ. KPO conducted a series of pre-tender clarification meetings with tenderers to communicate the Invitation to Tender requirements and principles of early tenders. Early Tender contracts for gaskets, flanges and fastening materials are planned to be awarded in early 2019.
- A Trial Order for the procurement of locally manufactured ball valves was placed as part of an effort to test the quality of the goods proposed for supply to Karachaganak project based on the scope of the Expansion Project. In December 2018, KPO technical specialists witnessed the locally manufactured ball valves being pressure tested.
- Trial Order for procurement of locally produced motor oil has been performed to test the quality of subject goods. Following the successful field test results, the user department initiated a long-term procurement tender of locally produced motor oils.
- 16" drill bit localized earlier via the Trial Order mechanism, resulted in a long-term contract with ZhigerMunaiService, after the samples had twice demonstrated Karachaganak drilling speed records in 2018 thus reducing an average drilling time. The achieved success is the precedent for KPO to consider localization of the 12" drill bits.

Since signing of the MoU on National Industry Development, KPO has successfully localized seven types of Goods and one type of Service through Early Tender and Trial Order mechanisms.

CASE STUDY № 2: New business opportunities

Original Equipment operated at the field represents the category of long-term demand in terms of maintenance including spares and licensed service provision and is therefore considered a potential subject of a study for localization opportunity. Draft long list of imported goods of constant demand including supplies by original equipment manufacturers and non-original equipment manufacturers was reviewed in correlation to data from other O&G operators in RoQ for synergy purposes and resulted in a short-list of 8 original equipment manufacturers.

The following are KPO's 2018 year-end achievements with regard to original equipment manufacturers and other priority goods:

- Honeywell announced plans to establish a fully equipped training centre in the Qazaq-British Technical University premises for the automation faculty students.
- RT Alliance, encouraged by constant demand from KPO, is implementing a project for the construction of a liquid nitrogen production plant with a capacity of 4500 tonnes/year in Aksai. The company already created 10 new work places and is expected to fully localize the liquid nitrogen production to cover the Karachaganak Project needs.
- In November 2018, the FAD Group, resident of the Aksai Industrial Park, opened a new production workshop based in Aksai Industrial Park for a specific alloy material product, where machining and finishing will be done in Aksai. Category of goods to be fabricated include flanges, fittings, components and forged pipes in alloy F22M, high yield carbon F65 and special material grades with the "Made in Qazaqstan" stamp. The workshop will include an ASME training centre for local welders. FAD created 28 new local jobs to support the workshop activity.

GRI 102-44, 203-2

CASE STUDY № 3: Local manufacturing capability development

KPO has been taking vigorous efforts to involve local companies into more complex scopes through facilitating cooperation between international and Qazaqstani companies with a view to create new jobs and assist in technologies' transfer, as well as creation of new production capabilities.

Over the last couple of years, KPO has made drastic changes in the nature of procurement of goods from simple products to more complex, high-technology goods and equipment made in Qazaqstan.

- In Q3 2018, local manufacturers – Byelkamit and Atyrauneftemash jointly completed the fabrication of two units of three-phase cladded separators. This is the first local experience in fabrication of such thick wall (71 mm) pressure vessels in Qazaqstan. Both separators were successfully delivered and installed at the Karachaganak Processing Complex (KPC) as part of the KPC Upgrade of Oil Treatment System project.
- KPO made early efforts to secure local content in the execution of Plateau Extension Projects by identifying the opportunities for local manufacturers, where the following contracts for supply of locally manufactured goods were placed in 2018:
  - Structural steel;
  - Isolation joints;
  - Heat Exchangers;
  - Remote Telemetry Units;
  - Pig launcher.

GRI 102-44, 203-2

Development of the local companies' competences

Introduction of quality management systems and international technical standards, as well as the best practices in business management are believed to increase the competitiveness of local manufacturers and service provides. Availability of competitive local vendors is one of the critical factors for the successful implementation of the localization initiatives. During 2018, KPO arranged the IPMA (International Projects Management Association) Project Management training for the supervisory staff of 17 local companies and the certification of three local suppliers as per ISO standards as a part of the suppliers' development initiative.

In the past year, KPO initiated activities aimed at developing the capabilities of the local machine-building enterprises by arranging the implementation and certification in compliance with ASME standards applicable to pressure vessels fabrication and repair. Three machine-building enterprises, JSC Aksaigasservice, JSC Zenit Uralsk Plant and JSC Petropavlovsk Heavy Engineering Plant, implemented the requirements of ASME during 2018. Petropavlovsk Heavy Engineering Plant successfully passed the certification audits and received ASME certificates (U and R stamps) in 2018, and compliance audits for certification of the remaining two candidates are scheduled for 2019.

KPO plans to continue its efforts to develop local capabilities, which is not only important as a commitment to the Republic of Qazaqstan sustainable development but also to ensure that KPO keeps costs low in a sustainable way.

THE WAY WE REPORT

GRI STANDARDS CONTENT INDEX GRI 102-55

This report has been prepared in accordance with the GRI Standards: Core option. GRI 102-54

"For the GRI Content Index Service, GRI Services reviewed that the GRI content index is clearly presented and the references for all disclosures included align with the appropriate sections in the body of the report."

UNIVERSAL STANDARDS			
GRI Standard	**Disclosures**	**References, comments**	**Omissions**
		GRI 101 Foundation 2016	
		GRI 102 GENERAL DISCLOSURES 2016	
102-1	Name of the organization	Report scope and boundaries (p.5)	
102-2	Activities, brands, products, and services	Our products and export routes (p.22), Operations in 2018 (p.23)	
102-3	Location of headquarters	Contacts (back cover), Overview of operations (p.20)	
102-4	Location of operations	Overview of operations (p.20)	
102-5	Ownership and legal form	Governance structure (p.33)	
102-6	Markets served	Our products and export routes (p.22)	
102-7	Scale of the organization, including: i. total number of employees; ii. total number of operations; iii. net sales; iv. total capitalization broken down in terms of debt and equity; v. quantity of products or services provided.	i. People and Skills (p.71), Overview of operations (p.20); ii. KPO facilities (pp.20-21), Karachaganak Operating Facilities in 2014 (Sustainability Report 2014, pp.6-8); iii - iv. Report's scope and boundaries (p.5) v. Operations in 2018 (p.23).	
102-8	Total number on employees and other workers, by employment contract, by gender, by employment type, by region.	People and skills (pp.71-72), including Graphs №№ 11, 12, 13 and Figure № 15, p.71)	
102-9	Supply chain	Supply chain (pp.123-124)	
102-10	Significant changes to the organization and its supply chain	No significant changes	

UNIVERSAL STANDARDS			
GRI Standard	**Disclosures**	**References, comments**	**Omissions**
102-11	Precautionary principle or approach	2018 HSE Improvement Plan (p.49); Asset Integrity (pp.56-60); HSE Engagement and communication (p.49); HSE Cards programme (pp.50-52); Emergency response management (pp.53-54); Community preparedness (p.55)	
102-12	External initiatives	Our strategy on work with communities (p.120)	
102-13	Membership of associations	Main issues and engagement events of KPO with stakeholders in 2018' (Fig. №4, pp.16-17). KPO is a member of KazEnergy Association, EITI (p.38), Business partnerships and membership in assosiations (p.9 of the Sustainability Report 2015).	
102-14	Statement from senior decision-maker	Letter from General Director (pp.6-7)	
102-15	Key impacts, risks, and opportunities	Letter from General Director (p.6), Executive summary (pp.7-11), Risk management (p.37), Safety (p.41), HSE Risk management (pp.42-43, p.48).	
102-16	Values, principles, standards, and norms of behavior	Ethical conduct (pp.39-40)	
102-17	Mechanisms for advice and concerns about ethics	Hotline and other compliance measures (p.40), Employee relations (p.78)	
102-18	Governance structure	Governance structure (pp.33-35)	
102-40	List of stakeholder groups	'KPO engagement with stakeholders in 2018' (Fig. №3, p.15)	
102-41	Collective bargaining agreements	Employee relations (p.78)	
102-42	Identifying and selecting stakeholders	Stakeholder engagement (pp.14-17)	
102-43	Approach to stakeholder engagement	Material topics (p.12), Stakeholder engagement (pp.14-17)	
102-44	Key topics and concerns raised	Material topics (pp.12-13), Stakeholder engagement (pp.14-17). Key issues raised by stakeholder's groups are presented in the following chapters: ▶ Parent Companies, PSA LLP Authority – in 'Governance and management approach' (pp.33-35); ▶ Local Communities, NGOs - in 'Community engagement' (p.122);	

UNIVERSAL STANDARDS			
GRI Standard	**Disclosures**	**References, comments**	**Omissions**
102-44	Key topics and concerns raised	▶ Employees - in 'Employee Relations' (p.78); ▶ Students - in 'KPO partnership with Qazaqstani universities' (p.81); ▶ State bodies - in 'Community preparedness' (p.55), 'Security' (p.62), 'Environmental Protective Measures Plan' (pp.87-89); ▶ Counterparties - in 'Supply chain' (pp.123-124), 'Local content development' (pp.125-129); ▶ Business partners - in 'Local content development' (pp.125-129); ▶ Trade Unions - in 'Employee relations' (p.78).	
102-45	Entities included in the consolidated financial statements or equivalent documents	This Report covers the Operations and Projects of the KPO B.V. Branch in Qazaqstan	
102-46	Defining report content and topic Boundaries	Material topics (pp.12-13)	
102-47	List of material topics	Material topics, 'Material topics of sustainable development' (Fig. № 2., p.13)	
102-48	Restatements of information	Average energy intensity indicator of the IOGP companies for 2017 in 'Dynamics of energy intensity in 2016-2018' (Graph №30, p.103), volumes in 'Waste generated at KPO facilities in 2016-2018, tonnes' (Graph №32, p.108)	
102-49	Changes in reporting	No significant changes	
102-50	Reporting period	Report scope and boundaries (p.5)	
102-51	Date of most recent report	Report scope and boundaries (p.5)	
102-52	Reporting cycle	Report scope and boundaries (p.5)	
102-53	Contact point for questions regarding the report	Contacts (back cover)	
102-54	Claims of reporting in accordance with the GRI Standards	Global Reporting Initiative (p.5), GRI Standards Content Index (p.131)	
102-55	GRI Standards Content Index	GRI Standards Content Index (pp.131-142)	
102-56	External assurance	Assurance of disclosed information (p.5)	

TOPIC–SPECIFIC STANDARDS			
GRI Standard	**Disclosures**	**References, Comments**	**Omissions**
GRI 200 Economic Topics 2016			
This reference to GRI 103: Management Approach 2016 and the corresponding Disclosures 103-1, 103-2 and 103-3 applies to the material topics Market presence, Indirect Economic Impacts, Procurement Practices, Anti-corruption, Reserves.			
GRI 103 Management Approach 2016	103-1 Explanation of the material topic and its boundary	KPO impact boundary covers West Qazaqstan Oblast. Report scope and boundaries (p.5), maps on p.22 (Fig. №6. Our export routes) and p.71 (Fig. № 15. KPO employees by region), Overview of operations (p.20)	
	103-2 The management approach and its components	Annex 5 to the FPSA: 'Supporting social infrastucture' (p.116), Joint Operating Committee's Tender procedures: 'Supply chain' (p.124), FPSA provisions on local content increase: KPO Local Content Policy (p.125), KPO Management systems (p.36)	
	103-3 Evaluation of the management approach	Assurance (p.38)	
Market Presence			
GRI 202 Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	Compensations and benefits (p.79). Karachaganak O&G condensate field located in the Western Qazaqstan Oblast (Republic of Qazaqstan) relates to 'significant location of operations'.	202-1-a. Not applicable There are no differences in salary levels by sex.
	202-2 Proportion of senior management hired from the local community	Development of the national personnel (p.73); By 'senior management' is meant to be Executive management and their deputies' given in category 1+2 in «Progress update with the KPO Plan for Increased Local Content in Staff by categories of employees» (Tab. №22, p.73). 'Local' in the context refers to national employees, the citizens of the Republic of Qazaqstan.	
Indirect Economic Impacts			
GRI 203 Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	Supporting social infrastructure (pp.116-118), Energy supply to Western Qazaqstan (p.119)	
	203-2 Significant indirect economic impacts	Local content development (pp.125-129)	
Procurement Practices			
GRI 204 Procurement Practices 2016	204-1 Proportion of spending on local suppliers	Local content development (p.125), Local Content share in total KPO purchases, 2016-2018' (Graph №36, p.126)	

TOPIC-SPECIFIC STANDARDS			
GRI Standard	**Disclosures**	**References, Comments**	**Omissions**
		Anti-corruption	
GRI 205 Anti-corruption 2016	205-2 Communication and training about anti-corruption policies and procedures	Awareness training on the Code of conduct and anti-corruption (p.39); Anticorruption due diligence process (p.40)	
		Reserves	
G4 O&G Sector Disclosures	OG-1 – Volume and type of estimated proved reserves and production (partial disclosure)	Overview of operations (p.20)	
		GRI 300 Environmental topics 2016	
This reference to GRI 103: Management Approach 2016 and the corresponding Disclosures 103-1, 103-2 and 103-3 applies to the material topics: Energy, Water, Biodiversity, Emissions, Effluents & Waste, Environmental Compliance			
GRI 103 Management Approach 2016	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers West Qazaqstan Oblast. Caring for the environment (p.83)	
	103-2 The management approach and its components	Integrated HSE management system (p.47); Caring for the environment (p.83); Our targets in environmental protection (Tab. №25, pp.84-86); 2018 Environmental Protective Measures Plan (p.87), '2018 Environmental Protective Measures Plan Implementation, %' (Tab. №27, p.88); Energy management system (p.102)	
	103-3 Evaluation of the management approach	Certification audit for compliance to the ISO 14001:2015 international standard (p.47); Certification audit for compliance to the ISO 50001:2011 standards 'Energy management system' (p.102), internal audits (p.38); Integrated HSE management system (p.47).	
		Energy	
GRI 302 Energy 2016	302-1 Energy consumption within the organization	Energy consumption (p.102). KPO applies standards, methods and convensions regulated by the RoQ normative documents in energy saving and energy efficiency.	302-1 - c(ii, iii, iv), d. Not applicable. KPO does not keep separate records on steam consumption and energy consumption for cooling; this data is included in the total amount of electricity consumption. KPO does not sell electricity, heat, air conditioning and steam.
	302-3 Energy intensity	'Dynamics of energy intensity in 2016-2018' (Graph №30, p.103)	

TOPIC–SPECIFIC STANDARDS			
GRI Standard	**Disclosures**	**References, Comments**	**Omissions**
		Water	
GRI 303 Water 2016	303-1 Water withdrawal by source	Water use (p.104), KPO's water consumption in 2016-2018 broken down by sources (Tab. №39, p.105)	
	303-3 Water recycled and reused	'Reuse of treated wastewater in 2016-2018, m^3' (Tab. №43, p.107). Approximately 3.5% of the total water withdrawal from surface sources was reused in 2018.	
		Biodiversity	
GRI 304 Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Biodiversity (p.112)	
	304-2 Significant impacts of activities, products, and services on biodiversity	Biodiversity (p.113)	
	304-3 Habitats protected or restored (partial disclosure)	Land reclamation in 'Results of KPO's Environmental Protection measures implemented in 2018' (Tab. №28, p.89)	304-3-b. Not applicable. The third party wasn't involved.
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	Species essential for nature conservation registered within the Karachaganak Field within the 1990-2016 research are shown in the relevant table available on the website www.kpo.kz in the section 'Sustainability / HSE / Protecting the Environment / Biodiversity'.	
		Emissions	
GRI 305 Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Direct greenhouse gas emissions (p.93)	
	305-2 Energy indirect (Scope 2) GHG emissions	Indirect GHG emissions (p.93)	

TOPIC–SPECIFIC STANDARDS			
GRI Standard	**Disclosures**	**References, Comments**	**Omissions**
GRI 305 Emissions 2016	305-4 GHG emissions intensity	Specific greenhouse gas emissions (p.94)	
	305-5 Reduction of GHG emissions	Reduction of greenhouse gas emissions (pp.94-95)	
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Air emissions (p.90)	
G4 O&G Sector Disclosures	OG-6 Volume of flared and vented hydrocarbon	Gas flaring (p.91), Gas Utilisation (p.92)	
Effluents and Waste			
GRI 306 Effluents and Waste 2016	306-1 Water discharge by quality and destination	Discharge of treated wastewater (pp.105-106)	
	306-2 Waste by type and disposal method	Waste disposal 'KPO waste treatment methods in 2018, in tonnes' (Tab.№45, p.111)	
	306-3 Significant spills	In 2018, no cases of significant spill were recorded at the territory of the Karachaganak field. The definition of a significant spill is applied to an incident, which has caused contamination of the environment through hydrocarbon/chemical spills to land or water and volume of spilled hydrocarbon/chemical exceeding 1,000 litres (as per KPO Incident classification).	
G4 O&G Sector Disclosures	OG 7 Amount of drilling waste and strategies for treatment and disposal	Waste generated from well operations, by handling methods, 2016-2018 (Tab. №46, p.111)	
Environmental Compliance			
GRI 307 Environmental Compliance 2016	307-1 Non-compliance with environmental laws and regulations	Environmental fines (p.89). There were no cases of non-monetary sanctions applied to the Company during the reporting period. KPO 2018 Environmental Protective Measures Plans and issued Permits (Tab.№ 26, p.87).	

TOPIC-SPECIFIC STANDARDS			
GRI Standard	**Disclosures**	**References, Comments**	**Omissions**
		GRI 400 Social topics 2016	
GRI 103: Management Approach 2016 (The covered material topics by this Management Approach are Employment and Labour/ Management Relations)	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers Qazaqstani citizens, in particular of the West Qazaqstan Oblast. People and skills (p.69).	
	103-2 The management approach and its components	Our targets in personnel development and renumeration (Tab.№ 21, p.70); HR Management System manual (p.36); Competency management system (p.77); KPO Programme for Increasing Local Content in Staff (p.73); Collective Agreement for 2019-2021 (p.78).	
	103-3 Evaluation of the management approach	Optimization of organizational structure and work processes (p.79), Personnel Development Review (p.79), Competency management system (p.77); Collective Agreement (p.78), Dynamics of local personnel turnover, 2016-2018 (Graph №16, p.72); Progress update with the KPO Plan for Increased Local Content in Staff by categories of employees (Tab. №22, p.73).	
		Employment	
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	People and skills (p.72): Graphs on personnel turnover (№№ 14, 15, 16)	
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Compensations and benefits (p.78)	
		Labor/Management Relations	
GRI 402 Labor/ Management Relations 2016	402-1 Minimum notice periods regarding operational changes	Employee Relations (p.78)	
		Occupational Health and Safety	
GRI 103 Management Approach 2016	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers KPO facilities at the Karachaganak field of the West Qazaqstan Oblast and export pipeline in Atyrau Oblast. The topic covers KPO and contractors.	
	103-2 The management approach and its components	Our targets in Safety (Tab. №5, pp.42-43); Integrated HSE Management System (p.47); Targets in health protection (Tab.№15, p.63), Health Promotion (pp.66-67).	
	103-3 Evaluation of the management approach	Certification audit for compliance of the international standards ISO 14001:2015 and OHSAS 18001:2007 (p.47); Peer Comparison (p.47); Safety performance (p.44); KPO performance vs IOGP, 2006-2018 (Graph №4, p.47); 2018 HSE Improvement Plan (p.49); HSE Cards Programme (pp.50-51).	

TOPIC–SPECIFIC STANDARDS			
GRI Standard	**Disclosures**	**References, Comments**	**Omissions**
GRI 403 Occupational Health and Safety 2016	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Safety performance (pp.44-47), Absenteeism monitoring (p.65); Occupational Diseases (p.65).	
	403-3 Workers with high incidence or high risk of diseases related to their occupation	Management of ill health (p.64); Absenteeism monitoring (p.65); Occupational Diseases (p.65); Health risk assessments (p.66)	
	403-4 Health and safety topics covered in formal agreements with trade unions (partial disclosure)	Health risk assessments (p.66)	
Training and Education			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers Qazaqstani citizens. Training and development (pp.75-77)	
	103-2 The management approach and its components	FPSA Regulations on training (p.75); HR Management System Manual (p.36); Collective Agreement (p.78); KPO Programme for Increasing Local Content in Staff (p.73); Competency Management System (p.77).	
	103-3 Evaluation of the management approach	Development of the national personnel (p.73); Training and development (p.75).	
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	Training statistics (p.76).	
	404-2 Programs for upgrading employee skills and transition assistance programs	Scholarship programmes for national employees and their children (pp.80-81)	
	404-3 Percentage of employees receiving regular performance and career development reviews	Personnel development review (p.79)	
Diversity and Equal Opportunity			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers Qazaqstan	
	103-2 The management approach and its components	Code of Conduct (p.39); Collective Agreement for 2019-2021 (Employee relations, p.78)	
	103-3 Evaluation of the management approach	Terms of the Collective Agreement are reviewed every 2-3 years	

TOPIC–SPECIFIC STANDARDS			
GRI Standard	**Disclosures**	**References, Comments**	**Omissions**
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Development of National Personnel (pp.73-75). Number of local and expatriate managers by age and gender, 2018 (Graph № 19, p.75)	
	405-2 Ratio of basic salary and remuneration of women to men	Karachaganak O&G condensate field located in the Western Qazaqstan Oblast (Republic of Qazaqstan) relates to 'significant location of operations'. Basic salaries are established for employee categories regardless of gender, and hence basic salaries for women and men are equal.	
Freedom of Association and Collective Bargaining			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers West-Qazaqstan Oblast	
	103-2 The management approach and its components	Collective Agreement for 2019-2021 (p.78)	
	103-3 Evaluation of the management approach	Terms of the Collective Agreement are reviewed every 2-3 years	
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Employee relations (p.78)	
Security Practices			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	The impact boundary covers KPO and contractors within the facilities of the Karachaganak field, the West Qazaqstan Oblast and the export pipeline facilities in the Atyrau Oblast	
	103-2 The management approach and its components	Our targets in security (Tab.№14, p.61); Security Management System (Security, p.62)	
	103-3 Evaluation of the management approach	Security Management System (p.62)	
GRI 410 Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	Security (p.62)	

TOPIC–SPECIFIC STANDARDS			
GRI Standard	**Disclosures**	**References, Comments**	**Omissions**
		Local Communities	
GRI 103 Management Approach 2016	103-1 Explanation of the material topic and its Boundary	The KPO impact boundary covers the local communities in villages along the perimeter of the Karachaganak field and Aksai town in the Burlin district of WQO	
	103-2 The management approach and its components	Our strategy on work with communities (p.120); Targets for community engagement (Tab.№51, p.120); KPO Stakeholder Engagement Operating Procedure; Involuntary Resettlement Operating Procedure; Grievance and Suggestion Management Procedure (p.120)	
	103-3 Evaluation of the management approach	Monitoring of resettled communities and grievance redress; Grievance and suggestions received from the local community in 2018 (Graph №33, p.122). KPO local community engagement procedure are developed in accordance with IFC standards.	
GRI 413 Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programmes	'Targets for community engagement' (Tab.№51, p.120), Monitoring of resettled communities and grievance redress (p.121), Environmental monitoring (pp.98-101)	
G4 O&G Sector Disclosures	OG-12 Operations where involuntary resettlement took place, the number of households resettled in each and how their livelihoods were affected in the process (partial disclosure)	Monitoring of resettled communities and grievance redress (pp.121-122) Resettlement of Berezovka and Bestau communities (2017 KPO Sustainability Report, pp.105-106)	
		Emergency response preparedness	
GRI 103 Management Approach 2016	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers KPO facilities at the Karachaganak field, the export pipeline in West Qazaqstan and Atyrau oblasts. The topic covers KPO and contractors. Emergency Response management (p.53)	
	103-2 The management approach and its components	Emergency Response management (p.53); 'KPO Emergency Response System' (Fig.№11, p.53)	
	103-3 Evaluation of the management approach	Emergency response exercises conducted in 2018' (Tab.№11, p.54); Community preparedness (p.55)	

TOPIC–SPECIFIC STANDARDS			
GRI Standard	**Disclosures**	**References, Comments**	**Omissions**
		Industrial safety and integrity management	
GRI 103 Management Approach 2016	103-1 Explanation of the material topic and its Boundary	The KPO impact boundary covers KPO facilities at the Karachaganak field, the export pipeline in West Qazaqstan and Atyrau oblasts	
	103-2 The management approach and its components	Asset Integrity Management System Framework (2016 KPO Sustainability Report, p.42); Targets in Asset Integrity (Tab.№13, p.57); The KPO Asset Integrity Barrier Model (p.58)	
	103-3 Evaluation of the management approach	2018 HSE Improvement Plan (p.49); HSE Risk management (p.48); Monitoring of Asset Integrity KPIs (pp.58-59); Alarm Rationalisation Project (p.60); Process Safety Fundamentals campaign (p.60)	
G4 O&G Sector Disclosures	OG-13 Number of process safety events, by business activity	Asset Integrity (p.56); Loss of Primary Containment (p.59)	

GLOSSARY

ABBREVIATION	DESCRIPTION
AI	Asset Integrity
ALARP	As low as reasonably practicable
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
BAP	Biodiversity Action Plan
BCMA	Billion cubic meters per annum
BOE	Barrels of oil equivalent
CH_4	Methane
ConCom	Contractor Committee
CO	Carbon monoxide
CO_2	Carbon dioxide
CPC	Caspian Pipeline Consortium
DSIU	Declaration of Safety for Industrial Units
EACS	Electronic Access Control System
ECC	Emergency Communication Centre
EDP	Enhanced Development Programme
EEP	Environmental Emissions Permit
EERA	Escape, Evacuation and Rescue Assessments
EIA	Environmental Impact Assessment
EITI	Extractive Industries Transparency Initiative
EQO	East Qazaqstan Oblast
EMS	Environmental Monitoring Station
EOPS	Early Oil Production Satellite
EPMP	Environmental Protection Measures Plan

ABBREVIATION	DESCRIPTION
FEED	Front End Engineering Design
FID	Final Investment Decision
FPSA	Final Production Sharing Agreement
FRM	Fatigue Risk Management
Gcal	Gigacalorie
GHG	Greenhouse Gases
GOR	Gas oil ratio
GRI	Global Reporting Initiative
GTPP	Gas Turbine Power Plant
GWS	Goods, works and services
HAZOP	Hazard and Operability
HC	Hydrocarbons
HRA	Health Risk Assessment
HSE	Health, Safety and Environment
H_2S	Hydrogen Sulphide
IFC	International Finance Corporation
IMS	Integrated Management System
IOGP	International Oil and Gas Producers' Association that collects safety incident and environmental data from its member companies globally since 1985.
ISAE 3000	International Standards on Assurance Engagement 3000
ISO 14001	Internationally accepted standard that sets out requirements for putting in place an effective Environmental Management System
ISO 50001	Internationally accepted standard that sets out requirements for putting in place an effective Energy Management System

ABBREVIATION	DESCRIPTION
JOA	Joint Operating Agreement
JOC	Joint Operating Committee
KATS	Karachaganak Atyrau Transportation System
KEP	Karachaganak Expansion Project
KGDBN	KPC Gas Debottlenecking Project
KOGCF	Karachaganak Oil and Gas Condensate Field
KOTS	Karachaganak Orenburg Transportation System
kt	kiloton
KPC	Karachaganak Processing Complex
KPI	Key Performance Indicators
LLP	Limited Liability partnership
LOPC	Loss of primary containment
LTI	Lost Time Injury
LTIF	Lost Time Injury Frequency
MDL	Minimal Detection Limit
MOC	Management of change
MoU	Memorandum of Understanding
MPC	Maximum Permissible Concentration
MPL	Maximum Permissible limits
Mscm	Million standard cubic metres
MWH	Megawatt hour
NGO	Non-governmental organisation
N_2O	Nitrous oxide
O&G	Oil & Gas
OHSAS 18001	Internationally recognised assessment specification for occupational health and safety management systems

ABBREVIATION	DESCRIPTION
OpCom	Operator Committee
OPITO	Offshore Petroleum Industry Training Organisation
OPS	Oil Pumping Station
Parent Companies or Contracting Companies	ENI, Shell, Chevron, Lukoil and KazMunayGaz National Company
PEC	Production Environmental Control
PEP	Plateau Extension Projects
Phase IIM	Phase II Maintenance
POB	Personnel on Board Control System
PSF	Process Safety Fundamental
QRA	Quantitative Review Assessment
RBI	Risk based approach
RoQ	Republic of Qazaqstan
RTI	Road Traffic incidents
RTIF	Road Traffic Incident Frequency
SCE	Safety Critical Element
SDG	Sustainable Development Goals
SPZ	Sanitary Protection Zone
TRI	Total Recordable injuries
TRIF	Total Recordable Injury Frequency
VPSHR	Voluntary Principles on Security and Human Rights
VAR	Value Assurance Review
WQO	West Qazaqstan Oblast
YTD	Year to Date

FEEDBACK

Feedback Form on the KPO Sustainability Report 2018

We genuinely believe that our readers' feedback is essential for our reporting.

1. Name, surname _____

Organization _____

2. Which stakeholder group best describes you?

(1) Parent companies	☐	(6) Counterparties	☐
(2) Authorised body – PSA LLP	☐	(7) Business partners	☐
(3) Employees	☐	(8) Media	☐
(4) Trade Unions	☐	(9) Local communities	☐
(5) State bodies	☐	(10) Non-government organisations	☐
(11) If you do not belong to any of groups listed above, please indicate your connection to KPO:			☐

3. What is the reason for reading our Sustainability Report?

(1) For KPO general awareness purposes	☐	(2) As a study material	☐
(3) As a potential vendor	☐	(4) To track KPO sustainability performance	☐
(5) For industry analytics purposes	☐		
(6) In search of specific information. Please specify: _____			
(7) For any other reasons. Please state: _____			

4. Please evaluate the report according to the criteria below:

Criteria	Poor	Fair	Good	Excellent
(1) Cohesion and coherence (easy to understand)	☐	☐	☐	☐
(2) Report structure (easy to navigate)	☐	☐	☐	☐
(3) Design and illustrations	☐	☐	☐	☐
(4) Visibility and value of tables, graphs and infographics	☐	☐	☐	☐
(5) Overall report quality	☐	☐	☐	☐

5. How would you rate our performance disclosure in the following areas?

	Poor	Fair	Good	Excellent
(1) Production and operation performance and technologies	☐	☐	☐	☐
(2) Corporate governance	☐	☐	☐	☐
(3) Environmental performance	☐	☐	☐	☐
(4) Contribution to economy of the Western Qazaqstan and the country	☐	☐	☐	☐
(5) Social responsibility	☐	☐	☐	☐
(6) Other comments or suggestions: _____				

6. In your opinion, which material topics or issues disclosed in the KPO Sustainability Report 2018 are important for you, as a KPO stakeholder? Please, limit your choice to 10 topics of the most interest to you.

Social topics:

- ☐ Personnel development and training
- ☐ Social, cultural and gender diversity, equal opportunities
- ☐ Labour / Management relations
- ☐ Freedom of association and collective bargaining
- ☐ Security practices
- ☐ Human Rights training for contractors
- ☐ Labour practices and grievance mechanism

Socio-Economic topics:

- ☐ Increase of local content in staff
- ☐ Social investments in the territories with our presence, including support for local communities
- ☐ Supply of electrical power to local communities
- ☐ Local content development and its share in procurement of goods and services
- ☐ Employment and compensation
- ☐ Anti-corruption

Environmental topics:

- ☐ Spills
- ☐ Air quality monitoring
- ☐ Reduction of GHG and pollutants
- ☐ Water conservation
- ☐ Management of waste and effluents
- ☐ Biodiversity and ecosystems conservation
- ☐ Environmental grievance mechanisms

Socio-Environmental topics:

- ☐ Labour Protection and Safety
- ☐ Protection of health
- ☐ Asset Integrity and Process Safety
- ☐ Community Emergency Preparedness – mechanisms of engagement
- ☐ Community Grievance Redress
- ☐ Community Relations – impact assessment and mitigation

Economic topics:

- ☐ Corporate governance and management
- ☐ Estimated proved reserves and production
- ☐ Procurement practices and supply chain
- ☐ Transparency of payments to the government (EITI)

Environmental-Economic topics:

- ☐ Energy efficiency
- ☐ Environmental compliance
- ☐ Environmental investments
- ☐ ISO 14001 and 50001 certification

7. Which of above, if any, you would like to see again in the KPO Sustainability Report 2019? In addition, please specify your other areas of interest.

Please send your feedback, comments to this edition or contribution to the Report 2019 to the below address or by email at Sustainability@kpo.kz.

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